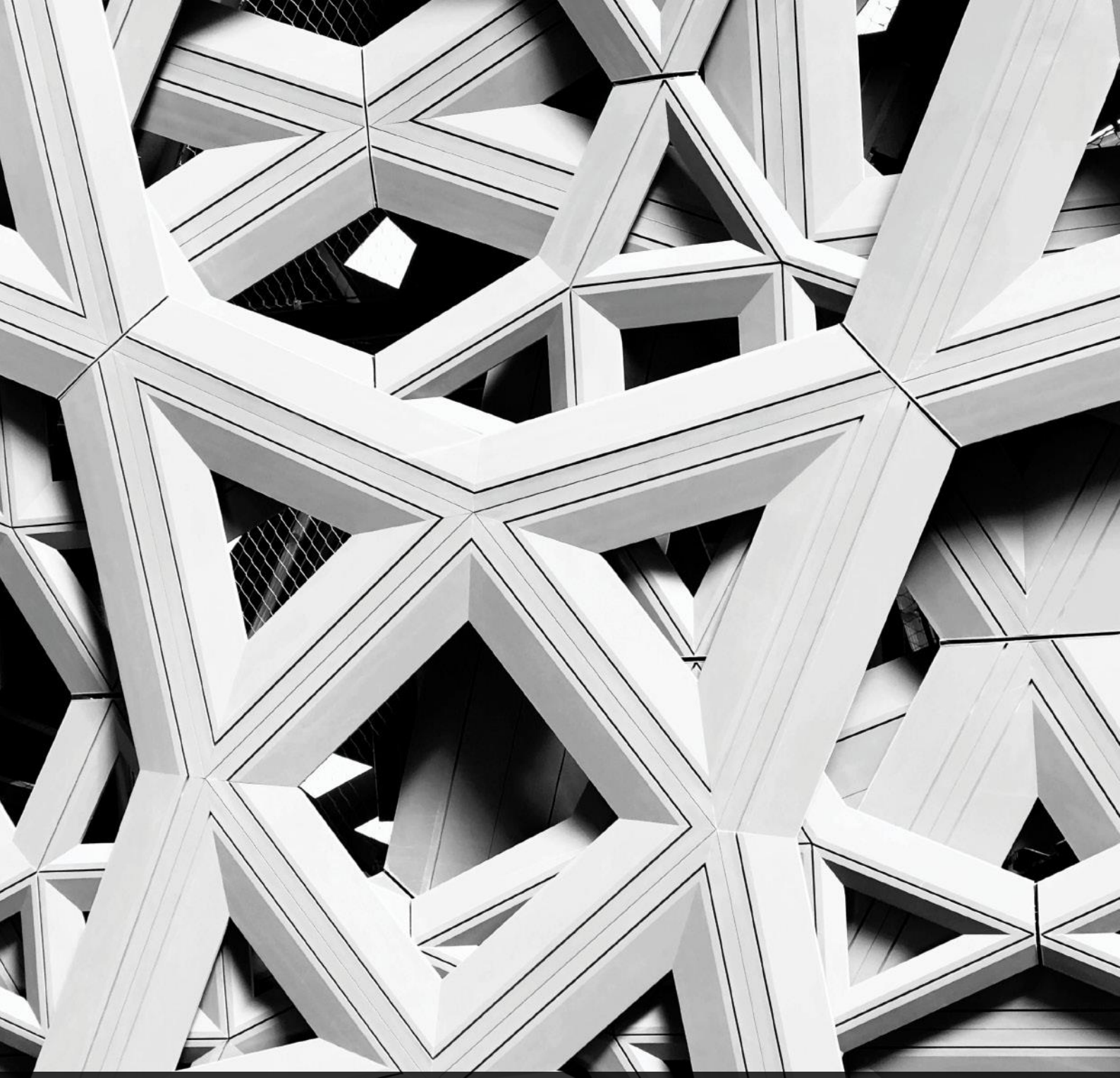

BCA Assessment Report

Design Development

Wyong Hospital Redevelopment Stage 3
Pacific Highway, Hamlyn Terrace NSW 2259

Prepared for:

Health Infrastructure
C/O - Colliers

Revision 0

13 July 2023

Reference: N230014

bmplusg.com.au

+ Contents

+ Report Status

+ Date	23 July 2023
+ Revision	0
+ Status	Final Schematic Design Report
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+ Reviewed	Peter Keppie

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+ Revision History

+ Revision	0	**+ Date**	19 July 2023
+ Status	Design Development		

1.0 Description of Project

1.1 Proposal

BM+G Pty Ltd have been commissioned by Health Infrastructure C/O – Colliers to undertake an assessment of the Design Development of the Stage 3 Redevelopment at Wyong Hospital against the relevant provisions of the Building Code of Australia 2022 (BCA).

An assessment of BCA compliance with respect to the new works is included within Section 3.0. For matters relating to the upgrade of existing building, refer to Section 4.0.

1.2 Aim

The aim of this report is to:

- Undertake an assessment of the proposed development against the deemed-to-satisfy provisions of the BCA.
- Identify matters that require plan amendments in order to achieve compliance with the BCA.
- Identify matters that are to be required to be addressed by Performance Solutions.
- Enable the Public Authority to satisfy its statutory obligations under Section 6.28 of the Environmental Planning and Assessment Act, 1979.
- Identify matters relating to the existing building that are required to be addressed as an upgrade strategy to accommodate the new works and / or to deal with significant fire safety issues within the building.

1.3 Project Team

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

- **Jake Hofner** – Report Preparation (Newcastle + North Coast Manager | Building Surveyor-Unrestricted
- **Peter Keppie** – Peer Review (Senior Building Surveyor) | Building Surveyor-Unrestricted

1.4 Referenced Documentation

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

- Building Code of Australia 2022 (BCA)
- The Guide to the Building Code of Australia 2019 Amendment 1.
- NSW Health Infrastructure Design Guidance Note 32.
- NSW Heath Engineering Services Guide dated 12 December 2022.
- Architectural Plans prepared by dwp numbered:

+ Drawing No.	+ Revision	+ Date
A0005	B	10.07.2023
X-AA-B1202	J	02.06.2023
X-AA-B1204	K	02.06.2023
X-AA-C1206	J	02.06.2023

+ Drawing No.	+ Revision	+ Date
X-AA-B1201	J	02.06.2023
X-AA-B1203	M	02.06.2023
X-AA-C1205	J	02.06.2023
X-AA-C1207	K	11.07.2023

1.5 Regulatory Framework

- Pursuant to S6.28 of the Environmental Planning and Assessment Act 1979, the proposed building is subject to compliance with the relevant requirements of the BCA as in force at the time of the date of invitation for tenders to carry out the Crown building work.

The assessment has been undertaken in accordance with Clause 24 and 25 of the Building and Development Certifiers Regulation 2020. BM+G are the proposed Registered Certifier and the advice provided in this Report is limited to whether submitted documentation complies with the Building Code of Australia or a legislative requirement.

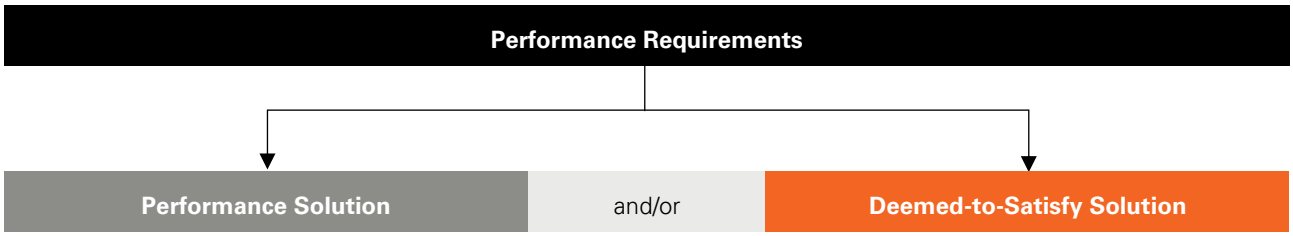
1.6 Relevant Version of the NCC Building Code of Australia

Pursuant to Section 6.28 of the Environmental Planning and Assessment Act 1979, the proposed building is subject to compliance with the relevant requirements of the BCA as in force at the time of the date of invitation for tenders to carry out the Crown building work. The current BCA that is in force is BCA 2022, with BCA 2025 coming in to force 1 May 2025. As the invitation to tender is likely to be / has been lodged after 1 May 2023, this report assesses the design against compliance with the requirements of BCA 2022.

The following parts of the BCA are subject to transitional provisions:

- NCC 2022 Energy Efficiency provisions – 1 October 2023.
- NCC 2022 Condensation Management provisions under BCA Part F8 – 1 October 2023.

1.7 Compliance with the National Construction Code



Compliance with the NCC is achieved by complying with:

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

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

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

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

- Prepare a performance-based design brief in consultation with relevant stakeholders.
- Carry out analysis, using one or more of the Assessment Methods listed in A2G2(2), as proposed by the performance-based design brief.
- Evaluation the results against the acceptance criteria in the performance-based design brief.
- Prepare a final report that includes:
  - All Performance Requirements and/or Deemed-to-Satisfy provisions identified through A2.2(3) or A2G4(3) as applicable; and
  - Identification of all Assessment Methods used; and
  - Details of steps (a) to (c); and
  - Confirmation that the Performance Requirement has been met; and
  - Details of conditions or limitations, if any exist, regarding the Performance Solution.

1.8 Limitations and Exclusions

The limitations and exclusions of this report are as follows:

+ This report is prepared in accordance with the Conflicts of Interest provisions of Part 4 of the Building and Development Certifiers Regulation 2020. BM+G confirm that this report is prepared specifically to address the requirements of Clause 25(5) and (9) of the Regulation with respect to the role of the Registered Certifier. This assessment report is not to be construed as extending any further into providing design advice, which would be contrary to the aims of this legislation.

+ No assessment has been undertaken with respect to the Disability Discrimination Act 1992 (DDA). The building owner needs be satisfied that their obligations under the DDA have been addressed.

+ Please note that whilst the BCA specifies a minimum standard of compliance with AS1428 (Parts 1-3) and Part D4 of the BCA for access and facilities for people with disabilities, compliance with such requirements may not necessarily preclude the possibility of a future complaint made under the DDA 1992. The DDA is a complaint based legislation and is presently not identified by the State Building Codes and Regulations. In this regard the building owner should be satisfied that their obligations under the DDA have been addressed.

+ No assessment has been undertaken with respect to the following areas of the NCC:

  - Structural
  - Weatherproofing
  - Waterproofing
  - Acoustic
  - Passive Fire Protection
  - DDA / Accessibility
  - Section J / ESD
  - Fire Safety Engineering

+ No assessment has been undertaken with respect to SEPP (Housing) 2021. It is understood that suitably qualified consultants will be engaged to determine the relevance of any Council planning requirements or SEPP requirements and provided detailed assessment reports where applicable.

  + Where relevant to this development, it is assumed that these assessments will be undertaken by others.

+ This report does not consider BCA Part G5 (Volume 1) which makes provision for construction of buildings in bushfire-prone areas, therefore no assessment has been undertaken in consideration of RFS, Planning for Bushfire Protection and AS 3959. Where Part G is applicable to the site, then it is required that assessment / due diligence is undertaken by a specialist consultant to verify compliance.

+ This report does not constitute a detailed assessment of the architectural documentation against the requirements of Section J. It is understood that a suitably qualified consultant will be engaged to determine compliance in this regard.

