BLACKETT MAGUIRE+ GOLDSMITH

BCA ASSESSMENT REPORT

Concept Design

PROJECT:

Northside West - Mental Health Care Facility

Stage 2

PREPARED FOR:

ERILYAN

Revision: 1

Date: 20 October 2021

Project No.: 210232

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EXECUTIVE SUMMARY

The Northside West Health Care Facility is located at 23-27 Lytton Street, Wentworthville NSW.

This report comprises a review of the Concept Design of the proposed Stage 2 works comprising of an extension of the existing Three (3) Storey – to a Four (4) Storey Facility.

The Health Care Facility building is classified as follows:

BCA CLASSIFICATION:	Class 9a (Health Care Facility) Class 7a (Open Deck Car Park) Class 7a (Carpark)
RISE IN STOREYS:	4 (Four)
STOREYS CONTAINED:	4 (Four)
TYPE OF CONSTRUCTION:	A
IMPORTANCE LEVEL (STRUCTURAL):	3 – *To be confirmed by structural engineer.*
SPRINKLER PROTECTED THROUGHOUT:	Yes
EFFECTIVE HEIGHT:	Approx. 14.5m (TBC)
MAX. FIRE COMPARTMENT SIZE:	Class 7a: 5,000m^2 & 30,000m^3 *(Refer to C2.5 for maximum size of compartments in patient care areas in Class 9a health-care building)*
CLIMATE ZONE:	Zone 6

Note 1: The proposed Stage 2 building is connected to Stage 1 existing building, and forms the same building as, the adjacent Stage 2 works.

While the building is proposed to generally comply with the deemed-to-satisfy provisions of the BCA the departures will need to be addressed as a fire engineered performance solution.

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Figure 1

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REPORT STATUS				
DATE	**REVISION**	**STATUS**	**AUTHOR**	**REVIEWED**
06.07.21	0	Concept Design – Issued for Client Review	LV	JH
20.10.21	1	Concept Design – Final Issue	LV	JH

Prepared by:

Building Surveyor
Blackett Maguire + Goldsmith

Reviewed by:

Senior Building Surveyor
Blackett Maguire + Goldsmith
A1 Accredited Certifier (NSW) – BPB No. 2309

INTRODUCTION

BACKGROUND

Blackett Maguire + Goldsmith Pty Ltd have been commissioned by Erilyan to undertake an assessment of the Concept Design of the proposed development of the new Stage 2 Health Facility at Wentworthville, against the relevant provisions of the Building Code of Australia (BCA) – 2019 Amendment 1.

OBJECTIVE OF REPORT

The objective of this report is to:

+ Confirm that the referenced Concept Design has been reviewed by an appropriately qualified Building Surveyor and Accredited Certifier.
+ Outline the BCA Compliance Strategy for the building and certification pathway for the project.
+ Identify BCA compliance matters that require further resolution.
+ Identify matters that are to be required to be addressed by Performance Solutions prior to issue of the S6.28 Crown Certificate. Noting reliance is also placed on the applicable design consultants to ensure non-compliances within their discipline are identified for consideration.
+ Enable the Public Authority to satisfy its statutory obligations under Section 6.28 of the Environmental Planning and Assessment Act, 1979.
+ Identify the relevant essential fire safety measures that are applicable to the proposed development.

PROJECT TEAM

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

+ Luke Varley – Report Preparation / Project Coordinator (Building Surveyor)
+ Jake Hofner – Team Leader (Senior Building Surveyor) | A1 Accredited Certifier

REFERENCED DOCUMENTATION

The following documentation was relied upon when preparing this Report:

+ Building Code of Australia (BCA) – 2019 Amendment 1
+ Guide to the Building Code of Australia 2019.
+ Concept Design Plans prepared by Team 2 Architects Dated: 07/06/2021

DRAWING NO.	REVISION	DATE	DRAWING NO.	REVISION	DATE
SK0010	P2	07.06.2021	SK0011	P2	07.06.2021
SK0012	P2	07.06.2021	SK0013	P2	07.06.2021
SK0014	P2	07.06.2021	SK0015	P2	07.06.2021
SK1011	P2	07.06.2021	SK1012	P2	07.06.2021
SK1013	P2	07.06.2021	SK1014	P2	07.06.2021
SK1015	P2	07.06.2021	SK1016	P2	07.06.2021
SK1017	P2	07.06.2021	SK1018	P2	07.06.2021
SK1019	P2	07.06.2021	SK1020	P2	07.06.2021
SK1021	P1	07.06.2021	SK3000	P4	07.06.2021
SK3001	P2	07.06.2021			

LIMITATIONS AND EXCLUSIONS

The limitations of this report are as follows:

+ This report is based on a review of the referenced documents. At this point in time, no inspection has been undertaken of the refurbishment areas to ascertain the current level of BCA compliance.
+ No assessment has been undertaken with respect to access for people with disabilities and the Disability Discrimination Act 1992 (DDA). The building owner should be satisfied that their obligations under the DDA have been addressed. In this instance, we note that an Access Consultant has been engaged to advise further in this regard,
+ The Report does not address issues in relation to the following:
  i. The design, maintenance or operation of any existing electrical, mechanical, hydraulic or fire protection services.
  ii. Work Health and Safety Act and Regulations.
  iii. Water, drainage, gas, telecommunications and electricity supply authority requirements.
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+ This report is based solely on client instructions, and therefore should not be used by any third party without prior knowledge of such instructions.

