BCA & ACCESS ASSESSMENT REPORT

SSDA Design

The Sutherland Hospital
Operating Theatre Upgrade Project

PREPARED FOR:

Revision: 0
Date:18 December 2020
Project No.: 200178

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1.0 EXECUTIVE SUMMARY

The project site is located at The Sutherland Hospital Campus. This report comprises a review of the SSDA Design for the upgrade to the operating theatres comprising upgrade and expansion of the OT complex on Level 3 and new plant and CSSD at level 4 of the existing hospital.

A new MRI facility is proposed at level 2.

The hospital is classified as follows:

+ **BCA CLASSIFICATION:**	Class 9a (Health-Care)
+ **IMPORTANCE LEVEL (STRUCTURAL):**	IL 4 – *To be confirmed by structural engineer.*
+ **RISE IN STOREYS:**	Four (4) TBC, pending section drawings
+ **TYPE OF CONSTRUCTION:**	Type A
+ **EFFECTIVE HEIGHT:**	>12m and <25m
+ **MAX. FIRE COMPARTMENT SIZE:**	5,000m^2 & 30,000m^3 + 2,000m^2 in Patient Care areas.
+ **FLOOR AREA:**	TBC
+ **SPRINKLER PROTECTED THROUGHOUT:**	Not throughout. Yes (all new works) including • Level 2 MRI • Level 3 Perioperative • Level 4 CSSD & Plant
+ **CLIMATE ZONE:**	Zone 5

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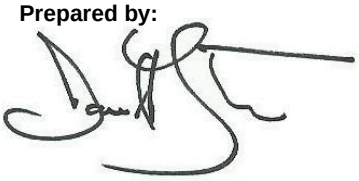
REPORT STATUS				
DATE	REVISION	STATUS	AUTHOR	REVIEWED
18-12-2020	0	SSDA Preliminary Design	DB	MP

Prepared by:



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2.0 INTRODUCTION

2.1 BACKGROUND

Blackett Maguire + Goldsmith Pty Ltd have been commissioned by NSW Health Infrastructure to undertake an assessment of the proposed upgrade of the operating theatres at The Sutherland Hospital Campus against the relevant provisions of the Building Code of Australia 2019 Amendment 1 (BCA) and the Access to Premises Standards 2010.

The proposal comprises upgrade and expansion of the OT complex on Level 3 and new plant and CSSD at level 4 of the existing hospital; and a new MRI facility is proposed at level 2.

2.2 OBJECTIVE OF COMPLIANCE STATEMENT

The objectives of this statement are to:

a) confirm that the DA architectural documentation has been reviewed by an appropriately qualified Building Surveyor and Accredited Certifier.

b) confirm compliance with the Disability (Access to Premises-Buildings) Standards 2010 (the Access to Premises Standards) requiring the building to comply with the Access Code (BCA Part D3 & AS 1428.1-2009).

c) confirm that the proposed new building works can readily achieve compliance with the BCA pursuant to clause 6.28 of the *Environmental Planning & Assessment Regulation 2000*.

d) accompany the Development Application submission to enable the Consent Authority to be satisfied that subsequent compliance with the fire & life safety and health & amenity requirements of the BCA, will not necessarily give rise to design changes to the building which may necessitate the submission of an application under Section 4.55 of the *Environmental Planning and Assessment Act 1979*.

It should be noted that it is not the intent of this statement to identify all BCA and Access provisions that apply to the subject development. The development will be subject further assessment following receipt of more detailed documentation at Crown Certificate stage.

Note: This statement has been prepared in accordance with Part 4 of the Building and Development Certifiers Regulation 2020.

2.3 PROJECT TEAM

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

+ David Blackett – Report Preparation (Director) | Registered Building Surveyor - Unrestricted - Certifier (NSW)
+ Michael Potts – Peer Review (Associate Director) | Registered Building Surveyor - Unrestricted - Certifier (NSW) & Accredited Access Consultant

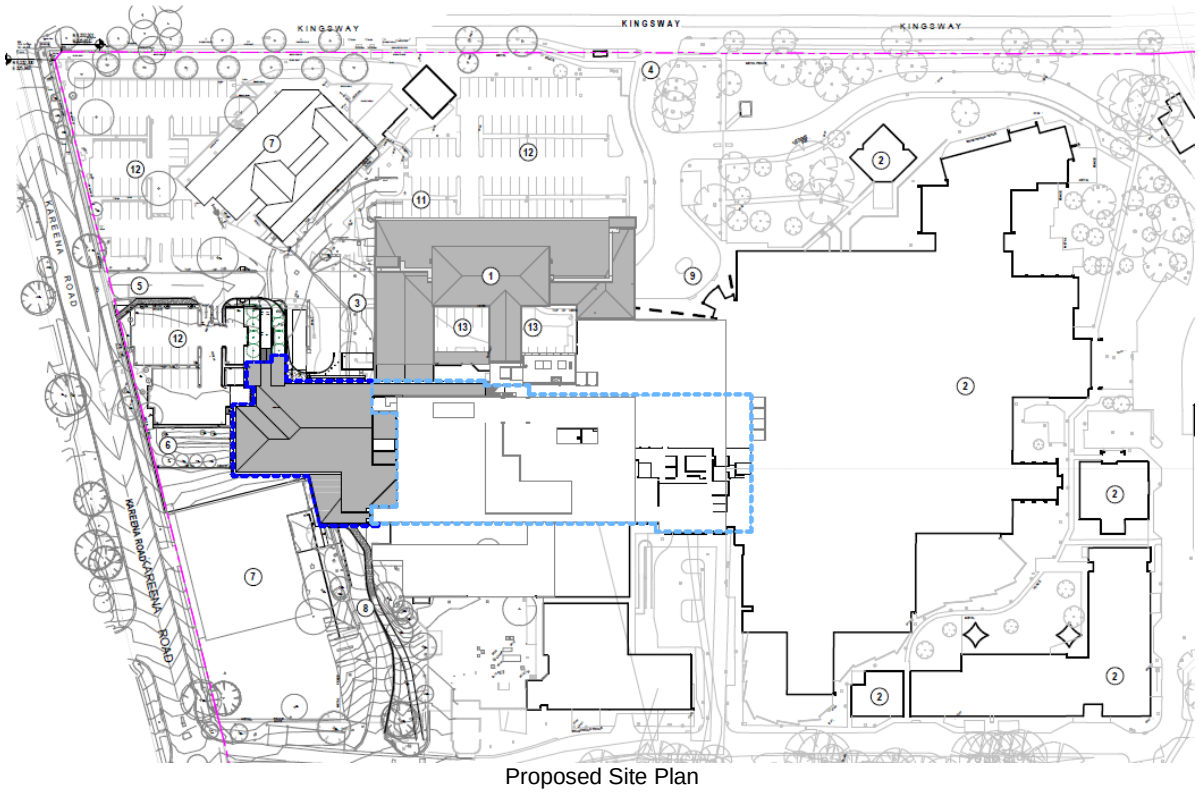
2.4 REFERENCED DOCUMENTATION

The following documentation was relied upon when preparing this Report:

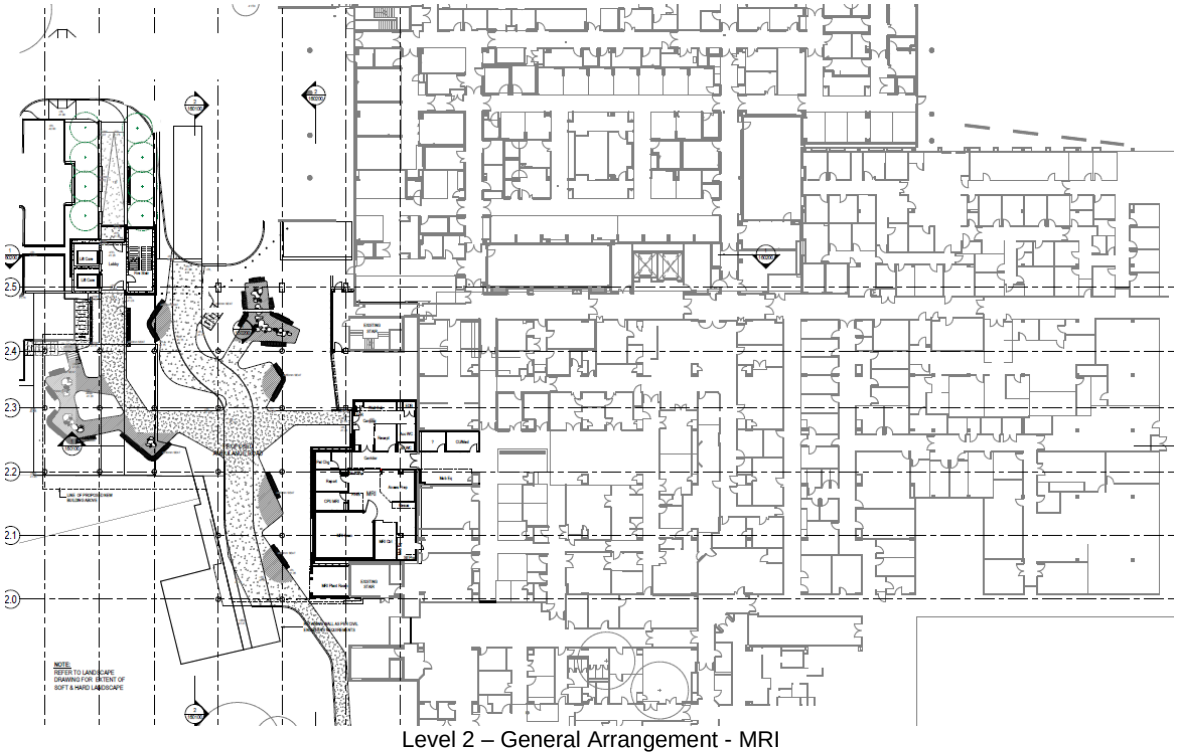
+ Building Code of Australia 2019 Amendment 1 (BCA)
+ Guide to the Building Code of Australia 2019
+ Disability (Access to Premises – Buildings) Standards 2010
+ AS 1428.1:2009 Design for access and mobility - General requirements for access - New building work
+ AS1428.2:1992 Design for access and mobility - 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
+ HB198:2014 Guide to the specification and testing of slip resistance of pedestrian surfaces
+ SSDA Design Plans prepared by HDR:

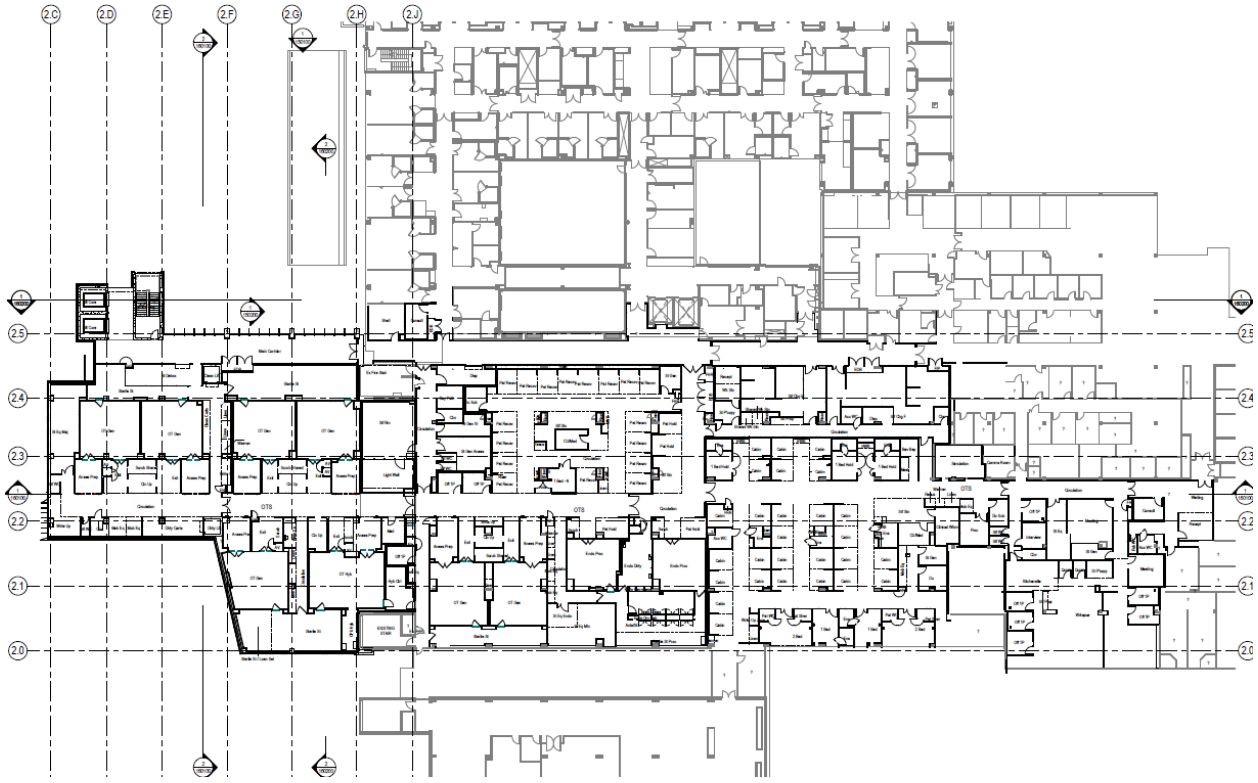
Drawing No.	Rev	Date	Drawing No.	Rev	Date
10192314 HDR-AR-DG-010100	2	13.11.2020	10192314 HDR-AR-DG-160300	3	13.11.2020
10192314 HDR-AR-DG-010200	2	13.11.2020	10192314 HDR-AR-DG-190100	2	13.11.2020
10192314 HDR-AR-DG-010300	3	13.11.2020	10192314 HDR-AR-DG-600100	2	13.11.2020
10192314 HDR-AR-DG-010350	4	13.11.2020	10192314 HDR-AR-SSD-111200	2	13.11.2020
10192314 HDR-AR-DG-010352	1	13.11.2020	10192314 HDR-AR-SSD-111300	2	13.11.2020

10192314 HDR-AR-DG-010401	2	13.11.2020	10192314 HDR-AR-SSD-111400	2	13.11.2020
10192314 HDR-AR-DG-150100	3	13.11.2020	10192314 HDR-AR-SSD-111500	2	13.11.2020
10192314 HDR-AR-DG-150200	3	13.11.2020	10192314 HDR-AR-SSD-800101	2	13.11.2020
10192314 HDR-AR-DG-160100	3	13.11.2020	10192314 HDR-AR-SSD-800102	2	13.11.2020

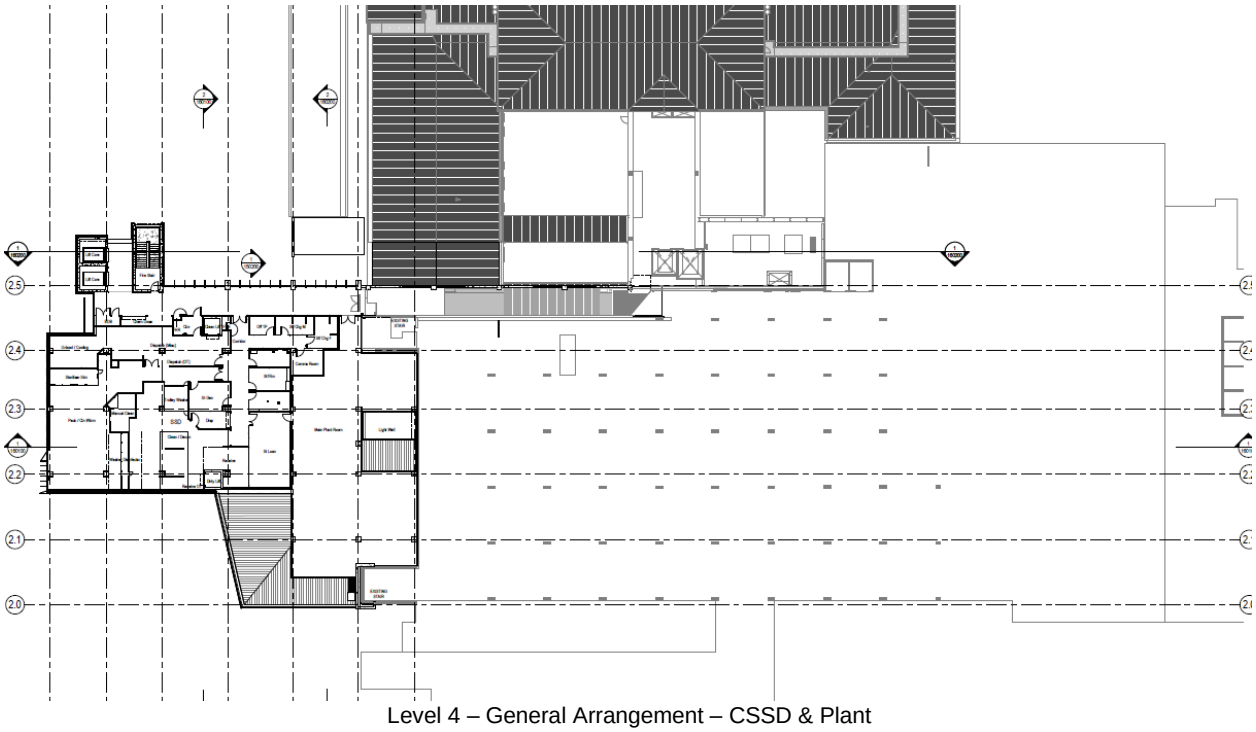


Proposed Site Plan

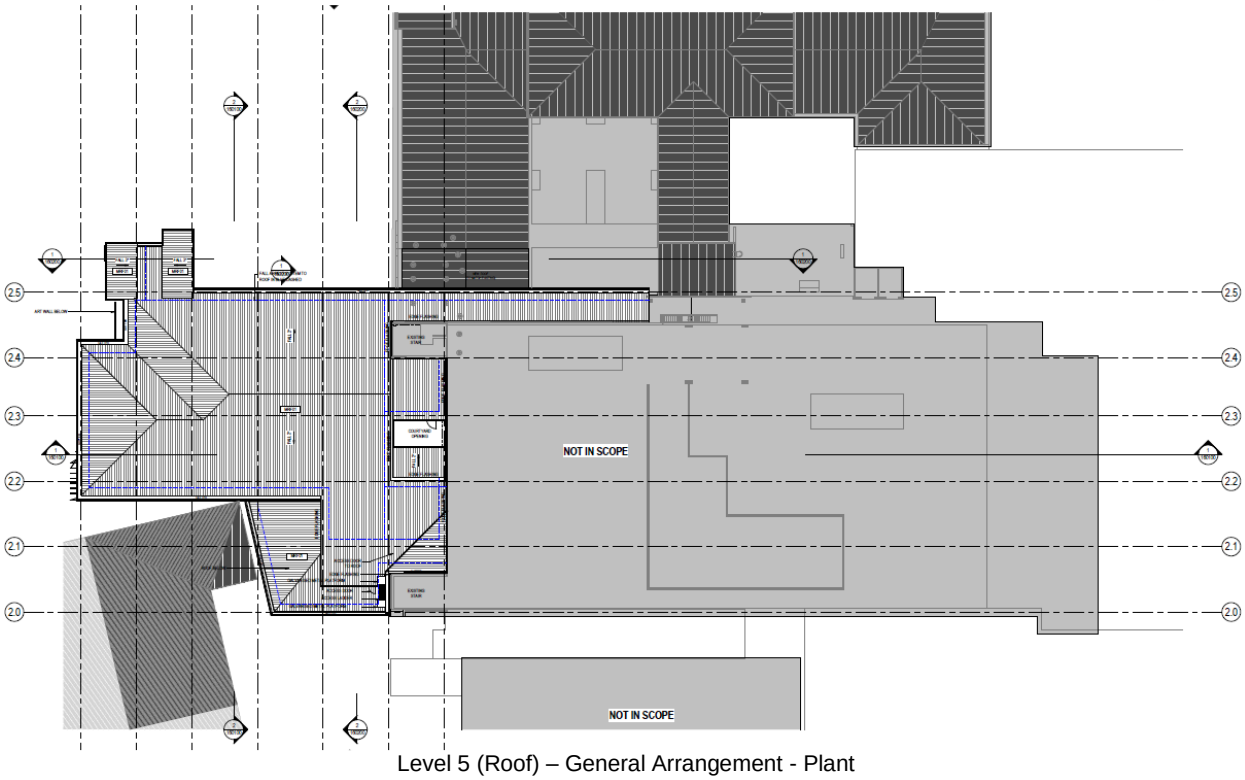

Level 2 – General Arrangement - MRI



Level 3 – General Arrangement - Perioperative



Level 4 – General Arrangement – CSSD & Plant



Level 5 (Roof) – General Arrangement - Plant

2.5 LIMITATIONS AND EXCLUSIONS

The limitations of this report are as follows:

+ This report is based on a review of the referenced documents. At this point in time, no inspection has been undertaken of the refurbishment areas to ascertain the current level of BCA compliance.
+ The Report does not address issues in relation to the following:
  i. The design, maintenance or operation of any existing electrical, mechanical, hydraulic or fire protection services.
  ii. Work Health and Safety Act and Regulations.
  iii. Water, drainage, gas, telecommunications and electricity supply authority requirements.
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+ This report is based solely on client instructions, and therefore should not be used by any third party without prior knowledge of such instructions.

2.6 COMPLIANCE WITH THE NATIONAL CONSTRUCTION CODE

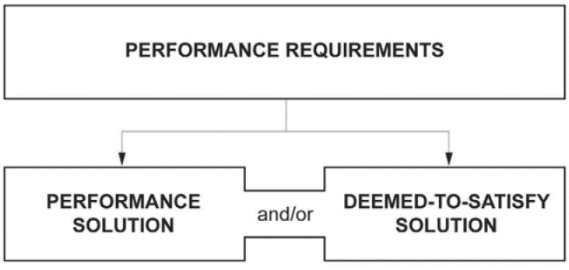
The proposed building work is subject to compliance with the relevant requirements of the BCA as in force at the time of tender for the scope of the building works. The current version of the BCA is the BCA 2019, with the BCA 2022 coming into effect in May 2022. This compliance statement, will be subject to compliance with the BCA 2019.

Compliance with the NCC is achieved by complying with—

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

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

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



3.0 PROJECT OVERVIEW

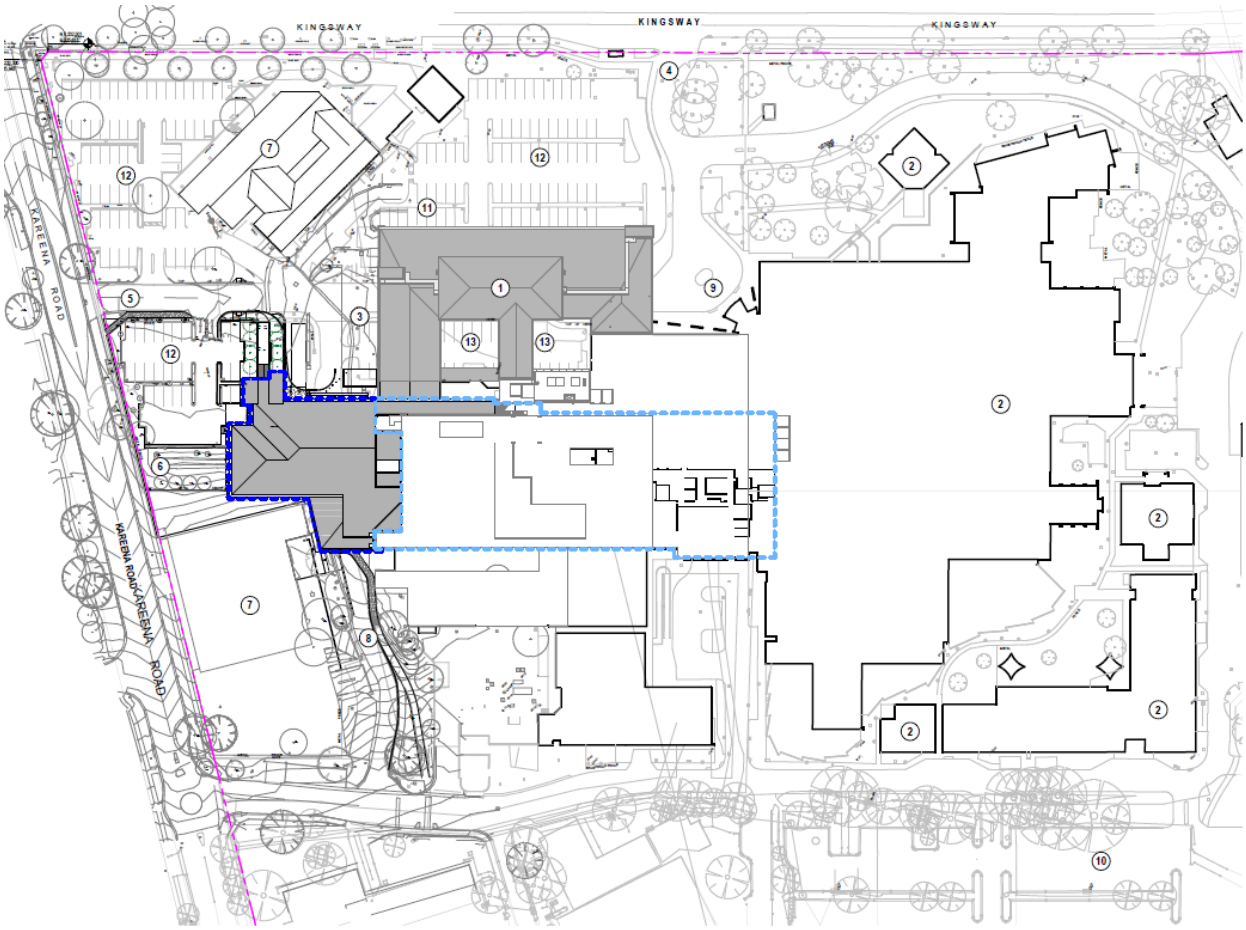
3.1 DESCRIPTION OF DEVELOPMENT

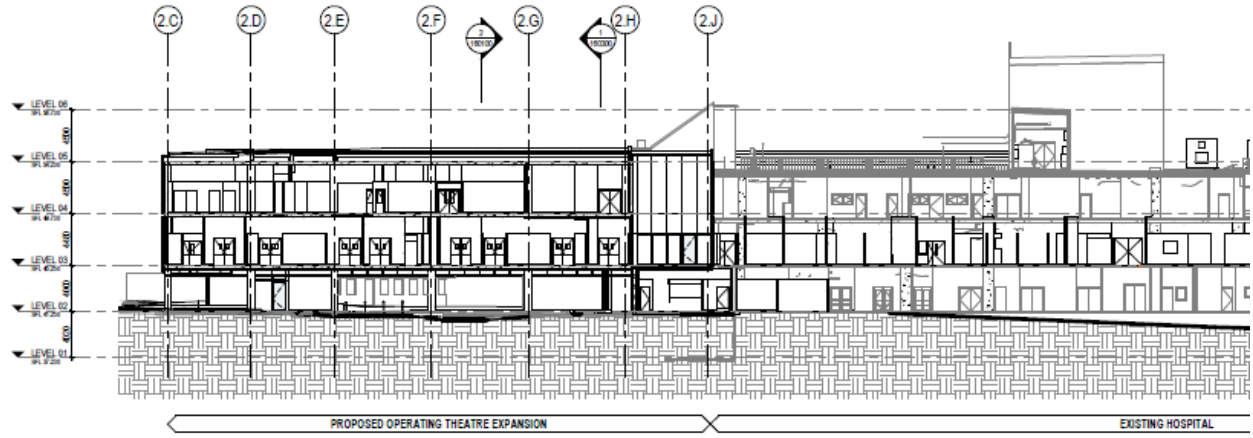
The project site is located at The Sutherland Hospital Campus. This report comprises a review of the Schematic Design for the upgrade to the operating theatres comprising upgrade and expansion of the OT complex on Level 3 of the existing hospital

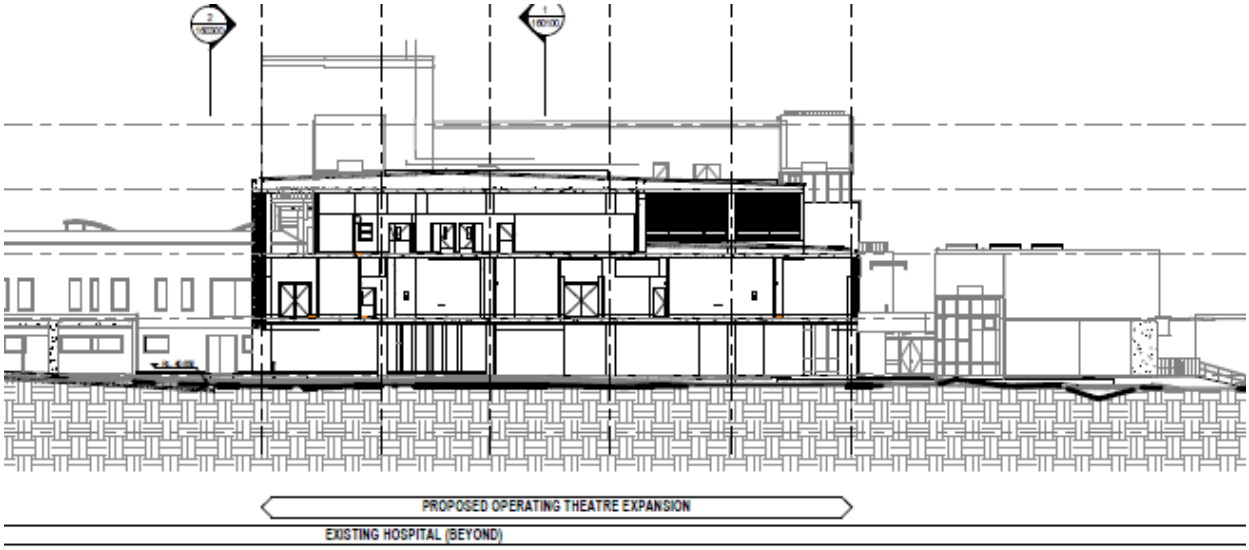
The Sutherland Hospital Operating Theatre Upgrade Project (TSHOTUP) includes the expansion of the Hospital's Operating Theatre Complex to carry the hospital into the future and cater for the increase in demographics and demand from the residents of the Shire and surrounds. The works entail:-