+ BM+G has not undertaken an assessment of any Performance Solution Reports at the time of the preparation of this report.

+ The Report does not address matters in relation to the following Local Government Act and Regulations:

  - Work Health and Safety Act and Regulations.
  - Work Cover Authority requirements.
  - Water, drainage, gas, telecommunications and electricity supply authority requirements.
  - Disability Discrimination Act 1992.

+ BM+G cannot guarantee acceptance of this report by Local Council, Fire & Rescue NSW or other approval authorities.

+ This report may not be relied upon under the provisions of the Design and Building Practitioners Act & Regulation for the purposes of issuing a Design Compliance Declaration.

+ No part of this document may be reproduced in any form or by any means without written permission from BM+G. This report is based solely on client instructions, and therefore should not be used by any third party without prior knowledge of such instructions.

1.9 Report Terminology

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

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

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

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

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

Construction Type – The construction type is a measure of a buildings ability to resist a fire. The minimum type of fire-resisting construction of a building must be that specified in Table C2D2 and Specification 5, except as allowed for:

- certain Class 2, 3 or 9c buildings in C2D6; and
- a Class 4 part of a building located on the top storey in C2D4(2); and
- open spectator stands and indoor sports stadiums in C2D8.

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

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

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

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

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

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

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

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

- structural adequacy; and
- integrity; and
- insulation.

and expressed in that order.

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

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

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

- **Horizontal exit:** A required doorway between 2 parts of a building separated from each other by a fire wall.

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

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

- that is open to the sky; and
- to which access is provided, other than access only for maintenance; and
- that is not open space or directly connected with open space.

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

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

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

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

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

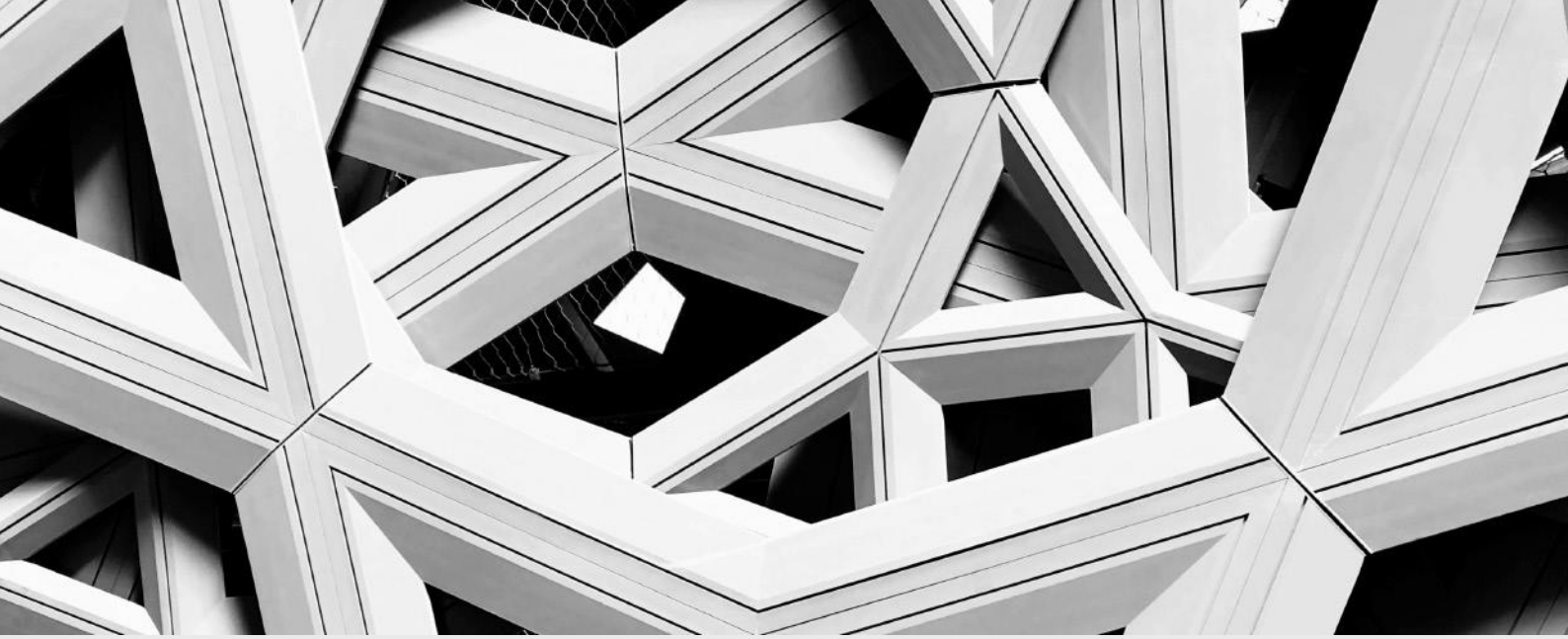
Compliance with the Performance Requirements can only be achieved by-

- complying with the Deemed-to-Satisfy Provisions; or
- formulating an Alternative Solution which-
  - complies with the Performance Requirements; or
  - is shown to be at least equivalent to the Deemed-to-Satisfy Provisions; or
- a combination of the above.

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

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

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

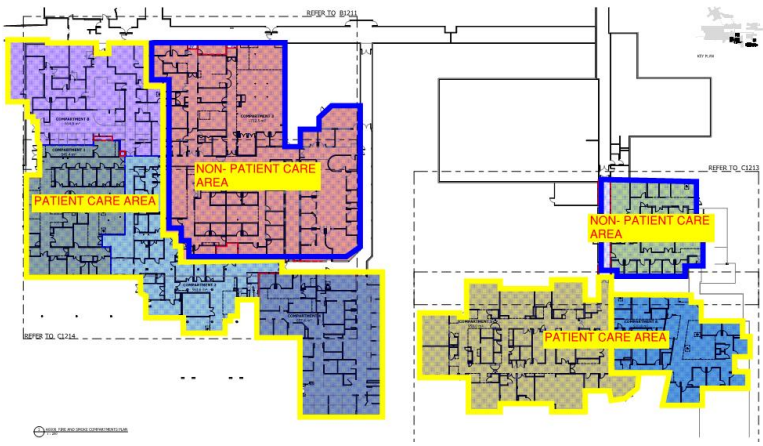


2.0 Building Characteristics

2.1 Proposed Development

The proposed development consists of redevelopment of the various existing clinical wards and health care units within Block A of Wyong Hospital. These works, undertaken as part of Stage 3 of the hospital redevelopment, will accommodate the following health care facilities; Pathology, Wyong Women's Centre Clinic, Nunyara Aboriginal Health Unit, Carer Support Unit and Cancer Day Unit as well as new Medical Staff Workspaces.

The building is classified as follows:

BCA Classifications:	Class 9a (Patient Care Area – Cancer Day Unit, Wyong Womens Centre, Numara Aboriginal Health Unit), Class 9a (Non-Patient Care Area – Carer support unit, Medical staff workspaces, pathology, ,) 
Rise in Storeys:	One (1) – Block A
Storeys Contained:	Two (2) – Roof top plant areas

Type of Construction:	Type C Construction – Pending limitations under C3D3 & C3D6 of the BCA
Importance Level (Structural)	IL4
Sprinkler Protected Throughout	No
Effective Height	<12m – works don't seek to alter any the effective height of the building.
Floor Area	TBC – Architect to review and confirm
Largest Fire Compartment	TBC – Fire compartmentation plan to be finalised
Climate Zone	Zone 5

Areas identified as being a Patient Care Area nominated in the table above have been confirmed in conjunction with the project team based on the activities and occupant characteristics.

2.2 Fire Compartment Floor Area Limitations

Maximum size of fire compartment/atria is:

+ Classification		+ Type A	+ Type B	+ Type C
6, 7, 8 or 9a	Max. floor area	5,000m^2	3,500m^2	2,000m^2
	Max. volume	30,000m^3	21,000m^3	21,000m^3
5, 9b or 9c	Max. floor area	8,000m^2	5,500m^2	3,000m^2
	Max. volume	48,000m^3	33,000m^3	18,000m^3

2.3 Distance to Fire Source Features

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

+ Elevation	+ Fire Source Feature	+ Distance
North	TBC – site plan to be provided	TBC – site plan to be provided
East	TBC – site plan to be provided	TBC – site plan to be provided
West	TBC – site plan to be provided	TBC – site plan to be provided
South	TBC – site plan to be provided	TBC – site plan to be provided

The works do not involve the construction of any new buildings and relate to the refurbishment of existing building stock only.

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

3.0 BCA Assessment

We note the following BCA compliance matters with relation to proposed building works are capable of complying with the BCA. Please note that this is not a full list of BCA clauses, they are the key requirements that relate to the proposed work and the below should be read in conjunction with the BCA.

3.1 Section B – Structure

Part B1	**Structural Provisions:** + New building works are to comply with the structural provisions of the BCA 2022 and referenced standards including AS 1170. + The structural engineer will need to certify that the structural capacity of any existing building will not be reduced as a result of the new works and that the building is considered structurally adequate for its intended use. + In addition to the above, the loadbearing capacity of existing balustrades (where retained) should be reviewed, particularly with respect to loadings under AS 1170. + 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. **Comment:** Compliance readily achieved design certification along with supporting documentation is to be provided along with the application for Crown Certificate.

3.2 Section C – Fire Resistance

C2D2 / Spec 5	**Type of Construction Required:** The building is required to comply with the requirements of Type C Construction as stated within Specification 5. The table below provides an overview of the requirements of each. Refer to Table 4 of Appendix 1 for the FRL requirements of Type C Construction. **+ Type C Construction:** + External walls (and columns incorporated within) need not achieve an FRL if >3m from a boundary or separate building. Where required, external walls of Type C Construction only require an FRL from the outside and not in both directions. + Floors need not achieve an FRL, subject to S5C3. + Roofs need not achieve an FRL. + Internal columns need not achieve an FRL.