PROJECT OVERVIEW

DESCRIPTION OF DEVELOPMENT

The project site is located at Northside West Health Care Facility – 23-27 Lytton Street, Wentworthville NSW.

This report comprises a review of the Concept Design of the proposed Stage 2 works comprising the development of a Four (4) storey Health Care Facility, attached to the existing building Three (3) Storey Health Care Facility.

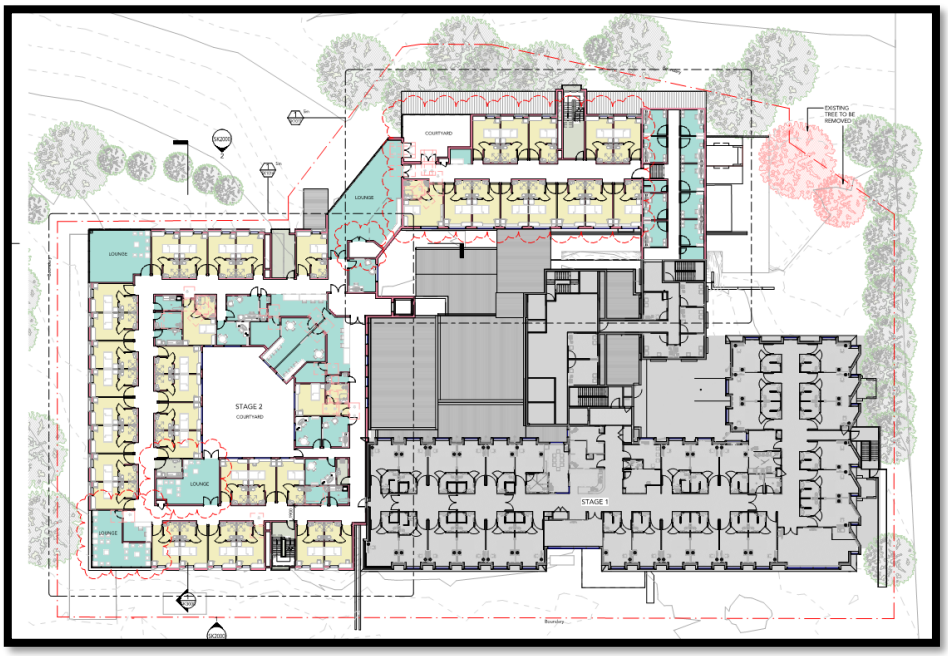


Figure 2

BCA COMPLIANCE METHODOLOGY

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

BUILDING CHARACTERISTICS

The Clinical Services Building is classified as follows:

+ **BCA CLASSIFICATION:**	Class 9a (Health Care Facility) Class 7a (Open Deck Carpark) Class 7a (Carpark)
+ **IMPORTANCE LEVEL (STRUCTURAL):**	3
+ **RISE IN STOREYS:**	Five (5).
+ **TYPE OF CONSTRUCTION:**	Type A
+ **EFFECTIVE HEIGHT:**	<25m (Approx. 14.5m)
+ **MAX. FIRE COMPARTMENT SIZE:**	7a – 8,000m^2 & 48,000m^3 *(Refer to C2.5 for maximum size of compartments in patient care areas in Class 9a health-care building)*
+ **SPRINKLER PROTECTED THROUGHOUT:**	Yes (Required under the DtS Provisions of the BCA)
+ **CLIMATE ZONE:**	Zone 6

BCA ASSESSMENT – KEY ISSUES

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.

LEGEND

General Note
Matters Requiring Redesign / Further Information
Performance Solution

SECTION B - STRUCTURE

B1	**General Note** New building works are to comply with the structural provisions of the BCA 2019 Amendment 1 and referenced standards including AS 1170. The structural engineer will need to certify that the structural capacity of the 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.

SECTION C – FIRE RESISTANCE

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

General Note

External walls appear to be within 3m in the south-west corner of the building, and generally within 6m from an allotment boundary throughout.

Confirmation the use of areas beyond indicated allotment boundaries, to confirm consideration as a fire source features. Currently there appears to be a mixture of private allotments and council reserves.

Performance Solution

External walls are to be protected and or will need to be addressed by way of a fire engineered solution. Projects fire safety engineer to review and comment accordingly.

C1.2

Calculation of Rise in Storeys:

The Rise in Storeys is considered Four (4) –

- Lower Ground Floor – Class 7a (Carpark) & Class 9a (Health Facility).
- Ground– Class 7a (Open Deck Carpark/s) & Class 9a (Health Facility).
- 1st Floor – Class 9a (Health Facility).
- 2nd Floor – Class 9a (Health Facility).
- 3rd Floor – Class 9a (Health Facility).

