

27 July 2020

Erilyan Pty Ltd
1/27 Hotham Parade
Artarmon NSW 2064

Attention: Mike Ryan

Dear Mike,

**RE: NORTHSIDE PRIVATE HOSPITAL - CNR OF FAUNCE STREET (WEST) & RACECOURSE ROAD, GOSFORD NSW, 2250
BCA COMPLIANCE STATEMENT FOR SSDA SUBMISSION**

This statement has been prepared to verify that Blackett Maguire + Goldsmith Pty Ltd have undertaken a review of the architectural documentation that will accompany the Development Application to The department of Planning for the proposed development comprising of the construction of a new ten-storey private hospital on a Greenfield site in Gosford.

A. PROPOSED DEVELOPMENT

The SSDA seeks consent for the staged redevelopment of the site including:

- + **Stage 1** – Concept and Built Form Development Application - the demolition of the existing buildings and a built form development application for a part 11 storey, part 5 storey building with 2 basement levels and a lower ground floor level. Stage 1 will consist of in-patient units, radiology rooms, pathology room, intensive care unit, operating theatres and ancillary retail. The basement levels will consist of parking, waste storage and loading dock.
- + **Stage 2** – Concept Development Application - Stage 2 comprises a concept development application for a 4 storey building along Racecourse Road and is anticipated that it will be used for retail tenancy, Medical Support Services and Mental Health Facility.





B. COMPLIANCE STATEMENT OBJECTIVES

The objectives of this statement are to:

- a) Confirm that the SSD architectural documentation has been reviewed by an appropriately qualified Accredited Certifier.
- b) Confirm that the proposed new building works can readily achieve compliance with the BCA 2019 incl amd 1.

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

C. RELEVANT VERSION OF THE BCA

The current version of the BCA is the BCA 2019 including Amd 1 with BCA 2022 coming into effect in May 2022. For the purpose of this compliance statement, the proposed development will be subject to compliance with the BCA 2019 Including Amd 1

D. REFERENCED DOCUMENTATION

This report has been prepared based on a review of the preliminary SSD architectural plans prepared by SJB Architects:

<u>Drawing No.</u>	<u>Revision</u>	<u>Date</u>
DA-0201	1	10.07.2020
DA-0202	1	10.07.2020
DA-0203	1	10.07.2020
DA-0204	1	10.07.2020
DA-0205	1	10.07.2020
DA-0206	1	10.07.2020
DA-0207	1	10.07.2020
DA-0208	1	10.07.2020
DA-0210	1	10.07.2020
DA-0211	1	10.07.2020
DA-0212	1	10.07.2020
DA-0213	1	10.07.2020
DA-0214	1	10.07.2020
DA-0501	1	14.07.2020
DA-0502	1	14.07.2020
DA-0503	1	14.07.2020
DA-0504	1	14.07.2020
DA-0601	1	14.07.2020
DA-0602	1	14.07.2020