	Comment: All works are contained within an existing part of the Wyong campus which is fire separated off from the multistorey buildings and based on previous base building documentation is considered a separate building for the purpose of the BCA with a Rise In Stories of one (1). Structural engineer will need to review and ensure the design of the proposed works achieve the fire rating requirements for a building of TYPE C construction as required under Specification 5 of the BCA. Design certification to be provided along with the application for Crown Certificate. The project architect and structural engineer to review the location of the proposed fire walls relied upon as part of the works and ensure that there are no members penetrating the compartment walls such as roof members other than roof battens 75x50mm permitted under C3D8 of the BCA. Should there be elements other than those permitted under C3D8 of the BCA this is to be addressed in the proposed works and or rationalised under the Fire Engineered Strategy.
C2D10 / C2D14	**Non-Combustible Building Elements:** All materials and or components incorporated in an external wall or fire-rated wall must be non-combustible. This includes but not limited to: + Any external wall claddings. + Any framing or integral formwork systems. I.e. timber framing, sacrificial formwork, etc. + Any external linings or trims. I.e. external UPVC window linings, timber window blades, etc. + Any sarking or insulation contained within the wall assembly. This is not an exhaustive list, and any element incorporated within any external wall assembly must be identified and approved prior to the issue of a Crown Certificate. Refer to Table 1 in Appendix 1 for the elements required to be non-combustible. Note that these works are subject to NSW HI DGN 32 and as such bonded laminate cladding is not permitted. **Ancillary Elements:** An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible, unless it is in accordance with this clause. **Comment:** Although of TYPE C construction compliance with this clause will be required in accordance with HI guidelines.
C2D11 & Spec. 7	**Fire Hazard Properties:** A schedule of all wall, floor, and ceiling linings along with associated test reports are to be provided for review to ensure compliance with the fire hazard property requirements of the BCA. Noting: + Minimum Group Numbers apply to wall and ceiling linings. AS 5637 test reports must be provided to determine compliance. + Minimum Critical Radiant Flux values apply to floor linings. AS ISO 9239.1 test reports must be provided to determine compliance Refer to Table 2 and 3 in Appendix 1 below for the required fire hazard properties. **Comment:** Architect to review and ensure linings are specified in accordance with the requirements of this clause. Details demonstrating compliance to be provided along with the application for Completion Certificate.
C3D3	**General Floor Area and Volume Limitations:** The building is to achieve fire compartment sizes not in excess of the DtS requirements of this clause. **Comment:** The following maximum fire compartment sizes apply to the building: + 2,000m^2 + 21,000m^3 In addition to the above, further compartmentation limitations are as noted in C3D6 below.. The compartmentation plan will need to be updated to identify the total floor area of each proposed

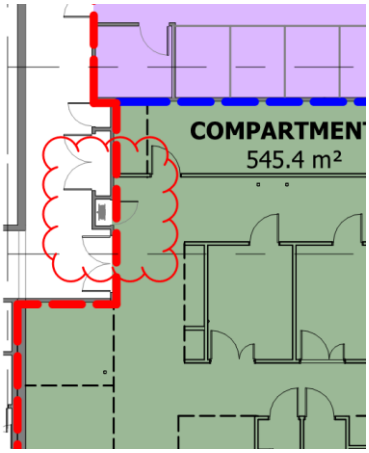
fire compartment bounded by 120minfire walls in addition to the current size of smoke zones, however we note that compliance appears readily achieved in the current documentation.

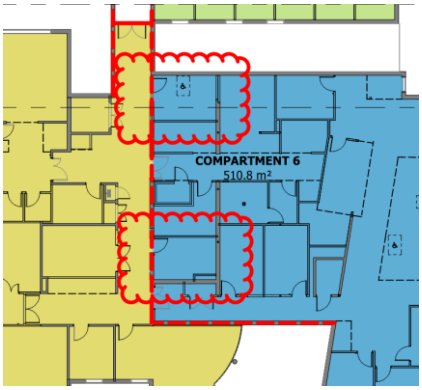
The current compartmentation plan includes a number of discrepancies associated with the location of existing compartment walls where the existing building interfaces with the new works with indicative areas noted below where it appears there is existing compartmentation not currently depicted on the documentation. Architect to review and ensure the location of existing walls are shown on the compartmentation plan.

Figure 1

Refer also comments under C3D6 below regarding additional limitations that apply to patient care areas.

The location of the proposed fire walls are to be positioned to avoid doorways and rooms which will present an issue operationally having all of the door hardware required for a fire/smoke door including signage, seals, self closing devices and the like. Typical areas of concern are as shown below





C3D6

Class 9a Buildings: The following fire and smoke compartmentation requirements apply to Class 9a patient care areas.

+ 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 1,000m², 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

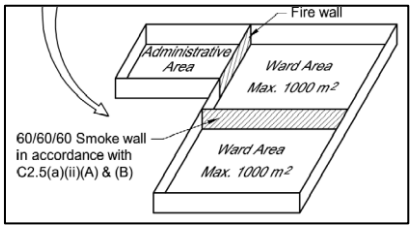


Figure 2

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 11, and

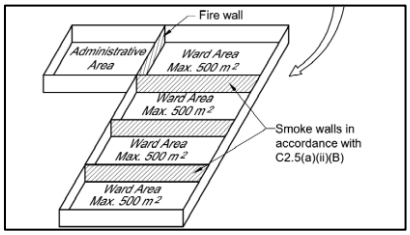


Figure 3

B. Treatment areas must be divided into compartments of not more than 1,000m², by smoke proof walls complying with Specification 11.

+ Consideration of upgrading smoke compartment walls to combined 2-hour fire and smoke walls may be required in order to utilise additional horizontal exits to maintain acceptable egress distances. Refer to Section D2D5 / D2D6.

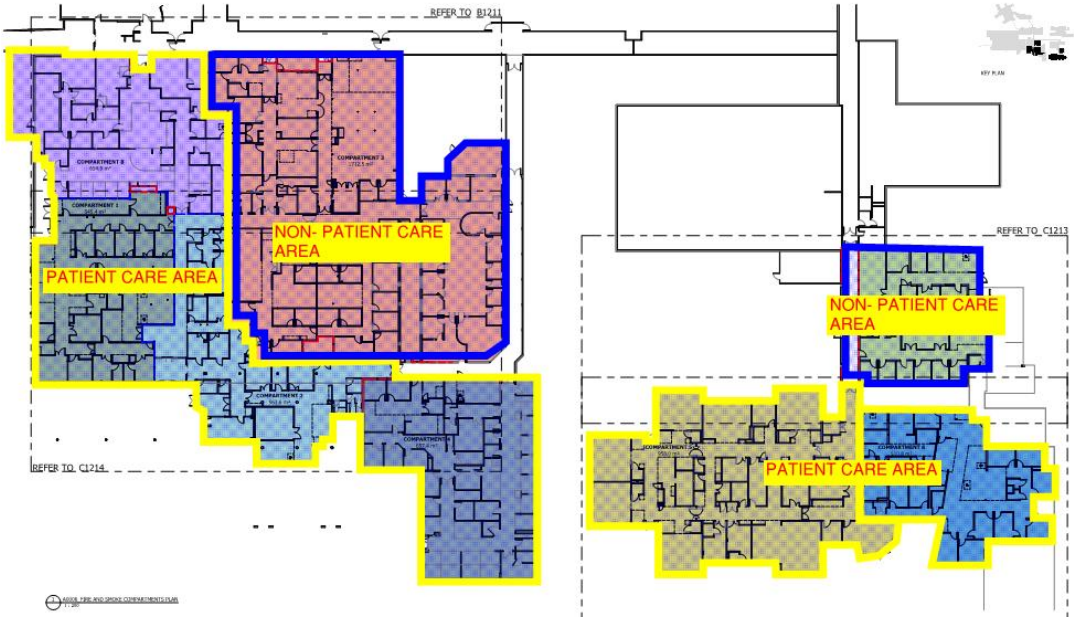
+ All fire walls are considered combined fire and smoke walls.

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

- A kitchen and related food preparation areas having a combined floor area of more than 30m^2.
- A room containing a hyperbaric facility.
- A room used predominately for the storage of medical records having a floor area of more than 10m^2.
- A laundry, where items of equipment are the type that are potential fire sources (e.g. gas fire dryers).

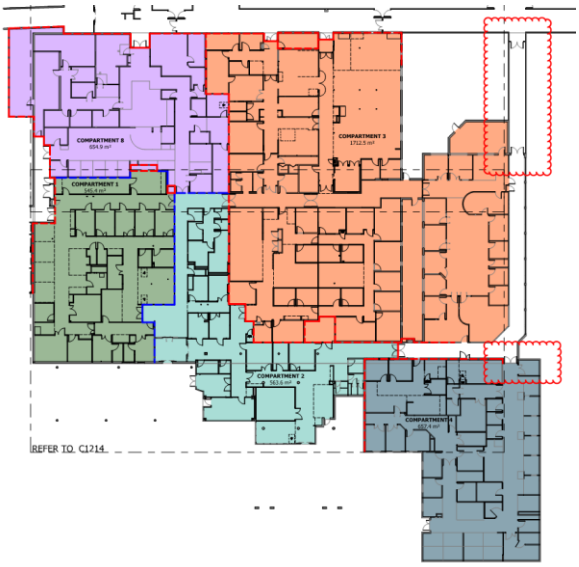
Comment: As noted above, the compartmentation plan needs to be updated to identify all of the sizes of the fire and smoke compartments demonstrating compliance with this clause. Currently the compartmentation plan only identifies the size of the proposed smoke areas. Noting all of the proposed patient care areas comprise only Treatment Spaces a compartmentation table will need to be developed showing the size of 120min compartments and also smoke compartment sizes.

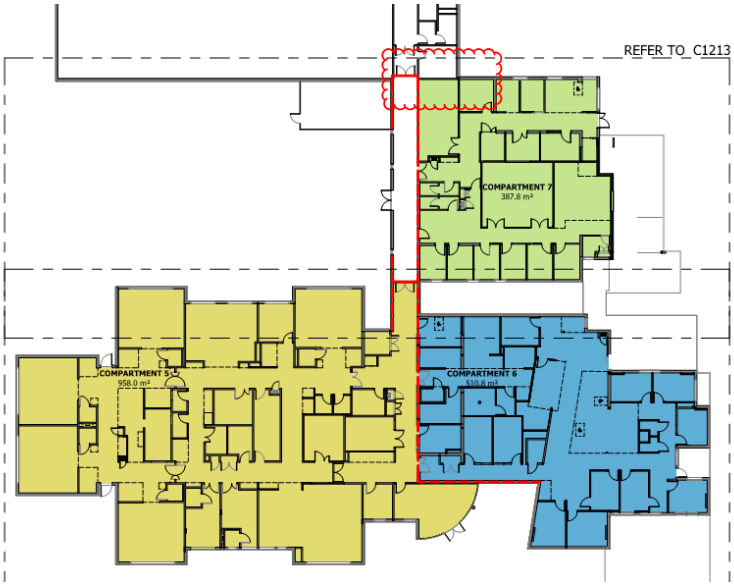
For all of the non-patient care areas shown in the shaded areas in blue below they are to maintain the maximum fire compartment sizes outlined under C3D3 of the BCA namely 2,000m2 and 21,000m3.



In addition, the design is to ensure that compartmentation is maintained so as to achieve fire separation between any patient and non-patient care areas and also that the compartment sizes of any existing areas are not exceeded or any existing compartment sizes are not exacerbated as a result of the proposed works.

With the exception of the below clouded areas where the existing compartmentation is to be confirmed, the proposed compartmentation strategy will readily achieve compliance with the requirements of this clause. Architect to review and ensure details demonstrating compliance are incorporated in the design.





Important note: All fire walls are to be designed as combined fire and smoke walls architect and design consultants to review and ensure adequate protection is incorporated into the design in this regard.

C3D7

Vertical Separation of Openings in External Walls: In a building of Type A construction, any part of a window or other opening in an external wall is above another opening in the storey next below and its vertical projection falls no further than 450 mm outside the lower opening (measured horizontally), the openings must be separated by a fire-rated spandrel, or a horizontal fire-rated extension.

In a non-sprinkler protected Class 9a health care building of Type B Construction, the requirements for separation of openings in external walls under this clause applies.