Matters Requiring Redesign / Further Information

NOTE: TBC - Section shows Rise in Storeys as Four (4) however based on the information provided on the floor plans we note that the building would comprise a Rise in Storeys of five (5), provide section inclusive of Lower Ground Floor – to demonstrate otherwise.

C1.8

Lightweight Construction: Lightweight construction must comply with Specification C1.8 if it used in a wall system that is required to have an FRL; or for a lift shaft stair shaft or an external wall bounding a public corridor.

Matters Requiring Redesign / Further Information

The use of lightweight construction is to be confirmed at the developed design phase, prior issuance of the Crown Certificate. Final design details and documentation showing the system proposed will need to be provided.

C1.9

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

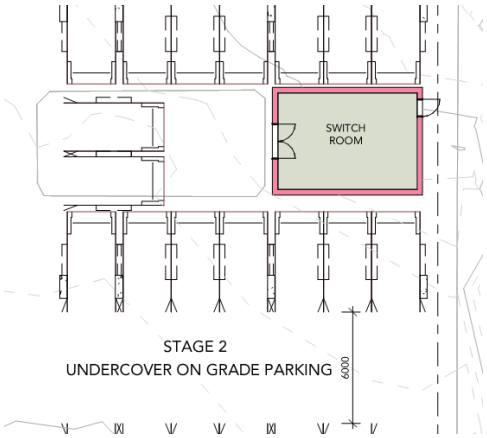
- Any external wall claddings.
- Any framing or integral formwork systems i.e. timber framing, sacrificial formwork, etc.
- Any external linings or trims i.e. external UPVC window linings, timber window blades, etc.
- Any sarking or insulation contained within the wall assembly.

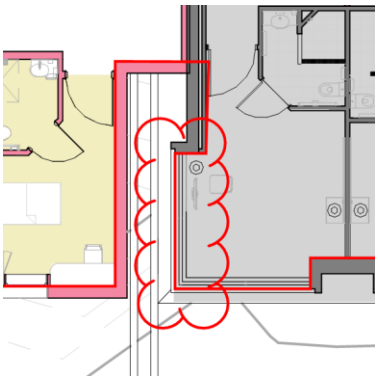
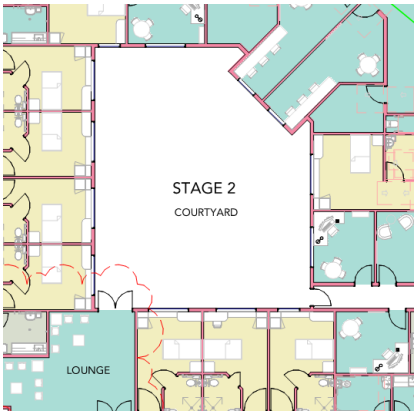
General Note

Any element incorporated within any external wall assembly must be identified and provided for review.

BUILDING ELEMENT	TYPE A CONSTRUCTION
External wall	Non-combustible
Common wall	Non-combustible
Floor and floor framing of lift pit	Non-combustible
All loadbearing internal walls (including those of shafts)	Concrete, masonry or fire-protected timber
Loadbearing fire walls	Concrete, masonry or fire-protected timber
Non-loadbearing internal walls required to be fire-resistant	Non-combustible
Non-loadbearing lift, ventilating, pipe, garbage and like shafts which do not discharge hot products of combustion	Non-combustible

C2.5 & Spec.C2.5	Class 9a buildings: The building must be divided into fire compartments not exceeding 2000m2, with ward areas to be divided into floor areas not more than 1000m2, by walls with an FRL of not less than 60/60/60, and where the floor area exceeds 500m2, must be divided into floor areas of not more than 500m2 by smoke-proof walls complying with Specification C2.5. 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. The ancillary use areas include, but are not limited to, the following: (A) A kitchen and related food preparation areas having a combined floor area of more than 30 m2. (B) A room containing a hyperbaric facility (pressure chamber). (C) A room used predominantly for the storage of medical records having a floor area of more than 10 m2. (D) A laundry, where items of equipment are of the type that are potential fire sources *(e.g. gas fire dryers).* A wall required to separate ancillary use areas from the remainder of the building must extend to the underside of— (A) the floor above; or (B) a non-combustible roof covering; or (C) a ceiling having a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes. Openings in walls required by ward areas and ancillary use areas (within patient care areas) to have an FRL must be protected as follows: (A) Doorways—self-closing or automatic closing –/60/30 fire doors. (B) Windows—automatic or permanently fixed closed –/60/– fire windows or –/60/– automatic fire shutters. (C) Other openings—construction having an FRL not less than –/60/–. **General Note** The plans indicate compliance can be readily achieved to comply with C2.5 through the introduction of compartment walls and finalisation of the compartmentation plan which will need to be provided for review and comment. This assessment does not include the existing separation Lower Ground Floor, Ground Floor and Level 1 - more information will be required relating to these areas, and relationship with the proposed Stage 2 works. Further information with respect of these areas will need to be provided at the SD phase. The doorways in smoke proof walls must be provided with a smoke reservoir, unless serving a fire compartment provided with a zone pressurisation system fire services to be installed within the building will need to be confirmed in order to determine the need for a smoke reservoir – this is to be confirmed at the developed design phase, prior issuance of the Crown Certificate. Compartmentation plan will need to be provided for review and comment demonstrating that the stage 1 works achieve compliant compartmentation limitations in accordance with this clause.
C2.6	Vertical separation of openings in external walls: If 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 spandrels or other construction providing vertical separation of openings in external walls complying with C2.6 **Matters Requiring Redesign / Further Information** The building is not shown to be provided with spandrels or other means of separation. We assume based on the lack of spandrel separation that a sprinkler system will be installed throughout in this regard. Should a sprinkler system not be provided then significant plan amendments will be required. Details demonstrating compliant spandrel separation throughout including interface between stage 1 and 2 will need to be provided noting that stage 1 is not shown to be provided with a sprinkler system under the existing AFSS

