

AA CROWN HOLDINGS PTY LTD C/- 360 PROPERTY AGENCY

BCA ASSESSMENT REPORT

Wollongong Private Hospital SSDA – 360-364 Crown Street, Wollongong NSW 2500



Project number: 253348
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Quality management

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1.0	2 December 2025	SSDA BCA Assessment Report				
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Executive summary

This document provides an assessment of the architectural design drawings for the proposed extension of the existing Wollongong Private Hospital, against the Deemed-to-Satisfy Provisions of the Building Code of Australia (BCA) 2022 Amendment 2 Volume One.

The development will comprise the substantial expansion of the existing building such that the gross floor area of the building will be increased to more than double the existing. The expansion works will be undertaken to form a single building spanning nineteen (19) storeys (including basements and roof plant) and provide additional areas including a new emergency department, consulting suites, radiation oncology and Medi-Hotel / Aged Care accommodation. The building generally consists of the following:

- + One (1) new basement Radiation Oncology Tenancy (Basement 6).
- + Two (2) new basement levels comprising carparking and miscellaneous plant / storage areas (Basements 4 & 5).
- + Extension of the two (2) existing basement levels comprising carparking and miscellaneous plant / storage areas (Basements 2 & 3).
- + Extension of the Lower Ground Floor to include additional carparking and drop off facilities, Medi-Hotel lobby, general building lobby from Urunga Parade, and plant and services rooms.
- + Extension of the Ground Floor to include new ambulance bay, carparking and drop off facilities, new emergency department and satellite imaging tenancy, general building lobby from Crown Street, extension of the existing café and plant rooms.
- + Extension of Levels 1 & 2 to include new ICU, Operating Theatres, Hospital Support and CSSD services, including associated plant rooms.
- + Extension of Levels 3 to 8 to include new Medical Tenancies and amenities.
- + Construction of three (3) new storeys to provide Medi-Hotel / Aged Care accommodation (to be fitout by future operator).

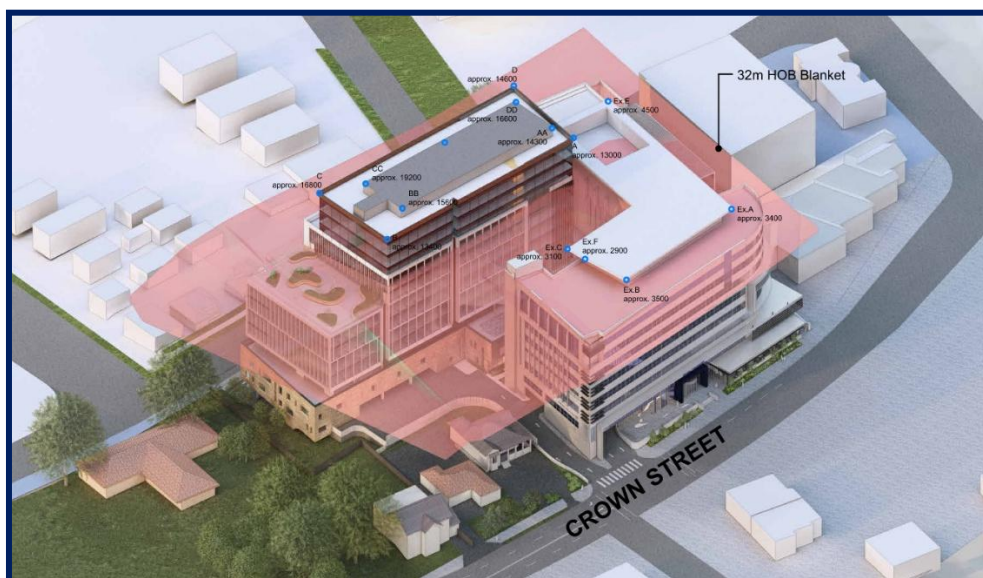


Figure 1 - Proposed Development – Crown Street Facade

Part 4 of this report outlines the identified BCA compliance issues that require further information or consideration and/or assessment as Performance Solutions. Any Performance Solution will need to be detailed in a separate report and must clearly indicate methodologies for achieving compliance with the relevant BCA Performance Requirements.

Item	Description	BCA Provision
Existing Building Performance Solutions		
1.	The columns in rooftop plant shall not achieve the 120/--/-- FRL required by Specification 5.	C2D2 & Spec 5 C1P1
2.	Perimeter slab edge detail to curtain wall to be sealed with non-combustible sealant/packing and/or a metal angle.	C2D2 & Spec 5 C1P2, C1P3 & C1P8
3.	Permit the retention of the existing foil-faced Kraft paper glued to the insulation material within the external walls.	C2D10 C1P2
4.	Permit the retention of the four existing sky signs on the external face of the building which are located between floor slabs and are constructed with combustible materials that do not comply with C2D14.	C2D10 C1P2
5.	Permit enlarged fire and smoke compartments as follows: <ul style="list-style-type: none"> + Level 2 south-western fire compartment = 1,136m² + Level 2 south-eastern smoke compartment = 518m² + Levels 3 & 4 central smoke compartments = 509m² 	C3D6 C1P2, C1P3 & E2P2
6.	Permit extended travel distances and increased separation between alternative exits as follows: <ul style="list-style-type: none"> + Basement 1 – up to 47m to an exit, in lieu of 40m from the Fresh Air Fan Room. + Basements 2 & 3 – up to 42m to an exit, in lieu of 40m. + Basements 1 to 3 – Up to 69m between alternative exits, in lieu of 60m. 	D2D5 & D2D6 D1P4 & E2P2
7.	Permit extended travel to a point of choice of up to 27m, in lieu of 20m from the Ground Floor pharmacy.	D2D5 & D2D6 D1P4
8.	Permit extended travel distances and non-compliance separation between alternative exits within Level 1 and 2 patient care areas as follows: <ul style="list-style-type: none"> + Level 1 Stage 2 Recovery Area – up to 35m to an exit (in lieu of 30m). + Level 2 patient rooms adjacent Stair 7 – up to 35m to an exit (in lieu of 30m). + Level 2 alternative travel paths of travel converge within 2.5m on the southern side of Stair 7 (in lieu of 6m). 	D2D5 & D2D6 D1P4

Item	Description	BCA Provision
9.	<p>The following areas have been identified as having clear unobstructed egress widths less than 1000mm:</p> <ul style="list-style-type: none"> + Level 1 Staff Station access points (RM2321, RM2150, RM1978, RM2122). + Level 1 Scrub Room outside operating theatres OT2 and OT3 (RM1920). + Level 1 Stage 2 Recovery Store Room (RM2139), Record Room (RM2103) and Day Surgery Reception (RM2102). + Levels 3 & 4 Staff Stations (RM3055, RM3355). + Level 5 Amenities (RM3802, RM3803). 	D2D8 D1P6
10.	<p>Permit the following fire-isolated stair discharge non-compliances:</p> <ul style="list-style-type: none"> + Fire Stair 7 discharges at ground floor into an internal passageway in lieu of directly to a road or open space. + Fire Stair 3 discharges into the loading dock in lieu of directly to a road or open space. + The path of travel from Fire Stairs 4, 5 and 6 to the public road requires occupants to travel within 6m of unprotected building openings. + The path of travel from the following exits to the public road incorporates stairs in lieu of a ramp: <ul style="list-style-type: none"> - Fire Stairs 4, 5, 6, 7 and 8. - Egress from the ground floor electrical sub-station. 	D2D12 & D2D15 D1P4 & D1P5
11.	The hydrant booster is located at the entrance to the site which is 5m from the external wall of the building, i.e. within 10m of the carpark entry which is an unprotected opening.	E1D2 E1P3
12.	A water supply storage capacity of 25,000L is provided, yet the ground floor contains retail tenancies that are Ordinary Hazard 3 (OH3).	E1D4 E1P4
13.	The Fire Control Centre is located in the main entry of the building, however this is located approximately 1.3m higher than street level (when measured to the Hydrant Booster Assembly).	E1D15 E1P6
14.	The mechanical air-handling system serving the operating theatres shall have inbuilt programming provisions and manual override to enable it to run during a fire.	E2D3 E2P2
Performance Solutions required		
1.	Permit the external walls of the Lower Ground Lobby (Urunga Pde entrance) and the Ground Floor space above that are within 3.0m of the external walls of the existing substation to achieve an FRL of 60/60/60 to one side of this external connection of fire compartments in lieu of both external walls.	C4D4 C1P2

Item	Description	BCA Provision
2.	Permit the inclusion of a glazed sliding door within the fire wall separating the Lower Ground Lobby and undercover drop off area fire compartments.	C4D4 C1P2
3.	Permit extended travel distances and increased separation between alternative exits to the Lower Ground external covered area as follows: + Up to 46m to the nearest exit, in lieu of 40m from the Main Switch Room. + Up to 69m between alternative exits, in lieu of 60m.	D2D5 & D2D6 D1P4 & E2P2
4.	Permit extended travel distances and increased separation between alternative exits within the new and existing Patient Care Areas as indicated in Part 4.5.1.4 of this report.	D2D5 & D2D6 D1P4 & E2P2
5.	Eastern fire-isolated stair serving basement storeys will require occupants to pass within 6m of unprotected openings (Lower Ground Lobby entrance doors) within the external walls of the same building to reach the adjoining roadway.	D2D12 D1P4
6.	The on-grade exits provided to the Ground Floor discharging into the Crown Street Porte Cochere will be required to be added to existing fire engineered performance solution 10 (above).	D2D15 D1P4
7.	Permit horizontal exit doors and smoke compartment doors to swing against the direction of egress where bi-directional travel is required through the exit or smoke compartment line.	D2D20 D1P2
8.	To demonstrate that the construction of external walls is such that they will prevent the penetration of water that could cause unhealthy or dangerous conditions or loss of amenity to occupants and undue dampness or deterioration of building elements.	F3P1
9.	Omission of an island type plunge bath facility whereby alternative means of bathing facilities is being proposed within each patient care areas throughout each storey of the building.	F4D4 F4P1
Building Code of Australia compliance matters to be addressed		
10.	Existing Level 5A and the proposed Level 1 drawings have not been provided to confirm the existing and proposed fire & smoke compartmentalisation within this area. Additionally, the Existing Level 5B and 6B layouts do not align with the existing drawings available for these portions of the building. Further information is to be provided to confirm compliant compartment sizes and egress travel distances.	C3D6, D2D5 & D2D6
11.	It is noted that the external separation between fire compartments on the Ground Floor between the new Hospital Street and the new Emergency Department is not required if the 180° separation is achieved for more than 2.0m. The current plans indicate that the external glazed wall of the Hospital Street curve within 2.0m of the external walls of the Emergency Department (refer to Figure 8 below) which will require the external walls of both fire compartments to achieve a 60/60/60 FRL or be drencher protected for 2m on either side of the dividing wall. It is recommended that the	C4D4

Item	Description	BCA Provision
	external wall design is amended to ensure that the proposed curve does not commence within this distance.	
12.	<p>The proposed discharge arrangement for the eastern fire-isolated stair serving the above-ground storeys of the building is unclear and as such, compliance is unable to be confirmed. Further review of the stair discharge arrangements will be undertaken as the design develops.</p> <p>Furthermore, it is noted that the Western stair core will discharge into a fire-isolated passage on the Lower Ground Floor however, the plans do not indicate how the separation of the stair rising from the basement storeys and the stair descending from the above-ground storeys will be achieved. Further review is to be undertaken as the design develops.</p>	D2D12, D2D15 & D3D5

1.0 Basis of assessment

1.1 Location and description

The building development, the subject of this report, is located at Wollongong Private Hospital SSDA – 360-364 Crown Street, Wollongong NSW 2500. The building generally consists of the following:

- + One (1) new basement Radiation Oncology Tenancy (Basement 6).
- + Two (2) new basement levels comprising carparking and miscellaneous plant / storage areas (Basements 4 & 5).
- + Extension of the two (2) existing basement levels comprising carparking and miscellaneous plant / storage areas (Basements 2 & 3).
- + Extension of the Lower Ground Floor to include additional carparking and drop off facilities, Medi-Hotel lobby, general building lobby from Urunga Parade, and plant and services rooms.
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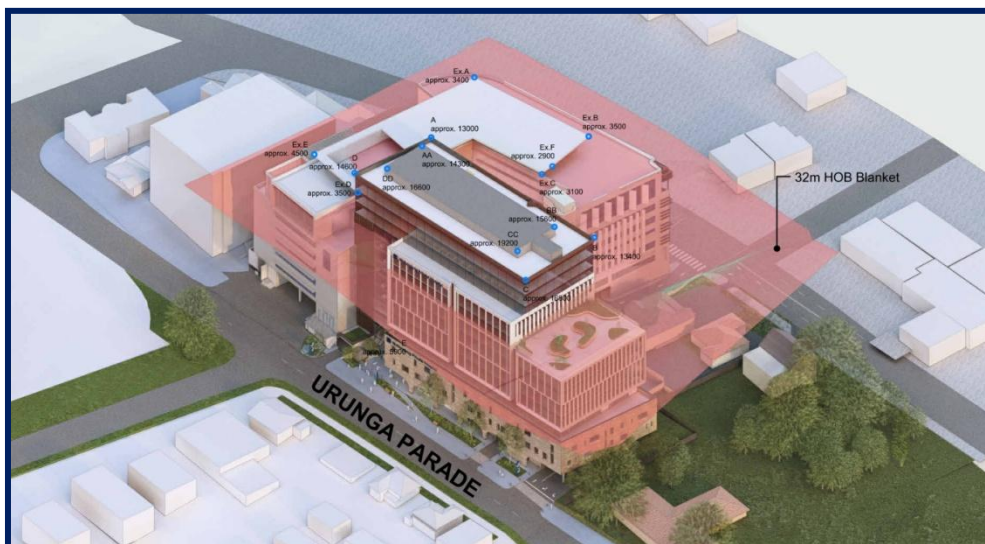


Figure 2 - Proposed Development – Urunga Parade Facade

1.2 Purpose

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of the BCA, and to clearly outline those areas (if any) where compliance is not achieved, where areas may warrant redesign to achieve strict BCA compliance or where areas may be able to be assessed against the relevant performance criteria of the BCA. Such assessment against relevant performance criteria will need to be addressed by means of a separate Fire Engineering Report (FER) for fire safety matters, and Performance Solution Report for non-fire-safety matters; such reports are to be prepared under separate cover.

1.3 Building Code of Australia

The National Construction Code (NCC) is Australia's primary set of technical design and construction provisions for buildings.

As a performance-based code, it sets the minimum required level for the safety, health, amenity, accessibility, and sustainability of certain buildings. The Australian Building Codes Board, on behalf of the Australian Government and each State and Territory government, produces and maintains the National Construction Code.

The NCC has three (3) volumes being:

- + Volume One - containing technical design and construction requirements for all Class 2 to 9 buildings.
- + Volume Two - containing technical design and construction requirements for certain residential (Class 1) and non-habitable buildings and structures (Class 10).
- + Volume Three - Containing technical requirements for the design and construction for plumbing and drainage systems in new and existing buildings.

This report is based on the Deemed-to-Satisfy Provisions of the National Construction Code (**NCC**) Series Volume One – Building Code of Australia, 2022 Edition (BCA) Amendment 2, incorporating the State variations where applicable.

Please note that the version of the BCA applicable to new building works is the version applicable at the time of the lodgement of the Construction Certificate application to the Accredited Certifying Authority, or for Crown projects the date of the invitation for tenders to carry out the Crown building work, or in the absence of tenders the date on which the Crown building work commences.

A reference to the BCA in this report is a reference to **BCA2022** Amendment 2, being volume 1 of the NCC.

1.4 Limitations

This report does not include nor imply any detailed assessment for design, compliance or upgrading for:

1. the structural adequacy or design of the building;
2. the inherent derived fire-resistance ratings of any proposed structural elements of the building (unless specifically referred to); and
3. the design basis and/or operating capabilities of any proposed electrical, mechanical or hydraulic services.

This report does not include, or imply compliance with:

1. the National Construction Code – Plumbing Code of Australia Volume 3

2. the Disability Discrimination Act 1992 including the Disability ((Access to Premises – Buildings) Standards 2010 – unless specifically referred to) (Note: The provision of access for people with a disability for the subject development has not been assessed against the Deemed-to-Satisfy Provisions of Part D4 and Clauses E3D7, E3D8, F4D5, F4D6, F4D7 and F4D12 of BCA2022 Amendment 2 unless otherwise discussed in this report);
3. Demolition Standards not referred to by the BCA;
4. Work Health and Safety Act 2011;
5. Requirements of Australian Standards unless specifically referred to;
6. Requirements of other Regulatory Authorities including, but not limited to, Telstra, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Local Council, ARTC, Department of Planning and the like; and
7. Conditions of Development Consent issued by the Local Consent Authority.

1.5 Design documentation

This report has been based on the Design plans and Specifications listed in Appendix A of this Report.

The basis of the assessment undertaken which forms part of the 100% SSDA BCA Report explicitly excludes the internal fit out of Levels 9 to 11 as this layout is subject to change by a future service provider. Additionally, the internal fitout of all extensions to the building has not been indicated on the plans provided nor have any plans for Level 1 been provided.

The assessment undertaken as part of this report relates to the cold shell formation of these areas only and does not consider any BCA compliance requirements with regard to the internal layouts of these areas including sanitary facilities.

2.0 Building description

For the purposes of the Building Code of Australia (BCA) the development may be described as follows.

2.1 Rise in storeys (clause C2D3)

The building has a rise in storeys of thirteen (13) (Lower Ground to Level 11)

2.2 Classification (Clause A6G1)

The building has been classified as follows.

Table 1 Building Classification(s)

Class	Level	Description
Class 5	Levels 3 to 8	Medical Consultation Tenancies
Class 7a	Basement Level 5 to Lower Ground & Ground Floor (part)	Car Parking, Porte Cochere & Ambulance Bay
Class 9a	Basement Level 6, Lower Ground (part) to Level 6	Emergency Department, Radiation Oncology, Ward Areas, Treatment Areas and Support Services
Class 9c	Levels 9 to 11	Aged Care Accommodation

Note: Class 7b parts of the building located on Lower Ground Floor comprise less than 10% of the floor area of the storey in which they are located. As such, these are considered ancillary to the use of the storey (Class 7a). Additionally, the Class 6 parts of the building located on the Ground Floor comprise less than 10% of the storey in which they are located and are considered ancillary to the use of the storey (Class 9a).

Floor plans for Level 1 have not been provided for assessment however, a review of the existing Level 1 floor plans and the building sections indicate that the storey will predominantly be used as a Class 9a part.

2.3 Effective height (Clause A1G4)

The building has an *effective height* of more than twenty-five (25) metres (approximately 45.60m).

2.4 Type of construction required (Table C2D2)

The building is required to be of type A Construction.

2.5 Floor area and volume limitations (Table C3D3)

The building is subject to maximum floor area and volume limits of: -

Class 5 & 9c	Maximum Floor Area	8,000m ²
	Maximum Volume	48,000m ³
.....		
Class 9a	Maximum Floor Area	5,000m ²
	Maximum Volume	30,000m ³

Class 9a (Patient Care)	Maximum Fire Compartment	2,000m ²
Class 9a (Treatment)	Maximum Smoke Compartment	1,000m ²
Class 9a (Ward)	Maximum Fire Rated Area	1,000m ²
	Maximum Smoke Compartment	500m ²
Class 7a	The carpark is to be provided with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17) and as such there are no maximum floor area or volume limitations for this area.	

2.6 Fire compartments

The following fire compartments have been assumed:

1. Basement Level 6 forms a single compartment that is not connected to the remaining basement levels.
2. Basement Level 5 to Lower Ground Floor form a single fire compartment connected by vehicle ramps and includes the Class 7b use areas on Lower Ground (Waste Rooms, Loading Dock, etc.)
3. The Lower Ground Lobby and associated MediHotel rooms are connected to the Ground Floor Hospital Street and existing main lobby forming a single fire compartment.
4. Ground Floor Emergency department forms a separate fire compartment from the remainder of the storey.
5. Existing fire compartmentation within the Ground Floor is retained.
6. Levels 1 to 6 are subdivided into multiple fire compartments as required for Class 9a Patient Care Areas, Ancillary Class 9a areas and Class 5 areas.
7. Levels 7 & 8 are subdivided into two fire compartments by virtue of the physical separation between towers.
8. Levels 9 to 11 form single and separate fire compartments per storey.

2.7 Exits

The following points in the building have been considered as the exits:

1. Basement Levels – 2 x fire-isolated stairs in extension areas and 4 x fire-isolated stairs within existing areas.

2. Lower Ground



Figure 3 - Exits Lower Ground

3. Ground

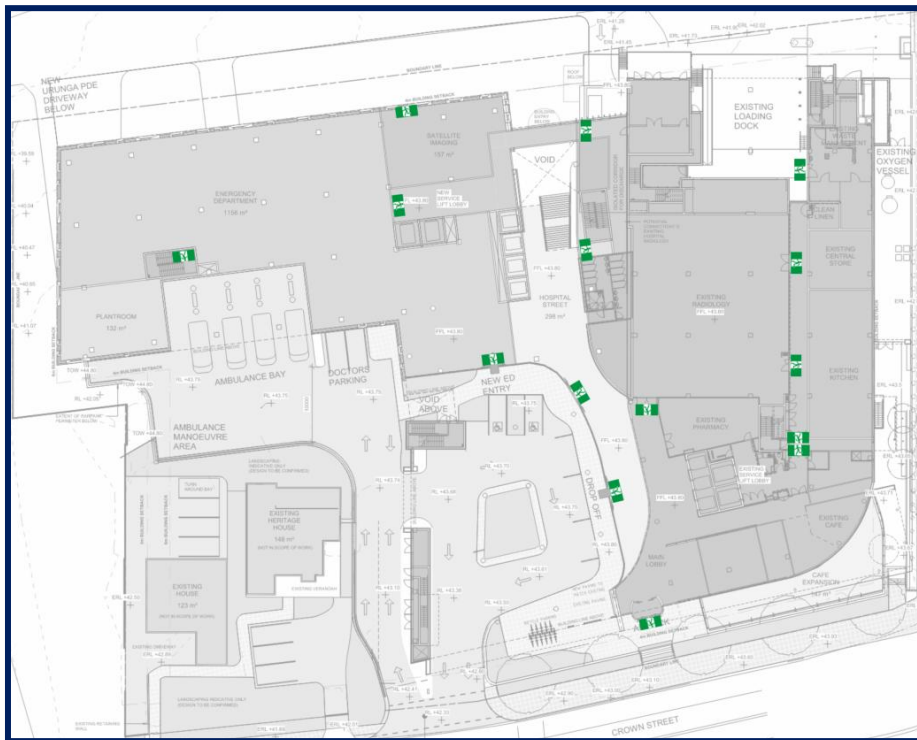


Figure 4 - Exits Ground Floor

4. Levels 1 to 11 – fire-isolated stairs provided to each storey and horizontal exits between fire compartments where applicable.

2.8 Climate zone

The building is located within Climate Zone 5.

2.9 Building importance level

Certain Australian Standards (particularly structural standards) require the Importance Level of the building to be determined. The importance level relates to the individual actions on a building listed in Clause B1D3 of the BCA. The building is importance level 4.