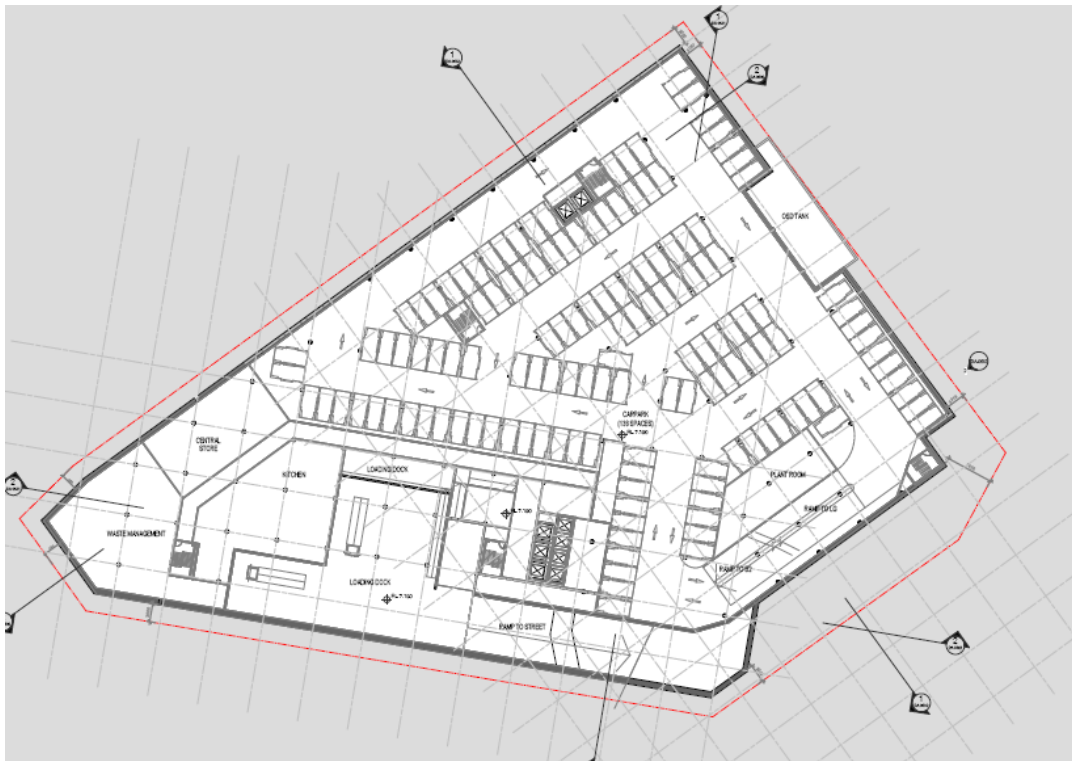


Figure 1: Floor Plan - Basement 1 – Overall

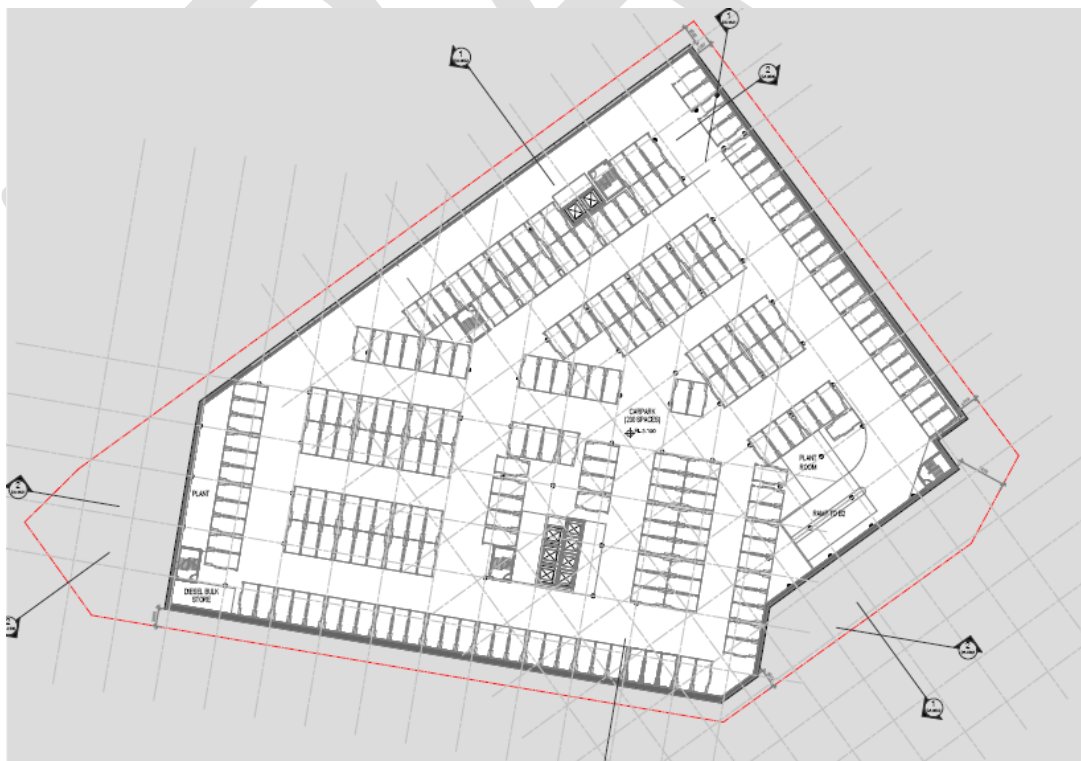


Figure 2: Floor Plan - Basement 2 – Overall

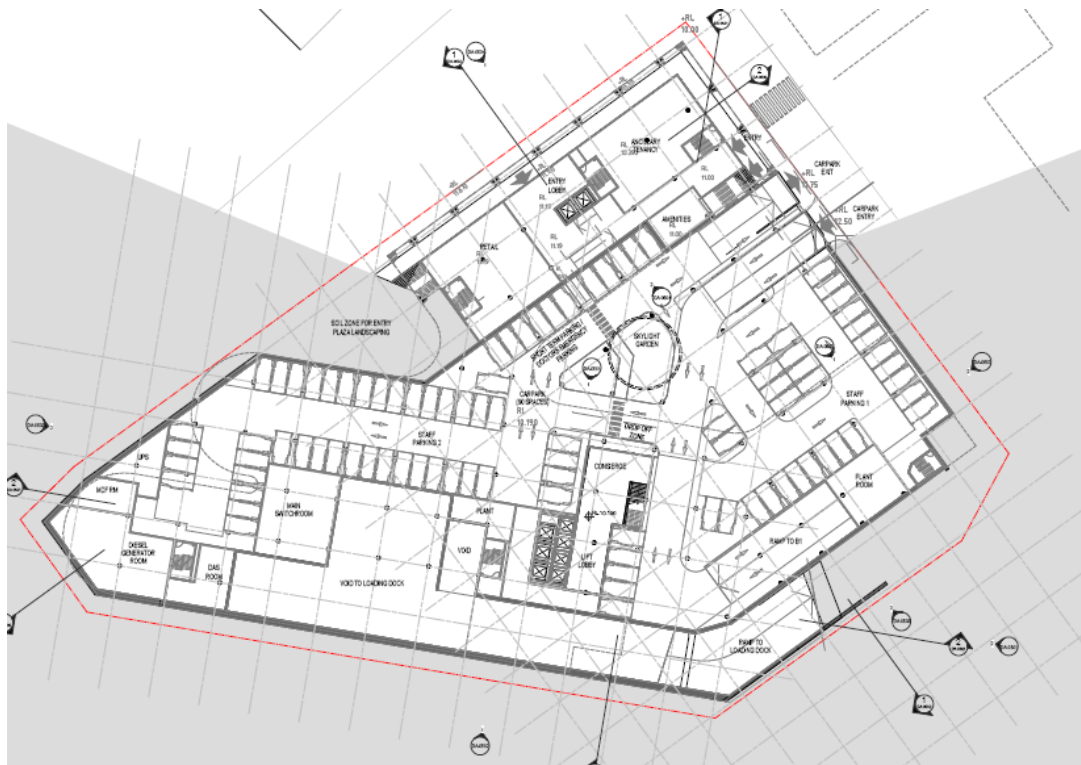


Figure 4: Floor Plan - Ground Floor – Overall

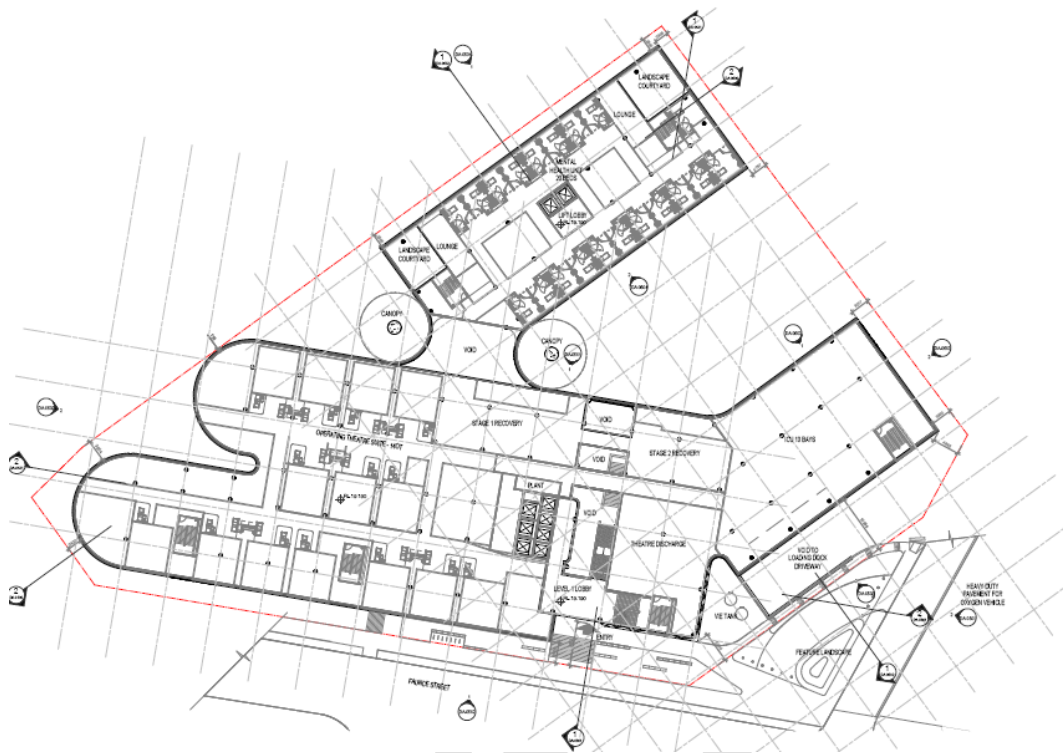


Figure 5: Floor Plan - Level 1 – Overall