C2.7	Separation by Fire Walls: FRL 120/120/120 fire walls and fire doors must be provided where new floor space adjoins the existing building throughout – C2.5 applies relevant to the use of the respective areas. **Matters Requiring Redesign / Further Information** We note that the Stage 1 and Stage 2 parts are proposed to be separated by a fire wall in accordance with the requirements of this clause. Fire separation between the new parts and the existing building is to be confirmed in all areas, with the separation of fire compartments to comply with Spec.C1.1. All of the compartment walls (fire) to be constructed as part of the stage 1 works will need to be constructed to comply with the requirements of this clause. Details demonstrating compliance to be provided along with the application for Crown Certificate.
C2.8	Separation of classifications in the same storey: If a building has parts of different classifications located alongside one another in the same storey consideration must be given to provide the highest FRL to each building element, or to separate the storey by a fire wall. **Matters Requiring Redesign / Further Information** The Class 9a and Class 7a Carpark Areas located alongside one another in the same storey, require each building element in that storey have the higher FRL for the elements concerned – as prescribed in Specification C1.1. Class 7a and 9a classifications have the same FRL requirements, as per Spec. C1.1 Table 3.
C2.10	Separation of Lift Shafts: Lift shafts are required to be bound by FRL 120/120/120 construction.
C2.12 / C2.13	Separation of Equipment: Dependent on plant and equipment to be housed within the plant rooms, FRL 120/120/120 fire separation may be required to separate these areas from the building remainder. This is applicable to: + Main switch rooms / boards; or + Electricity substations; or + Light motors and lift control panels; or + Emergency generators used to sustain emergency equipment operating in the emergency mode; or + Central smoke control plant; or + Boilers; + A battery or batteries installed in the building that have a voltage exceeding 12 volts and a 200kWh or more. General Note The Stage 2 undercover carpark contains a switch room, this is required to be fire separated with a FRL not less than 120/120/120 and, any doorway in that construction protected with a self-closing fire door having an FRL of not less than –/120/30. 

C3.3	Separation of Different Fire Compartments: Exposure of external walls and associated openings in different fire compartments is expected to occur – subject to confirmation of fire compartmentation of the building Based on a high-level review of the compartmentation plan sketches we note that there will be exposure between compartments in a number of areas. **Performance Solution** Where external walls of adjacent fire compartments cannot be protected with FRL 60/60/60 construction and glazed openings drenched externally, they will be required to be considered under a fire engineered performance solution. The developed design with the locations of firewalls, within patient care areas, will need to be reviewed to consider non-compliance with C3.3 – relevant to the internal courtyard connecting Three (3) Storeys.  

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

D1.2	Number of Exits Required: A minimum of two exits are required to be provided from each storey. Additional exits in excess of this requirement are required to satisfy aggregate exit width, travel distances, and vertical exit requirements when passing through numerous horizontal exits. **General Note** The Lower Ground Floor and Ground Floor have egress discharging away from the building, confirmation of the path of travel from open space to a road will need to comply with D1.10. Exits must be located to achieve travel distances in accordance with D1.4 and D1.5. Exceedances will be considered on a case-by-case basis for inclusion under fire engineered performance solutions. Further Information Required: The location of the exit points from the ground floor and various carparking areas is not clear further design details will need to be provided showing the location of the exits and how the various internal courtyard areas are connected to the public road.

D1.3

Where fire-isolated stairways and ramps: Every stairway and ramp in a class 9a building must be fire isolated where it connects passes through or by more than two consecutive storeys.

As the building has a rise in storeys of more than two (2) all of the stairways serving the building are required to be constructed as fire isolated stairways and/or external stairs in lieu - refer to D1.8 later in this report.

Details to be provided to BM+G for review and comment accordingly.