+ Increased operating theatre services to a total ten operating/procedure rooms; i.e.
    - increase from 5 to 8 operating theatres,
    - increase from 1 to 2 endoscopy suites,
+ Increase recovery and other perioperative clinical and support spaces, including PACU Recovery Stage 1, Recovery Stage 2/3 and a High-Volume Short Stay Unit.

The execution of the base scope is a maximum refurbishment with expansion west, without works to the Ambulance Station. Consequently, the CSSD would be displaced and is proposed to be built on level 4 of the new extension.







The inclusion of an MRI with the Medical Imaging will be located at level 2.

3.2 BCA Compliance Methodology

The proposed building work will be subject to compliance with the relevant requirements of BCA 2019 Amendment 1 as required by Section S6.28 of the Environmental Planning & Assessment Act 1979.

3.3 Building Characteristics

The hospital is classified as follows:

+ **BCA Classification:**	Class 9a (Health-Care)
+ **Importance Level (Structural):**	IL 4 – *To be confirmed by structural engineer.*
+ **Rise in Storeys:**	Four (4) TBC, pending section drawings
+ **Type of Construction:**	Type A
+ **Effective Height:**	>12m and <25m
+ **Max. Fire Compartment Size:**	5,000m^2 & 30,000m^3 in non-patient care areas 2,000m^2 in Patient Care areas.
+ **Floor Area:**	TBC

+ **SPRINKLER PROTECTED THROUGHOUT:**	Not throughout. Yes (all new works)
+ **CLIMATE ZONE:**	Zone 5

3.4 ACCESSIBILITY EXEMPTIONS

The use of certain parts of the building are not required to be accessible in the following instances:

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

Some examples of the above include:

- Cleaner's rooms used by cleaning staff only
- Plantrooms and specialty equipment rooms (e.g. comms, UPS, distribution boards etc.)
- Loading Docks
- Clean and dirty utility rooms
- Equipment stores

3.5 PERFORMANCE SOLUTIONS

Where there are any departures from achieving compliance with the DTS provisions of the BCA, there is an opportunity to address the compliance issue by the development of a Performance Solution.

This may relate to any matters of BCA compliance including fire and life safety, amenity, accessibility and ESD.

To date the design will be the subject of a fire engineered strategy (FER) to address the following:-.

BCA (DtS) Clause		Description
Fire & Smoke Separation & Compartmentation		
1.	Spec C3.4	Direction of swing of fire/smoke doors
2.	Spec C1.1	Penetration of steel members through / over fire walls
3.	C3.3	Exposure of external walls between adjacent fire compartment
4.	C2.2, C2.5 & Spec C1.1	To rationalise extent of fire and smoke protection at the slab edges of the curtain wall system
5.	Spec C3.4	To justify reasonable smoke leakage through pivot smoke doors.
6.	Spec C1.1	Rationalised FRL construction between levels 3 and 4 at the location of the light well. Connection of consecutive fire compartments as a result of same issue
7.	C2.2, C2.5 & Spec C1.1	Exposure of level 2 under croft to side boundary (fire source feature) and to adjoining fire compartments
Access and Egress Considerations		
8.	D1.7	Discharge of fire isolated stairways into level 2 under croft
9.	D1.4 & D1.5	Extended travel distances and distance between alternative exits
10.	D1.11	Discharge of horizontal exits into fire compartments without an egress stairway.
11.	D2.19	To allow sliding doors in a patient care area of the building
Fire Services Considerations		
12.	E1.4	Not to provide FHR coverage to smaller rooms or smaller / low risk spaces separated by compartment barriers
13.	E1.3	Not provide FHs in every fire compartment
14.	E2.2b	Justify stairway pressurisation at a pressure level determined by the existing system
15.	E1.5	Recessed sprinkler heads in areas with infection control requirements
16.	E4.9	Omission of OWS speakers or volume control in critical care areas
17.	E2.2a	Extended spacing of smoke detection system in concealed spaces (ceiling voids)

BCA (DtS) Clause		Description
18.	E1.5	Existing sprinkler valve assemblies are located in the ceiling void outside of the fire stairs. The code requirement of AS2118.6 is that these assemblies are located within the fire stairs.
19.	E1.3	Existing hydrant valves within the existing fire stairs have been installed on the half landings; meaning that to access them one would have to ascend half a flight of stairs; and technically resulted in the valves not being located on the floor which they serve.
20.	E1.5	The MRI room is proposed to be provided with a Pre-Action system; as a pre-caution to minimise the risk of damage to the equipment. This is a DTS system, and will be designed to be fully compliant to AS2118.1; however, it is something of interest which could be mentioned in the FER/FEBQ.
21.	E1.5	Sprinkler protection is proposed to be installed in all electrical rooms and comms rooms and Electrical/Comms Cupboards greater than 2.5m2. Where sprinklers are proposed in these areas they will be provided with heavy duty sprinkler guards (as per NSW Health Guidelines). Design consultant proposes that these heads also be higher temperature heads (93°C); these higher temperature heads are not DTS.
22.	E2.2a	Due to the change in dry fire system technologies and Australian standards, there is not a current compliant fire indicator panel that is compatible with the existing system. As such, proposed dry fire works are to provide a new fully compliant FIP in the new buildings/areas of works; and network this back to a new proposed Secondary Main-FIP to be installed in the Fire Control Room. Whilst this is a DTS approach consultant would like this incorporated into the FER/FEBQ as it will result in the hospital having 2 Main-FIP's side-by-side in the FCR. It is important the Fire Brigade and the end users are aware that at the completion of the project there will be 2 separate fire detection systems installed; with the long term future plan for the hospital to be a staged transition from the existing old and redundant system to the new, compliant system.

4.0 BCA ASSESSMENT – KEY ISSUES

Arising from our review, it is considered that the proposed development can readily achieve compliance with the relevant provisions of the BCA.

It is our experience that such compliance matters noted at this stage are not uncommon for a development of this nature and that they can be readily addressed at S6.28 Crown Certificate stage. In this instance, we are of the opinion that any amendments required to the design documentation in order to comply with the BCA can be addressed in the preparation of the detailed documentation for S6.28 Crown Certificate without giving rise to significant changes to the proposal as submitted for SSDA.

Please note that a further detailed assessment of the S6.28 Crown Certificate architectural plans will be undertaken prior to issue of the S6.28 Crown Certificate.

4.1 SECTION B - STRUCTURE

B1

New building works are required to comply with the structural provisions of BCA 2019 and referenced standards.

The Importance Level provisions of BCA (Section B) are to be acknowledged by the Structural Engineer and addressed to the degree necessary.

New building works to the existing building must be compliant with earthquake provisions of AS1170.4 – Earthquake Actions in Australia.

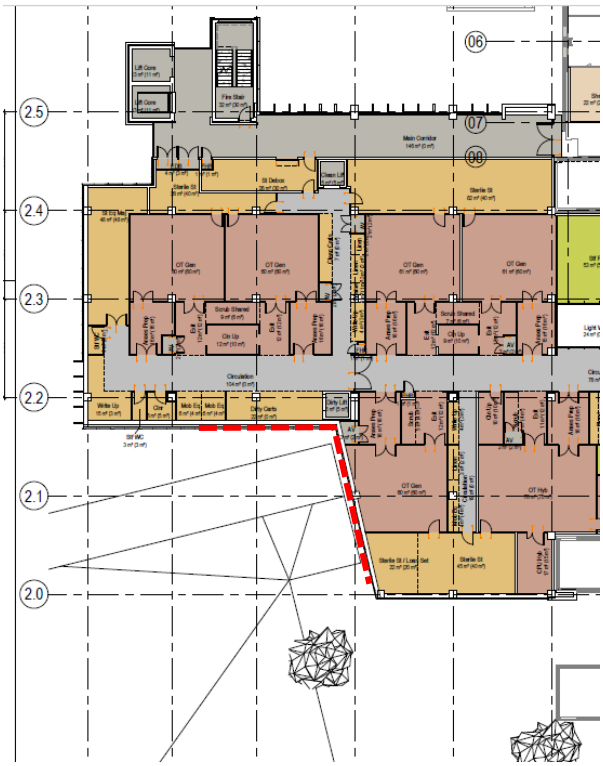
Consideration may be given to compliance with AS 3826-1998 - Strengthening existing buildings for earthquake for any required remedial works to the existing building where appropriate.

4.2 SECTION C – FIRE RESISTANCE

C1.1

Type of Construction: As the building contains three or more storeys, Type A Construction applies to the building. The relevant FRLs as listed in Table 3 of Specification C1.1 must be adhered to. Refer to **APPENDIX A.**

The level 2 open storey will be exposed to the side boundary and will need to be addressed in the FER



The new external wall claddings will be strategically selected to achieve consistency with the recent stage extensions to the hospital. The new additions will not consist of any composite cladding panels to the external wall system. .