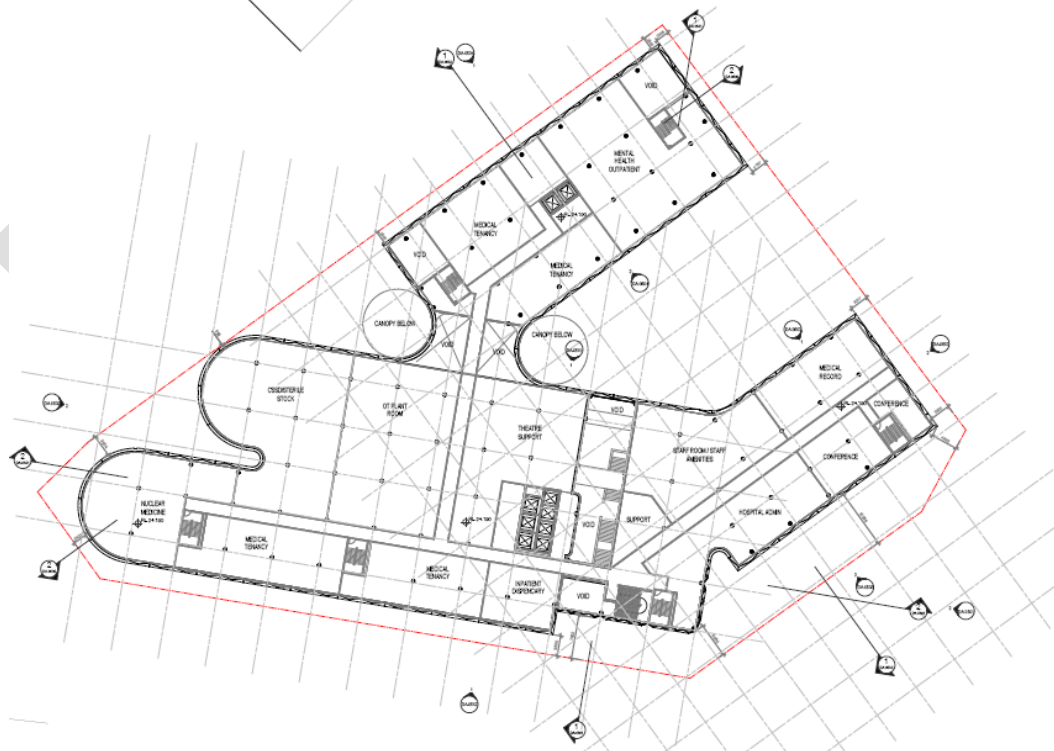


Figure 6: Floor Plan - Level 2 – Overall

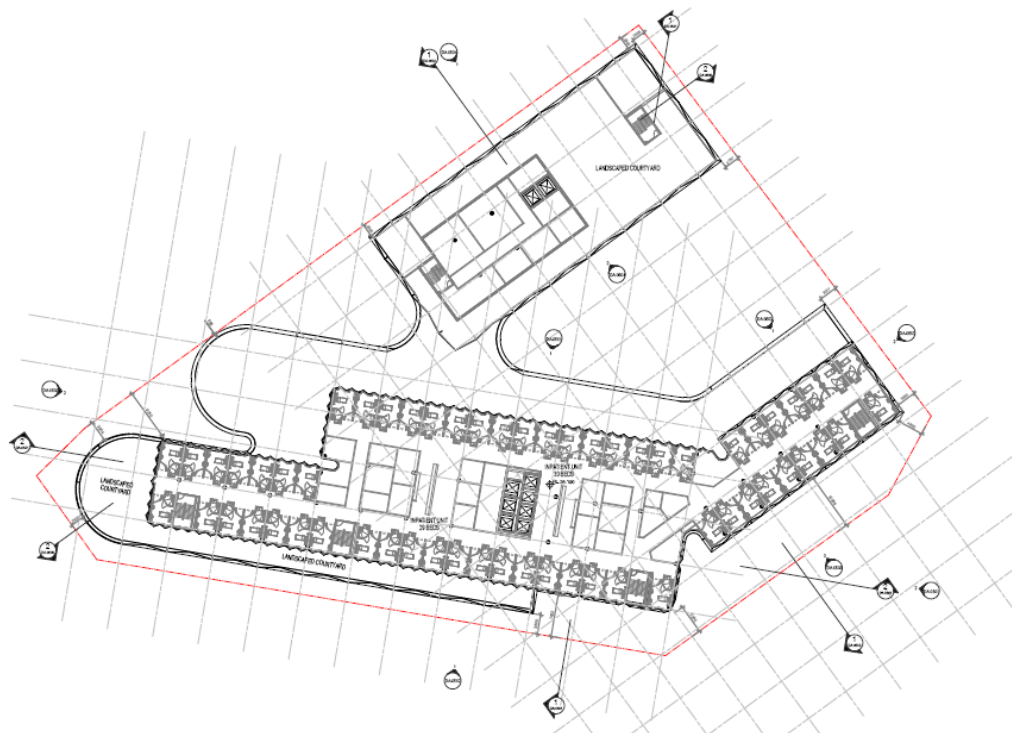


Figure 7: Floor Plan - Level 3 – Overall

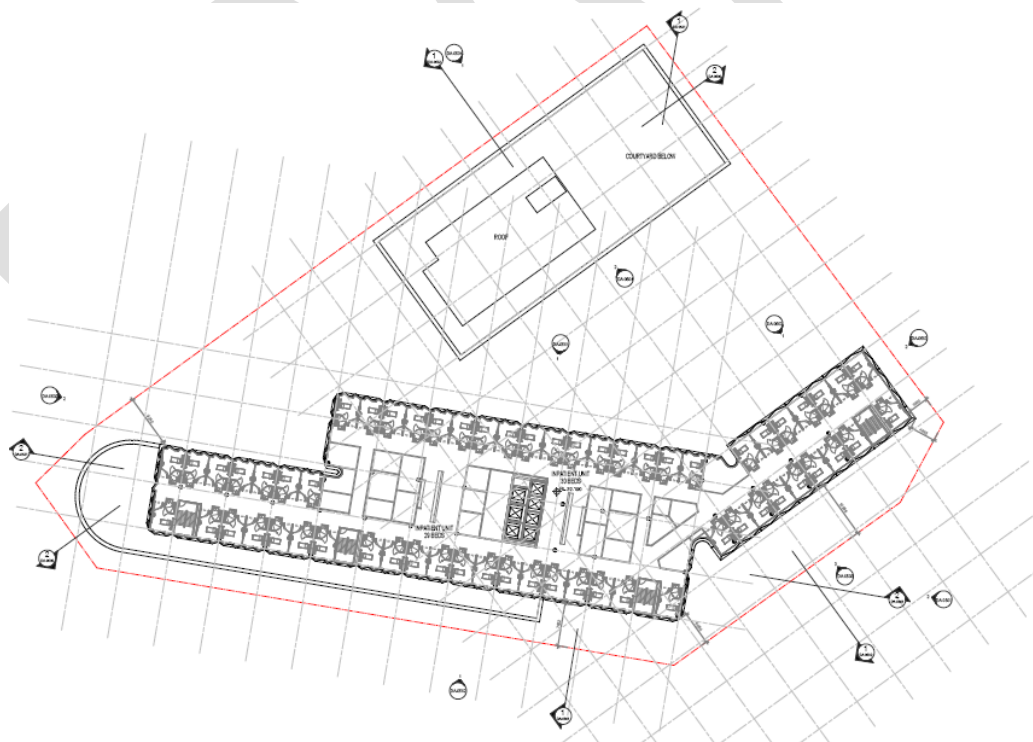


Figure 8: Floor Plan - Level 4 – Overall



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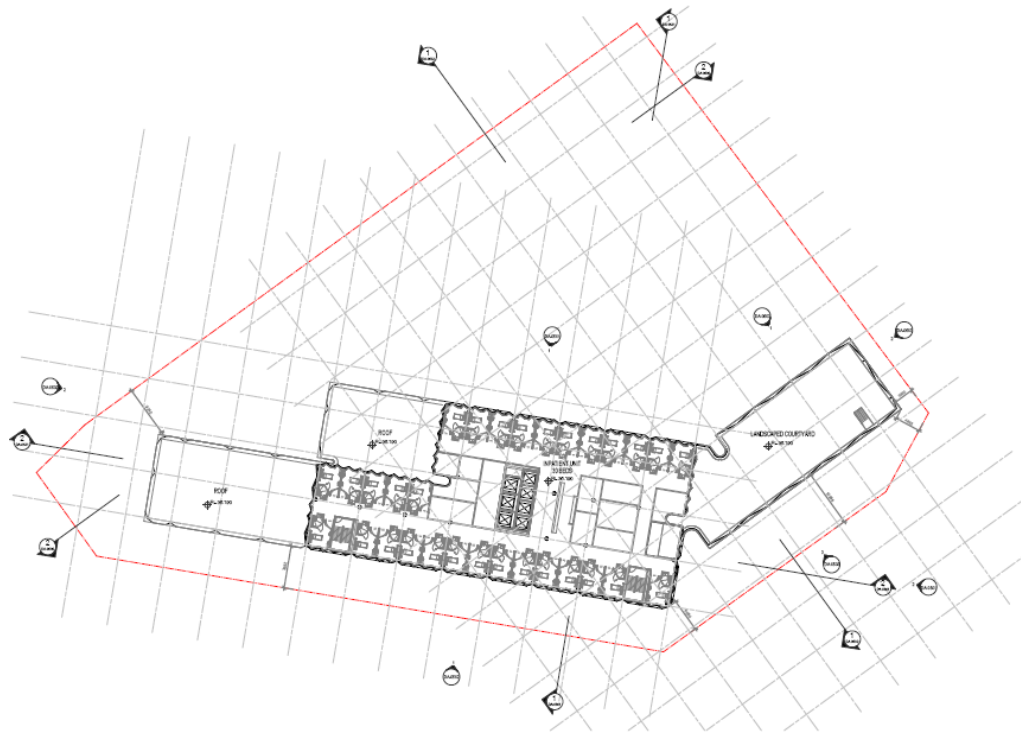