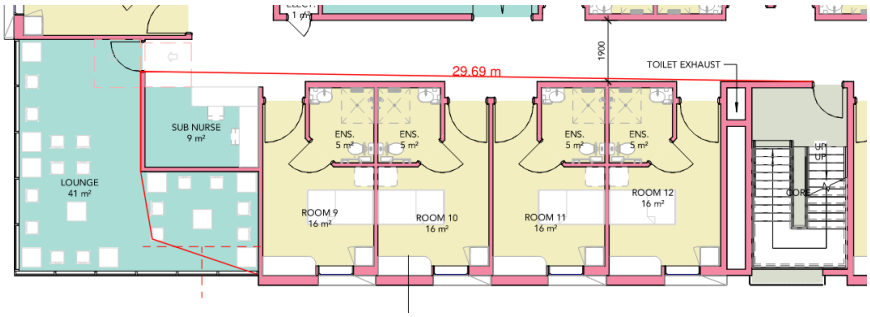
D1.4

Exit Travel Distances: Travel distances in patient care areas must not exceed 12m to a point of choice between two exits and 30m to a single exit.

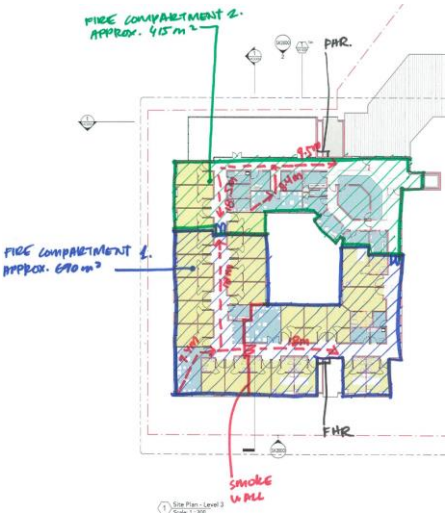
In non-patient care areas, distances must not exceed 20m to a point of choice between two exits, and 40m to a single exit.

General Note

The travel distance to closest exits is currently <30m – the installation of furniture or alteration to the schematic design in the lounge, and courtyard areas, may increase travel distances to greater than 30m this is to be reviewed as part of ongoing design stages.



The provision of horizontal exits (*within FRL 120/120/120 combined fire and smoke walls*) will be required to bring travel distances down to acceptable levels – as shown in provided fire compartmentation sketch below. To be subject to further review as part of future design stages.



A final compartmentation plan will need to be provided in order to complete a travel distance assessment insufficient information is provided to confirm travel distances.

Compartmentation strategy of existing stage 1 building will need to be confirmed and subject to further review in order to confirm travel distances based on existing compartmentation and location of horizontal exits and the like.

Performance Solution

To potentially justify travel distances in a number of instances. Number of extended travel distances were identified based on the limited details available within the building with typical examples as noted below;

- Confirmation on the use of stage 1 ground floor area i.e., whether patient or non-patient care areas
- 47m to one of the two available exits within the carpark areas including both stage1 and stage 2 in lieu of 40m

This will be developed with the design.

D1.5

Distance Between Alternative Exits: Distances between alternative exits must not exceed 45m in patient care areas, and 60m in non-patient care areas.

General Note

The provision of horizontal exits (within FRL 120/120/120 combined fire and smoke walls) will be required to bring distance between alternate exits down to acceptable levels, the developed design will need to include horizontal exits to be assessed for compliance.

Performance Solution

To potentially justify travel distances in a number of instances. Number of extended travel distances were identified based on the limited details available within the building with typical examples as noted below;

- Up to 73m between exits within carpark areas in lieu of 60m

Final compartmentation plan to be provided to confirm distances to patient care areas.

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 minimum.

The unobstructed width of doorways in Patient Care areas, where patients are normally transported in beds, is dependent on the width of the corridor in which the doorway provides access to or from.

If the corridor is less than 2.2m, the doorway must achieve >1200mm. If 2.2m wide or greater, the doorway must achieve >1070mm. Doorways forming horizontal exits must achieve no less than 1250mm.

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

Further Information Required:

The corridors in patient areas are shown to be provided with an unobstructed width of 1.9m, although consideration of handrails required by D2.17 is required guarantee compliance can be achieved.

Dimensions of doorways are not currently provided - in areas which patients would normally be transported in beds, doorways require a 1200mm unobstructed width due to the corridor being less than 2.2m.

In Patient Care Areas, Horizontal Exit doorways requires a minimum 1250mm unobstructed width – this information is to be provided at in developed design stage.

D1.7

Travel via Fire-Isolated Exits: Fire-Isolated exits must discharge directly to open space. Where the path of travel from the point of discharge requires passing within 6m of any part of an external wall of the same building (measured at right angles to the path of travel), that wall must achieve an FRL of 60/60/60 with openings protected in accordance with C3.4.

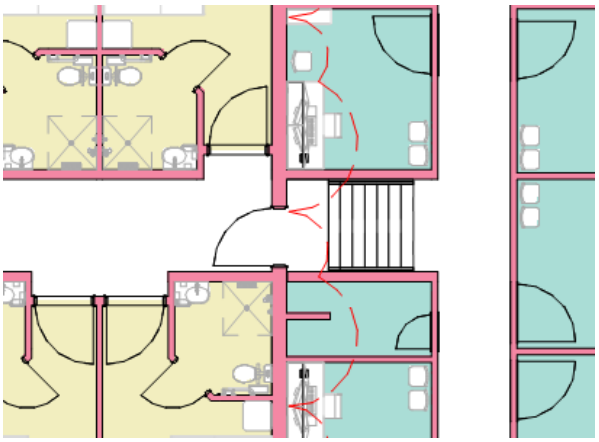
Further Information Required/Performance Solution:

Confirmation if any fire isolated stairs are proposed to provide egress throughout the new part of the building, as this will require consideration relating to egress paths and protection of openings of the external walls.