Table B1D3a of the BCA provides the following:

Importance Level	Building Types	Jensen Hughes Interpretation and Examples
1	Buildings or structures presenting a low degree of hazard to life and other property in the case of failure.	1 and 2 storey factory buildings
2	Buildings or structures not included in Importance Level 1, 3 and 4.	Residential apartment buildings and associated carparking. Office buildings
3	Buildings or Structures that are designed to contain a large number of people.	Stadia, Entertainment venues, shopping centres. Transport facilities
4	Buildings or Structures that are essential to post-disaster recovery or associated with hazardous facilities.	Data centres, evacuation centres

2.10 Location of fire-source features

The fire source features for the subject development are:

North: The far boundary of Urunga Parade.

South: The far boundary of Crown Street.

East: The adjoining property boundary.

West: The adjoining property boundary.

In accordance with Clause S5C2 of Specification 5, a part of a building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the fire-source feature, or vertical projection of the feature, is not obstructed by another part of the building that–

- a. has an FRL of not less than 30/–/–; and
- b. is neither transparent nor translucent.

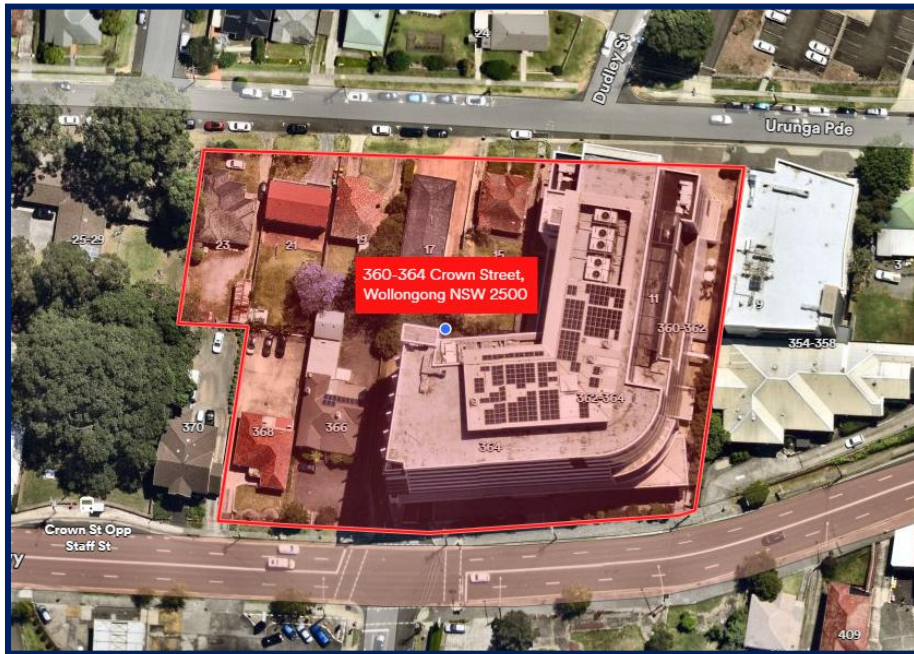


Figure 5 - Site Location

3.0 Clause 62 and 64 – Environmental Planning and Assessment

In addition to the requirements for new works to comply with the current provisions of BCA2022 Amendment 2, it is necessary to review the existing building, particularly those parts which are being relied upon for the new works component and to ascertain whether any upgrading is required to satisfy Sections 62 & 64 of the Environmental Planning and Assessment Regulation 2021.

The main trigger for upgrades to an existing building is: -

Clause 62 of the Environmental Planning and Assessment Regulation, 2021:

1. *This section applies to the determination of a development application for a change of building use for an existing building if the applicant does not seek rebuilding or alteration of the building.*
2. *The consent authority must:*
 - a. *Consider whether the fire protection and structural capacity of the building will be appropriate to the building's proposed use, and*
 - b. *not grant consent to the change of building use unless the consent authority is satisfied that the building complies, or will, when the development is completed, comply, with the Category 1 fire safety provisions that are applicable to the building's proposed use.*
3. *Subsection (2)(b) does not apply to the extent to which an exemption from a provision of the Building Code of Australia or a fire safety standard is in force under the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021.*

The proposed development involves alterations to the existing building, therefore Clause 62 does not apply.

Clause 64 of the Environmental Planning and Assessment Regulation, 2021 –

1. *This section applies to the determination of a development application that involves the rebuilding or alteration of an existing building if:*
 - a. *the proposed building work and previous building work together represent more than half of the total volume of the building, or*
 - b. *the measures contained in the building are inadequate—*
 - i. *to protect persons using the building, if there is a fire, or*
 - ii. *to facilitate the safe egress of persons using the building from the building, if there is a fire, or*
 - iii. *to restrict the spread of fire from the building to other buildings nearby.*
2. *The consent authority must consider whether it is appropriate to require the existing building to be brought into total or partial conformity with the Building Code of Australia.*
3. *In this section—*

previous building work means building work completed or authorised within the previous 3 years.

total volume of a building means the volume of the building before the previous building work commenced and measured over the building's roof and external walls.

The proposed alterations and additions are undertaken across all storeys of the existing building and represent a significant increase in the floor area of the building (increasing the GFA from 18,078m² to 39,059m²). As such, the overall works would be considered to be more than 50% of the total volume of the existing building. It is noted that the existing building was constructed between 2015 and 2016 and is likely to include building services that have been designed to comply with the previous editions of the applicable

Australian Standards. This Clause would only apply, should Council consider the measures contained in the building being inadequate to: -

- i. to protect persons using the building, and to facilitate their egress from the building, in the event of fire, or
- ii. to restrict the spread of fire from the building to other buildings nearby.

An assessment of these requirements has been undertaken below: -

- i. The proposed alterations and additions have been assessed to ensure that the building as a whole will comply with the current requirements of the BCA. This includes re-assessing the existing building as well as the building extension works to ensure compliance with BCA 2022 Amendment 2.
- ii. The existing building has an oxygen vessel enclosure located within 3 metres of the eastern boundary. The proposed works do not include any alterations to this enclosure and as such, it has not been re-assessed for compliance with the requirements of BCA 2022 Amendment 2.
- iii. The existing site will be expanded to include seven (7) adjacent properties for the expansion works. Two (2) of the existing buildings (located at 366 & 368 Crown Street) will be retained. These buildings are indicated on the Ground Floor plans however they are not included within the proposed scope of works and are not anticipated to be altered as part of the proposed works. The assessment within this report has not considered these buildings and they are not anticipated to be upgraded to meet current BCA compliance requirements.

With reference to the above assessment, to satisfy parts (1)(b)(i) and (1)(b)(ii) of Clause 64, the following upgrades are required:

- + The existing fire sprinkler system and automatic fire detection and alarm system (including EWIS) may continue to operate in accordance with their original installation standards being AS2118.1-1999 & AS1670-2004. However, all new building works shall see fire safety measures designed and installed to the current editions of the Australian Standards, as referenced in Schedule 2 of the BCA (Amdt 2) 2022 and be separated by means of fire resisting construction achieving 2 hours (FRL120/120/120) to achieve appropriate fire compartmentation between the new and existing sprinkler systems. (see also below recommendation if this is not achievable).
- + The specified locations of the existing façade of the building be upgraded as per Part 4.4.2 of this report by incorporating external drenchers to the glazed curtain wall to prevent fire spread between separate fire compartments throughout the building.
- + Any existing combustible Aluminium Composite Panel (ACP) system used on the external façade of the building is to be removed and replaced with a non-combustible product that achieves compliance with the Performance Requirements of the BCA, as detailed by the specified project timeline within the Department of Planning Industry & Environments Fire Safety Order issued against the owners and dated 22nd December 2021.

With reference to the above assessment, to satisfy parts (1)(b)(i) and (1)(b)(ii) of Clause 64, the following upgrades are to be considered with the design team;

- + Upgrading the existing fire hydrant system to comply with AS2419.1-2021.
- + Upgrading the existing fire sprinkler system to comply with AS2118.1-2017.
- + Upgrading the existing smoke detection system to comply with AS1670.1-2018.

- + Upgrading any existing smoke control or air handling system to comply with AS1668.1-2015
- + Upgrading existing portions of the building to comply with AS1428.1-2021.

4.0 BCA assessment

4.1 Introduction

The assessment undertaken is in relation to the plans prepared for the development consent application. The technical details required for a development consent are far less than that required for a construction certificate and as such, this assessment is designed to address a higher-level assessment of the building against the provisions of the BCA.

The main purpose of this report is to identify any major design changes required to the building, services required to be installed, and the fundamentals of design required by sections C, D, E, F, G and H (where applicable) of the BCA. This report does not address the design requirements for the structure of the building (Section B), or for the detailed design of services (Section E) and is subject to the limitations outlined under Section 1.4 of this report.

The summary below is to be read in conjunction with the BCA specification contained in Appendix E of the report.

4.2 Fire resistance and stability – Part C2 & Specification 5

4.2.1 Fire Resistance Levels

The building is proposed to be constructed of the following elements:

Element	Method of Construction
External Walls	TBC
Floors	Concrete (assumed)
Roof	Concrete (assumed)
Basement walls	TBC
Lift shafts	Concrete (assumed)
Stair shafts	Concrete (assumed)

The required fire resistance levels for the building elements are outlined in Appendix C of this report.

The following existing fire engineered performance solutions are to be retained as part of the proposed works:

- + The columns in the Level 8 existing rooftop plant shall not achieve the 120/--/-- FRL required by Specification 5.
- + Perimeter slab edge detail to curtain wall to be sealed with non-combustible sealant/packing and/or a metal angle.

4.2.2 Combustibility of External Walls

The plans provided do not indicate the proposed construction materials for the external walls. The external walls and all components of the wall, in a building of Type A Construction, are required to be non-combustible. Full details have not been provided with respect to the materials of the external wall and further details will be required to be submitted at Construction Certificate Stage for assessment.

It is noted that there may be existing external façade construction which has been identified as having a combustible cladding product installed. It is understood that replacement works for this existing façade has commenced as required by the Development Control Order (Fire Order) issued against the building owners by the Department of Planning, Industry, & Environment dated 22nd December 2021. Any scheduled replacement works that have not concluded at the time of writing are to be finalised as part of the proposed works.

A review of the proposed new building materials and replacement materials will be undertaken as the design develops to ensure compliance.

The following existing fire engineered performance solutions are to be retained as part of the proposed works:

- + Permit the retention of the existing foil-faced Kraft paper glued to the insulation material within the external walls.
- + Permit the retention of the four existing sky signs on the external face of the building which are located between floor slabs and are constructed with combustible materials that do not comply with C2D14.

It is noted that the building is to be provided with additional external signage on the northern elevation of the building within the extension area. This external signage does not appear to extend beyond one storey or fire compartment and is provided with sufficient separation between alternative signs. Confirmation of the signage materials is to be provided to ensure that materials achieving a Group Number of 1 or 2 are utilised. If the new signage is to be constructed to align with the existing signage, the existing fire engineering solution for the building signage will be required to be updated to incorporate the new signs.

4.2.3 Fire Hazard Properties

Internal linings and materials are required to meet the specified fire hazard properties of BCA Clause C2D11 and Specification 7.

Subject to the required FRL's being provided, the proposed building is capable of complying with the requirements of the BCA with respect to fire resistance.

4.3 Compartmentation and separation – Part C3

4.3.1 Fire Compartments

Carpark

The carpark is required to have an AS2118.1 sprinkler system, as it accommodates more than forty (40) vehicles and is part of a building required to have sprinklers. Therefore, the carpark is not subject to the floor area and volume limitations under BCA Clause C3D3.