(Vertical Separation through Vertical Spandrel	Vertical Separation through Vertical Spandrel

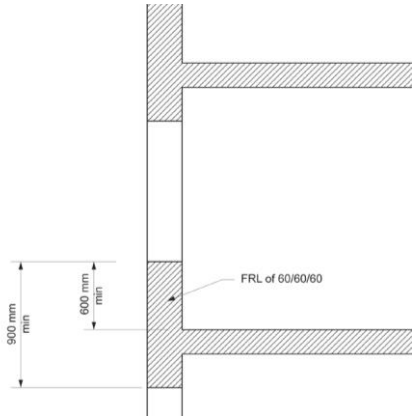


Figure 4

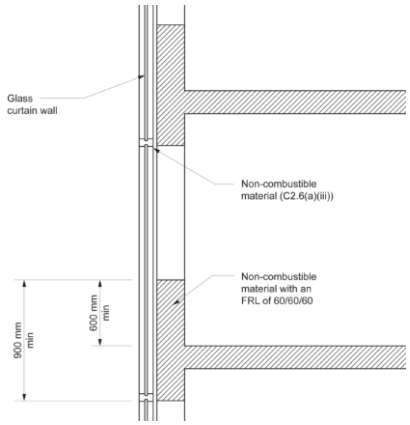


Figure 5

Vertical Separation through Horizontal Projection	Vertical Separation through Horizontal Projection

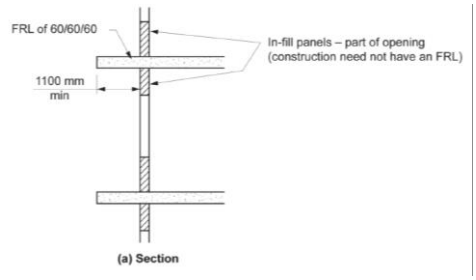


Figure 6

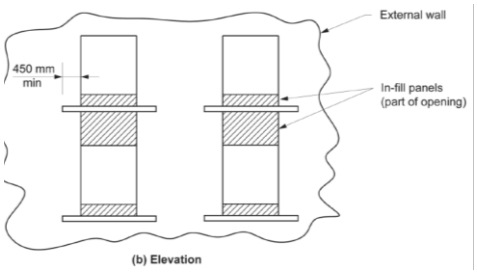


Figure 7

Comment: Does not apply the building is of TYPE C construction.

C3D8

Separation by Fire Walls:

Separation of buildings- A part of a building may be considered separate from the remainder of the building if separated by a fire wall in accordance with the following:

+ The fire wall extends through all storeys and is carried through to the underside of the roof covering.
  - Where roofs of separate buildings are at different heights, the fire wall must extend to the underside of:
  - The higher roof, or >6m above the lower roof.
  - The lower roof if it has an FRL not less than that of the fire wall and no openings closer than 3m to any wall above the lower roof.
  - The lower roof if its covering is non-combustible and the lower part is sprinkler protected.

Separation of fire compartments- A part of a building, separated from the remainder by a fire wall, may be treated as a separate fire compartment if the fire wall extends to the underside of:

+ A floor having an FRL required for a fire wall; or
+ The roof covering.

Comment: Based on the existing arrangement and base building documentation we note that the existing buildings on the campus have been treated as separate buildings for the purpose of the BCA of mixed types of construction. All of the areas subject to refurbishment works comprise single storey buildings of TYPE C construction the works are not to alter this existing arrangement and where the existing compartmentation is to be altered then it must comply with the requirements of this clause to ensure the strategy with respect of separate buildings is maintained. Indicative locations of existing fire compartmentation are as shown below.

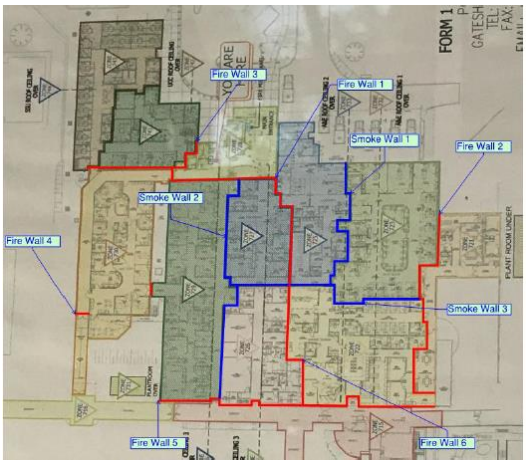


Figure 8

Compliance readily achieved to be reviewed in conjunction with the proposed works. The compartmentation plan developed by DWP appears to be consistent with the existing compartment walls shown above.

Important Note: All new walls or walls altered or relied upon to achieve compliance with the requirements of this clause will need to upgraded to comply with the requirements of this clause.

Structural engineer and architect to review the location of fire walls and structural members to ensure that they don't penetrate the fire wall where in excess of that permitted under the BCA.

C3D9/ C3D10

Separation of Classifications: Where parts of a building with different classifications are located adjacent one another, the fire resisting construction requirements of the most stringent classification apply throughout – unless the classifications are separated via a fire wall with an FRL of that required for the most stringent classification.

Where different classifications are located above and below one another, the floor is required to achieve the FRL of that required for the classification in the storey below.

Comment: Compliance readily achieved; no additional separation will be required under this clause other than that identified elsewhere in this report based on the proposed building characteristics.

C3D13

Separation of Equipment / Electricity Supply Systems: 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. The following equipment required FRL120/120/120 fire separation from the building:

- 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 12 volts and a capacity exceeding 200kWh.

Comment: Services consultants to review and ensure compliance with the requirements of this clause. The works don't show any new main switch boards or substations being proposed and it is assumed the works will rely on existing infrastructure. Where the works require the reticulation of services to existing main switch rooms or substations all new works will need to comply with current BCA requirements.

In addition to electrical equipment where services under this clause are introduced, they are required to be separated off from the remainder of the building by 120min construction. The design currently shows that the comms rooms are fire separated off from the remainder of the building as such compliance is readily achieved. Services consultants to confirm any other equipment to which this clause applies and incorporate separation accordingly.

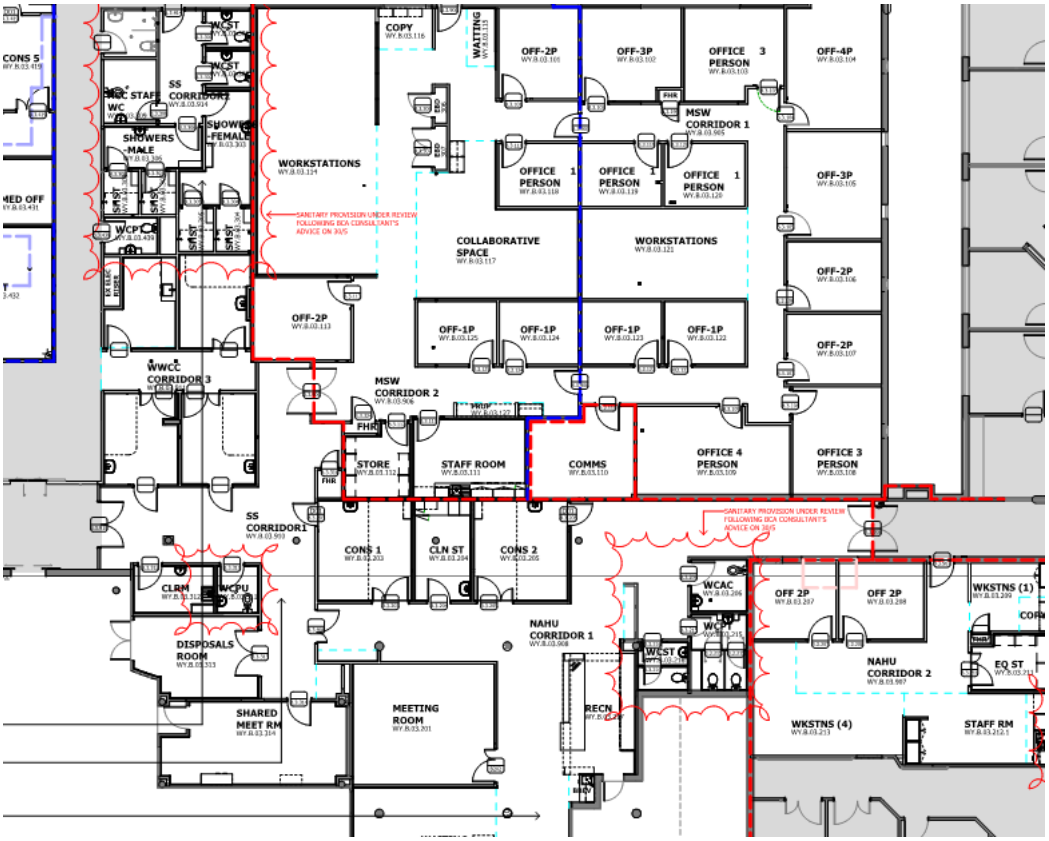


Figure 9

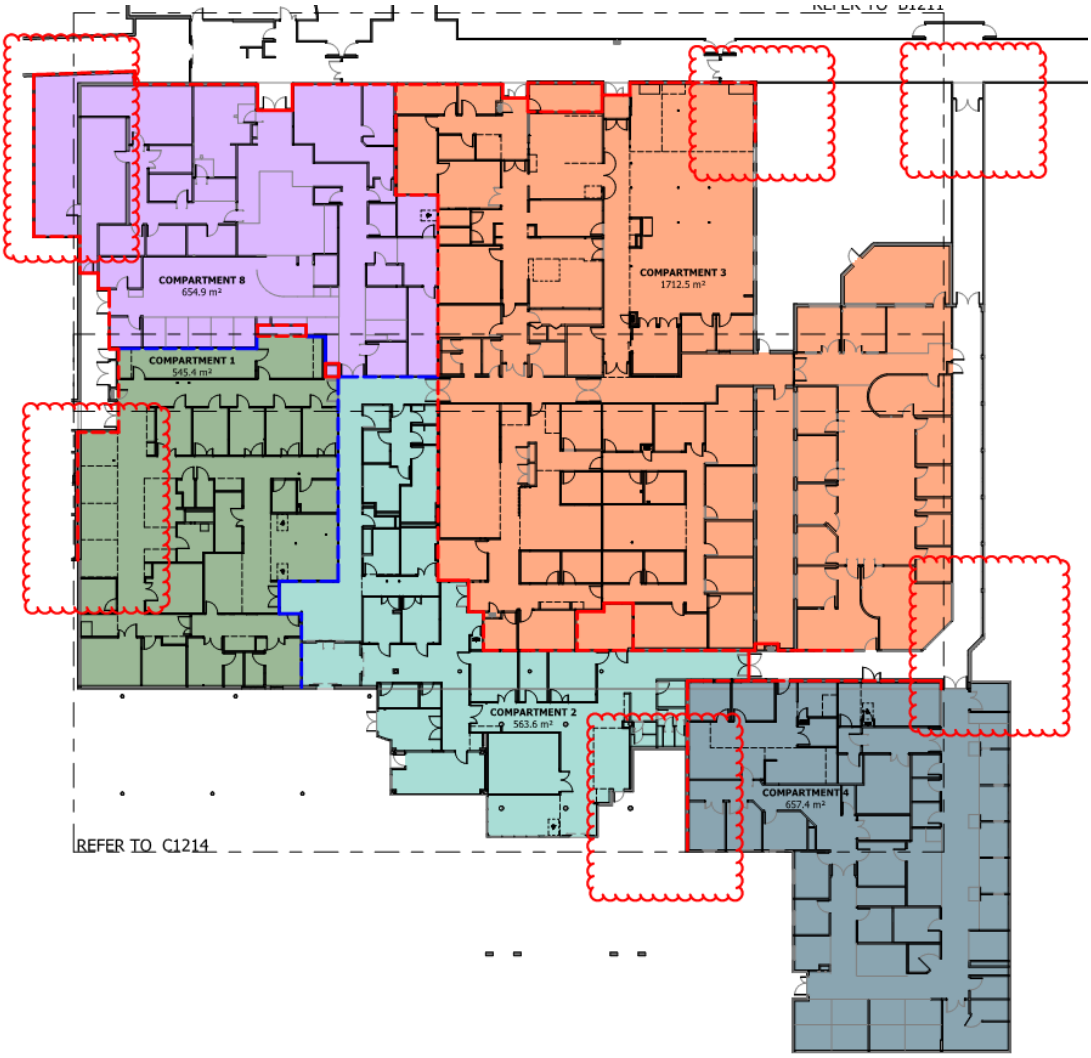
Any omission of Fire Hose Reel coverage to these rooms will need to be addressed under the Fire Engineered Strategy.