Performance Solution

Existing Fire Engineered strategy associated with stage 1 will need to be reviewed by the projects fire safety engineer and updated altered to accommodate the new works given the extent of works and proximity to stage 1 we note that there will be impacts on the base building FER strategy.

D1.8	External Stairways or Ramps In lieu of Fire-Isolated Exits: External stairways must discharge directly to open space. They must be non-combustible throughout and protected with FRL 60/60/60 construction any part of the stairway is within 6m of the external walls of the building served. No openings are permitted within 0-3m of the exit, except for an FRL -/60/30 fire door serving as access to the exit. Openings within 3-6m of the exit must be protected in accordance with C3.4, where wall-wetting sprinklers are provided, they must be located internally. **General Note** Where external stairs in lieu of fire isolated stairways are proposed they will need to be designed to comply with the requirements of this clause. Based on a review of the concept drawings provided to date we note the following; + Elevations will need to be provided demonstrating elevation is fully ventilated + No details provided regarding the openability of the ventilated side of the stairway + The West Parking (Lower Ground and Ground) currently shows exit doors discharging to the covered carpark area, in lieu of to discharging directly to open space. + The ventilated Elevation of the stairway shows a shield wall within 6m of the exit, this must be protected in accordance with C3.4. Performance Solution The relocation of the exit door will affect the ventilation of the external stairs, with the openings not being permitted with 0-3m of the exit - this may be required to be addressed by a Fire Engineer via a Performance Solution.
D1.10	Discharge from Exits: If an exit discharges to open space that is at a different level than the public road in which it is connected to, the path of travel to the road must be via a ramp having a gradient not steeper than 1:8, or not steeper than 1:14 if required to be accessible. The discharge point of exits must be located as far away from one another as reasonably practical. Further Information Required/Performance Solution: Details to be provided showing a compliant path of travel from each exit, the current egress path via the western stairs must not pass underneath the building – current concept documentation does not clearly show the provided gradients and egress widths in open space to the road.
D1.11	Horizontal Exits: Horizontal exits will be required to reduce egress distances to an acceptable level. **General Note:** The location of Horizontal Exit is to be confirmed, the provided sketch indicates compliance can be readily achievable in the new parts of the building.
D1.12	Non-Required Stairways, Ramps or Escalators: A non-required non-fire-isolated stairway must not be used within a patient care area of a Class 9a building.
D1.16	Plant Rooms, Lift Machine Rooms and Electricity Network Substations – Concession: A ladder may be used in lieu of a stairway to provide egress from a plant room of not more than 100m^2 or all but one point of egress from a plant room of not more than 200m^2. A ladder used for this purpose must comply with AS 1657. Further Information Required: Access to plant areas via ladders is not currently shown on the plans, this information is to be provided as applicable during the developed design phase.
D2.3	Non-fire isolated stairways and ramps: Required stairs and ramps (including landings and any supporting building elements) which are not required to be within a fire-resisting shaft, must be constructed according to D2.2, or only of— (a) reinforced or prestressed concrete; or (b) steel in no part less than 6 mm thick.
D2.5	Open access ramps and balconies: Where balconies are provided they must have ventilation openings to the outside air which—have a total unobstructed area not less than the floor area of the balcony; and are evenly distributed along the open

	sides of the balcony; and not be enclosed on its open sides above a height of 1 m except by an open grille or the like having a free air space of not less than 75% of its area. **General Note** Elevations do not currently provide any details relating to openings, this is to be provided in developed design documentation to guarantee compliance can be readily achieved in balcony/courtyard areas.
D2.7	Installations in Exits and Paths of Travel: Any new or altered electricity and communications cupboards located within a nominated egress paths within the proposed building will be required to be suitably smoke sealed and enclosed in non-combustible construction in accordance with D2.7(d).
D2.13 / D2.14 / D2.16 / D2.17	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. + Landings must accommodate a stretcher, 2m long and 600mm wide, throughout all flights of all stairs. This includes navigating landings that may turn 90-180°. 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. Handrails: + Handrails must be located on both sides of all stairways and ramps except for fire-isolated stairs. + Handrails must be provided on at least one side of all corridors or passageways normally used by patients. Handrails must be continuous in length where practical. Further Information Required: The current documentation does not provide sufficient details to show compliance. Landing areas must be sufficient to provided room for a stretcher, as prescribed in D2.14(b), the design currently has areas which insufficient information has been provided – additional information is required to show compliance can be readily achievable. Level 1 West Wing requires re-design to provide compliance with the landing provisions and consideration for providing compliant access for people with a disability throughout the patient care areas. 