C1.9

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

- Any external wall claddings. There will be zero composite panel systems.
- Any framing or integral formwork systems.
- 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.

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

C2.5

Class 9a Buildings:

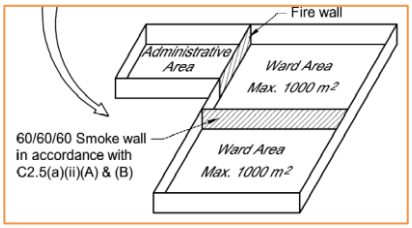
Fire and Smoke Compartments:

Patient care areas need to be separated into maximum 2,000m² fire compartments by fire walls having an FRL of 120/120/120. Non-patient care areas may be increased to maximum 5,000m² fire compartments.

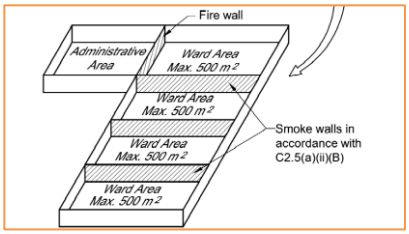
Compartmentation is to be as follows:-

A. In Ward Areas –

i) Where the floor area exceeds 1,000m^2, then it must be divided into compartments of not more than 1,000m^2, 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 further compartments of not more than 500m2, by smoke proof walls complying with the requirements of Specification C2.5, and



B. Treatment areas must be divided into compartments of not more than 1,000m^2, by smoke proof walls complying with Specification C2.5.

The new works are predominately treatment areas (perioperative).

Generally:

All fire walls are to be considered (and treated) as combined fire and smoke walls.

Ancillary use spaces are required to be 1-hour fire separated from patient care areas. Ancillary use spaces in a Class 9a comprise:

a. A kitchen and related food preparation areas having a combined floor area of more than 30m^2.

b. A room containing a hyperbaric facility.

c. A room used predominately for the storage of medical records having a floor area of more than 10m^2.

d. A laundry, where items of equipment are the type that are potential fire sources (e.g. gas fire dryers).

C2.7

Separation by Fire Walls: FRL 120/120/120 fire walls and fire doors are to be provided as outlined above, predominately to provide internal horizontal exits and also to separate the new additions from existing parts (levels 2, 3 & 4).

There are a number of proposed smoke walls in levels 3 & 4 that will need to be upgraded to fire walls to assist with egress (horizontal exits) These are marked up above.

The level 3 preoperative is to be fire separated from the existing building / compartments to the south.

There is to be no timber materials or other combustible materials incorporated into the fire walls.

C2.10

Separation of Lift Shafts: New lift shafts are required to be bound by FRL 120/120/120 construction.

C2.12 / C2.13	Separation of Equipment: Dependent on plant and equipment to be housed within the plant rooms, FRL 120/120/120 fire separation may be required to separate these areas from the building remainder. This is applicable to: + 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.
C3.3	Separation of Different Fire Compartments: Exposure of external walls and associated openings in different fire compartments is expected to occur. Where external walls of adjacent fire compartments cannot be protected with FRL 60/60/60 construction and glazed openings drenched externally, they will be required to be considered under a fire engineered performance solution.
Spec C1.1	Fire-Resisting Construction: The building is required to comply with Table 3 as relevant to FRLs required for buildings of Type A Construction. *There will be a fire engineered performance solution in relation to this clause.*
Spec C3.4	Fire Doors, Smoke Doors, Fire Windows and Shutters: Fire doors and smoke doors must comply with the requirements of this specification. *There will be a fire engineered performance solution in relation to this clause.*

4.3 PARTS D1 & D2 – PROVISION FOR ESCAPE AND CONSTRUCTION OF EXITS

D1.2	Number of Exits Required: The building has two or more exits provided to all areas as required by this part.
D1.3	Where Fire-Isolated Exits are Required: All exits from the building are proposed to be fire-isolated exits.
D1.4	Exit Travel Distances: Exit travel distances within the building are required to be not more than 20m to a point of choice between alternative exits and 40m to the nearest one from Class 6 / 7 / 8 / 9 areas. *It is understood that there will be a fire engineered performance solution in relation to this clause.*
D1.5	Distance Between Alternative Exits: Distances between alternative exits must be not greater than 60m in Class 6 / 7 / 8 / 9 parts. *It is understood that there will be a fire engineered performance solution in relation to this clause.*
D1.6	Dimensions of Paths of Travel to an Exit: 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 minimum width of paths of travel must be not less than 1m wide generally (this width dimension is measured clear of any obstructions such as handrails and joinery), *It is understood that there will be a fire engineered performance solution in relation to this clause.*
D1.7	Travel via Fire-Isolated Exits: Each fire isolated exit must discharge directly to open space. Any unprotected external walls within a perpendicular distance of 6m from the path of discharge will need to achieve FRL 60/60/60. *It is understood that there will be a fire engineered performance solution in relation to this clause.*
D1.10	Discharge from Exits: If an exit discharges to open space that is at a different level than the public road in which it is connected to, the path of travel to the road must be via a ramp having a gradient not steeper than 1:8, or not steeper than 1:14 if required to be accessible. The discharge point of exits must be located as far away from one another as reasonably practical.
D1.11	Horizontal Exits: Horizontal exits will be required to reduce egress distances to an acceptable level. *A fire engineered performance solution will be proposed to justify travel via multiple horizontal exits before reaching an exit that is not a horizontal exit.*
D1.16	Plant Rooms, Lift Machine Rooms and Electricity Network Substations - Concession: A ladder may be used in lieu of a stairway to provide egress from a plant room of not more than 100m2 or all but one point of egress from a plant room of not more than 200m2. A ladder used for this purpose must comply with AS 1657.
D2.7	Installations in Exits and Paths of Travel: Any new or altered electricity and communications cupboards located within a nominated egress paths within the proposed building will be required to be suitably smoke sealed and enclosed in non-combustible construction in accordance with D2.7(d).
D2.12	If an exit discharges to a roof, it must have an FRL of at least 120/120/120 and not have any 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 understood that there will be a fire engineered performance solution in relation to this clause.*
D2.13 / D2.14 / D2.16 / D2.17	Stairways, Balustrades, and Handrails: Stairways, balustrades and handrails to achieve the minimum requirements of the BCA. Floor finishes will be required to achieve the correct slip resistance in accordance with AS 4586-2013, and associated handbooks HB197 and HB198. This will need to be confirmed compliant at Occupation stage and as such, the selection of materials will need to be considered in relation to these requirements.
D2.19 / D2.20 / D2.21	Doors and Latching: All egress doorways must swing in the direction of egress and must be readily openable without a key from the side that faces a person seeking egress, by a single handed downward or pushing action on a single device which is located between 900mm and 1100mm from the floor. *It is understood that there will be a fire engineered performance solution in relation to this clause.*

D2.22	Re-Entry from Fire-Isolated Exits: Doors of a fire-isolated exit must not be locked from the inside in a Class 9a health-care building. The requirements of this clause do not apply to a door which: A. Automatically unlocks upon the activation of a fire alarm and on at least every fourth storey, the doors are not able to be locked and a sign is foxed on such doors stating that re-entry is available; OR B. Automatically unlocks upon the activation of a fire alarm and an intercommunication system or an audible or visual alarm system, operated from which the enclosure is provided near the doors and a sign is fixed adjacent to such doors explaining its purpose and method of operation.

4.4 PART D3 – DDA / ACCESSIBILITY

DDA

The Disability (Access to Premises-Buildings) Standards 2010 (the Access to Premises Standards) requires the building to comply with the Access Code (BCA Part D3 & AS 1428.1-2009).

With respect to the proposed new building, compliance with the Access Code is achieved if the building complies with:

+ BCA clauses D3.1 to D3.12;
+ BCA clause E3.6;
+ BCA clauses F2.2 and F2.4.

Detailed documentation demonstrating compliance with the above BCA provisions and AS 1428.1-2009 will be required for assessment at Crown Certificate stage. However, our review of the SSDA documentation indicates that compliance with the abovementioned provisions will be readily achievable.

Note that accessibility has been assessed specific to the zone of the new works. There is no statutory trigger or requirement to assess access from existing carparks, roadways or open space on the site.

D3.1

General Building Access Requirements

+ In a Class 9a hospital building, access must be provided to and within all areas normally used by the building occupants.
+ Access is provided to and within all areas of the Class 6 / 7 / 8 / 9 part unless exempted under D3.4.

D3.2

Access to Buildings: 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.

D3.3

Parts of Buildings to be Accessible:

+ Every ramp and stairway (except for fire-isolated stairways) are required to comply with AS 1428.1 – 2009.
+ Accessways must have turning and passing space complying with AS 1428.1 – 2009.
+ Compliance is readily achievable with the requirements of AS 1428.1 – 2009 as required by this part.

D3.4

Exemptions: The use of certain parts of the building are not required to be accessible in the following instances:

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

Some examples of the above include:

+ Cleaner's rooms used by cleaning staff only
+ Plantrooms and specialty equipment rooms (e.g. comms, UPS, distribution boards etc.)
+ Equipment stores

D3.5

Accessible Parking: Accessible car parking spaces must comply with the requirements of AS 2890.6 – 2009.

We note there is no new parking or accessible parking allocated to this project.

D3.6

Signage: In a building required to be accessible, braille and tactile signage must be provided to all:

+ Required accessible sanitary facilities
+ Spaces with hearing augmentation
+ Ambulant sanitary facilities
+ Non-accessible pedestrian entrances
+ Each door required to be provided with an exit sign

Braille and tactile signage is to comply with sub-clause (a) and Specification 3.6.