Figure 9: Floor Plan - Level 5 – Overall

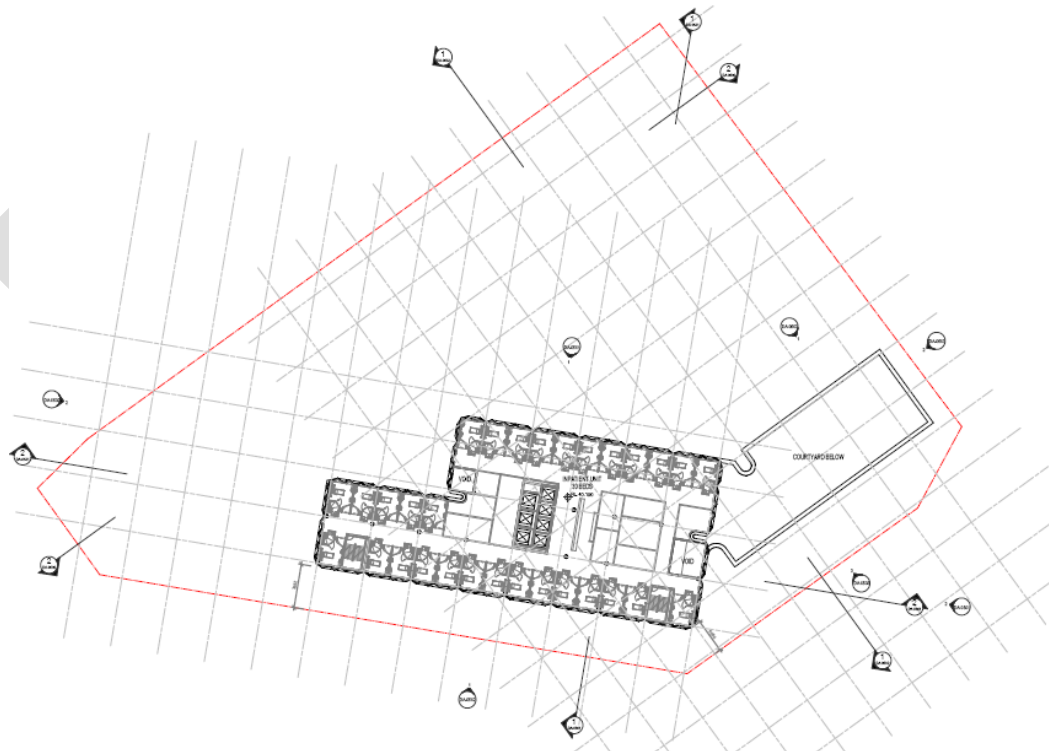


Figure 10: Floor Plan - Level 6 – Overall

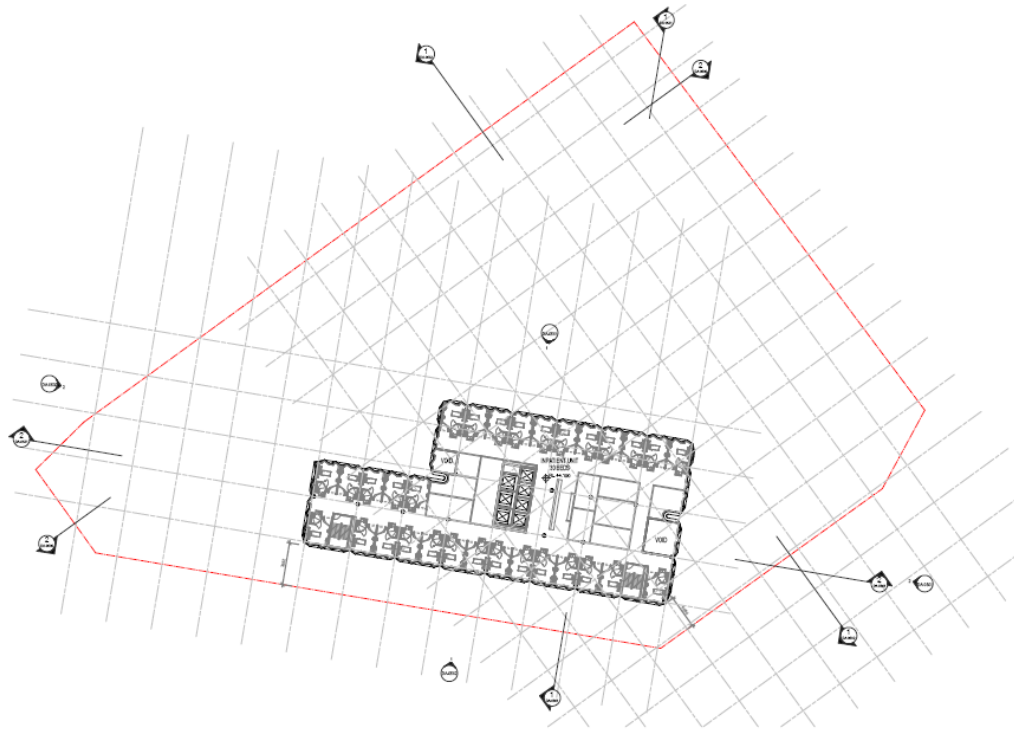


Figure 11: Floor Plan - Level 7 – Overall

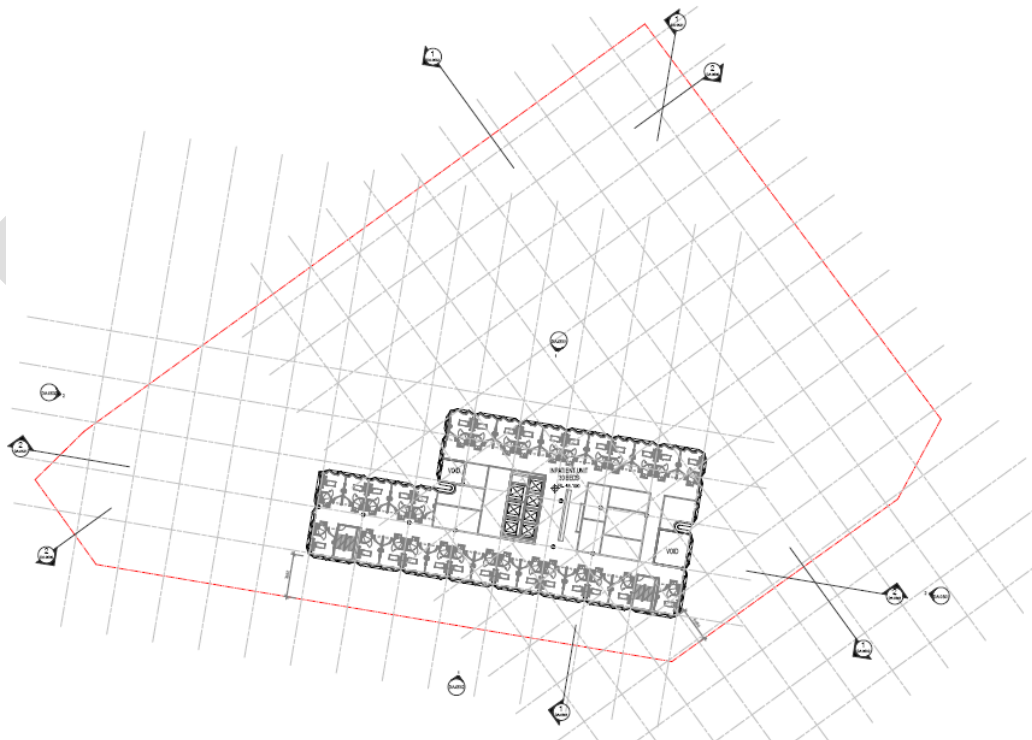


Figure 12: Floor Plan - Level 8 – Overall

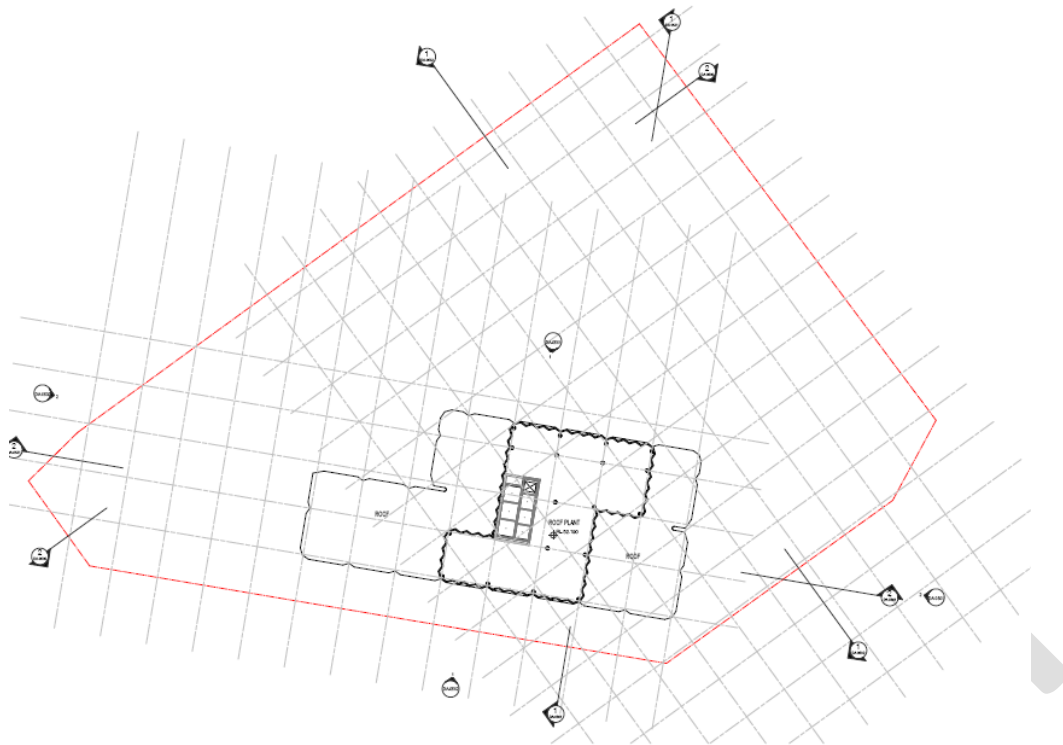
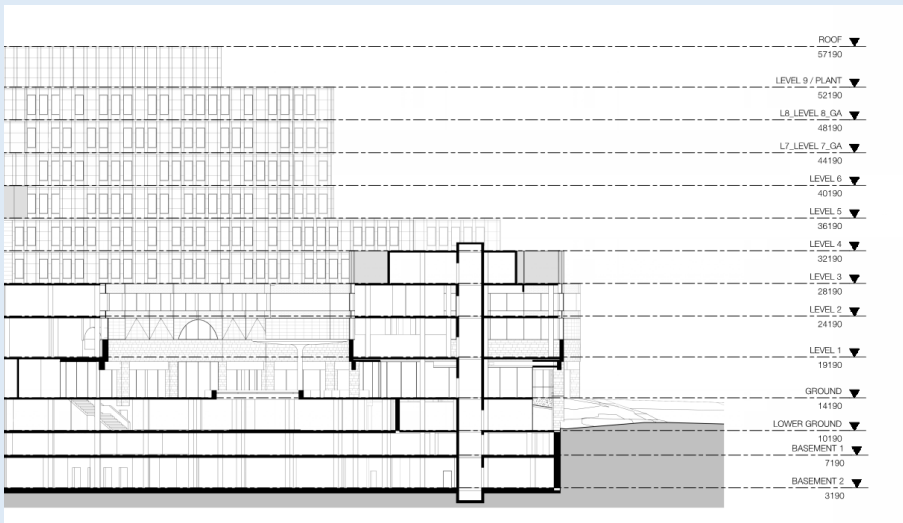