D2.19 **D2.20** **D2.21**	Doors and latching: All egress doorways must swing in the direction of egress and must be readily openable without a key from the side that faces a person seeking egress, by a single handed downward or pushing action on a single device which is located between 900mm and 1100mm from the floor. **General Note** Where doors are required to swing in both directions for the purpose of egress, dual swing doors will need to be specified. A fire engineered performance solution will then be proposed to justify smoke leakage. **Performance Solution** Direction of swing of fire and smoke doors against the direction of egress Smoke leakage through dual swing doors Direction of swing of final egress doors against the direction of egress

PART D3 - ACCESSIBILITY

Part D3 & AS 1428.1	Access for People with a Disability: All access is required to comply with AS 1428.1-2009. Access must be provided to all areas normally used by the occupants. This applies to staff and patients alike. **General Note** We understand an Access Consultant will be engaged to provide advice in this regard.

SECTION E – SERVICES AND EQUIPMENT

E1.3	Fire Hydrants: Fire hydrant coverage is required to be provided to the building in accordance with AS 2419.1-2005 details to be provided by the hydraulic consultant showing the location of all infrastructure including outlet locations to the fire isolated exits, pump rooms, booster locations etc. These details will need to be provided for review and comment accordingly. **General Note** + Confirmation of the existing system performance, coverage and location of booster assembly will be required - this is not currently provided on the concept plans. + Internal fire hydrants must be located within fire-isolated exits. Where additional fire hydrants are required for coverage, they must be within 4m of an exit (i.e. external stairways, horizontal exits, or doors leading directly to outside.  **Performance Solution** Hydraulic consultant to provide further information regarding the hydrant system for consideration in terms of feasibility for rationalisation as part of the fire engineered strategy for the building.
E1.4	Fire Hose Reels: Fire hose reel coverage is required to be provided to the building in accordance with AS2441-2005. **General Note**

	Preliminary Hydraulic Plans will be required from a suitable qualified consultant, to show that compliance can be readily achievable – with consideration given to the proposed locations of fire and smoke doors. Further details to be provided insufficient details provided on documentation provided to date. **Performance Solution** It is possible that some small rooms will have smoke doors to access them and will not be provided with fire hose reel coverage. In such instances, a fire engineered performance solution will be required.
E1.5 **Spec. E1.5**	Sprinklers: A sprinkler system, with a building occupant warning system, must be provided throughout the Class 9a Building, including the carpark areas and any voids where potential fuel loads could be located - to comply with E1.5, Spec.E1.5, AS2118.1 as applicable. Hydraulic consultant to review and provide details with respect of the sprinkler system including location of all infrastructure including pumps, booster valves, control valves and the like currently there is insufficient details with respect of the sprinkler system to confirm compliance.
E1.6	Fire Extinguishers: To be provided and designed to cover risks as defined in Table E1.6 and in accordance with AS 2444-2001.
E2.2a	Smoke Hazard Management: The following provisions are required: + An AS 2118.1 – 2017 Sprinkler System is to be installed throughout the building. + An AS 1670.1 – 2018 Fire Detection and Alarm System is to be installed throughout. + All fire-isolated stairs must be provided with stair pressurisation in accordance with AS 1668.1 – 2015. Noting that this requirement does not apply to fire-isolated stairways. + Any ducted mechanical air handling systems, or non-ducted systems exceeding a capacity of 1000L/s, must shut down on activation of smoke detection. + Manual call points must be installed in evacuation routes so that no point on a floor is more than 30 m from a manual call point. **General Note** Preliminary Fire Services Plans will be required from a suitable qualified consultant, to show that compliance can be readily achievable.
Part E3	Emergency Lifts: 2x Emergency lifts will be required for patient care areas located at a level that does not have direct egress to a road or open space – we will require confirmation the existing lift provided in the building complies with Part E3. Where lifts serve storeys above an effective height of 12 m, the following must be provided: + a fire service recall control switch complying with E3.9 for a group of lifts; or a single lift not in a group that serves the storey. + A lift car fire service drive control switch complying with E3.10 for every lift. Details will need to be provided.
E4.2-E4.8	Emergency lighting and Exits Signs: Emergency lighting and exit signage to be installed in accordance with AS 2293.1-2018.
E4.9	Emergency warning and intercom systems (EWIS): An emergency warning and intercom system complying where applicable with AS 1670.4-2018 must be installed in the building, arranged to provide a warning for occupants - and in a ward area, may have its alarm adjusted in volume and content to minimise trauma consistent with the type and condition of patients

SECTION F – HEALTH AND AMENITY

F2.3

Sanitary facilities: Sanitary facilities are only required to be provided in accordance with the requirements for a Class 9a healthcare facility. Sanitary facilities are only required to be counted for patients and staff (i.e. not visitors).

Sanitary Facilities for the proposed works – *Class 9 Employees*						
	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 for the proposed works – *Class 9 Patients*						
	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

General Note

Confirmation the Lounge areas are provided with adequate facilities for the preparation and cooking or reheating of food including a kitchen sink and washbasin.

Performance Solution

The plans currently do not show one island-type plunge bath in each storey containing ward areas, this can be supported as a Performance Solution.