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 in a meeting room, or a reception area where the public is screened from the service provider.
D3.8	Tactile Indicators: Tactile Ground Surface Indicators (TGSIs) must be provided to: + A stairway, other than a fire-isolated stairway; and + An escalator or passenger conveyor; and + A ramp other than a fire-isolated ramp; and + In the absence of a suitable barrier- a) An overhead obstruction <2m above floor level; and b) An accessway meeting a vehicular way adjacent to any pedestrian entrance to a building including a pedestrian entrance serving an area referred to in D3.4, if there is no kerb or kerb ramp at that point. Tactile indicators are required to be designed in accordance with AS 1428.4.1-2009.
D3.11	Ramps: Ramps are readily able to meet compliance with AS 1428.1 – 2009.
E3.6	Passenger Lifts: All passenger lifts provided exceed the minimum dimensions required to comply as accessible lifts. In this regard, access to every floor in the development is achieved in the design.
F2.4	Accessible Sanitary Facilities: The provision of Unisex Accessible Sanitary Facilities and facilities suitable for use for persons with an ambulant disability satisfy the requirements of this clause.
F2.9	Accessible adult change facilities: + Must be constructed in accordance with Specification F2.9; and; + Cannot be combined with another sanitary compartment .. Refer to Specification F2.9 for detailed requirements around the design of an Accessible Adult Change Facility

4.5 SECTION E – SERVICES AND EQUIPMENT

E1.3	Fire Hydrants: Fire hydrant coverage is required to be provided to the all buildings in accordance with AS2419.1-2005. *It is understood that there will be a fire engineered performance solution in relation to this clause.*
E1.4	Fire Hose Reels: Fire hose reel coverage is required to be provided in accordance with AS2441-2005. *It is understood that there will be a fire engineered performance solution in relation to this clause.*
E1.5	Sprinklers: Due to the building comprising an effective height of >25m, the building is required to be provided with a sprinkler system. We understand an AS 2118.1 – 2017 and AS 2118.6 – 2012 system is proposed to the building (new works).
E1.6	Fire Extinguishers: To be provided and designed in accordance with AS 2444-2001.
E1.8	Fire Control Centre: A fire control room is to be provided based on the total effective height exceeding 50m.
E2.2a	Smoke Hazard Management: The building is required to be provided with the following smoke hazard management systems as required by E2.2 / NSW E2.2: + An AS 1670.1 – 2018 Fire Detection and Alarm System is to be installed throughout the building. + All fire-isolated stairs must be provided with stair pressurisation in accordance with AS 1668.1 – 2015. *It is understood that there will be a fire engineered performance solution in relation to this clause.*
Part E3	Lifts: The following provisions are required to be provided to the lifts: + Stretcher facilities within at least one lift serving each storey. + Emergency lift/s complying with E3.4. + Lift provisions complying with E3.6. + Fire service controls in accordance with E3.7. + Fire service recall control switch in accordance with E3.9. + Lift car fire service drive control switch in accordance with E3.10.
E4.2-E4.8	Emergency Lighting and Exits Signs: Emergency lighting and exit signage to be provided in accordance with E4.2-E4.5 complying with AS 2293.1 - 2018.
E4.9	Emergency Warning Intercom System (EWIS): Emergency Warning Intercom System (EWIS) complying with AS 1670.4 - 2018 must be installed.

F1

Damp and Weatherproofing: Damp and weatherproofing to comply with the prescriptive requirements of clauses F1.1-F1.13.

F2.3

Sanitary facilities: Sanitary facilities are only 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 (i.e. not visitors).

With focus on the level 3 and 4 perioperative and CSSD, we have calculated required sanitary facilities as follows:-

Based on these **total** staff numbers, minimum total aggregate sanitary facilities against BCA are as follows:-

Level 3 Perioperative Total - 314.6 - *say 350 total @ 60% F and 40% M*

Building address	Address line 1	TSH - Workforce Plan for Periopertive Services (350 staff - 60% F & 40% M)
	Address line 2	
Building classification	Class 9a - health-care buildings	

			Required sanitary facilities				
Gender	Design Occupancy	User Group	Closet Pans	Urinals	Washbasins	Showers	Baths
Male	140	employees	7	4	5	NA	NA
Female	210	employees	14	NA	7	NA	NA
Male	0	patients	0	NA	0	0	Refer to notes
Female	0	patients	0	NA	0	0	Refer to notes
		NA	NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA	NA

NOTE: In calculating the number of facilities to be provided, under **F2.1** and **F2.3** an accessible unisex facility required for people with a disability may be counted once for each sex. An accessible unisex facility comprises one closet pan, one washbasin and adequate means of disposal of sanitary products. This concession means that for each wash basin and closet pan counted above, you may deduct one for each accessible unisex facility provided. This concession does **NOT** apply to urinals. Refer to **F2.2** for further details.

Level 4 CSSD has total 28 total (say 30 staff @ 60%F and 40%M)

Building address	Address line 1	TSH - Workforce Plan for CSSD (30 staff - 60% F & 40% M)
	Address line 2	
Building classification	Class 9a - health-care buildings	

			Required sanitary facilities				
Gender	Design Occupancy	User Group	Closet Pans	Urinals	Washbasins	Showers	Baths
Male	12	employees	1	1	1	NA	NA
Female	18	employees	2	NA	1	NA	NA
Male	0	patients	0	NA	0	0	Refer to notes
Female	0	patients	0	NA	0	0	Refer to notes
		NA	NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA	NA

NOTE: In calculating the number of facilities to be provided, under **F2.1** and **F2.3** an accessible unisex facility required for people with a disability may be counted once for each sex. An accessible unisex facility comprises one closet pan, one washbasin and adequate means of disposal of sanitary products. This concessio means that for each wash basin and closet pan counted above, you may deduct one for each accessible unisex facility provided. This concession does **NOT** appl to urinals. Refer to **F2.2** for further details.

Level 4 will be provided with new facilities in accordance with the above requirements.

Level 3 design will look to utilise existing staff only sanitary facilities for the new perioperative. The LHD has confirmed existing staff-only sanitary facilities within level 3 perioperative:-

	Staff Toilets only. • Periop/Admissions =Unisex 1 wc+1Basin • Theatre's Female change rooms = 3 wc+3Basins+3 showers. • Theatre's male Change rooms =2wc+2Basins+2showers. • Admin Theatres unisex toilet=1wc+1 Basin • CSSD Female toilet = 2 wc+2 Basins. *Existing summary number:-* • *male - 4 WCs* • *female - 7 WCs* • *There are No compliant accessible unisex WCs* Additional sanitary facilities will be required within level 3 as part of the new works to achieve the total required number in accordance with the above table.
F2.4	Accessible Sanitary Facilities: Unisex Accessible WCs (Accessible WC) must be provided in accordance with the following: + 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.
Part F3	Room Heights: The ceiling height in a Class 9a building must be no less than; 2.4m in patient care areas, **3m in an operating theatre or delivery room** and 2.4m in a treatment room, clinic, waiting room, passageway, corridor, or the like. Sanitary compartments, air-locks, tea preparation areas, store rooms and garages must achieve no less than 2.1m. Commercial kitchens must achieve 2.4m. The floor to ceiling height above a stairway, ramp, landing or the like must achieve no less than 2m when measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing, or the like.
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. The loss of natural light to the existing level 1 BOH / medical records room by virtue of the proposed MRI over is acceptable from a BCA perspective.
F4.5	Ventilation of Rooms: Any room occupied by a person for any purpose must be provided with natural ventilation complying with this clause, or a mechanical ventilation or air-conditioning system complying with AS 1668.2 and AS 3666.1.

4.6 SECTION F – SECTION J - ESD

Section J	Energy Efficiency: The new building works subject to compliance with the Energy Efficiency Provisions of Section J **BCA 2019** relating to: + J1: Building Fabric + J2: External Glazing + J3: Building Sealing + J5: Air-conditioning and ventilation systems + J6: Artificial lighting and power + J7: Hot water supply + J8: Access for maintenance

4.7 GENERAL FIRE SAFETY UPGRADE CONSIDERATIONS

Having regard to the proposed internal works and levels 2, 3-4 extensions off the existing parts of the building, the following key items are noted for consideration:

1. All new works will be required to comply with the requirements of the current BCA and associated Australian Standards (as applicable).
2. The two existing fire isolated stairways (stairways 4 & 5) with glazed facades to the western side of the building. These stairways, located within the zone of the new works, will need to be upgraded to ensure compliant stairways within fire isolated (fire rated) shafts. Glazing will be replaced with fire rated material.

   The existing stairways will need also upgrade in relation to balustrades and also fire services including stairway pressurisation.

   These works are the subject of a separate REF application.
3. In areas where there is refurbishment proposed to be carried out within existing parts of the hospital building, localised upgrade works in relation to fire safety are likely to be required in order to achieve compliance. The extent of these upgrade works will be dependent upon:-

   + Whether the refurbishment works will result in any increase in floor areas or modification of existing fire and or smoke compartments;
   + Location and extent of refurbishment works (light, medium or full refurb) and impact on existing fire and life safety systems and deficiencies – location of the works in relation to existing fire and smoke walls will also be a consideration factor;
   + Whether the proposed refurbishment works include increase in patient bed numbers or change in use from non-patient care to patient care or even ward areas to treatment (and vice-versa)
   + Existing and proposed fire safety measures and egress from the affected part in the building or part and extent of existing non-compliances or deficiencies.
   + The existing level 1 medical records room will be provided with sprinkler system throughout. It is understood the existing medical records will be 2-hour fire separated from the remainder of the floor (where not sprinkler protected)

4.8 BUILDING SERVICES UPGRADE – HIGH-LEVEL CONSIDERATIONS

The following is general considerations for building fire services upgrade:

Generally	Existing fire services may remain where deemed acceptable by the design consultants. New services must comply with the current BCA
Wet Fire	Fire Hydrants and Fire Hose Reels – Locations of existing fire hydrants and fire hose reels are to be checked to ensure that coverage is achieved. Parts of the existing fire hydrant system may be required to be upgraded as part of the new works. Confirmation will be required to confirm that *coverage, flow and pressure* comply with current AS2419.1. Where new fire hydrants and fire hose reels are required in order to achieve coverage they must comply with AS 2419.1-2005 and AS 2441-2005. Automatic Sprinklers - The existing level 1 medical records room will be provided with sprinkler system throughout. It is understood the existing medical records will be 2-hour fire separated from the remainder of the floor (where not sprinkler protected). The new level 1 MRI and the level 2 and 3 works zone will be sprinkler protected throughout.
Dry Fire	Fire Indicator Panel (FIP) – The main FIP and any existing sub-FIPs may remain. New FIP will be provided to assist with systems compatibility. Smoke Detection and Occupant Warning – Existing smoke detection and occupant warning may remain. Detection to be upgraded to ensure smoke detectors are throughout all new and refurbished works areas to comply with current Standards. All new cabling, smoke detectors and SSISEP items such as speakers, WIPS etc. must comply with the new standards – AS 1670.1-2015, AS 1670.4-2015 etc.