Figure 13: Floor Plan - Level 9 Plant Room – Overall



E. BUILDING CLASSIFICATION

The new building works have been classified as follows:

BCA CLASSIFICATION:	Class 5 (Offices, administration and consultation suites) ⁽¹⁾ Class 6 (Retail/Cafe) Class 7a (Basement carpark) Class 7b (Storage spaces including Bicycle parking)) Class 8 (BOH) Class 9a (Health-Care Building (patient care & non patient care) Class 9b (Assembly areas/Conference)
IMPORTANCE LEVEL (STRUCTURAL & SERVICES):	IL 4
RISE IN STOREYS:	Ten (10) ⁽²⁾
TYPE OF CONSTRUCTION:	Type A
EFFECTIVE HEIGHT:	Greater than 25m (LG – 10.19 – Lv.8 – 48.19 = 38m) ⁽³⁾ 
MAXIMUM FIRE COMPARTMENT SIZE:	Class 5, 9b – 8,000m ² , 48,000m ³ Class 6, 7, 8, 9a (Non-patient care area) – 5,000m ² , 30,000m ³ Class 9a - (Patient care area) – 2,000m ² Note: Additional compartmentation requirements apply for patient care areas as per C2.5 of the BCA.
SPRINKLER PROTECTED THROUGHOUT:	The building will be sprinkler protected throughout.
CLIMATE ZONE:	Zone 5

*** Note 1** – The proposed function of the various Medical Support Services proposed to Lv. 2 will need to be confirmed i.e. whether will comprise a health care building. This will need to be confirmed during the design development, i.e. where occupants are undergoing medical treatment becoming non-ambulatory and/or requiring supervision/care on the premises and where they need physical assistance to evacuate the building during an emergency

Note 2 - Lv.9 has been assessed on the basis that it contains only plant equipment and therefore is not included in the calculation of Rise in Storeys in accordance with C1.2 b (i) of the BCA

Note 3 – Detailed sections will need to be provided as part of the design development stage to confirm the Effective Height noted above. Based on a review of the documentation provided to date and for the purpose of this assessment LG constitute a storey and therefore has been included in the calculation of effective height.



F. SUMMARY OF KEY BCA COMPLIANCE ISSUES

Arising from our review, the following comprises a summary of the key BCA compliance issues identified following a review of the documentation provided to date:

Section B – Structure

1. Part B1 – Structural Provisions

New building works are to comply with the structural provisions of 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 – 2002, 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

The structural and services design disciplines will need to provide design certification verifying the design strategy is in accordance with BCA, AS1170.4.



Fire Separation and Compartmentation

- 1) Clause C1.1 – Type of Construction Required: The minimum type of fire-resisting construction of a building must be that specified in Table 3 of Specification C1.1 for Type A Construction as shown below.

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</i> lift and stair <i>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



1. All required FRLs to external walls of the building applies in both directions (internal and external).
2. A method of attaching or installing a finish, lining, ancillary element of service installation must not reduce the fire resistance of that element to below that required. Refer also, C1.9 and C1.14 having regards to the construction of external walls and ancillary elements.
3. Lift shafts and stair shafts are required to be enclosed at the top of the shaft with fire rated construction having an FRL not less than that required under Table 3.
4. Services shafts are to be enclosed by fire rated construction at the top and bottom by fire rated construction having an FRL not less than that required for walls of a non-loadbearing shaft except where the shaft extends above the roof covering, and or the bottom of the shaft where it is non-combustible and laid directly onto the ground.
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. Refer C1.9 & C1.14 of the BCA accordingly
9. FRL requirements for classifications with higher fire rating (i.e. Class 6) may be subject to FER strategy to rationalise the FRLs consistent with the main building (120/120/120 FRL). This will be further developed as part of the fire engineering strategy for the building.

- 2) Clause 1.9 – Non-combustible building elements: In a building of TYPE A and B construction the following building elements and their components must be non-combustible;

(i) External walls and common walls incorporating all components incorporating in them including the façade covering and framing and insulation.

(ii) The flooring and floor framing of lift pits

(iii) Non-loadbearing internal walls where they are required to be fire-resisting

The above does not apply to elements as listed under (d) (i)-(vii) under this clause

Note For the purpose of this clause items (e) (i)- (iv) as listed under this clause are deemed non-combustible

Details demonstrating compliance with the requirements of this clause will need to be provided as part of the design development stage of the project.

Refer comments under C1.14 below with respect of ancillary elements incorporated into the external walls including the proposed vegetation incorporated into the external façade system.

- 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:

Critical Radiant Flux of Floor Materials and Floor Coverings (Sprinkler protected)

- + 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

- 4) Clause C1.14 Ancillary Elements - An ancillary element must not be fixed, installed or attached to the internal and/or external face of an external wall that is required to be non-combustible unless it is one of the items listed under (a)-(g) of this clause.

Details will need to be provided demonstrating compliance with the requirements of this clause will need to be provided as part of the design development. We note that the current documentation does not contain sufficient information in this regard.



- 5) Clause C1.1, C2.2 & Clause C2.5 – Fire Separation and Compartmentation: Fire separation and compartmentation strategies will be subject to further development as the design develops and it is noted that the compartmentation strategy will also be subject to rationalisation under the Fire Engineering Strategy for the building.

Performance Solution;

- + Rationalisation of the FRL's to the ground floor retail spaces (Class 6) /bike storage(Class 7b) from 180min to 120min will be subject to consideration under the proposed fire engineering strategy. Further consultation with the projects fire safety engineer will be required as part of the design development.
- + Fire separation to the slab edge construction will need to be verified during the design development. Based on the provision of a sprinkler system throughout, it is noted that there may be scope to rationalise smoke separation in lieu of fire separation under the fire engineering strategy.

Additional matters that we noted in support of the design:-

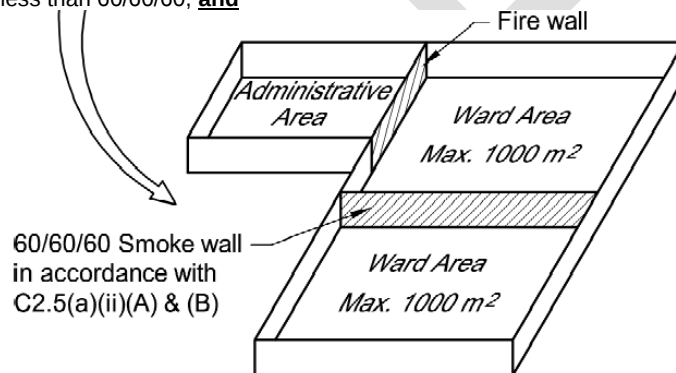
- + The Class 9a patient care areas are to be separated by 120/120/120 FRL walls to create maximum 2,000m² fire compartments.

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 –

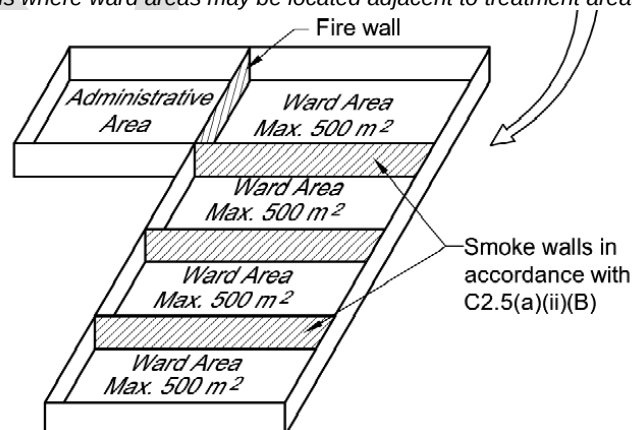
- i) Where the floor area exceeds 1,000m², then it must be divided into compartments of not more than 1,000m², by walls with an FRL of not less than 60/60/60, and



- 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

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. There are a number of medical record spaces currently noted within the building in this regard.
- + 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.

Important Note: Fire and smoke doors in each fire and smoke wall (provided for compartmentation purposes) are to swing in the direction of egress. Whilst the compartmentation strategy will be further refined, it is likely that a number of the fire and smoke doors will swing against the direction of egress. In this regard, consideration is to be given to documenting dual swing doors. Where dual swing doors will not be functional the direction of swing will need to be rationalised by way of a fire engineered alternative solution these two scenarios have been outlined below

Performance Solution;

- + **Dual Swing doors** – Where dual swing doors proposed smoke leakage will need to be rationalised by the projects fire safety engineer
- + **Single Swing doors** – Where documented to swing in a single direction, strategy will need to be based on additional signage, location activation of smoke detectors either side also provision of power operated door opening mechanism as a minimum.

The above will be further refined as part of the design development in consultation with project stakeholders.

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.

Performance Solution: Any medical gas lines will need to be rationalised under the fire engineering strategy.