Levels 3 to 8 Class 5 Use Areas

The Tenancy spaces provided on Levels 3 to 8 are understood to be Class 5 consultancy use, which have been illustrated to comply with the maximum fire compartment sizes of 8,000m² and 48,000m³ as per BCA Clause C3D3.

Levels 9 to 11 Class 9c Use Areas

The MediHotel / Aged Care tenancy spaces provided on Levels 9 to 11 are understood to be Class 9c use, which have been illustrated to comply with the maximum fire compartment sizes of 8,000m² and 48,000m³ as per BCA Clause C3D3.

Furthermore, a Class 9c building requires further compartmentalisation due to the overnight accommodation and impaired physical capabilities of the occupants. This additional compartmentalisation requires the 9c building (or part) to be subdivided into floor areas not exceeding 500m² by smoke-proof construction.

Additionally, ancillary use areas within the Class 9c areas as listed in BCA Clause C3D6, as follows, are required to be separated from the remainder of the area by smoke-proof walls constructed in accordance with Specification 11. These areas include:

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

The internal fitout of the Class 9c parts of the building has not been assessed as part of this report however, it is noted that the storeys are capable of being subdivided into smoke compartments not exceeding 500m².

Class 9a Use

In relation to the assessment commentary provided against BCA Clause C3D6, the following definitions are relevant in understanding compartmentation requirements.

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

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

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**.

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

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.

The patient care areas containing ward and treatment areas within the Class 9a building parts require further compartmentalisation due to the overnight accommodation and impaired physical capabilities of the occupants. This additional compartmentalisation requires ward areas containing sleeping accommodation to be subdivided into floor areas not exceeding 1,000m² by walls achieving an FRL not less than 60/60/60 and further subdivision into floor areas not exceeding 500m² by smoke-proof construction.

Treatment areas within a patient care area containing operating theatres and associated rooms utilised for recovery purposes where a patient may not be readily moved, require compartmentalisation into floor areas not exceeding 1,000m² by smoke-proof construction and 2,000m² by walls achieving an FRL not less than 60/60/60.

The following existing enlarged fire and smoke compartments as permitted under the existing fire engineered performance solutions are to be retained as part of the proposed works:

- + Level 2 south-western fire compartment = 1,136m²
- + Level 2 south-eastern smoke compartment = 518m²
- + Levels 3 & 4 central smoke compartments = 509m²

Excluding the above, the parts of the building utilised as Class 9a Patient Care Areas appear to indicate that the maximum fire and smoke compartment sizes will not be exceeded however, compliance in relation to Levels 1 and 5 cannot be confirmed at this stage. It is noted that the internal fitout of the Basement Level 6 and Ground Floor Emergency Department areas has not been indicated. As these floor areas exceed 1,000m², both areas will be required to be sub-divided into smoke compartments less than 1,000m². This will be reviewed as the design develops.

The Class 9a parts of the building that are not a Patient Care Areas are required to be sub-divided into fire compartments that do not exceed 5,000m² or 30,000m³. A review of these areas indicates that these compartment limitations will not be exceeded in the proposed design.

Furthermore, ancillary use areas within the Class 9a patient care areas as listed in BCA Clause C3D6, as follows, are required to be separated from the remainder of the patient care area by walls achieving an FRL not less than 60/60/60:

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

The existing building appears to have adequately separated all ancillary use areas and the proposed works do not currently detail the inclusion of any new ancillary use areas. Further confirmation of ancillary use spaces requiring fire separation as noted above is required.

Compliance with the provisions of the BCA for compartmentation is readily achieved, however this assessment is to be reaffirmed at Construction Certificate stage once holistic fire compartment drawings are available for assessment.

4.3.2 Spandrel Separation

The development is Type A Construction and is required to have spandrel separation between openings in an external wall. However, as the building is required to be protected with an AS2118.1 system, fire rated spandrel panels are not required under the provisions of BCA Clause C3D7.

4.3.3 Separation of Classifications

It is noted that the building will contain Class 5, 7a, 9a & 9c uses which are required to achieve the same minimum FRLs stipulated under S5C11. As such, compliance with BCA Clause C3D9(1)(a) is achieved by virtue of the classifications within the building. This will result with there being no requirement to fire separate between alternative classifications to comply with BCA Clauses C3D9 or C3D10. The above notwithstanding, separation between classifications will be achieved due to the required fire compartmentalisation as outlined in Part 4.3.1 of this report.

4.3.4 Separation of Lift Shafts

As the building exceeds an effective height of 25m and includes Patient Care Areas on storeys other than Ground, not less than two (2) emergency lifts must be provided to each storey and part of the building serviced by lifts. As there will be multiple lift shafts provided as part of the proposed works, the new emergency lifts must be provided in separate fire-isolated shafts. These fire-isolated lift shafts must achieve and FRL not less than 120/120/120 throughout (excluding doorways which are to achieve an FRL of -/60/-).

4.3.5 Electrical Equipment

It is noted that a new substation will be provided as part of the proposed works and a new switch room will be provided in the external covered area on Lower Ground Floor. It is assumed that the existing main switchboard within the existing Ground Floor Main Switch Room will be retained and unaltered as part of the proposed works and the new works will be serviced by the new Main Switch Room.

As the existing switchboard is required to sustain emergency equipment in an emergency, the services room is required to be fire separated from the remainder of the building. The existing building plans indicate that this is achieved.

Compliance with Part C3 of the BCA can be readily achieved by the proposal.

4.4 Protection of Openings – Part C4

4.4.1 Openings in external walls

The existing and proposed external walls are located more than three (3) metres from the adjoining property boundaries, more than six (6) metres from the far boundary of the adjoining roadways and more than six (6) metres from any other building on the allotment (two (2) x existing houses). As such there is no requirement to protect any openings within the external walls.

4.4.2 External openings between alternative fire compartments

Due to the Class 9a health care use, the building design includes fire compartmentation with glazed openings within external walls and as such will require protection of openings as an extension of fire compartmentation in accordance with BCA Clause C4D4. Where the angle between external walls and openings in different fire compartments is between 45° to 90° protection of openings is to be provided for a length of 4m as illustrated in Figure 6 below.

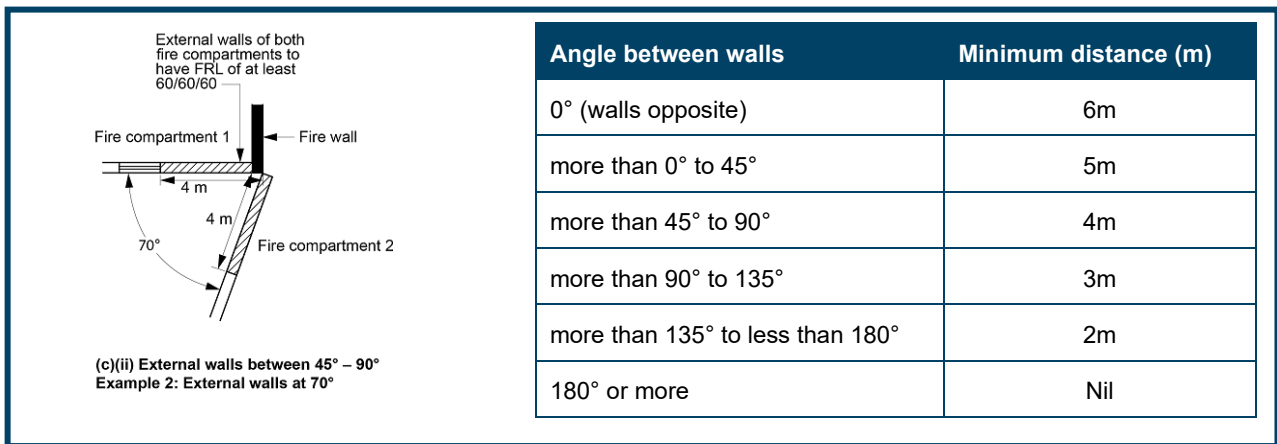


Figure 6 - Extract from the Guide to the BCA C4D4

As nominated with blue lines in Figure 7 below, external walls are required to achieve an FRL not less than 60/60/60 and glazed openings within the external walls are required to be protected as per BCA Clause C4D5, where windows are provided with internal or external wall-wetting sprinklers or windows achieve a - /60/- FRL and windows are automatic closing or permanently fixed in the closed position. Where it is not possible to provide wall-wetting sprinkler protection, these unprotected openings between fire compartments are to be addressed under a fire engineered performance solution.

It is noted that this protection is required to be provided between the following area:

- + Level 2 – Existing central Mechanical Plant Room & existing ward (maternity ward).
- + Level 2 – Existing central Mechanical Plant Room & new 33m² plant room.
- + Level 3 – Existing Inpatient Ward 2 and existing Inpatient Ward 3 (Eastern and Western sides).
- + Level 3 – Existing Inpatient Ward 2 and proposed Waiting Lounge.
- + Level 4 – Existing Inpatient Ward 4 and existing Inpatient Ward 5 (Eastern and Western sides).
- + Level 4 – Existing Inpatient Ward 4 and proposed Waiting Lounge.
- + Level 5 – Existing central waiting area (RM1654) and existing plant room (RM1753).

- + Level 5 – Existing Day Oncology and existing Consulting Suite 501.
- + Level 5 – Existing Cath Lab and proposed Waiting Lounge.

The existing building plans provided indicate that fire-rated walls are provided in some instances and not in others. As the existing Fire Engineering Reports do not indicate that the openings between two existing areas have been addressed under performance solutions, it is assumed that drencher protection has been provided. Confirmation of the provision of drencher protection to new and existing openings as identified above is to be provided as the design develops.

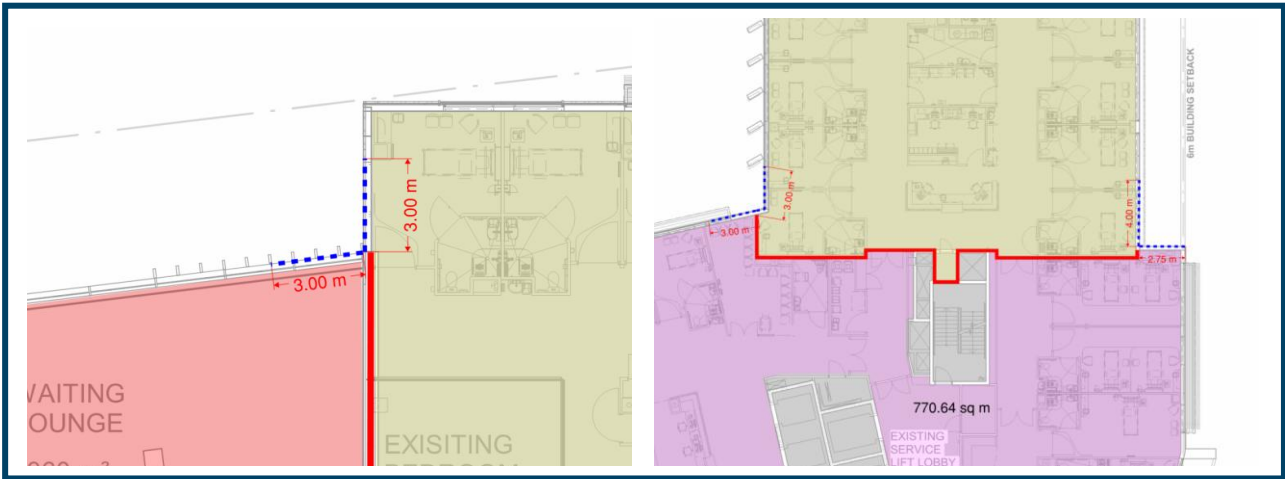


Figure 7 - External Openings Between Fire Compartments Level 4

It is noted that the external separation between fire compartments on the Ground Floor between the new Hospital Street and the new Emergency Department is not required if the 180° separation is achieved for more than 2.0m. The current plans indicate that the external glazed wall of the Hospital Street curve within 2.0m of the external walls of the Emergency Department (refer to Figure 8 below) which will require the external walls of both fire compartments to achieve a 60/60/60 FRL or be drencher protected for 2m on either side of the dividing wall. It is recommended that the external wall design is amended to ensure that the proposed curve does not commence within this distance.