C4D4

Separation of external walls and associated openings in different fire compartments: External walls and openings of adjacent fire compartments must be protected in accordance with this clause where exposed to one another. The extent of fire-rating is driven by the angle of exposure, refer to the below table for the applicable distances.

+ Angle between walls	+ Min. Distance
0^0 (walls opposite)	6m
More than 0^0 to 45^0	5m
More than 45^0 to 90^0	4m
More than 90^0 to 135^0	3m
More than 135^0 to 180^0	2m
0^0 or more	Nil

Comment: Compliance readily achieved, focusing on the new works, only the following areas have been identified as having exposure between different fire compartments.


COMPARTMENT 8
654.9 m²
COMPARTMENT 3
1712.5 m²
COMPARTMENT 1
545.4 m²
COMPARTMENT 2
563.6 m²
COMPARTMENT 4
657.4 m²
REFER TO C1214

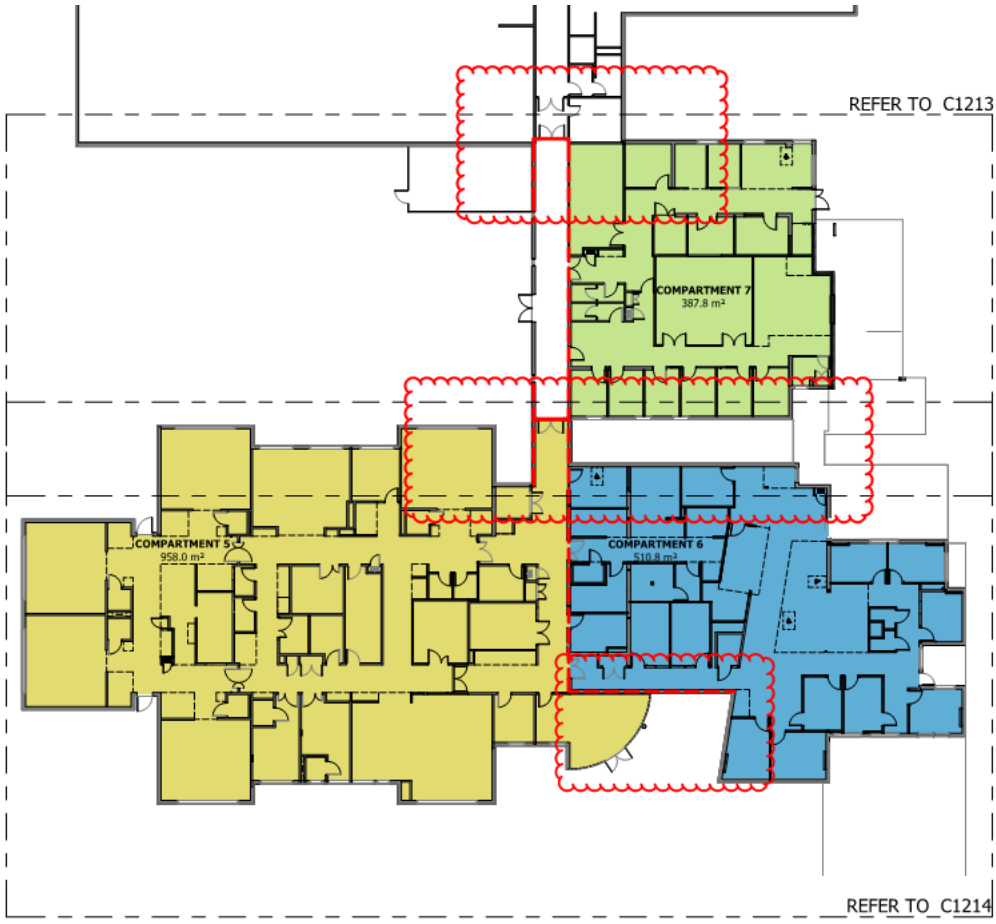


Figure 10

As part of the proposed works exposure between compartments is to be addressed in the areas of refurbishment works as outlined above. The location of the compartment walls in the cancer day unit will be subject to further refinement.

There is scope for the exposure to be addressed through the introduction of two-way protection to one of the two opposing walls in lieu of protecting both under a Fire Engineered Strategy. Further consultation with the projects fire safety engineer is required in this regard.

Spec. 12

Fire Doors, Smoke Doors, Fire Windows and Shutters: Fire doors and smoke doors must comply with the requirements of this specification.

Comment: Compliance readily achieved. Subject to further refinement as part of the design development and finalisation of the compartmentation plan.

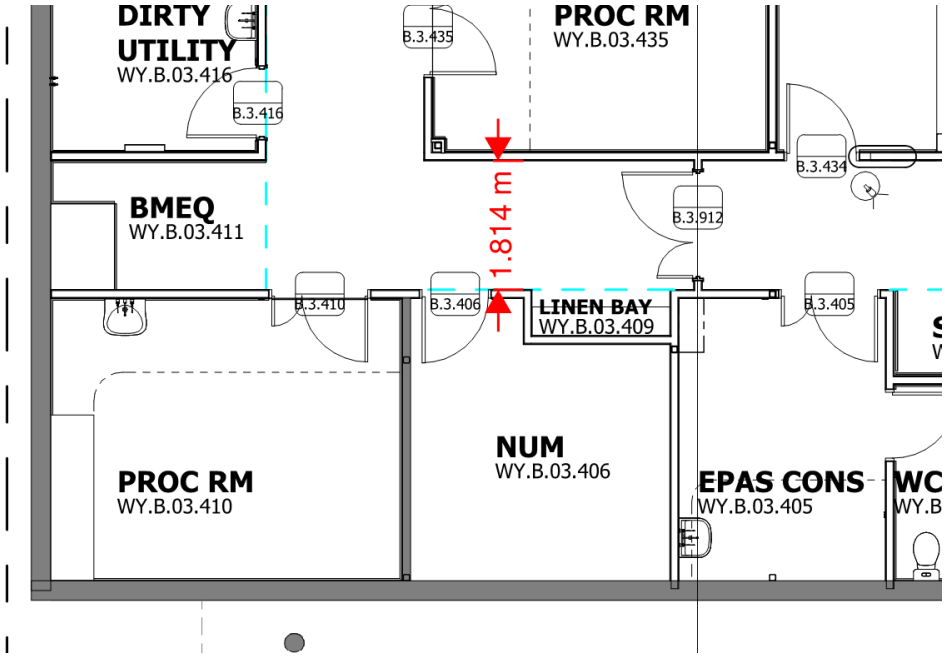
Single swing horizontal exits or smoke doors are to be addressed in the Fire Engineering Strategy where against the direction of travel.

Any dual swing doors are to have smoke leakage addressed under the Fire Engineering Strategy.

3.4 Parts D – Provision for Escape and Construction of Exits

D2D3	**Number of Exits Required:** The building is required to be provided with 2 exits to each storey. **Comment:** A minimum of two exits are to be maintained from all parts of the proposed works and also existing horizontal exits between existing parts of the building and the new works will need to be maintained in order to maintain compliance. Compliance is readily achieved having regards to the proposed works based on the location of existing compartment walls.
D2D5	**Exit Travel Distances:** Egress from the building will rely on a combination of exit stairways and horizontal exits across the floor plate. The following is noted in relation to egress: + Travel distances are permitted to extend to 20m to a point of choice and 40m to a single exit in non-patient care areas. + Travel distances in patient care areas are permitted to extend to 12m to a point of choice and 30m to a single exit. **Comment:** Compliance is readily achieved based on the fire compartment plans utilising the proposed fire doors within the 120min compartment walls as Horizontal Exits.
D2D5	**Distance Between Alternative Exits:** The maximum distance permitted between alternative exits in Class 9 areas is 60m. This must be measured back through the point of choice. Alternative egress paths are not permitted to converge to less than 6m, and alternative exits must be located more than 9m apart. Refer to D2D6 travel distance assessment below. **Comment:** Compliance is readily achieved based on the fire compartment plans utilising the proposed fire doors within the 120min compartment walls as Horizontal Exits.

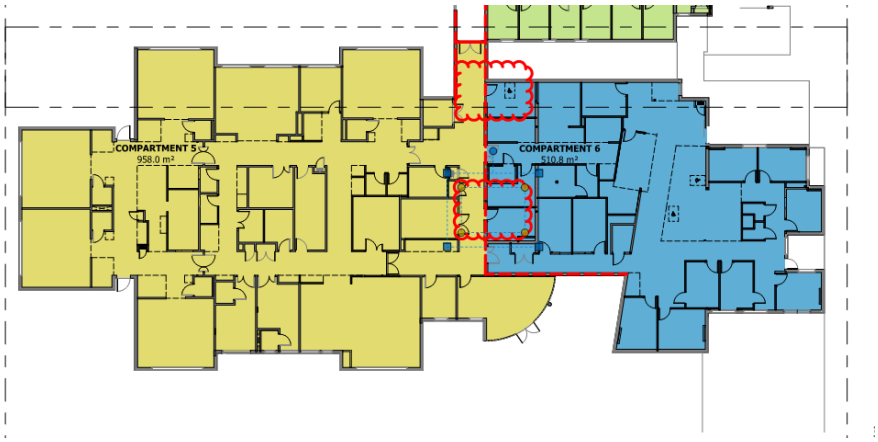
D2D7/ D2D8/ D2D9/ D2D10/ D2D11	**Dimensions of Paths of Travel to an Exit:** The minimum clear height through all egress paths is required to be no less than 2m, and a minimum of 1m wide (this width dimension is measured clear of any obstructions such as handrails and joinery). Aggregate exit widths must be achieved which are driven by occupancy numbers of each floor.
	
	In patient care areas through which patients would normally be transported in beds:
	
	+ if the doorway provides access to, or from, a corridor of width
	  - less than 2.2 m — 1200 mm; or
	  - 2.2 m or greater — 1070 mm.
	
	Any horizontal exit in a patient care area is to achieve a clear unobstructed width of not less than 1250mm.
	
	Comment: Architect to ensure the minimum corridor width throughout all corridors for patient bed movement currently it does not appear as though the corridor width is sufficient to achieve the minimum 1.8m width when the required handrails are installed under D3D22 in the corridors. Architect to review and ensure compliance in the design and provide updated architectural documentation. See typical example below.

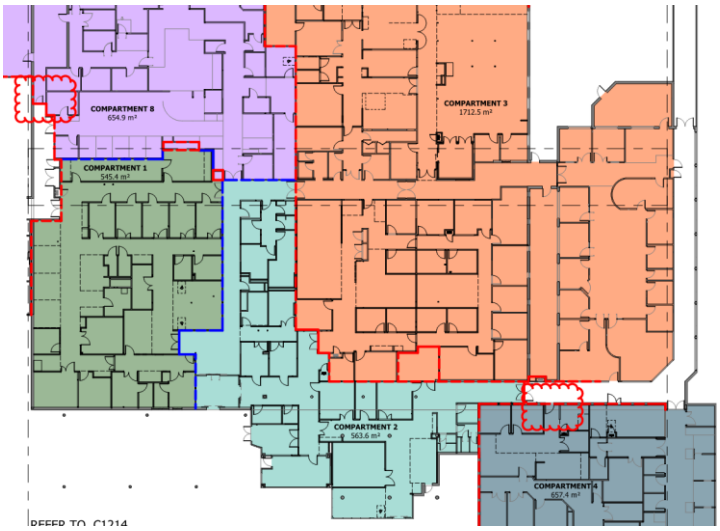


Door schedule to be provided along with the application for Crown Certificate demonstrating compliance.