Smoke Hazard Management	Stairway pressurisation may need to be installed within existing fire isolated stairways that are relied upon as part of the new works. Existing stairways will need to be upgraded with pressurisation systems to the degree necessary where the proposed scope of works is reliant upon such stairways for egress.

4.9 ACCESSIBILITY UPGRADE REQUIREMENTS

BCA Part D3	New and altered parts of the existing building will be required to comply with Part D3 of the BCA and AS 1428.1-2009 throughout.
Access to Premises Standard 2010	The existing parts of the hospital will be assessed against the 'affected part' provisions of the Access to Premises Standard 2010 – Affected Part is an assessment of existing accessibility provisions from the point of principal entrance of the existing hospital to the location of the new works. This may require an upgrade of the affected part (which is the pathway/corridor/lift access from the main (theatre) entry to the areas of refurbished works). There is no requirement to upgrade access from existing parking areas, roadway or open space on the site.

5.0 FIRE SAFETY SCHEDULE

The following table is a list of the existing fire safety measures within the existing hospital.

SCHEDULE

Essential Fire and Other Safety Measures	Standard of Performance
Access Panels, Doors & Hoppers	BCA Clause C3.13 &b AS 1530.4 - 2005
Alarm Signalling Equipment	AS1670.3 – 2004
Automatic Fail-Safe Devices	Existing: BCA Clause D2.21 and activation of sprinkler system under AS2118 or smoke or other detector under AS1670.1 & AS1670.1-2004 Proposed: BCA Clause D2.21
Automatic Fire Detection & Alarm System	Existing: AS1670.1-2004 & AS1670.4-2004 Proposed: BCA Spec. E2.2a & AS 1670.1 – 2004 & Fire Engineering Report No. 16050-R01 Issue 1 prepared by Innova Fire dated 27/6/16
Automatic Fire Suppression Systems	Existing: AS2118 Proposed: BCA Spec. E1.5 & AS 2118.1-1999 & Fire Engineering Report No. 16050-R01 Issue 1 prepared by Innova Fire dated 27/6/16
Building Occupant Warning System activated by the Sprinkler System	BCA Spec E1.5 Clause 8 and/ or Clause 3.22 of AS 1670.1 – 2004 & Fire Engineering Report No. 16050-R01 Issue 1 prepared by Innova Fire dated 27/6/16
Emergency Lifts	BCA Clause E3.4 & AS 1735.2 - 2001
Emergency Lighting	Existing: AS2293 Proposed: BCA Clause E4.4 & AS 2293.1 - 2005
Sound System and Intercom System for Emergency Purposes *(EWIS)*	Existing: AS2220 (EWIS) Proposed: BCA Clause E4.9 & AS 1670.4 – 2004 & AS 4428.4 – 2004 & Fire Engineering Report No. 16050-R01 Issue 1 prepared by Innova Fire dated 27/6/16
Emergency Evacuation Plan *(including temporary plans)*	AS 3745 – 2002 & Fire Engineering Report No. 16050-R01 Issue 1 prepared by Innova Fire dated 27/6/16
Exit Signs	Existing: AS2293 Proposed: BCA Clauses E4.5, E4.6 & E4.8 and AS 2293.1 – 2005 & Fire Engineering Report No. 16050-R01 Issue 1 prepared by Innova Fire dated 27/6/16
Fire Blankets	AS 3504 – 006 & AS 2444 - 2001
Fire Dampers	Existing: AS1682 & AS1668 Proposed: BCA Clause C3.15, AS 1668.1 - 1998 & AS 1682.1 & 2 – 1990
Fire Doors	Existing: AS1905 Proposed: BCA Clause C2.12, C2.13, C3.2, C3.4, C3.5, C3.7, C3.8, and AS 1905.1 – 2005
Fire Hose Reels	BCA Clause E1.4 & AS 2441 – 2005
Fire Hydrant Systems	Existing: AS2419 Proposed: Clause E1.3 & AS 2419.1 – 2005 & Fire Engineering Report No. 16050-R01 Issue 1 prepared by Innova Fire dated 27/6/16
Fire Seals	Existing: AS4072 Proposed: BCA Clause C3.15 & AS 1530.4 – 2005 & AS 4072.1 – 2005 & Fire Engineering Report No. 16050-R01 Issue 1 prepared by Innova Fire dated 27/6/16
Fire Walls	BCA Section C
Fire Windows	Existing (Nurses Station): AS1905
Lightweight Construction	BCA Clause C1.8 & AS 1530.3 – 1999
Mechanical Air Handling Systems *(automatic shutdown)*	Existing: BCA Clause E2.2, AS/NZS 1668.1 - 1998 & AS 1668.2 – 1991 Proposed: BCA Clause E2.2, AS/NZS 1668.1 – 1998 & AS 1668.2 – 2012
Paths of Travel	EP & A Regulation Clause 186 & Fire Engineering Report No. 16050-R01 Issue 1 prepared by Innova Fire dated 27/6/16
Portable Fire Extinguishers	BCA Clause E1.6 & AS 2444 – 2001 & Fire Engineering Report No. 16050-R01 Issue 1 prepared by Innova Fire dated 27/6/16
Required Exit Doors (power operated)	BCA Clause D2.19(d)
Smoke Dampers	AS/NZS 1668.1 - 1998
Smoke Walls & Doors	Existing: BCA Spec C3.4 Proposed: BCA Spec. C3.4 & C2.5

Essential Fire and Other Safety Measures	Standard of Performance
Stand-by Power Systems	BCA Clause E1.3, E3.4, E4.2 & E4.5 and AS 3000 – 2000
Wall wetting sprinklers (Protection of window openings in external walls as required)	BCA Clause C3.4 & AS 2118.2 – 1995 & Fire Engineering Report No. 16050-R01 Issue 1 prepared by Innova Fire dated 27/6/16
Warning & Operational signs *(including temporary signage)*	Section 183 of the EP & A Regulations 2000, AS 1905.1 - 2005, BCA Clause C3.6, D2.23, E3.3 & Fire Engineering Report No. 16050-R01 Issue 1 prepared by Innova Fire dated 27/6/16

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Variation to BCA DtS	**Fire Safety Strategy**
Protection of openings in external walls of adjoining fire compartments & Acceptable methods of protection 1. Method of protection afforded to the external walls and associated openings of the subject fire compartments on Levels 2 and 3, that will be exposed to an external wall and its associated openings of an adjoining fire compartment and vice versa, as the wall construction is located within the minimum separation distances outlined in BCA Table C3.3.	The fire safety strategy is based on the: + Variation to provide both internal and external wall wetting sprinklers to openings of one fire compartment only, in lieu of both compartments. + External walls of one fire compartment will be of fire rated construction with an FRL of at least 120/120/120, in lieu of fire rated external wall construction to both fire compartments. + Provision of fire sprinklers throughout the building to mitigate the development and spread of fire.
Openings in floors and ceilings for services & Openings for service installations 2. Medical gas pipes containing medical air, medical suction, nitrous oxide and oxygen penetrating through fire walls of greater than two fire compartments in lieu of two or less fire compartments.	The fire safety strategy is based on the: + Medical gases being contained are not flammable. + Medical gas pipes are installed in accordance with AS 2896-2011. + Provision of sealing of copper pipes penetrating through the fire rated building elements. + Provision of sprinkler system in the building.
Type of construction & Fire-resisting construction 3. Use of aluminium composite wall panels, Alucobond Plus, as part of the external wall construction to parts of the proposed building on the western, eastern and northern elevations on Level 3. The core within the proposed composite wall panel is not certified as a non-combustible material when tested to AS 1530.1.	The fire safety strategy is based on the: + Characteristics of the composite wall panels. The subject panels are subject to a CodeMark “Certificate of Conformity”, and satisfy the requirements for a Group 1 Material. + Assessment of the NFPA 285 full-scale test report on the Alucobond PLUS system. + Provision of sprinkler system throughout the building. + Provision of elevation plans at the FIP/fire control room and SECP / mimic panel highlighting the location where Alucobond PLUS system is fitted to the external façade for extra information for fire brigade intervention.
Fire-resisting construction 4. Edge of the floor slabs in the proposed building do not extend all the way to the curtain wall resulting in a slot in between which will be fire stopped and smoke sealed i.e. FRL of -/120/120, in lieu of a floor construction of FRL 120/120/120 throughout.	The fire safety strategy is based on the: + Provision of compression fit safing system of FRL -/120/120 in accordance with AS 1530.4-2005 and AS4072.1-2005 along the slot perimeter between the edge of the floor slab and the curtain wall. + Provision firestop coating on top of the compression fit safing system to mitigate smoke spread and provide adhesion to the overall system. + Provision of sprinkler system throughout the building.
Dimensions of exits and paths of travel to exits & Horizontal exits 5. Building occupants are escaping from a fire compartment via horizontal exits, which: + Do not lead to fire compartments with a direct connection to a DtS compliant required exit i.e. discharge door or door into a fire-isolated exit + Lead to adjacent fire compartments with a clear floor area less than the BCA DtS required floor area (based on 2.5 m² per patient) to additionally accommodate the total number of persons served by the horizontal exit. Additionally, the doorways on the fire compartment line leading to “dead-end” rooms are technically classified as horizontal exits under the BCA and will	The fire safety strategy is based on the: + Provision of alternate paths of travel and multiple exits from each fire compartment. + Occupants crossing an exit to an adjacent fire compartment being accommodated and will not be required to return to the fire affected compartment. + Reduced widths of several doorways actually lead to ‘dead end’ rooms which are not exits and will not impact on the proposed building egress strategy. + Provision of sprinkler system throughout the building. + Provision of automatic smoke detection throughout the building. + Provision of building management plan and staff training to be familiar to undertake emergency and evacuation procedures for the building.