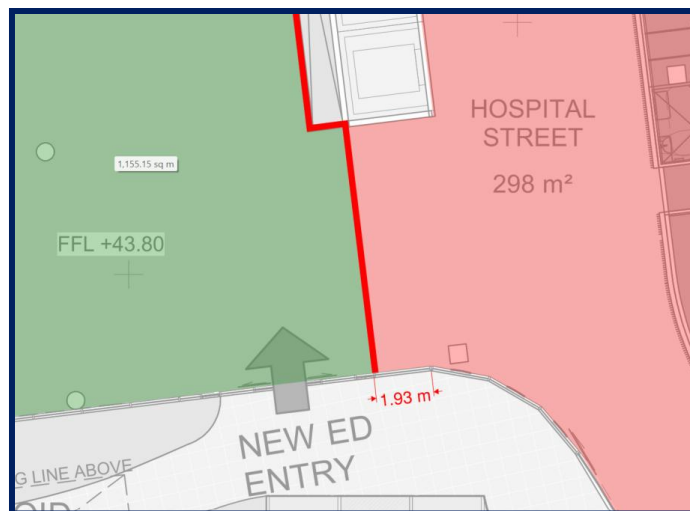


Figure 8 - External Separation Between Fire Compartments (Ground Floor)

In addition to the above, the proposed construction of the external walls of the Lower Ground Lobby (Urunga Pde entrance) and the Ground Floor space above this appear to be glazed. These external walls are provided at an angle between 90° and 135° to the existing external walls of the existing substation. It is assumed that the new glazed walls will not be provided with drencher protection or achieve an FRL of (60)/60/60. As such, it is proposed to permit the external walls to achieve an FRL of 60/60/60 to one side of this external connection of fire compartments in lieu of both external walls under a fire engineered performance solution.

It is noted that the Lower Ground Lobby will include a glazed sliding door within the external wall that provides access between the undercover drop off area and the lobby. As this external wall is required to be fire-rated to achieve separation between the basement carparking fire compartment and the Lower Ground / Ground Floor Class 9a (general use) fire compartment, a fire engineered performance solution is required to permit the inclusion of a glazed sliding door within the fire wall separating fire compartments.

4.4.3 Horizontal Exits and Doorways within Fire Walls

In a Class 9a health care building, horizontal exits may be counted as required exits if the path of travel from a fire compartment leads by one or more horizontal exits directly into another fire compartment which has at least one required exit which is not a horizontal exit.

Horizontal exits must have a clear area on the side of the fire wall to which occupants are evacuating, to accommodate the total number of persons served by the horizontal exit of not less than –

- (a) 2.5 m² per patient/resident in a Class 9a health-care building or Class 9c aged care building; and
- (b) 0.5 m² per person in any other case.

Staff and patient numbers are to be provided to enable assessment of compliance to be completed.

A doorway that is part of a horizontal exit must be protected by a fire door achieving a FRL not less than -- /120/30 in accordance with BCA Clause C4D6. Horizontal exits must be self-closing or automatic-closing with the operation of the automatic-closing initiated by activation of a smoke detector in accordance with AS1670.1 to be located within 1.5m of the horizontal exit to each side of the fire wall. Activation of sprinklers within either fire compartment separated by the fire wall must also initiate the automatic closing operation.

Exit doors and horizontal exits have not currently been indicated on the plans provided for the new extension works. A review of the proposed horizontal exits will be undertaken as the design develops. It is noted that all fire compartments contain not less than one (1) exit that is not a horizontal exit.

4.4.4 Openings in floors for services and service installations

Where electrical, plumbing, mechanical or other services pass through an element of construction that is required to achieve a fire resistance level (FRL), the service installation shall not compromise the fire resistance level of the element. A such, the service installation must be fire sealed with a compliant system such as fire collar on PVC pipes or fire rated mastic on electrical cables tested in accordance with AS1530.4-2014.

Fire sealing of services is a design element that will require detailed assessment and specification at Construction Certificate stage.

4.5 Occupant access and egress – Section D

4.5.1 Egress from the building

4.5.1.1 General Requirements

As the development is over twenty-five (25) metres effective height, each storey is required to have no less than two (2) exits. Furthermore, within Class 9 parts, in addition to any horizontal exit, not less than two exits must be provided from any storey which includes a patient care area additionally, at least one exit must be provided from every part of a storey which has been divided into fire compartments required by BCA Clause C3D3 or C3D6 in a Class 9a health care building. Where two (2) exits are available, they are to be no less than nine (9) metres apart.

A review of the drawings provided indicates that all storeys are provided with no less than two (2) exits, every part of the building that has been sub-divided into fire compartments to comply with C3D6 has been provided with 1 required exit and where a fire compartment is provided with only horizontal exits, (i.e. Ground Floor Existing Radiology), the horizontal exits are permitted to be counted as required exits as per BCA Clause D2D16(2).

All stairs within the building (with the exception of the stair within the Lower Ground / Ground Floor Hospital Street) are required to be provided as fire-isolated stairs. The plans provided indicate that this is achieved. The Hospital Street stairs are permitted to be non-fire-isolated as they are located within a non-patient-care area of the building.

Where the egress discharges to open space on the property, a continuous pathway from the point of discharge to the street is required. The plans generally indicate such a pathway is provided however it is unclear whether this is provided to all exits and whether all exits are provided with ramped access to the adjoining road / open space. It is noted that the existing exits from the building incorporate stair discharge arrangements that have been addressed under the existing fire engineering reports, these include:

- + The path of travel from the following exits to the public road incorporates stairs in lieu of a ramp:
 - Fire Stairs 4, 5, 6, 7 and 8.
 - Egress from the ground floor electrical sub-station.

The existing exit discharge arrangements will not be altered for the existing fire-isolated stairs and as such, the existing fire engineered performance solution for the exits listed above is to be retained. The newly constructed exits within the building extension appear to generally comply with the requirements of D2D15 however, the on-grade exits provided to the Ground Floor discharging into the Crown Street Porte Cochere will be required to be added to the existing fire engineered performance solution.

Handrails within a Class 9a health-care building must be provided along at least one side of every passageway or corridor used by patients, and must be -

- + fixed not less than 50mm clear of the wall; and
- + where practicable, continuous for their full length.

Drawings provided do not provide adequate detail to demonstrate the compliant provision of handrails alongside corridors used by patients. Handrails are to be demonstrated in accordance with D3D22 as the design progresses.

A swinging door in a required exit or forming part of a required exit must swing in the direction of egress as outlined in BCA Clause D3D25. Doors serving as horizontal exits between fire compartments and smoke

doors provided between smoke compartments are required to swing in both directions. Doors between the existing fire and smoke compartments appear to swing in a single direction and the proposed extension drawings do not confirm door locations or swing directions. It is proposed to allow horizontal exit doors and smoke compartment doors to swing against the direction of egress where bi-directional travel is required through the exit or smoke compartment line under a fire engineered performance solution.

As required by BCA Clause D3D27 doors of a fire-isolated exit within a Class 9a health care building must not be locked from the inside, unless provided with a doorway that is fitted with a fail-safe device that automatically unlocks the door upon activation of a fire alarm and is provided with an intercommunication system, or an audible or visual alarm system, operated from within the enclosure provided near doors and a sign is fixed adjacent to such doors explaining its purpose and method of operation.

Confirmation of the fire stair re-entry strategy is to be provided as the design progresses.

Electrical distribution cupboards are to be provided with smoke separation to satisfy the requirements of BCA Clause D3D8. The doors are to be lined internally with fire grade plasterboard or metal backing sheets and smoke seals provided to all four sides, including drop down seals on the bottom. All penetrations from the enclosure are to be suitably sealed against smoke spread by sealing with non-combustible mastic.

4.5.1.2 Car Parking Egress

Egress from the carparking areas of the building shall ensure that no point on the floor is more than twenty (20) metres from an exit, or where a point of choice of two (2) exits is available, the distance to the nearest of those exits does not exceed forty (40) metres, as permitted by BCA Clause D2D5.

The distance between alternative exits is required by BCA Clauses D2D6 to be no closer than nine (9) metres and no further apart than sixty (60) metres when measured through the point of choice.

It is noted that the following existing fire engineered performance solution for extended travel distances within the existing car parking areas is to be retained as part of the proposed works:

- + Basement 1 (Lower Ground) – up to 47m to an exit, in lieu of 40m from the Fresh Air Fan Room.
- + Basements 2 & 3 – up to 42m to an exit, in lieu of 40m.
- + Basements 1 to 3 – Up to 69m between alternative exits, in lieu of 60m.

The proposed additional car parking areas provided across Basement Level 5 to Lower Ground generally maintain compliance with the limitations of Clauses D2D5 and D2D6 however, it is noted that the Lower Ground external covered area forming the new drop off and carpark entrance will include the following extended travel distances that are to be addressed under an updated fire engineered performance solution:

- + Up to 46m to the nearest exit, in lieu of 40m from the Main Switch Room.
- + Up to 69m between alternative exits, in lieu of 60m.

4.5.1.3 Commercial Tenancies, Ancillary 9a and Aged Care Egress

Egress from the commercial / medical consultation tenancies, ancillary Class 9a areas of the building and Aged Care portions of the building shall ensure that no point on the floor is more than twenty (20) metres from an exit, or where a point of choice of two (2) exits is available, the distance to the nearest of those exits does not exceed forty (40) metres, as permitted by BCA Clause D2D5.

The distance between alternative exits is required by BCA Clauses D2D6 to be no closer than nine (9) metres and no further apart than sixty (60) metres when measured through the point of choice.

It is noted that the following existing fire engineered performance solution for extended travel distances within the Ancillary Class 9a areas is to be retained as part of the proposed works:

- + Permit extended travel to a point of choice of up to 27m, in lieu of 20m from the Ground Floor pharmacy.

The proposed commercial, ancillary and aged care areas provided throughout the building generally maintain compliance with the limitations of Clauses D2D5 and D2D6 however, it is noted that the following extended travel distances are to be addressed under an updated fire engineered performance solution:

- + Up to 22m to a Point of Choice from the Ground Floor Café Expansion.
- + Up to 45m to the nearest exit from the Level 2 expansion Plantroom.
- + Up to 25m to a Point of Choice from Medical Consulting Tenancies on Levels 6 & 7.
- + Up to 30m to a Point of Choice from the Level 7 Sky Garden.

4.5.1.4 Patient Care Areas

Egress from the Patient Care Areas within the building shall ensure that no point on the floor is more than twelve (12) metres from an exit, or where a point of choice of two (2) exits is available, the distance to the nearest of those exits does not exceed forty (30) metres, as permitted by BCA Clause D2D5.

The distance between alternative exits is required by BCA Clauses D2D6 to be no closer than nine (9) metres and no further apart than forty-five (45) metres when measured through the point of choice.

It is noted that the following existing fire engineered performance solution for extended travel distances within the Patient Care Areas is to be retained as part of the proposed works:

- + Up to 35m to an exit from the Level 1 Stage 2 Recovery Area.
- + Up to 35m to an exit from the Level 2 patient rooms adjacent Stair 7.
- + Level 2 alternative travel paths of travel converge within 2.5m on the southern side of Stair 7 (in lieu of 6m).