It is understood that the design particularly to the non-acute services including ancillary supplementary services associated with the acute uses within the building will allow for compartmentation complying with the requirements of C2.5 of the BCA equivalent to that required for a 9a patient care area. Whilst not strictly required from a compliance perspective it will be provided for future proofing purposes

It is noted that the Class 5, 6, 7, 8 & 9 parts within the building will comply with the maximum fire compartmentation limitations as set out under C 2.2 of the BCA. The class 7a basement carpark will be sprinkler protected throughout and as such is not subject to a maximum fire compartment size as per C2.1 of the BCA. Particular attention will need to be paid to the various voids within the building connecting a number of storeys within the building these void areas will need to be considered in terms of maintaining the maximum compartment sizes within the building.

The interface of the various different classifications in terms of the maximum floor area and volume limitations C2.2 will be subject to further assessment as part of the design development



- 6) 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.

Early coordination with the projects structural engineer is recommended to ensure no elements other than roof battens (75x50mm) penetrate proposed fire walls throughout the building.

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

- 7) Clause C2.8 & C2.9 – Separation of classifications: Where the building comprises classifications located alongside one and other in the same storey and/or different storeys additional fire separating requirements apply including the application of the higher FRL for different classifications located on the same storey and where located on different storeys the floor between the adjoining parts must have an FRL of not less than Spec C1.1 for the lower storey.

Under the fire engineering strategy it is noted that there may be scope to rationalise FRLs to the ground floor to 120min throughout. Further consultation with the projects fire safety engineer during the design development is required in this regard.

Based on a review of the documentation it appears the size of the storage/BOH areas will comprise an area greater than 10% of the floor area of the remainder of the floor as such needs to be separated off from the remainder of the building.

In this regard, either the class 7b/8 space is to be separated off from the carpark by 240min construction and/or the 240min will need to be applied throughout the floor.

- 8) Clause C2.10 – Separation of Lift Shafts The lift shafts are required to have a fire resistance level 120/120/120 (load bearing) and -/120/120 (non-load bearing) generally throughout (Pending FER), inclusive of a fire rated lid over in accordance with Table 3 of Specification C1.1.

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). A detailed compartmentation plan will need to be provided in this regard.

Details required for further assessment at the detailed documentation stage. Each Emergency Lift will need to be nominated on the architectural documentation.

- 9) Clause C2.12 & C2.13 – Separation of equipment and electrical supply services – The BCA requires separation of equipment and electrical supply services within buildings dependant on the function in terms of supporting key fire safety systems and equipment which may present a hazard to the building.

Services consultants will need to confirm items requiring separation under this clause including any proposed central smoke control plant, boilers batteries and the like. As applicable, fire rating will need to be documented on the architectural documentation during the design development.

The main switch room and substation are required to be separated off from the remainder of the building by construction achieving an FRL of not less than 120min. The plans indicate compliance is currently achievable. Electrical consultant will need to advise of any additional fire rating requirements which may be required by the electrical authority above and beyond the requirements of the BCA.

Separation to any room containing UPS batteries beyond the maximum limitations under this clause additional fire separation may apply. Details to be provided accordingly.

- 10) Clause C1.1 & C3.2 – Protection of Openings in External Walls: All openings in external walls that are within 3m of the side boundary are required to be protected in accordance with Clause C3.4.

The building is shown to be situated not less than 3m from the adjoining side boundaries and not less than 6m from the far side of the adjoining roads.

The current architectural documentation shows the building fronting roads on all sides and being not less than 6m from the adjoining far side of adjoining road final locations of allotment boundaries will need to be confirmed accordingly.

- 11) Clause C3.3 – Exposure between fire compartments: Where exposure occurs between different fire compartments separated by a fire wall those parts must of each wall must achieve an FRL of not less than 60/60/60 and have any openings protected in accordance with C3.4 of the BCA for a distance as specified under Table C3.3 of the BCA (shown below).

Alternative Solution: It should be noted that there is scope under the fire engineering strategy to rationalise two way protection to one of the two walls in lieu of both walls. This will need to be further developed as part of the design development in consultation with the projects fire safety engineer and during the development of the compartmentation strategy for the building.

- 12) 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. generally 120min throughout as per FER strategy.



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.

- 13) Clause C3.7 – Protection of Doorways in Horizontal Exits All horizontal exits are required to have a FRL of -/120/30 throughout the class 9a part.

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 will be reliant upon a number of horizontal exits.

Access and Egress

- 14) 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 building including all parts which contains patient care areas. Not less than 2 exits are to be documented from the basement storeys also.

In this instance the building design provides for multiple exits at each level. Whilst no specific details regarding the compartmentation strategy within the building have been provided at this stage, it is noted that the building will achieve compliance through a number of ways including through provision of horizontal exits, fire isolated stairways and a number of egress doorways to the ground floor.

The final egress strategy will be subject to further development during the design finalisation stage with the number and location of exits to be provided based on the exit travel distances and aggregate egress width requirements.

All of the retail tenancies, commercial tenancy's, roof plant areas will need to be provided with a minimum of two (2) exits in order to comply with the requirements of this clause.

Performance Solution: Where a single exit is proposed to the retail tenancies, roof plan area this will need to be documented under the Fire Engineering Strategy

- 15) Clause D1.3 – When fire-isolated stairways are required: All required egress stairways in the building are required to be fire-isolated.

This includes stairs located on landscaped courtyards. It is noted that this stair is not currently designed as a fire isolated stairway

Where there is a connection between rising and descending stairs separation will need to be provided in accordance with D2.4 of the BCA. It appears as though there is connection between rising and descending stairs to the NE fire stair on the Ground floor.

Refer also comments under D1.7 below with respect of discharge from fire isolated stairways.

- 16) Clause D1.4 – Exit Travel Distance: Exit travel distances within non-patient care areas of the building are required to be not more than 20m to a single exit, or a point of choice of two exits. Where there is a point of choice of two exits, all points on the floor are required to be within 40m to one of the exits. A detailed egress assessment cannot be undertaken based on current floor plan layouts as the location of doorways and the like are not documented. Notwithstanding the final location will need to be provided so as to ensure acceptable limits are achieved.

Within patient care areas, these distances are reduced to 12m to a single exit, or point of choice of two exits. Where there is a point of choice of two exits, all points on the floor are required to be within 30m to one of the exits.

Travel distances within various areas will need to be addressed as a fire engineered performance solution. Where distances exceed those supportable under fire engineering, the design shall be amended accordingly this will be confirmed this may entail the introduction of additional Horizontal exits and the like.

Based on the proposed layout travel distances within the north eastern OT suite to be reviewed as travel distances are in excess of 20m which will not be supported, also to the landscaped courtyard to the north eastern landscaped corridor to Lv. 3

Egress travel distances from the various courtyard/garden areas will need to be addressed as part of the design development stage once the internal layouts and location of doorways have been confirmed. It should be noted that the above travel distances will apply to the external courtyard/garden areas.

Important Note: The exit travel distances will be subject to further review as part of the design development once the internal layouts of the subject building have been confirmed and the compartmentation strategy has been developed. We note that it is clear that the egress strategy within the building will comprise a mixture of DTS and Performance based strategy.



- 17) Clause D1.5 – Distance between alternative exits: The distance between alternative exits in non-patient care areas is required to be no greater than 60m apart. Within patient care areas, this distance is reduced to 45m. Distance between alternative exits are required to be no closer than 9m.

Travel distances within various areas will need to be addressed as a fire engineered performance solution. Where distances exceed those supportable under fire engineering, the design shall be amended accordingly.

Egress travel distances from the courtyard/garden areas will need to be addressed in the detailed design stage once the internal layouts and location of doorways have been confirmed. It should be noted that the above travel distances will apply to the external courtyard/garden areas.

Important Note: The exit travel distances will be subject to further review as part of the design development once the internal layouts of the subject building have been confirmed and the compartmentation strategy has been developed. We note that it is clear that the egress strategy within the building will comprise a mixture of DTS and Performance based strategy.

- 18) 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.

In a class 9a patient care area, the minimum clear unobstructed width for passageways, corridors and/or ramps is to be a minimum of 1.8m in width where used for the transportation of patients in beds within a treatment or ward area. Compliance is readily achievable. Final internal layout plans will be subject to further assessment as part of the Design Development stage.

The unobstructed clear width of doorways within the class 9a patient care areas where patients would normally be transported in beds will need to comply with the following;

- + Corridor width of less than 2.2m – 1200mm,
- + Corridor width 2.2m or greater – 1070mm,
- + Horizontal exits in a patient care area – 1250mm

Population numbers of each storey within the building will need to be confirmed in order to determine the required egress width we note that compliance is readily achievable based on the number of exits in this regard.

Compliance is readily achievable in this regard. Details demonstrating compliance will need to be provided during the Design Development stage.

- 19) Clause D1.7 – Travel via fire-isolated exits: Each fire-isolated stairway must discharge directly to open space and or into a space or area complying with the requirements of D1.7 (b) (ii) (iii).

Discharge from the various fire isolated exits will need to be confirmed, including the final egress doors and path of travel from the discharge point to the road connected. The plans do not currently demonstrate how compliance will be achieved.