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Variation to BCA DtS	**Fire Safety Strategy**
be permitted to have a clear width of less than 1,250 mm.	
Doorways and doors 6. In some patient care areas on Level 2, an internal sliding door is fitted in lieu of a swing door.	The fire safety strategy is based on the: + Provision of a push-button device adjacent to each sliding door. + Battery backup is to be provided to maintain operation of the subject button devices in the event of building power failure. In the event of total power failure (battery backup & building power), the sliding doors must be manually openable (no more than 110 N of force). + Provision of a "PUSH TO OPEN" signage to instruct occupants the use of the push button device. + Provision of sprinkler system throughout the building. + Provision of automatic smoke detection throughout the building. + Provision of building management plan and staff training to be familiar to undertake emergency and evacuation procedures for the building.
Swinging doors 7. There are identified doors in the path of travel to exits that will swing against the direction of egress.	The fire safety strategy is based on the: + Provision of "PULL TO OPEN" signage to instruct occupants the action of open doors against the direction of egress. + Internal horizontal exits remaining open by electromagnetic door holders and to shut upon activation of local smoke detectors to maintain fire separation between fire compartments. + Provision of sprinkler system throughout the building. + Provision of automatic smoke detection throughout the building. + Provision of building management plan and staff training to be familiar to undertake emergency and evacuation procedures for the building.
Fire hydrants 8. The existing fire hydrant booster assembly serving the proposed building is not located within sight of the proposed building main entry. The existing fire hydrant booster assembly is also located within 10 m of an existing electrical substation.	The fire safety strategy is based on the: + Existing fire hydrant system having adequate flow and pressures to facilitate fire brigade intervention. + Sufficient hardstand / parking area next to the booster assembly for fire brigade operation. + Provision of permanent signage/block plans and laminated block plans including "YOU ARE HERE" indications for ease of usage by fire brigade personnel. + Protection of the electrical substation from potential excess firefighting water run-off from the booster assembly via drains and shielded louvers are provided.
Fire hose reels 9. Fire hose reels are not be provided to the following fire-isolated rooms: + MSB Plant, UPS Plant, Comms St & DAS Plant (Level 1); and + Comms Rooms Fire hose reels are located greater than 4 m from an exit on Levels 2 and 3 of the subject building.	The fire safety strategy is based on the: + Provision of a portable fire extinguisher adjacent to the doorway outside each subject fire-isolated room. CO2 fire extinguishers are appropriate. + Provision of building management plan and staff training to be familiar to undertake emergency and evacuation procedures for the building. + Provision of additional exit signage at each fire hose reel located greater than 4 m of an exit. + Provision of sprinkler system throughout the building. + Provision of automatic smoke detection throughout the building.
Fire sprinklers 10. Partial sprinkler protection to the external ambulant drop-off canopy on Level 2. Sprinklers not to be provided within the following areas: + MSB Plant, UPS Plant, Comms St & DAS Plant; + CT-Scan & X-Ray Rooms; + Comms Rooms; and + Main electrical cupboards.	The fire safety strategy is based on the: a) Ambulant Drop-off Canopy + Open nature of the external canopy to permit natural heat and smoke venting. + The main drop-off zone is sprinkler protected except for the northern and western perimeter. + Prohibition of permanent fire loads under the canopy, only temporary parked cars and external landscaping plantation beneath the canopy b) Fire-isolated rooms (FRL of 120/120/120) + Provision of a portable fire extinguisher adjacent to the doorway outside each subject fire-isolated room. Carbon dioxide fire extinguishers are appropriate.

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Variation to BCA DtS	**Fire Safety Strategy**
	+ Provision of smoke detection in each subject fire-isolated room in accordance with AS 1670.1-2004.
Fire sprinkler Systems 11. The building sprinkler system for Light Hazard areas i.e. general hospital areas, is designed to NFPA13 in regards to the output water density, orifice size and spacing, in lieu of AS 2118.1 requirements.	The fire safety strategy is based on the: + Assessment comparison of the sprinkler design criteria demonstrating the sprinkler head performance, with regards to discharge flow density and orifice dimensions, of the NFPA 13 design exceeds that of AS 2118.1.
Sound systems and intercom systems for emergency purposes 12. Removal of warning system speakers from the patient ward rooms.	The fire safety strategy is based on the: + Condition of the occupants / patients in the subject patient ward rooms being under sedation / medication and therefore loud alarm speakers in the rooms are not considered appropriate. + Provision of building management plan and staff training to be familiar to undertake emergency and evacuation procedures for the building. Trained staff will assist dependent occupants in emergency evacuation. + Provision of warning strobe light at each nurse station to provide visual cue of an emergency to attending staff for notification and evacuation. + Alarm speakers are provided in the corridors outside the patient ward rooms to notify staff and occupants for emergency and evacuation from the building. + The remainder of the building will be provided with SSISEP designed in accordance with AS 1670.4-2004.
Smoke detection and alarms systems 13. Removal of smoke detection in ceiling voids greater than 800 mm in depth	The fire safety strategy is based on the: + Low likelihood of fires occurring in ceiling void areas due to lack of fire load expected in the space. + Provision of sprinklers in the ceiling voids and the building. + Provision of point type smoke detector at the return air inlet duct to detect any smouldering fires.
Omission of FRL to Existing Level 4 Plant Internal Columns 14. No protection to the internal columns of the existing Level 4 (roof) plant room, in lieu of providing an FRL of 60/60/60 construction.	The fire safety strategy is based on the: + Characteristics of the plant areas being low fire load spaces and infrequent restricted access to plant spaces. + The roof not requiring to achieve a fire rating (non-combustible construction only). + Provision of sprinklers in the subject existing plant room. + Demonstrating the risks associated with failure of the internal columns under flashover conditions is at least equivalent to that of a BCA DtS compliant design where roof collapse occurs.

APPENDIX A – TYPE A CONSTRUCTION

Table 3 TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS

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 therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* parts—				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 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-*loadbearing* 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 *external wall*—				
For *loadbearing* columns—	90/–/–	120/–/–	180/–/–	240/–/–
For non-*loadbearing* columns—	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS—				
Fire-resisting lift and stair *shafts*—				
Loadbearing	90/ 90/ 90	120/120/120	180/120/120	240/120/120
Non-*loadbearing*	–/ 90/ 90	–/120/120	–/120/120	–/120/120
Bounding *public corridors*, public lobbies and the like—				
Loadbearing	90/ 90/ 90	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—				
Loadbearing	90/ 90/ 90	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
Ventilating, pipe, garbage, and like *shafts* not used for the discharge of hot products of combustion—				
Loadbearing	90/ 90/ 90	120/ 90/ 90	180/120/120	240/120/120
Non-*loadbearing*	–/ 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. Any lightweight construction in a fire wall or an internal wall required to have an FRL is to comply with Specification C1.8.
2. All elements of an external wall assembly (except those allowed under Clause C1.9) must be non-combustible. This includes, framing, integral formwork, insulation, sarking, façade coverings, and the like. Any departures from this will require consideration under CV3 or potentially, a fire engineered performance solution.
3. Fire rated shafts are required to be enclosed at the top and bottom by construction having an FRL of not less than what the shaft requires (in both directions)
4. The concession granted under clause C3.5 results in the roof of the building not being required to be fire rated (the building is provided throughout with sprinklers). Notwithstanding, the Atrium provisions override this general concession in BCA Specification C1.1.
5. Lift shafts are required to be enclosed at the top of the shaft with fire rated construction having an FRL of 120/120/120.

6. Fire isolated exits are to be provided with a fire rated “lid” that achieves an FRL of 120/120/120.
7. Where roof lights are proposed they are required to be located not less than 3 metres from a roof light in an adjoining fire separated part; and must not be more than 20% of the area of the roof.
8. Any loadbearing internal walls or loadbearing fire walls are to be masonry or concrete.
9. External walls must be non-combustible construction. Non-loadbearing parts of an external wall that are more than 3m from a fire source feature need not be fire rated.
10. Internal columns in this building (being less than 25m in effective height) that are in the storey immediately below the roof, can be constructed as follows:
    a. Building with a rise in storeys exceeding 3 – FRL 60/60/60

6.0 CONCLUSION

This report contains an assessment of the referenced architectural documentation for The Sutherland Hospital Campus. This report comprises a review of the SSDA Design for the upgrade to the operating theatres comprising upgrade and expansion of the OT complex on Level 3 and new plant and CSSD at level 4 of the existing hospital.

A new MRI facility is proposed at level 2.

The assessment was against the Deemed-to-Satisfy provisions and Performance Requirements of the National Construction Code Series (Volume 1) Building Code of Australia 2019 Amendment 1 & Disability (Access to Premises – Buildings) Standards 2010.

In view of the above assessment, we can confirm that subject to the above measures being appropriately addressed by the project design team, compliance with the provisions of the BCA is readily achievable.

Furthermore, it is concluded that the development proposal is capable of achieving compliance with the accessibility provisions of the BCA and Access to Premises Standard. Noting the design will be subject to refinement in preparation of the construction documentation to capture detailed compliance matters.

In addition, it is considered that such matters can adequately be addressed in the preparation of the Crown Certificate documentation without giving rise to any inconsistencies with the State Significant Development Approval.