The proposed Patient Care Areas provided throughout the building generally maintain compliance with the limitations of Clauses D2D5 and D2D6 however, it is noted that the following extended travel distances are to be addressed under an updated fire engineered performance solution:

- + Basement 6 Radiation Oncology and Ground Floor Emergency Department – Allow up to 15m to a point of choice, up to 35m to the nearest exit and up to 55m between alternative exits
- + Existing Level 2 Maternity Ward – up to 35m to the nearest exit and up to 60m between alternative exits.
- + Existing Level 3 and 4 Inpatient Wards (Units 3 and 5) – up to 32m to the nearest exit.
- + Existing Level 5 Day Surgery – up to 36m to the nearest exit and up to 54m between alternative exits
- + Existing Level 5 Oncology Unit – up to 48m between alternative exits.
- + Existing Level 6 Inpatient Unit – up to 50m between alternative exits.

It is noted that the existing building layouts on Levels 5 and 6 do not align with the existing floor plans available and as such, it is unclear where the horizontal exits are located within these storeys. Further information is to be provided in relation to these existing parts of the building to confirm compliance. Furthermore, the proposed Level 1 layout has not been provided for review and may also incorporate extended travel distances. Further review will be undertaken as the design develops.

4.5.2 Paths of travel to exits

The unobstructed width of a passageway or corridor normally used for the transportation of patients in beds within a treatment area or ward area is to achieve a minimum of 1.8m as required by BCA Clause D2D8.

Where the corridor width is less than 2.2m, patient care areas are required to have a doorway with an unobstructed clear width of 1,200mm and if the corridor width is greater than 2.2m, doorways are to achieve an unobstructed width of 1,070mm as required by BCA Clause D2D9. Where the doorway is fitted with two leaves and one is secured in the closed position, one leaf must provide an unobstructed opening of not less than 800mm wide. The unobstructed width of a horizontal exit must not be less than 1,250mm. Further review will be required to be undertaken as the design progresses.

It is noted that the following existing fire engineered performance solution for reduced egress widths is to be retained as part of the proposed works:

- + The following areas have been identified as having clear unobstructed egress widths less than 1000mm:
 - Level 1 Staff Station access points (RM2321, RM2150, RM1978, RM2122).
 - Level 1 Scrub Room outside operating theatres OT2 and OT3 (RM1920).
 - Level 1 Stage 2 Recovery Store Room (RM2139), Record Room (RM2103) and Day Surgery Reception (RM2102).
 - Levels 3 & 4 Staff Stations (RM3055, RM3355).
 - Level 5 Amenities (RM3802, RM3803).

A review of the existing floor plans generally indicates that corridor widths within patient care areas exceed 1.8m as required and are typically greater than 2.2m. Further review of the achieved corridor and door opening widths will be reviewed as the design develops.

BCA Clause D3D15 requires a landing within a stairway in a Class 9a building where the stair has a change in direction of 180°, to have a clear width of not less than 1.6m and length of not less than 2.7m. The new and existing fire isolated stairways are to incorporate landings that can facilitate the movement of a 2m long by 600mm wide stretcher across the stairway with at least one end of the stretcher being located on the landing while changing directions. Where the landing details a 180-degree change of direction it must have a width of 1.6m and a length of 2.4m measured in accordance with Figure 9 below.

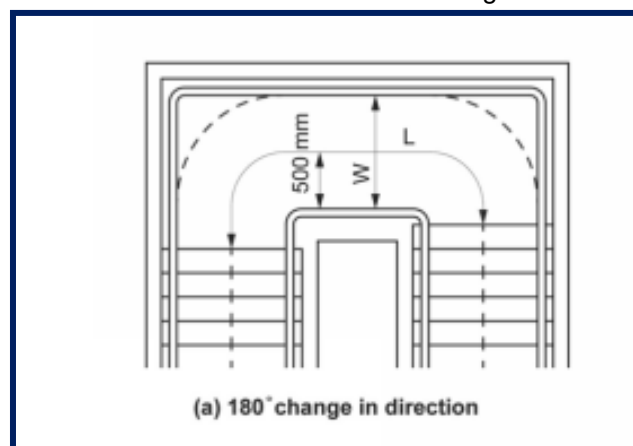


Figure 9 - Method of Measuring Landings

A detailed review of the landing dimensions will be undertaken as the design develops and detailed stair drawings are available.

4.5.3 Fire-Isolated Stairs

The existing fire-isolated stairs provided throughout the building are to be retained as part of the proposed works and an additional two (2) x fire-isolated stair cores (including one (1) stair serving basement storeys and one (1) stair serving above-ground storeys) will be provided as part of the proposed works.

It is noted that the following existing fire engineered performance solution in relation to the design of the fire-isolated stairs is to be retained as part of the proposed works:

- + Fire Stair 3 discharges into the loading dock in lieu of directly to a road or open space.
- + The path of travel from Fire Stairs 4, 5 and 6 to the public road requires occupants to travel within 6m of unprotected building openings.
- + Fire Stair 7 discharges at ground floor into an internal passageway in lieu of directly to a road or open space.

The proposed works will not alter the egress arrangements for the existing fire-isolated stairs within the building (Fire Stairs 1 to 8) and a review of the proposed new fire-isolated stairs indicates that the Western stair core will generally comply with the requires of BCA Clause D2D12 however the following non-compliances are noted:

- + Eastern fire-isolated stair serving basement storeys will require occupants to pass within 6m of unprotected openings (Lower Ground Lobby entrance doors) within the external walls of the same building to reach the adjoining roadway.

The above arrangement is to be permitted under an updated fire engineered performance solution.

The proposed discharge arrangement for the eastern fire-isolated stair serving the above-ground storeys of the building is unclear and as such, compliance is unable to be confirmed. Further review of the stair discharge arrangements will be undertaken as the design develops.

Furthermore, it is noted that the Western stair core will discharge into a fire-isolated passage on the Lower Ground Floor however, the plans do not indicate how the separation of the stair rising from the basement storeys and the stair descending from the above-ground storeys will be achieved. Further review is the be undertaken as the design develops.

4.5.4 Access for people with a disability

BCA Part D4 has not been assessed within this report. It is assumed a separate Access Consultant has been engaged.

4.6 Services and equipment- Parts E1, E2, E3 and E4

The building is required to be provided with the services and equipment set out in Appendix B of this report. The appendix also outlines the standard of performance to be achieved by the services and equipment.

4.6.1 Part E1 – Fire Fighting Equipment

Specific comments pertaining to fire fighting services and equipment required for the building as set out in Appendix B of this report are provided as follows:

4.6.1.1 Fire hydrant

As the building has a floor area greater than 500m², fire hydrant protection is required. Fire hydrants are to be located within fire isolated stairs as relevant to the requirements contained within AS 2419.1-2021.

The hydrant booster is required to be no more than twenty (20) metres from the building and within sight of the principal pedestrian entrance as well as located not less than ten (10) metres from any substation. The existing booster assembly is located adjacent to the existing vehicle entrance from Crown Street and is noted to be within 5m of the external walls of the building without a shield wall. This was previously permitted under a fire engineered performance solution as the concession to omit protection of the booster assembly within a sprinkler protected building is not included within AS21118.1-1999.

The plans provided do not indicate the retention of the existing booster assembly however it is unclear whether this is due to the early stage of design or whether a new booster assembly will be provided in a new location. Further review of the booster assembly arrangement will be completed as the design develops.

The existing building is provided with a combined fire hydrant and sprinkler system. The existing FERs indicate that the pump equipment is located on the Ground Floor in the undercover drop-off area adjacent to Stairs 1 and 6. A new dedicated fire pump room has not been indicated on the plans provided however it is anticipated that a new fire pump room will be provided as part of the proposed works. Further review will be completed as the design develops.

The plans indicate the approximate locations of the fire hydrants within the fire-isolated stairs on the entry landings of each storey. Adequate hydrant coverage appears to be provided on all storeys of the building however, further review will be required to confirm compliance throughout the building as the design develops.

Further information will be required at the Construction Certificate Stage from the Wet Fire Consultant to demonstrate compliance.

4.6.1.2 Fire Hose Reel

Fire Hose Reels (FHRs) are required to be provided throughout the carparking & Class 9a parts of the building. FHRs are indicated within the existing portions of the building and appear to generally achieve adequate coverage however, FHRs have not been shown within the proposed works to confirm compliance. Further review will be required to confirm compliance throughout the building as the design develops.

Further information will be required at the Construction Certificate Stage from the Wet Fire Consultant to demonstrate compliance.

4.6.1.3 Sprinklers

The building is required to have a sprinkler system installed throughout all parts of the building as per BCA Clause E1D5 & Specification 17. Details are to be provided at the Construction Certificate Stage by the

Hydraulic Consultant to demonstrate compliance. It is understood that the existing building is provided with a combined fire hydrant and sprinkler systems designed to comply with AS2118.6-2012, AS2118.1-1999 and AS2419.1-2005. The existing system includes a fire engineered performance solution to allow for the use of a water supply storage capacity of 25,000L despite the ground floor containing retail tenancies that are Ordinary Hazard 3 (OH3).

It is unclear whether the proposed works (which include water storage tanks) will require the retention of this performance solution, an update to the existing solution or whether they will allow for this to be removed due to a compliant design.

Further information will be required at the Construction Certificate Stage from the Wet Fire Consultant to demonstrate compliance.

4.6.1.4 Portable Fire Extinguishers

The development is required to have portable fire extinguishers installed throughout in accordance with AS2444-2001. Compliance is readily achievable.

4.6.1.5 Fire Control Centre

As the development is over twenty-five (25) metres in effective height, it is required to have a Fire Control Centre (FCC) in accordance with Clause E1D15 and Specification 19.

The existing Fire Control Centre is located within the existing Ground Floor Main Lobby accessed via Crown Street. The existing location has been supported by a fire engineered performance solution as it is located approximately 1.3m higher than street level (when measured to the Hydrant Booster Assembly).

It is noted that the proposed works will include the formation of a Fire Control Room which will be accessed via Urunga Parade. The RLs provided indicate that the change in height from the external footpath will be approximately 140mm. If the new Fire Control Room will house the Main FIP for the building, it is understood that the existing performance solution for the existing FIP can be omitted.

It is also noted that the building does not have an effective height exceeding 50m and as such, a fire control room complying with Specification 19 is not required to be provided.

Detailed information has not been provided to confirm compliance and further design input is required at the Construction Certificate Stage.

4.6.1.6 Provisions for Special Hazards

The building is capable of containing Electric Vehicles (EVs) and may also be provided with Photovoltaic (PV) cells on the roof of the building. The ability to park an EV within a building and the inclusion of PV Cells are recognised by FRNSW as Special Hazards which are required to be assessed as risks as part of the application to FRNSW.

4.6.2 Part E2 – Smoke Hazard Management

Specific comments pertaining to smoke hazard management system services and equipment required for the building as set out in Appendix B of this report are provided as follows:

4.6.2.1 Smoke Detection & Alarm System

The development must be provided with a smoke detection and alarm system complying with Specification S20C4 throughout. The preliminary Development Application plans do not provide any details regarding the layout of smoke detection and alarm system. Further information is needed from the Dry Fire Consultant during the Construction Certificate Stage to demonstrate compliance.

4.6.2.2 Automatic Mechanical Shutdown

Ducted mechanical ventilation or individual units with a capacity more than 1000 L/s, is/are anticipated to be provided throughout all parts of the building (excluding car parking) therefore automatic shutdown will be required to the ventilation systems provided to each storey, fire compartment and smoke compartment as required by BCA Clause E2D3. No details have been provided, and further design development is necessary from the Mechanical Consultant.

The above notwithstanding, it is understood that the mechanical air-handling system serving the operating theatres within the existing portions of the building have inbuilt programming provisions and manual override to enable it to run during a fire. This is anticipated to also be required within the proposed operating theatres expansion on Level 1 and as such, the existing fire engineered solution will be required to be updated to include all new areas.