F2.4

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

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

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

F2.8

Waste Management: In a Class 9a health-care building, at least one slop-hopper or other device, other than a water closet pan or urinal, must be provided on any storey containing ward areas or bedrooms to facilitate emptying of containers of sewage or dirty water; and with a flushing apparatus, tap and grating.

General Note

Provide details in developed design to show compliance is readily achievable to provide waste facilities on each storey to comply with F2.8.

Part F3

Room Heights: The ceiling height in a Class 9a building must be no less than; 2.4m in patient care areas, 3m in an operating theatre or delivery room and 2.4m in a treatment room, clinic, waiting room, passageway, corridor, or the like.

Sanitary compartments, air-locks, tea preparation areas, store rooms and garages must achieve no less than 2.1m.

Commercial kitchens must achieve 2.4m.

The floor to ceiling height above a stairway, ramp, landing or the like must achieve no less than 2m when measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing, or the like.

F4.1 and F4.2	Natural lighting: Natural lighting is required to all room for sleeping purposes. Details will need to be provided demonstrating compliance with the requirements of this clause including the interface between the higher and lower roofs throughout the building.
F4.5	Ventilation of Rooms: Any room occupied by a person for any purpose must be provided with natural ventilation complying with this clause, or a mechanical ventilation or air-conditioning system complying with AS 1668.2 and AS 3666.1.
Section J	Energy Efficiency: The new building works subject to compliance with the Energy Efficiency Provisions of Section J relating to: + J1: Building Fabric + J3: Building Sealing + J5: Air-conditioning and ventilation systems + J6: Artificial lighting and power + J7: Hot water supply + J8: Access for maintenance The architect, mechanical, electrical, and hydraulic engineers are to incorporate details demonstrating compliance with the above provisions (as applicable to their respective disciplines). **General Note** We understand the new works will comply with the provisions of Section J 2019 Amdt.1

EXISTING 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.

Section 4: Fire safety measures

Fire safety measure	Minimum standard of performance	Date(s) assessed	CFSP *
AUTOMATIC FIRE DETECTION AND ALARM SYSTEM	BCA CLAUSE E2.2A, AS1670.1	16/07/2020	Lee Adams
EMERGENCY LIGHTING	BCA CLAUSE E4.2, E4.4, AS2293.1	16/07/2020	Lee Adams
EMERGENCY WARNING AND INTERCOMMUNICATION SYSTEM	BCA CLAUSE E4.9, AS2220	16/07/2020	Lee Adams
EXIT SIGNS	BCA CLAUSE E4.5, E4.6, AS2293.1	16/07/2020	Lee Adams
FIRE BLANKETS	AS3504, AS2444	16/07/2020	Lee Adams
FIRE EXTINGUISHERS	BCA CLAUSE E1.6, AS2444	16/07/2020	Lee Adams
FIRE HOSE REELS	BCA CLAUSE E1.4, AS2441	16/07/2020	Lee Adams
FIRE HYDRANT SYSTEM	BCA E1.3, AS2419.1	16/07/2020	Lee Adams
FIRE AND SMOKE DOORS	BCA CLAUSE C3.4, AS1905.1	16/07/2020	Lee Adams
FIRE SEALS AND PENETRATIONS	BCA CLAUSE C3.15, AS1530.4-2005	16/07/2020	Lee Adams
LIGHTWEIGHT CONSTRUCTION	BCA CLAUSE C1.1, C1.8 & C3.15	16/07/2020	Lee Adams
FIRE SHUTTERS	AS1668.1, AS1905.2	16/07/2020	Lee Adams
PATHS OF TRAVEL	EP&A REGULATIONS 2000, CLAUSE 186	16/07/2020	Lee Adams

* See notes on page 4 about how to correctly identify a Competent Fire Safety Practitioner (CFSP).

Note: A proposed fire safety will be provided pending resolution of a number of items within this report.

APPENDIX A – TYPE A CONSTRUCTION

Table 3 TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS

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

Notes:

1. Any lightweight construction in a fire wall or an internal wall required to have an FRL is to comply with Specification C1.8.
2. All elements of an external wall assembly (except those allowed under Clause C1.9) must be non-combustible. This includes, framing, integral formwork, insulation, sarking, façade coverings, and the like.
3. Fire rated shafts are required to be enclosed at the top and bottom by construction having an FRL of not less than what the shaft requires (in both directions)
4. Lift shafts are required to be enclosed at the top of the shaft with fire rated construction having an FRL of 120/120/120.
5. Fire isolated exits are to be provided with a fire rated “lid” that achieves an FRL of 120/120/120.
6. Where roof lights are proposed they are required to be located not less than 3 metres from a roof light in an adjoining fire separated part; and must not be more than 20% of the area of the roof.
7. Any loadbearing internal walls or loadbearing fire walls are to be masonry or concrete.
8. External walls must be non-combustible construction. Non-loadbearing parts of an external wall that are more than 3m from a fire source feature need not be fire rated.
9. Internal columns in this building (being less than 25m in effective height) that are in the storey immediately below the roof, can be constructed as follows:
    a. Building with a rise in storeys exceeding 3 – FRL 60/60/60
    b. *Building with a rise in storeys not exceeding 3 – no FRL*.