The documentation shows that the minimum 1m clear unobstructed width is generally achieved throughout as such compliance is readily achieved – to be coordinated with the proposed fitout works and any fixed furniture and the like.

Particular attention needs to be paid to any single doors proposed to be used as a Horizontal Exit which are required to achieve a minimum width of 1250mm. A number of single fire doors are noted in the design and are required for egress as such these are to be increased in width or addressed in the Fire Engineering Strategy where not used for bed movement.





a	**Travel via Fire Isolated Exits:** A fire isolated stairway is required to provide independent egress from each storey that it serves and discharge directly – + To a road open space; or + To a point – - In a storey or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least 2/3 of its perimeter; and - From which an unimpeded path of travel, not further than 20m, is available to a road or open space External walls and openings exposed to the discharge path of a fire-isolated stairway (less than 6m, measured perpendicular to the path of travel) must be protected with a 1-hour fire-rating for external walls, and C4D5 for openings. **Comment:** Not applicable. The works do not propose to alter any of the existing fire isolated exits.
D2D14	**Travel Via Non Fire Isolated Required Stairways:** A non-fire-isolated stairway or non-fire-isolated ramp serving as a required exit must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided. The distance from any point on the floor to a point of road or open space must not exceed 80m. The stair must discharge at a point not more than 15m to a point of road or open space, or from a fire-isolated passage, or 30m from one of two such points. **Comment:** Not applicable. There are no non-fire isolated exits proposed as part of the works, also the works do not seek to alter any of the existing non-fire isolated exits.
D2D14	**Discharge of Exits:** In accordance with the DTS provisions of the BCA, the discharge of exits to open space cannot incorporate any steps to connect the discharge point to the adjoining roadway. Verification will be required as to whether there are any proposed stairways connecting the exits to the public roadways that a person is required to travel via (where there is no alternative ramp). Where ramps are used, the gradient cannot exceed 1:8 at any part or 1:14 where the ramp is also used for access for a person with a disability. **Comment:** Egress pathways to be shown on architectural documentation between the building and the adjoining road this includes showing the gradients locations of ramps and stairways and the like.

Currently it is not clear how egress to the adjoining public road is achieved and whether it necessitates egress back via the adjoining building given it is located on a raised area. The project team have confirmed that egress is available via a flat and level surface to the adjoining road as indicated by the green arrows below.

Figure 11

Figure 12

Where stairways are proposed these are to be addressed by way of a Fire Engineered strategy. Compliance is readily achieved this is to be reviewed and confirmed as part of the design development.

D2D16

Horizontal Exits: Horizontal exits will be required to reduce egress distances to an acceptable level. The location of horizontal exits will be refined in subsequent design stages to achieve compliant travel distances.

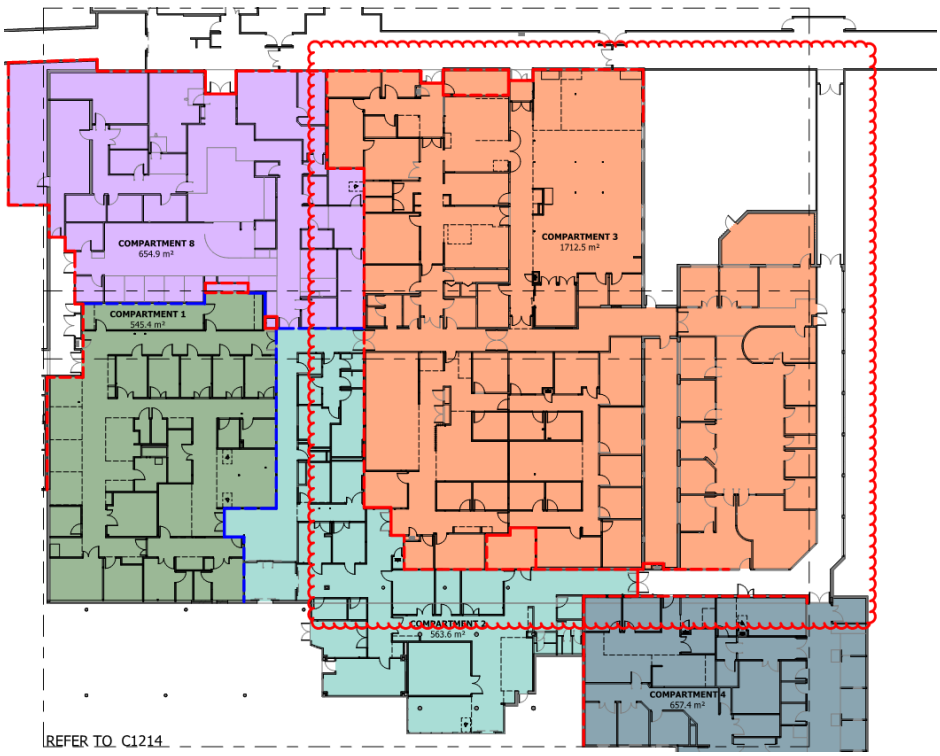
It is however anticipated however that given the layout of the building egress via multiple fire compartments without another exit other than a HE will occur in multiple locations.

Compartmentation strategy to be developed and coordinated with BM+G and other project stakeholders.

Comment: The proposed works will maintain existing fire rated walls ensuring that egress from existing parts of the building remains not impacted by the works and as such compliance being maintained from the exiting building.

To achieve acceptable travel distances existing fire walls will be relied upon as horizontal exits.

The design currently requires egress via multiple fire compartments to reach a fire compartment with a door direct to open space and or a fire isolated exit. This arrangement is to be addressed by way of a fire engineered strategy. The below compartments show where this applies to the subject development. This solution is on the basis that egress via multiple fire compartments lead to an exit other than a Horizontal Exit and not requiring egress back through the same compartment and or a dead end fire compartment.



D3D14/ D3D15/ D3D16/ D3D22

Stairways, Balustrades, and Handrails:

Stairways:

- A stairway must have no more than 18, nor less than 2, risers in each flight.
- Landings must be not less than 750mm in length.
- In a Class 9b building, not more than 36 risers in consecutive flights without a change in direction of at least 30°.

Balustrades:

- All balustrades must achieve a minimum height of 1m above finished floor level.
- Balustrades (except for fire-isolated stairs) must not permit a 125mm sphere to pass through any opening.
- Balustrades in fire-isolated exits must comprise no gap larger than 150mm between nosing line (or landing) and bottom rail. Other openings in the balustrade must not exceed 460mm. If the fire-isolated exit also functions as a circulation stair, the 125mm gap requirement applies in lieu of these reduced provisions.
- Where fire-isolated stairs are also intended to be used as circulation stairs, they must be designed to comply with the 125mm sphere balustrade requirements.

Handrails:

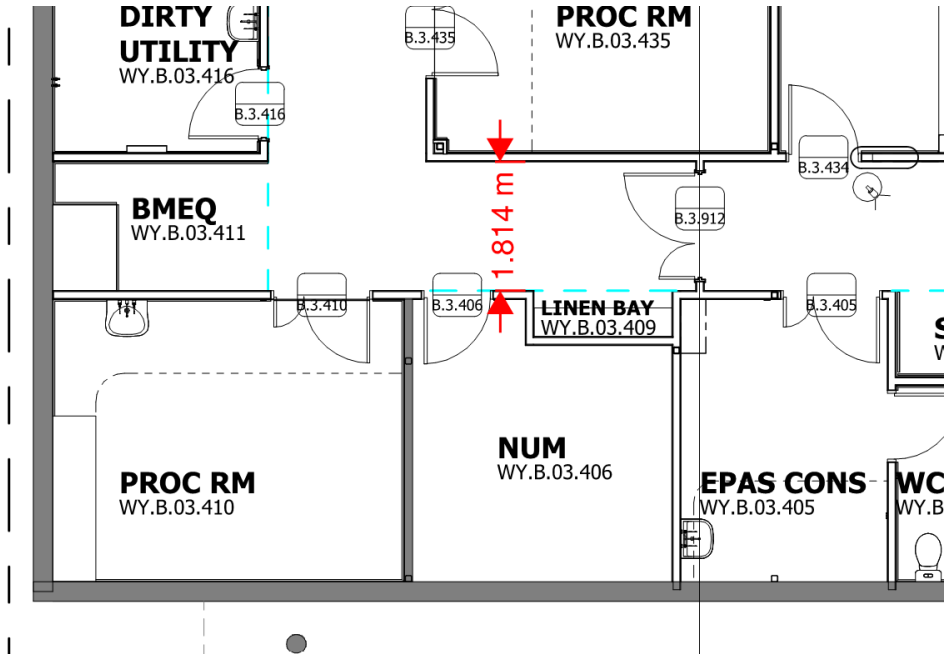
- Handrails must be located on both sides of all stairways and ramps except for fire-isolated stairs. Handrails must comply with AS 1428.1 as relevant.
- Where fire-isolated stairs are also intended to be used as circulation stairs, they must be designed to comply fully with AS 1428.1 – 2009 with respect to handrails.
- Handrails are required to be provided to at least one side of every passageway or corridor used by patients and where practicable continuous for their full length.

Landings:

- The area of any landing must be sufficient to move a stretcher, 2 m long and 600 mm 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 change of direction of 180°, and the landing a clear width of not less than 1.6 m and a clear length of not less than 2.7 m.

Comment: The works don't include the additional of any ramps, stairways or the like based on the current design documentation, this is to be confirmed and where applicable compliance with this part will be required.

Handrails are not currently documented to the corridors within the building used by patients as shown below. In this regard, handrails are to be documented on the architectural documentation and provided to BMG for review and comment architect to coordinate the location of these handrails and ensure that they do not encroach on the minimum clear unobstructed width requirements of the BCA including the minimum 1.8m corridor width for those used for bed movement.