4.6.2.3 Stair Pressurization

As the development comprises stairs which serve a level above twenty-five (25) metres effective height and stairs which serve more than two (2) basement storeys that have not been counted in the Rise in Storeys, it will be necessary to have a stair pressurisation system to all fire-isolated stairs within the building.

The drawings do not provide sufficient detail to confirm whether all stairs have stair pressurisation shafts as required. With design development all shafts and lobby relief will need to be further developed with further design input from the Mechanical Consultant at the Construction Certificate Stage.

4.6.2.4 Zone Pressurisation

As the development comprises a building with an effective height of more than 25m, the Class 5, 9a & 9c parts of the building are required to be provided with zone pressurisation between vertically separated fire compartments. No details have been provided, and further design development is necessary from the Mechanical Consultant.

4.6.3 Part E3 – Lift Installations

As the building exceeds an effective height of 25m and includes Patient Care Areas on storeys other than Ground, not less than two (2) emergency lifts must be provided to each storey and part of the building serviced by lifts. As there will be multiple lift shafts provided as part of the proposed works, the new emergency lifts must be provided in separate fire-isolated shafts.

The emergency lifts must be provided with stretcher facilities with clear space not less than 600mm wide x 2,000mm long x 1,400mm high above the floor level. However, as the emergency lifts will also serve a Class 9a part of the building, the internal dimensions of the lift car are required to comply with Table E3D5 (refer to

Figure 10 below) which exceeds minimum dimensions required for stretcher facilities. The existing lifts are understood to meet this requirement, and the proposed lifts illustrate dimensions of 1,850mm wide x 2,600mm long which exceed the minimum requirements as per Table E3D5.

Lift component	Minimum dimension (mm)
Minimum depth of car	2280
Minimum width of car	1600
Minimum floor to ceiling height	2300
Minimum door height	2100
Minimum door width	1300

Figure 10 - Extract of BCA Table E3D5

The emergency lifts that do not serve Class 9a Patient Care Areas (i.e. MediHealth Tenancy Lifts) are permitted to have internal dimensions of 1,400mm wide x 1,600mm long and must be contained within a fire resisting shaft (FRL 120/120/120) and be connected to a standby power supply system where installed. It is noted that there must be a minimum of two (2) emergency lifts provided to serve these storeys.

No details have been provided to undertake an assessment. Therefore, further information is required during the Construction Certificate Stage.

4.6.4 Part E4 – Visibility in emergency, exit signs and warning systems.

Specific comments pertaining to emergency lighting, exit signs and warning systems required for the building as set out in Appendix B of this report are provided as follows:

- + Emergency lighting is required as per BCA Clause E4D2 for all non-fire-isolated stairs, corridors, passageways, hallways, or the like that is part of a path of travel to an exit.
- + Exit signs are required to be installed throughout the building, including directional exit signs to guide occupants to the designated exits in the building.
- + Emergency warning and intercommunication system is required to be installed within buildings with an effective height greater than twenty-five (25) metres.

The DA plans do not provide any details for the emergency lighting and exit signs. As such further information will be required at the Construction Certificate Stage, however compliance is readily achievable.

4.7 Facilities in buildings – Part F4

4.7.1.1 Aged Care Amenities

BCA Clause F4D2 requires the following facilities for a Class 9c building:

- + A closet pan;
- + Shower
- + Bath
- + Kitchen
- + Laundry facilities
- + Clinical hand washing basin.

The plans provided do not provide details of the amenities that are to be provided within studio apartments or the communal parts of the Class 9c storeys. Further review is to be undertaken to determine compliance as the design develops.

4.7.1.2 Healthcare Amenities

BCA Clause F4D4 requires the following facilities for a Class 9a building:

- + 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.

The plans have been assessed which indicated that the above facilities have been provided within the existing portions of the building however, an island type plunge bath has been omitted under a performance solution due to alternative means of bathing being provided within each Patient Care Area on each storey of the building. The existing kitchen and laundry facilities are understood to comply and will be retained as part of the proposed works.

Sanitary facilities for the use of Staff and outpatients are provided throughout Levels Lower Ground to Level 8 and are typically provided within the central lift lobby areas. It is to be noted that sanitary facilities for outpatients are not technically required to be provided, however for convenience purposes, members of the public are anticipated to have access to these facilities.

The number of facilities (WCs, urinals, basins etc) have not been indicated for all amenities indicated on the plans. Further details of facilities provided and also anticipated occupant numbers are required to enable assessment under Clause F4D3 and D2D4.

As required by BCA Clause F4D11, a Class 9a health care building is to be provided with at least one slop-hopper or other device (other than a water closet pan or urinal) on any storey containing ward areas and must include a flushing apparatus, tap and grating. It is understood that this is provided to the existing ward

areas of the building, and the proposed works do not currently indicate the formation of any new ward areas. Further assessment will be undertaken to confirm compliance as the design progresses.

4.8 Facilities in class 3 to 9 buildings – Part F4

Sanitary facilities for the use of Staff and external occupants are provided throughout Levels Lower Ground to Level 8 and are typically provided within the central lift lobby areas.

Further review is to be undertaken as the design develops to ensure that adequate facilities are provided for the use of all building occupants.

4.9 Room heights – Part F5

The ceiling height of rooms and other spaces within a Class 9a health care building, must not be less than –

- (a) For a patient care area – 2.4m; and
- (b) For an operating theatre or delivery room – 3m; and
- (c) For a treatment room, clinic, waiting room, passageway, corridor or the like 2.4m.

The ceiling height of rooms and other spaces within a Class 9c aged care building, must not be less than –

- (a) For a kitchen, laundry or the like – 2.1m; and
- (b) For corridor, passageway or the like – 2.4m; and
- (c) For habitable room, excluding a kitchen 2.4m.

The height of rooms and other spaces within the Class 5 and 7a parts must not be less than 2.4m and within a corridor or passageway, bathroom, sanitary compartment airlock, store room or the like 2.1m.

Detailed Reflected Ceiling Plans have not been provided for review however a review of the building sections and elevations that have been provided indicate that the storeys throughout the building (including storeys containing operating theatres) are capable of complying.

Further review is to be undertaken to ensure compliance as the design develops.

4.10 Light and ventilation – Part F6

4.10.1 Class 9a and 9c buildings

4.10.1.1 Method and extent of natural light

Natural light is required to all rooms used for sleeping purposes within a Class 9a and 9c building or part. The drawings generally indicate that habitable spaces are served by windows or glazed doors. The area of the doors and windows (exclusive of any framing members, glazing bars or other obstructions) are likely to be sufficient in size to provide the required 10% natural light to all habitable rooms.

Where windows are fixed, a mechanical ventilation or air-conditioning system complying with AS1668.2 and AS/NZS 3666.1 is required which can be readily provided. However, window specification will be needed with design development to verify compliance.

The building is noted to be set-back from the adjoining property boundaries by more than 3.0m and where windows are provided that face the external walls of another part of the building, they are noted to be greater than 3.0m from the wall that they face. As such, the windows are not considered to be obstructed or provided with reduced natural light.

In addition to the above, the windows provided to the Class 9c parts of the building (Levels 9 to 11) must be provided such that the windowsills are transparent and located no more than 1,000mm above the finished floor level. The external elevations appear to indicate the use of a glazed curtainwall which will provide floor to ceiling windows however, sufficient detail has not been provided to confirm compliance. Further review will be undertaken as the design develops.

4.10.1.2 Ventilation of rooms

Ventilation is required to all rooms used for sleeping purposes within a Class 9a and 9c building or part. Clause F6D6 allows for either natural ventilation as per Clause F6D7 or mechanical ventilation or air-conditioning system complying with AS1668.2 and AS/NZS3666.1. It is anticipated a mechanical ventilation system will be provided.

4.10.2 Commercial buildings

For the Class 5 parts of the building, artificial lighting and mechanical ventilation are required, and these systems can be readily installed in the building. Further design development and input will be required from the Electrical and Mechanical Consultants at the Construction Certificate Stage.

The basement carparking areas are required to have a mechanical ventilation system complying with AS1668.2. No information has been provided; However, the mechanical system can be readily designed. Further design input will be required from the Mechanical Consultant to demonstrate compliance.

4.11 Cleaning windows – NSW G1D5

A building must provide for a safe manner of cleaning any *windows* located three (3) or more storeys above ground level as per NSW Clause G1D5. Two (2) options are available for cleaning the windows:

1. The windows can be cleaned wholly from within the building; or
2. Provisions are made for cleaning windows by a method complying with the *Work Health and Safety Act 2011* and regulations made under the Act.

No information has been provided to determine if the development can comply with this requirement, and further information will be required during the design development stage.

4.12 Energy Efficiency - Section J

To be separately assessed by Energy Consultant.

5.0 *Statement of compliance*

The plans assessed were developed to a standard suitable for submission as a development application and do not contain all the details necessary information to allow a CC to be issued. As such, this assessment was limited to the major items of the BCA with the view of identifying any items that may result in a modified development consent being required, or additional key items that need to be included in the design.

The architectural design documentation as referred to in report has been assessed against the applicable provisions of the Building Code of Australia, (BCA) and it is considered that such documentation complies or is capable of complying with that Code, subject to all matters for further consideration identified in this report being addressed in the design, and subject to compliance with all appendices and Specifications included with this report.

Appendix A Design documentation

This report has been based on the following design documentation.

Table 2 Design documentation

Existing Building Architectural Plans Prepared by Health Projects International – Project Wollongong Private Hospital			
Drawing Number	Revision	Date	Title
WGPH-P-1a	21	27.11.15	PLAN - LEVEL 1 - ZONE A
WGPH-P-1b	30	27.10.15	PLAN - LEVEL 1 - ZONE B
WGPH-P-2a	27	27.11.15	PLAN - LEVEL 2 - ZONE A
WGPH-P-2b	29	27.10.15	PLAN - LEVEL 2 - ZONE B
WGPH-P-3a	24	09.09.15	PLAN - LEVEL 3 - ZONE A
WGPH-P-3b	27	06.07.15	PLAN - LEVEL 3 - ZONE B
WGPH-P-4a	22	09.09.15	PLAN - LEVEL 4 - ZONE A
WGPH-P-4b	23	28.05.15	PLAN - LEVEL 4 - ZONE B
WGPH-P-5b	30	11.11.15	PLAN - LEVEL 5 - ZONE B
WGPH-P-6a	21	06.11.15	PLAN - LEVEL 6 - ZONE A
WGPH-P-6b	27	06.11.15	PLAN - LEVEL 6 - ZONE B
WGPH-P-7a	19	06.11.15	PLAN - LEVEL 7 - ZONE A
WGPH-P-7b	26	06.11.15	PLAN - LEVEL 7 - ZONE B
WGPH-P-8a	21	06.07.15	PLAN - LEVEL 8 - ZONE A
WGPH-P-8b	30	06.07.15	PLAN - LEVEL 8 - ZONE B
WGPH-P-B1a	42	25.11.15	PLAN - BASEMENT LEVEL 1 - ZONE A
WGPH-P-B1b	38	25.11.15	PLAN - BASEMENT LEVEL 1 - ZONE B
WGPH-P-B2a	28	09.11.15	PLAN - BASEMENT LEVEL 2 - ZONE A
WGPH-P-B2b	41	09.11.15	PLAN - BASEMENT LEVEL 2 - ZONE B
WGPH-P-B3a	26	27.11.15	PLAN - BASEMENT LEVEL 3 - ZONE A
WGPH-P-B3b	30	27.11.15	PLAN - BASEMENT LEVEL 3 - ZONE B
WGPH-P-Ga	54	09.12.15	PLAN - GROUND FLOOR - ZONE A
WGPH-P-Gb	56	09.12.15	PLAN - GROUND FLOOR - ZONE B