The final discharge location of all of the required exits will need to be confirmed we note that a number of the fire isolated stairways within the building do not discharge to a compliant location i.e. a number of the required exits are shown to currently discharge internally. Updated documentation will need to be provided in this regard demonstrating compliance with the requirements of this clause.

Where the path of travel from the Fire isolated exits to the road connected necessitates passing within 6m of the same building when measured at a right angle the external wall must achieve a minimum FRL of 60min and have any openings protected in accordance with C3.4 of the BCA.

Access to the fire isolated exits (fire isolated stairways/passageways) must not be directly via a room unless it is from a public corridor, public lobby, sole-occupancy unit, sanitary compartment or the like. It is clear that additional airlocks will need to be incorporated in a number of locations noting that the plans currently show that access to the fire isolated stairways is other than that permitted under this clause.

Performance Solution: Where there is the opportunity to incorporate alternative egress pathways in opposite directions from the discharge point there is opportunity to rationalise fire rating and protection of openings within external walls under the fire engineering strategy.

- 20) Clause D1.10 – Discharge from Exits: Details demonstrating compliance with the requirements of this clause particularly having regards to the path of travel (grades of ramps, proposed stairways) from the required exits to the road connected will need to be provided for review and comment. It should be noted that the path of travel from the required exits to the public road in a class 9a building is not permitted to be via a stairway.

Performance Solution: Where the discharge from exits that serve Class 9a levels require travel via external stairs/steps to reach road or open space. This will be addressed in the Fire Engineering Strategy.



Although not clear on the current architectural documentation where there are awnings and the like which are required to be backed passed under once open spaced has been reached then this will need addressed by way of fire engineering.

- 21) Clause D1.11 – Horizontal Exits: The egress strategy across floors will be reliant on multiple horizontal exits. It is envisaged that occupants will likely need to pass through more than one horizontal exit before reaching a fire-isolated exit and will be addressed by a fire engineered performance solution.

Detailed egress strategies and compartmentation has not yet been documented on the architectural documentation. The overall egress strategy for the building in this regard will be finalised and documented during the design development stages.

- 22) Clause D1.12 – Non-required stairways and ramps: The central atrium/non-required stairway connecting Lower ground to Lv2 will need to be rationalised under a fire engineered strategy.

- 23) Clause D2.4 – Separation of Rising and Descending Flights: There are instances where separation has not been detailed between rising and descending flights in the fire isolated stairs. This will need to be documented in the design development stage.

- 24) 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.

Performance Solution: Any proposed omission of sprinklers from EDB/Comms cupboards under the fire engineering strategy will require the introduction of additional fire separation. To be confirmed during the design development in consultation with the projects fire safety engineer. This would necessitate additional fire rating to EDB comms cupboard

- 25) 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

- 26) 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.

Details demonstrating compliance will need to be provided along with the design development.

- 27) Clause D2.15 – Threshold: 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

Performance Solution: Steps from plant rooms into the fire isolated stairways within the building



- 28) 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.

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.

Additional detail for the balustrade designs to the terraces will need to be provided at the detailed design documentation stage.

Important Note: Any egress stairways proposed to be used for general circulation purposes will need to be designed to comply with general balustrade requirements and not three rail system as permitted within fire isolated stairways.

- 29) Clause D2.17 – Handrails 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.
- 30) Clause D2.19 & D2.20 – Doorways & Doors/Swinging Doors Doorways 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 airlock sliding doors located within patient care areas will need to be rationalised by the projects fire safety engineer.

Sliding doors are not permitted to be located within patient care areas (except the final discharge door).

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. It is clear plan amendments will be required in this regard.

In addition to the above, all smoke doors and horizontal exit fire doors are to be documented to swing in the direction of egress.

Performance 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.

It is noted that the building includes a mental health zone any ant ligature door hardware will need to be addressed in the fire engineering strategy

- 31) Clause D2.20, C3.4 – Swinging Doors: All exit doors, including fire and smoke doors, are required to swing in the direction of egress. It is likely that some fire and smoke doors may not swing in the direction of egress and will be addressed by a fire engineered performance solution.
- 32) Clause D2.21 – Operation of Latch: Latch hardware will comply with BCA except in cases where doors will be secured and hence connected to an automatic fail safe system.
- 33) Clause D2.22 – Re-Entry to Fire-Isolated Stairs: Doors serving the fire isolated stairways must not be locked from the inside. Compliance is readily achievable in this regard and will be developed during the detailed design.

Fire Safety Systems

- 34) Clause E1.3 – Fire Hydrants: Fire hydrants are required to serve the building and comply with AS2419.1-2005.

The location of the fire booster assembly and associated fire hydrant infrastructure including pumprooms, on-site water storage, ring mains etc, will need to be shown on the architectural documentation and provided for review as the design progresses. Where not positioned in accordance with E1.3/AS2419.1-2005 of the BCA this will need to be rationalised as part of the fire engineering strategy.

Internal Hydrants are to be located in accordance with the requirements of AS2419.1. Final locations will need to be confirmed and reviewed in subsequent design stages.

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

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 = 60 m hose and 10 m stream



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

The location of the fire services infrastructure will be subject to further review as part of the design development this includes the location of booster assembly, pump rooms and the like we note that the plans don't currently show the location of this infrastructure in this regard

- 35) Clause E1.4 – Fire 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 design development stage

Fire hose reel coverage is based on the following:

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

Performance Solution It is likely that various small rooms fitted with smoke doors will not be provided with hose reel coverage and will be addressed as a fire engineered performance solution.

- 36) Clause E1.5 – Sprinklers: An Automatic Fire Suppression System will be required throughout

The sprinkler system needs to be designed to comply with 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.

The sprinkler system is technically required to be installed to all EDB, Comms cupboards etc throughout the building. If sprinklers proposed to be omitted from these enclosures, additional fire separation is required and this will need to be included in the fire engineering strategy. Further consultation with the fire safety engineer is required accordingly.

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.

Performance Solution; 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.

The location of the fire services infrastructure will be subject to further review as part of the design development.

The location of the fire services infrastructure will be subject to further review as part of the design development this includes the location of booster assembly, pump rooms and the like we note that the plans don't currently show the location of this infrastructure in this regard.

- 37) Clause E1.6 – Portable Fire Extinguishers: Portable fire extinguishers are required to serve the building and comply with AS2444-2001. Compliance readily achievable details to be incorporated into the design in this regard.

- 38) Clause E1.8 – Fire Control Centre: A fire control centre is to be provided based on the building having an effective height greater than 25m. 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.

Performance Solution: The location of the fire control centre is to be confirmed. Where located more than 300mm from the public road/open space this will need to be rationalised under the fire engineering strategy. The location of the fire services infrastructure will be subject to further review as part of the design development.

Part E2 – Smoke Hazard Management: Any air-handling system (other than non-ducted systems with a capacity not more than 1000 litres/second) which does not form part of the smoke hazard management system must shut down automatically on the activation of smoke detectors installed as per Specification E2.2a.

Based on the building being greater than 25m in effective height it is noted that a zone pressurisation system is required between the vertically separated fire compartments

Consideration will need to be given to separate mechanical systems to service critical care areas (i.e. operating theatres), where the mechanical system may need to continue to run. Mechanical consultant will need to review and provide further comment accordingly during the design development.

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

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.

The fire detection and alarms system will be a fully addressable type in accordance with AS 1670.1:2018 and the BCA.

The MFIP will incorporate emergency fire alarm directly to NSW Fire and Rescue.

The fire control centre location is still to be determined

The fire indicator panel shall have interface between the fire sprinkler and fire hydrant services, detection devices, security systems and mechanical systems for fire mode operation, i.e. shutdown of mechanical ventilation system and release the magnetic door holders etc.

Smoke and heat detectors shall be provided throughout the building in accordance with statutory requirements.

Additional smoke hazard management systems will need to be provided to service any atriums within the building. We note that there are atriums in the building to which Part G3 will apply given that they connect more than three (3) storeys within one of those storeys not located at ground level.

- 39) **Part E3, C2.10 Lift Installations:** 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.

- 40) **Part E4 – Emergency lighting, exit signs and warning systems:** Emergency lighting and exits signs are required to be provided in accordance with AS2293.1-2018 and Part E4.

- 41) **Clause F4.9 – Emergency warning and intercom systems:** The building is required to be provided with a Sound System and Intercom System for Emergency Purposes (SSISEP) installed throughout the entire building.

Performance Solution: Where proposed to omit/reduce EWIS speakers from ward and treatment rooms and or mental health areas so as not to disturb patients this will need to be rationalised in the fire engineering strategy

An emergency warning and Intercommunication systems (EWIS) shall be provided in accordance with AS1670.4:2018 and the BCA / NCC. EWIS panels shall be located with the MFIP

The EWIS panel shall be activated by Manual Call Points (MCP) spaced at 30 m intervals along the corridors, the fire detection system, active emergency fire equipment (e.g.; fire sprinkler alarm valve) or manual operation at the FIP. Each MCP shall be installed 1 m (maximum) above floor level and shall have a minimum of 600 mm clearance around it.