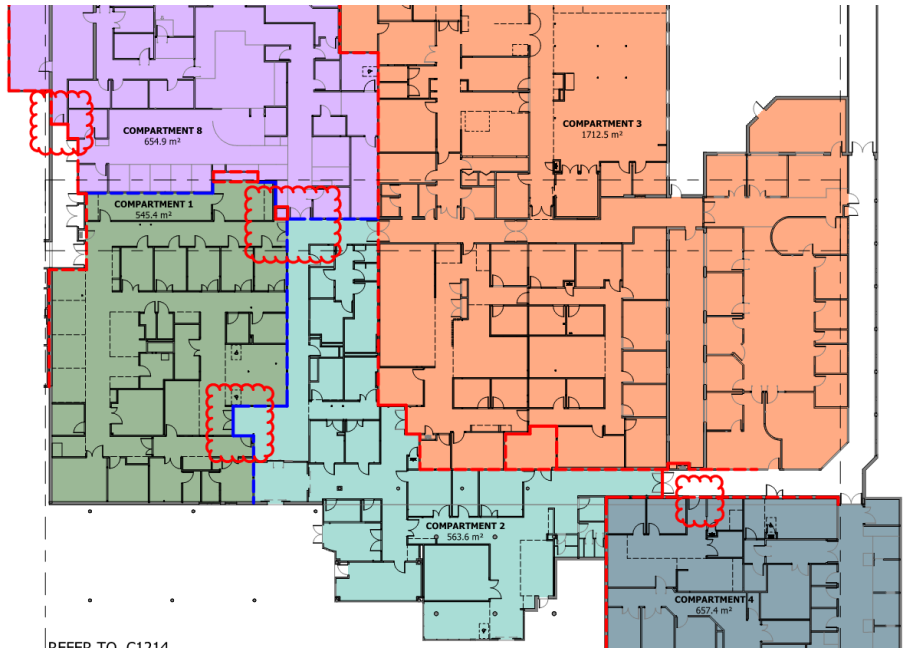
D3D24

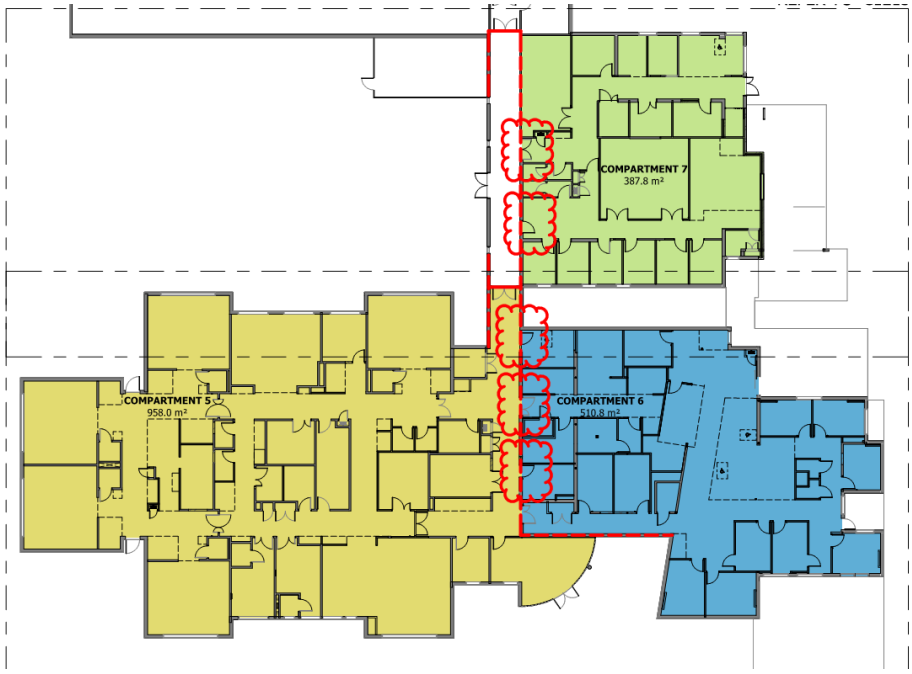
Doorways and Doors: Doorways located in a patient care area must not incorporate a sliding door unless that door leads directly to open space and is able to be manually opened under a force of not more than 110 N and open automatically upon fire trip or power failure.

Doors in a path of travel in patient care areas are not permitted to be sliding doors.

Comment: The documentation does not show any proposed sliding doors within patient care areas other than the final egress doors as such compliance is achieved.

All final egress doors and horizontal exits and smoke doors located in a path of travel to an exit are required to swing in the direction of travel we note that there are a number of doors which currently swing against the direction of travel which will need to be further coordinated and where unable to be re-swung or provided with a dual swing door this will need to be addressed by way of a Fire Engineered Strategy. Shown Below.





It is recommended that the design incorporate dual swing doors and smoke leakage be addressed in the Fire Engineering Report to all patient care areas.

Where doors swing against the direction of egress in non-patient care areas the direction of swing can be addressed under the Fire Engineered Strategy.

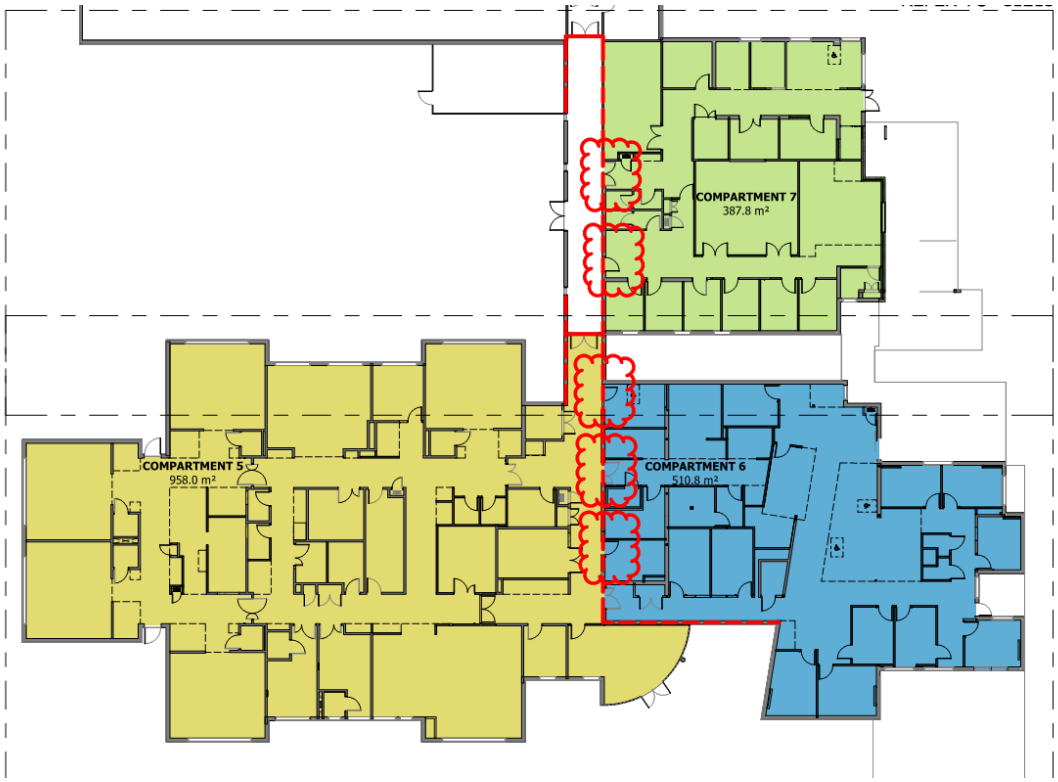
Part D4

Access for People with a Disability: The extent of access required depends on the classification of the building. Buildings and parts of buildings must be accessible as set out in D4D2 unless exempted by Clause D4D4. The building is required to comply with AS1428.1-2009.

Comment: We understand an access consultant has been engaged to provide advice in this regard / Refer to separate Access Report.

3.5 Section E – Services and Equipment

E1D1	**Fire Hydrants:** Fire hydrant coverage is required to be provided to the building in accordance with AS2419.1–2021. **Comment:** Compliance with AS 2419.1-2021 is required with respect of the new works in terms of performance, location and coverage requirements. Hydraulic consultant to review and provide details demonstrating compliance. We note that the existing building has a combination of hydrant systems with parts being Ord 70 which won't be capable of supporting the new works. In this regard the hydraulic engineer is to provide design advice on how compliance will be achieved without compromising the existing system and parts of the building. This may include provision of new external hydrants, inclusion of additional outlets with pressure reduction valves and the like. Details to be provided to BMG for review and comment. Design drawings and certification will need to be provided along with the application for Crown Certificate in this regard. Architect and services consultant to review and ensure details are included and coordinated into the architectural plans in this regard.
E1D3	**Fire Hose Reels:** Fire hose reels are required to be provided to areas other than any Class 5 buildings / parts. Where required to be provided, fire hose reels are to comply with AS 2441 – 2005. **Comment:** Compliance readily achieved, the new works are to be services by a Fire Hose Reel system complying with AS 2441-2005 this includes locations performance and coverage. Design drawings and certification will need to be provided along with the application for Crown Certificate in this regard. Architect and services consultant to review and ensure details are included and coordinated into the architectural plans in this regard. Hydraulic consultant to review any shortfalls with respect of the Fire Hose Reel system i.e., coverage to any fire separated comms rooms and the like where it is proposed to omit coverage from these rooms this is to be addressed by way of a fire engineered strategy. A number of clear compliance issues are identified in the current documentation which will need to be addressed under this strategy. (See below)



E1D4 – E1D13	**Sprinklers:** An automatic fire sprinkler system is required to be provided in accordance with AS 2118.1 – 2017. / AS 2118.6 – 2012. **Comment:** The building is a singe storey class 9a part as such sprinklers are not required under the DTS provisions of the BCA. Notwithstanding where sprinklers are not proposed in accordance with HI policy's then a dispensation is to be sought by the project team. Details to be provided to BMG with the application for Crown Certificate in this regard.
E1D14	**Fire Extinguishers:** To be provided and designed in accordance with AS 2444-2001. Powder Type fire extinguishers are not permitted to be provided within any patient care areas. **Comment:** Compliance readily achieved details to be provided along with the application for Crown Certificate.
E2D4/ E2D9/ E2D11/ E2D12/ E2D13	**Smoke Hazard Management:** The following smoke hazard management systems are to be installed to the building and will be required throughout: + An Automatic Fire Detection and Alarm System and Building Occupant Warning System complying with AS 1670.1 – 2018 and S20C4 (5m grid) S20C6 (10m grid). + Automatic shut-down of mechanical air handling systems upon fire trip in accordance with Section 5 and 6 of AS 1668.1. **Comment:** The new works are to be provided with the above smoke hazard management systems at a minimum and any additional required under the Fire Engineering strategy. The new works are to be interfaced with the existing fire systems onsite. We note that there is an existing central fire control room (non-required) which the new works will need to be interfaced with. In this regard a dry fire consultant is to review and provide design details to BMG on how this is to be achieved. The works appear to remove the exiting fire panels as such it is also to be confirmed where the new fire panels will be located and this is to be shown on the architectural documentation.

E4D2 - E4D8	**Emergency Lighting and Exits Signs:** Emergency lighting and exit signage to be provided in accordance with E4D2 - E4D5 complying with AS 2293.1 – 2018. **Comment:** Compliance readily achieved details to be provided along with the application for Crown Certificate.
E4D9	**Emergency Warning & Intercom Systems (EWIS):** An Emergency Warning and Intercom System is required to be provided in accordance with AS 1670.4 – 2018. **Comment:** Compliance readily achieved details to be provided along with the application for Crown Certificate. The new works are to be interfaced with the existing fire systems onsite. We note that there is an existing central fire control room (non-required) which the new works will need to be interfaced with. In this regard a dry fire consultant is to review and provide design details to BMG on how this is to be achieved. The works appear to remove the exiting fire panels as such it is also to be confirmed where the new fire panels will be located, and this is to be shown on the architectural documentation.

3.6 Section F – Health and Amenity

Part F1	**Damp and Weatherproofing:** Damp and weatherproofing to comply with the prescriptive requirements of this part. **Comment:** Compliance readily achieved, where the existing arrangement is altered design details and certification is to be provided to BMG for review and comment.
Part F2	**Wet Areas and Overflow Protection:** Where urinals are installed, an impervious wall lining must be provided up to the top of the urinal. Where any floor waste is installed (including floor wastes not required by the BCA), they must be provided with falls in accordance with F2D3. **Comment:** Compliance readily achieved architect to review and ensure compliance in the design
Part F3	**Roof and Wall Cladding:** This section contains DtS provisions for the weatherproofing of certain external wall and roof designs. + Roof coverings must comply with F3D2. + Sarking must comply with F3D3. + Glazed assemblies must comply with F3D4. + Wall cladding must comply with F3D5. **Comment:** A Performance Solution is required to be obtained in relation to the departures from F3D5 with respect to wall cladding systems. A Façade Engineer is required to prepare the Performance Based Design Brief (PBDB) and Performance Solution Report.
Part F4	Sanitary Facilities: Sanitary facilities must be provided to comply with the requirements of F4D2 and F4D4 as applicable for the subject part. The following facilities are also required to be provided: + one kitchen or other adequate facility for the preparation and cooking or reheating of food including a kitchen sink and washbasin; and + laundry facilities for the cleansing and drying of linen and clothing or adequate facilities for holding and dispatch or treatment of soiled linen and clothing, sanitary products and the like and the receipt and storage of clean linen; and + one shower for each 8 patients or part thereof; and

- one island-type plunge bath in each storey containing a ward area.

Comment: Based on the population numbers provided to BMG to date the required number of facilities are as outlined in the table below. Project architect is to provide details demonstrating compliance and location of the designated sanitary facilities. For public facilities at a minimum 1x accessible and 1x male and female ambulant facilities is to be allowed for in general areas on each storey.

Department	Staff		Patient	
	Male	Female	Male	Female
Pathology Class 9a non-patient	13	13	0	0
	1 x unisex accessible facility 1 x Urinal for male use Note this can be a standard WC			
Medical Works Space This space appears to all be class 5 administration	27	27	0	0
	1 x unisex accessible facility 1 x female ambulant + basin 1 x male ambulant + 1 x urinal + 1 x basin			
Cancer Day Unit This space appears to all be class 9a treatment space	25	25	23	23
	1 x unisex accessible facility 1 x female ambulant + basin 1 x male ambulant + basin 1 x Urinal for male use. Note this can be a standard WC		1 x unisex accessible facility 1 x female ambulant + 1 x basin 1 x female standard facility + 1 x basin 1 x male ambulant + 1 x basin 1 x male standard facility + 1 x basin 6 x Showers	
Cancers Support Unit This space appears to all be class 5 administration use	1	1	0	0
	1 x unisex accessible facility			
Nunyara Aboriginal Health Unit Class 9a non-patient	8	8	8	8
	1 x unisex accessible facility **Note** (max 10 staff) or female ambulant required + basin for additional		1 x unisex accessible facility 1 x female ambulant + 1 x basin 1 x male ambulant + 1 x basin	
Wyong Women's Clinics Class 9a non-patient	13	13		22
	1 x unisex accessible facility 1 x Urinal for male use. Note this can be a standard WC		1 x unisex accessible facility 1 x female ambulant + 1 x basin 1 x standard female + 1 x basin	

Part F5

Ceiling Heights: The floor to ceiling heights must be as follows:

The minimum ceiling heights in a Class 9a building are as follows –

- a patient care area -2.4 m;
- an operating theatre or delivery room – 3 m; and
- a treatment room, clinic, waiting room, passageway, corridor, or the like – 2.4 m.
- Bathrooms, sanitary compartments, tea preparations rooms, pantries, store rooms or the like – 2.1m,
- A commercial kitchen – 2.4m,
- Above a stairway, ramp, landing or the like – 2m.

	Comment: Compliance readily achieved architect to provide details along with the application for Crown Certificate demonstrating compliance with the requirements of this clause in this regard. In addition, the architect is to note any additional requirements under the AUSFG with respect to unobstructed heights.
Part F6	**Light and Ventilation:** Artificial lighting systems are required to comply with Clause F4.4 and AS 1680. All mechanical or air-conditioning installations must be undertaken in accordance with Clauses F4.5(b) and AS 1668.2.-2012. + In Class 9a / 9c buildings, natural lighting must be provided to all rooms used for sleeping purposes. **Comment:** Architect to provide details demonstrating compliance having regards to the cancer day unit with respect of the required natural lighting.

3.7 Section G – Ancillary Provisions

Part G5	**Construction in Bushfire Prone Areas:** In a designated bushfire prone area the following must comply with Specification 43: + A Class 9a health-care building. + A Class 9b— - early childhood centre; or - primary or secondary school. + A Class 9c residential care building. **Comment:** It is to be confirmed if the works are located in a bushfire prone area where applicable all new works will need to comply with current requirements it is noted however that the works relate to internal refurbishment works primarily.
Part G6	**Occupiable Outdoor Areas:** Occupiable Outdoor Areas (such as the communal rooftop space) are required to comply with the fire hazard property, provision for escape, construction of exits, firefighting equipment, lift installations, visibility in an emergency, exit signs and warning systems, and light and ventilation provisions of the BCA (as specifically prescribed under this part) as if it were an internal building part. **Comment:** The works don't appear to involve an outdoor occupiable area based on the current documentation although there are existing these areas are not subject to any works. This is to be reviewed as part of the design development.

3.8 Section J – Energy Efficiency

Part J	**Energy Efficiency:** The new building works subject to compliance with the Energy Efficiency Provisions of BCA 2022 Section J relating to: + J1: Energy Efficiency Performance Requirements + J2: Energy Efficiency + J3: Elemental Provisions for a Class 2 Building and a Class 4 Part + J4: Building Fabric

- J5: Building Sealing
- J6: Air-Conditioning and Ventilation
- J7: Artificial Lighting and Power
- J8: Heated Water Supply and Swimming Pool and Spa Pool Plant
- J9: Energy Monitoring and On-Site Distributed Energy Resources

The Crown Certificate documentation from the architect, mechanical, electrical, and hydraulic engineers are to incorporate details demonstrating compliance with the above provisions (as applicable to their respective disciplines).

Comment: Compliance will be required with respect of any new building works.

3.9 Pandemic Zones

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 are a number of fire safety implications which must be considered. Examples include:

- Egress arrangements may need to be reviewed to mitigate the need to pass through these areas in the event of horizontal evacuation; and
- Zone smoke control and shut down systems may need to be programed 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
- 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. The project stakeholders to confirm where pandemic zones are proposed based on discussions to date we note that there are no pandemic zones proposed.

4.0 Existing Building Upgrade

Certain upgrades are recommended to take place within existing buildings where new works are proposed in order to ensure an adequate level of fire and life safety is achieved.

The BCA, NSW Health Guidelines, and community expectation are used as a benchmark to determine the baseline for these upgrades, with matters such as existing building deficiencies and proposals for performance-based designs also driving these recommendations.

4.1 Matters for Upgrade

The following general upgrades are recommended:

- Where existing fire and / or smoke walls are relied upon as part of the new works, any existing deficiencies (service / structural penetrations, inadequate protection of openings for doorways, exposure, etc.) are to be rectified as part of the works. This includes the provision of new fire and smoke seals to doorways.
- Fire Hydrant coverage location and performance to the new areas to comply with the requirements of AS 2419.1 – 2021. The fire services designer is to advise on whether there are any fire safety issues with the existing system that should be addressed as a part of these works. We understand that recent upgrade works undertaken with the recent block G works will be relied upon for the proposed works.
- Where new fire hydrants / fire hose reels are required to be provided in order to achieve coverage, they must comply with AS 2419.1 - 2021 and AS 2441 - 2005 respectively.
- Pressures and flows of fire hydrants / fire hose reels serving the areas of new works are to achieve compliance with AS 2419.1 - 2021 and AS 2441 - 2005 respectively.
- Relevant services consultants to advise on existing system deficiencies that need to be considered for upgrade as part of these works such as issues with mechanical ventilation, dry fire, electrical services, hydraulic services, smoke control systems, etc.
- Where new dry fire services are installed, they are to comply with current version BCA 2022 / AS requirements. The fire services designer is to review existing systems to ensure there is capacity to accommodate any new zones or the like.
- Any area undergoing refurbishment is to be provided with automatic shutdown of air-handling systems (excluding non-ducted systems not exceeding 1000L/s) on activation of smoke detector and sprinkler head.
- Which regards to building structure, the following upgrade expectations are noted:
  - Any new works must not reduce the capacity of the existing structure,
  - The structural capacity of the existing building must be appropriate to its new use, and
  - The existing building must be structurally adequate to accommodate the new works.
  - 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.

Notwithstanding any of the above, all new works must comply.

4.2 Refurbishment Scope – Accessibility Upgrade Requirements

Refer to separate DDA Report.

5.0 Conclusion

This report contains an assessment of the referenced architectural documentation for the proposed Stage 3 Redevelopment works at Wyong Hospital against the deemed-to-satisfy provisions of the Building Code of Australia 2022.

Arising from the assessment, key compliance issues have been identified that require further resolution, either by way of fire engineered Performance Solutions or plan amendments as the design develops.

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

Appendices

+ Appendix 1 – References Tables

Table 1: Non-Combustibility Requirements

+ 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 the like shafts which do not discharge hot products of combustion.	Non-combustible (subject to conditions outlined in C2D10)

Table 2: Fire Hazard Properties Requirements – Floor Linings

+ Table S7C3 of Specification 7 Critical Radiant Flux or Floor Linings and Floor Coverings			
+ Class of Building	Building Not Fitted with a Sprinkler System	Building Fitted with a Sprinkler System (other than a FPAA101D or FPAA10H System)	Fire-isolated Exits and Fire Control Rooms
Class 9a – Patient care areas.	4.5 kW/m2	2.2 kW/m2	4.5 kW/m2
Class 9a – Areas other than patient care areas.	2.2 kW/m2	1.2 kW/m2	4.5 kW/m2

Table 3: Fire Hazard Properties Requirements – Wall and Ceiling Linings

+ Table S7C4 of Specification 7 – Wall and Ceiling Lining Materials (Materials Groups Permitted)				
Class of Building	Fire-isolated Exits and Fire Control Rooms	Public Corridors	Special Areas	Other Areas
Class 3 or 9a, Unsprinklered Accommodation for the aged, people with a disability, children and health-care buildings	Walls: 1 Ceilings: 1	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 3 or 9a, Sprinklered Accommodation for the aged, people with a disability, children and health-care buildings	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3

Table 4: Fire-Resisting Construction – Type C Construction

TYPE C 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 within it) or other external building element, where the distance from any fire-source feature to which it is exposed is:				
For loadbearing parts:				
Less than 1.5m	90/90/90	90/90/90	90/90/90	90/90/90
1.5 to less than 3m	–/–/–	60/60/60	60/60/60	60/60/60
3m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN - Not incorporated in an external wall				
Less than 1.5m	90/–/–	90/–/–	90/–/–	90/–/–
1.5 to less than 3m	–/–/–	60/–/–	60/–/–	60/–/–
3m or more	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS	90/90/90	90/90/90	90/90/90	90/90/90
INTERNAL WALLS				
Bounding public corridors, public lobbies and the like:	60/60/60	–/–/–	–/–/–	–/–/–
Between or bounding sole-occupancy units:	60/60/60	–/–/–	–/–/–	–/–/–
Bounding a stair if required to be rated:	60/60/60	60/60/60	60/60/60	60/60/60
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

Notes:

1. New external walls that are located 1.5m or more from an allotment boundary / fire source feature require no FRL's.
2. Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part must typically achieve the same FRL. Where that part is also required to be non-combustible, the supporting part must also be non-combustible.
3. An external wall required to have an FRL is only required from the outside.
4. Any lightweight construction in a fire wall or an internal wall required to have an FRL is to comply with Specification 6.
5. The method of attaching or installing a finish, lining, ancillary element, or service installation to a building must not reduce the fire-resistance of that element to below that required.
6. No structural elements are permitted to pass through fire-rated walls.

+ Appendix 2 – Fire Safety Schedule

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

Table 5: Fire Safety Schedule

TBC- Existing Annual Fire Safety Statement to be provided.