A WIP phone will be located within each fire compartment, typically at the nurse station.

The emergency evacuation plan will be developed in consultation with the user groups in a future design phase.

Health and Amenity

- 42) **Clause F2.3 – Facilities in Class 3-9 Buildings:** Sanitary facilities for visitors and patients, such as closet pans, shower or bath, along with facilities for employees will be provided in accordance with Table F2.3.

Toilet facilities are to be provided in accordance with the following:-

Class 9a



Sanitary Facilities – <i>Class 9 Employees</i>						
	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 – <i>Class 9 Patients</i>						
	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.

Class 5, 6 and 9

Sanitary Facilities – <i>Class 5,6 and 9 Employees</i>						
	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

Class 6

Sanitary Facilities – <i>Class 6 restaurants, cafes bars</i>						
	Closet Pans		Urinals		Washbasins	
	Required	Proposed	Required	Proposed	Required	Proposed
Male	1 – 100	1	1 – 50	1	1 – 50	1
	101-300	2	51-100	2	51-200	2
	>300	Add 1 per 200	101-150	3	>200	Add 1 per 200
			151- 200	4		
			201- 250	5		
			>250	Add 1 per 100		
Female	1 – 25	1	-	-	1 – 50	1
	26-50	2	-	-	51 – 150	2
	51- 100	3			>150	Add 1 per 200
	101-150	4				
	151-200	5				
	201-250	6				
	>250	Add 1 per 100				

- 43) 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.

44) 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.

45) Part F3 – Room Sizes: The floor to ceiling heights in the Class 5, 6, and 7 parts must not be less than 2.1m in corridors, passageways, sanitary compartments, store rooms, and the car park. Remaining areas must achieve 2.4m. Whereas a Class 9b part and any corridors serving said part must achieve 2.7m. Ceiling heights throughout the Class 9a parts of the building are required to be a minimum of:

- + 2.4m in patient care areas; and
- + 3m in operating theatres and delivery rooms; and
- + 2.4m in a treatment room, clinic, waiting room, passageway, corridor or the like.

46) Part F4 – Light and Ventilation: Artificial lighting system are required to comply with Clause F4.4 and AS 1680. All rooms used for sleeping purposes (not treatment) must be provided with natural lighting.

All mechanical or air-conditioning installations must be in accordance with Clauses F4.5(b) and AS 1668.2. -2012.

47) Section J – Energy Efficiency: The building is subject to compliance with the Energy Efficiency Provisions of BCA Section J, as applicable to climate zone 5, 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

Section J ESD consultant will need to review and provide details demonstrating compliance as part of the design development.

Note: BCA 2019 will apply to the subject development.

48) Part G3 Atrium: There are a number of atriums noted within the building which connect more than three (3) storeys as such the requirements of this part will apply. The design of the proposed atrium space will be subject to consideration as part of the fire engineered strategy.

49) Part G6 Occupiable Outdoor Areas:

This part does not apply to an occupiable outdoor area of a sole-occupancy unit in a Class 2 or 3 building, Class 9c building or Class 4 part of a building (with the exception of the requirements for Fire Hazard Properties), nor does it apply to an occupiable outdoor area with an area less than 10m².

A lining, material or assembly in an occupiable outdoor area must comply with C1.10 as for an internal element. The following fire hazard properties of a lining, material or assembly in an occupiable outdoor area are not required to comply with C1.10:

- (i) Average specific extinction area.
- (ii) Smoke-Developed Index.
- (iii) Smoke development rate.
- (iv) Smoke growth rate index (SMOGRARC).



Note 1: For the purposes of the Deemed-to-Satisfy Provisions of C2.7, C2.8 and C2.9, a reference to a storey includes an occupiable outdoor area, however a fire wall cannot be used to separate an occupiable outdoor area into different fire compartments.

Note 2: A reference to a storey or room in Part D1, Part D2, Part E1 (except for cl 7(b)(i) of Spec E1.5), Part E3, Part E4 includes an occupiable outdoor area.

Note 3: An occupiable outdoor area is not a storey for the purposes of Schedule 3 of the NCC and therefore is not included in the determination of rise in storeys.

Note 4: For the purposes of the Deemed-to-Satisfy Provisions of F4.4, F4.8 and F4.9, a reference to a room includes an occupiable outdoor area.

Note 5: Construction in Alpine areas includes an occupiable outdoor area for the purposes of displaying notices associated with FIRE ORDERS.

General

Pandemic Zone

It is necessary to understand if Pandemic Zones will be required in the building. It is necessary to ascertain whether they are required in the early design stage as there is a number of fire safety implications which must 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.

G. FIRE ENGINEERED PERFORMANCE SOLUTIONS

Spec C1.1	The use of roof lights having an area greater than 20%, also the roof lights being within 3m of a part of the building which projects above the roof - TBC
C1.1	Smoke sealing of slab edge at the curtain wall construction in lieu of fire sealing.
Spec C1.1, C2.8, C2.9	Rationalise FRL's of the ground floor retail/bike storage spaces from 180min to 120min
Spec C3.4 / D2.20	To permit fire and smoke doors to only swing in one direction in certain instances where egress requires them to swing in both directions.
C3.3	Rationalize protection of openings between adjacent fire compartments.
C3.15	Medical gas penetrations within fire rated elements.
D1.2	Small retail tenancies to be provided with a single exit in a case where not less than two exits are required (TBC) For the roof top plant area to be provided with a single exit where not less than two exits are required
D1.4 / D1.5	+ To justify excessive distances to a point of choice. + To justify excessive distances to an exit. + To justify excessive distances between exits. Note: Departures to be considered on a case-by-case basis once the design develops. Further consultation with BM+G will be required accordingly.



D1.7	To potentially 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.
D1.10	Stairways proposed to the path of travel to the public road in lieu of ramp. (TBC) Path of travel from the required exits from the building required to pass back under roofed areas
D1.12, G3.2, G3.3 Spec G3.8	Rationalisation of the non-fire isolated connecting stairway and atrium: + 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 based on interface of void spaces.
D1.11	Discharge of horizontal exits into fire compartments without an exit stairway.
D1.12	Non-required stairway connecting a number of storeys
D2.15	Steps located at the door threshold into the fire isolated stairways at the plant room
D2.19	To allow sliding doors in patient care areas. Swing of fire safety doors located in fire and smoke walls throughout the building.
E1.3	Location of FH booster. (TBC)
E1.4	To potentially justify fire hose reel coverage not being provided to certain rooms which are isolated by smoke/fire separating construction.
E1.5	+ Omission of sprinklers to equipment rooms which are sensitive to water in the event of discharge (TBC) + RTI of recessed sprinkler heads (TBC)
E4.9, D2.21	Decrease of speak volume within ward treatment, OT and SAR areas Use of antiligature door hardware within mental health areas

Please note that the above matters have been identified arising from a review of the referenced architectural plans. A further detailed assessment will be undertaken during the design development.



H. PRELIMINARY FIRE SAFETY SCHEDULE

The following comprises a preliminary fire safety schedule containing statutory fire safety measures that will apply to the new building.

Statutory Fire Safety Measure	Design / Installation Standard
Access Panels, Doors & Hoppers	BCA Clause C3.13 & AS 1530.4 – 2005 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	BCA Spec. E1.5 & AS 2118.1 – 2017 or AS 2118.6 – 2012
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 Blankets	AS 3504 – 1995 & AS2444 – 2001
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	BCA Clause E1.3 & AS 2419.1 – 2005
Fire Seals	BCA Clause C3.15, AS 1530.4 & AS 4072.1 – 2005 and manufacturer's specification
Lightweight Fire Resisting Construction	BCA Clause C1.8 & AS 1530.3 – 1999 and manufacturer's specification
Mechanical Air Handling Systems (incorporated auto 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)
Required Door in a Path of Travel (power operated)	BCA Clause D2.19(c)
Smoke Dampers	AS/NZS 1668.1 – 2015
Smoke Doors	BCA Spec C3.4 & C2.5
Smoke Hazard Management Systems (zone pressurisation system)	BCA Part E2 & AS/NZS 1668.1 – 2015
Emergency warning and intercom system (EWIS)	BCA E4.9, Clause 5 of BCA Spec G3.8 and AS1670.4-2018
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

Please note that the above schedule will need to be revised to reference any proposed Fire Engineering Report and incorporate any additional measures required by the proposed Performance Solutions.



I. CONCLUSION

This report confirms that BM+G have undertaken a review of the architectural plans for the proposed Northside Private Hospital against the deemed-to-satisfy provisions of the Building Code of Australia 2019 incl amd 1.

It is our experience that such compliance matters raised in this report are not uncommon for a development of this nature and that they can be readily addressed at Construction 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 Construction Certificate without giving rise to significant changes to the proposal as submitted for Development Application.

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

Yours sincerely,

Jake Hofner
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Blackett Maguire + Goldsmith Pty Ltd

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