Table 3 Design documentation

Proposed Building Architectural Plans Prepared by Health Projects International – Project Wollongong Private Hospital Master Plan			
Drawing Number	Revision	Date	Title
WGP20-MP-B6	2	2/09/2025	Basement 6
WGP20-MP-B5	2	2/09/2025	Basement 5
WGP20-MP-B4	8	2/09/2025	Basement 4
WGP20-MP-B3	8	2/09/2025	Basement 3
WGP20-MP-B2	9	2/09/2025	Basement 2
WGP20-MP-LG	10	2/07/2025	Lower Ground
WGP20-MP-G	13	4/09/2025	Ground Floor
WGP20-MP-2	7	30/06/2025	Level 2
WGP20-MP-3	8	30/06/2025	Level 3
WGP20-MP-4	7	30/06/2025	Level 4
WGP20-MP-5	7	30/06/2025	Level 5
WGP20-MP-6	7	30/06/2025	Level 6
WGP20-MP-7	10	18/09/2025	Level 7
WGP20-MP-8	8	18/09/2025	Level 8
WGP20-MP-9	10	7/11/2025	Level 9
WGP20-MP-10	4	7/11/2025	Level 10
WGP20-MP-11	4	7/11/2025	Level 11
WGP20-MP-12	3	18/09/2025	Level 12
WGP20-E-1-DA	F	31/10/2025	ELEVATION 1
WGP20-E-2-DA	F	31/10/2025	ELEVATION 2
WGP20-E-3-DA	F	31/10/2025	ELEVATION 3
WGP20-E-4-DA	F	31/10/2025	ELEVATION 4
WGP20-E-5-DA	F	31/10/2025	OVERALL SECTION A
WGP20-E-6-DA	F	31/10/2025	OVERALL SECTION B
WGP20-E-7-DA	F	31/10/2025	OVERALL SECTION C

Appendix B Essential Services

The following fire safety measures are required to be installed in the building. The following table may be required to be updated as the design develops and options for compliance are confirmed, including any omissions or additions as a result of the fire engineering processes.

Table 4 Essential fire safety measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
Fire Resistance (Floors – Walls – Doors – Shafts)		
1.	Access Panels & doors/hoppers (fire rated)	BCA2022 C4D14 (Openings in Shafts) BCA2022 Specification 12 AS 1905.1:2015 (Fire Resistant Door sets)
2.	Construction Joints	BCA2022 C2D2, Specification 5 BCA2022 C4D16 AS 1530.4:2014 & AS 4072.1:2005
3.	Fire doors	BCA2022 C3D6 (Class 9a and 9c) BCA2022 C3D13 (Separation of Equipment) BCA2022 C3D14 (Electricity Supply Systems) BCA2022 C4D5 (Acceptable methods of Protection) BCA2022 C4D6 (Doors in Fire Walls) BCA2022 C4D8 and D2D16 (Horizontal Exits) BCA2022 C4D9 (Openings in Fire Isolated Exits) BCA2022 C4D11 (Opening in Fire Isolated Lift Shafts) AS1735.11- 1986 BCA2022 C4D14 (Opening in Shafts) Specification 19 (Fire Control Centres) Specification 12 AS1905.1: 2015
4.	Fire seals protecting openings in fire resisting components of the building	BCA2022 C4D15 (Openings for service installations) BCA2022 Specification 13 AS1530.4:2014 & AS4072.1-2005
5.	Lightweight construction	BCA2022 C2D2, Specification 5 BCA2022 C2D9, Specification 6 AS1530.4:2014
6.	Smoke Walls	BCA2022 C3D6, Specification 11 (Class 9a and 9c) Ward Areas <500m ² BCA2022 D3D5 (Separation of Rising and Descending Stair Flights)
7.	Smoke Doors	BCA2022 C3D6 (Class 9a and 9c) Specification 11 Ward Areas <500m ²

Item	Essential Fire and Other Safety Measures	Standard of Performance
		Clause S11C2 BCA2022 D3D5 (Separation of Rising and Descending Stair Flights) BCA2022 Specification 12 AS1670.1:2018
General		
8.	Fire Control Centre 300mm of street	BCA2022 E1D15, Specification 19 (Fire Control Centres)
9.	Portable fire extinguishers	BCA2022 E1D14 AS 2444–2001
10.	Fire blankets	AS 2444–2001
General Egress		
11.	Evacuation Training	AS 3745:2010
12.	Operation of Door latches Failsafe Manual Push Button Control	D3D26 (Operation of Latch) AS 1670.1 (Amdt 1)
13.	Required Automatic Doors	D3D24 (Doorways and Doors)
14.	Swing of Exit Doors	D3D24 (Swinging Doors)
15.	Warning & operational signs	BCA2022 D3D28 (Signs on Fire Doors) BCA2022 D4D7 (Braille Exit Signs) (Note: E4D5 (Exit Signs)) BCA2022 E3D4 (Lift Signs)
Lifts		
16.	Access to Lift Pits Located at lowest level	BCA2022 D2D22 (Access to Lift Pits)
17.	Emergency lifts	BCA2022 E3D5 AS 1735.1:2003 (Appendix A) or AS 1735.2:2001
18.	Stretcher Lifts including Fire Service Controls Recall Operation Drive control switch	BCA2022 E3D3 BCA2022 E3D9 (Fire Service Controls) BCA2022 E3D11 (Fire Service Recall Operation Switch) BCA2022 E3D12 (Lift Car Fire Service drive control switch) BCA2022 Specification 24 AS 1735.11:1986 (Fire rated landing doors)
Electrical Services		
19.	Automatic fail-safe devices Auto open Sliding Exit doors	BCA2022 D3D26 (Operation of Latches)

Item	Essential Fire and Other Safety Measures	Standard of Performance
	Break Glass release	BCA2022 D3D27 (Re-entry from fire-isolated stairs) AS1670.1:2018 (Fire)
20.	Automatic fire detection & alarm:	BCA2022 E2D3, E2D4, E2D6, E2D7, E2D12 Spec 20 BCA2022 C4D6 (Doors in Fire Walls) BCA2022 C4D8 (Horizontal Exits) BCA2022 C4D9 (Openings in Fire-Isolated Exits) BCA2022 D3D26 (Operation of Latch) Specification 12 BCA2022 S20C4 (Smoke detection system) BCA2022 S20C6 (Smoke detection for smoke control systems) BCA2022 S20C8 (System Monitoring) AS 1670.1 (Amdt 1) (Fire) – Section 4 and 5 (Detectors) AS 1670.1 (Amdt 1) (Fire) – Section 7 (Smoke Control) AS 1670.3 (Amdt 1) (Fire Alarm Monitoring) AS 1670.4 (Amdt 1) (EWIS)
21.	Emergency lighting	BCA2022 E4D2, E4D4 AS/NZS 2293.1:2018
22.	Exit signs	BCA2022 E4D55 (Exit Signs) BCA2022 E4D6 (Direction Signs) BCA2022 E4D8 (Design and Operation - Exits) AS/NZS 2293.1:2018
23.	Smoke detectors & heat detectors 1. Zone Smoke Control System 2. Air Pressurisation System. 3. Auto-shutdown of Air-handling System. (Clause E2.2(b)) - Any system that recycles air from one fire compartment to another, or operates in a manner that may spread smoke and does not operate as a smoke control system as per AS 1668.1; (Table E2.2a) - Any system in a <u>Class 9a health care or 9c aged care</u> building that does not operate as a smoke control system as per AS 1668.1:2015, other than: - individual room units with a capacity of not more than 1000 L/s; or - systems serving critical treatment areas; or - miscellaneous exhaust are systems installed as per Section 5 and 6 of AS/NZS 1668.1:2015;	BCA2022 E2D3, Specification 20 AS 1668.1:2015
24.	Emergency warning and intercom systems for Emergency Purposes (EWIS) Class 9a (>1,000m ² or RIS >2)	BCA2022 E4D9 AS 1670.4 (Amdt 1) (EWIS)

Item	Essential Fire and Other Safety Measures	Standard of Performance
	>25m	
25.	Standby power systems	BCA2022 Specification 31 AS 4509.3:1999
26.	System Monitoring	BCA2022 S20C8 AS 1670.3 (Amdt 1) Monitoring Required for any: Any Sprinkler System Class 9a building >20 patients Any Class 9c building.
Hydraulic Services		
27.	Automatic fire suppression systems General Sprinklers Combined Sprinklers and Hydrant Fast Response Heads	BCA2022 E1D4, E1D5, E1D9, E1D10 BCA2022 Specification 17 AS 2118.1:2017 (Sprinklers) AS 2118.6:2012 (Combined Sprinklers/Hydrant)
28.	Fire hydrant systems NSW Storz Couplings Ring Main required (LIB, >25m) On-site water storage (>25m)	BCA2022 E1D2 AS 2419.1:2021 FRNSW Technical Sheet D15/45534.V9 issued 10.01.19, 'Compatible Hose Connections'
29.	Hose reel systems	BCA2022 E1D3 AS 2441:2005
30.	Wall-wetting sprinkler / drenchers	BCA2022 C4D5, AS 2118.2: Wall-wetting sprinkler / drenchers
Mechanical Services		
31.	Fire dampers	BCA2022 E2, Specification 20, BCA2022 C4D16 AS 1668.1:2015 (Amdt 1) AS 1682.1:2015 & AS 1682.2:2015
32.	<ol style="list-style-type: none"> 1. Mechanical air handling systems 2. Smoke Control System 3. Mechanical ventilation to carpark. 4. Auto-shutdown of Air-handling System. <p>Any system that recycles air from one fire compartment to another, or operates in a manner that may spread smoke and does not operate as a smoke control system as per AS 1668.1:2015;</p> <p>Any system in a Class 9a health care or 9c aged care building that does not operate as a smoke control system as per AS 1668.1:2015, other than:</p> <ul style="list-style-type: none"> - individual room units with a capacity of not more than 1000 L/s; or - systems serving critical treatment areas; or 	<p>BCA2022 E2, Specification 20, Specification 21 AS 1668.1:2015 (Amdt 1) Note: 5.5.3 Override control</p> <p>To enable manual control by attending emergency services personnel, fans that are not required to shut down on initiation of fire mode in the car park shall be provided with a control switch at the designated building entry point.</p> <p>Note: Signage should be located at the car park entry indicating the location of the control switches.</p>

Item	Essential Fire and Other Safety Measures	Standard of Performance
	miscellaneous exhaust are systems installed as per Section 5 and 6 of AS 1668.1:2015; 5. Zone Pressurisation System. 6. Fire Isolated Exit Pressurisation System	
33.	Smoke dampers	BCA2022 C3D6 and Specification 11 BCA2022 E2, Specification 20 AS 1668.1:2015 (Amdt 1), AS 1682.1:2015 & AS 1682.2:2015

Appendix C Fire resistance levels

The following fire resistance levels (FRL's) are required for the various building elements, with a fire source feature being the far boundary of a road adjoining the allotment, a side or rear boundary or an external wall of another building on the allotment except a Class 10 structure.

Type A construction

Table 5 Type A construction

Table S5C11a: Type A construction: FRL of loadbearing parts of external walls

Distance from a fire-source feature	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
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	180/180/180	240/240/180
3m, or more	90/60/30	120/60/30	180/120/90	240/180/90

Table S5C11b: Type A construction: FRL of non-loadbearing parts of external walls

Distance from a fire-source feature	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
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
3m, or more	-/-/-	-/-/-	-/-/-	-/-/-

Table S5C11c: Type A construction: FRL of external columns not incorporated in an external wall.

Column Type	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Loadbearing	90/-/-	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/-/-	-/-/-	-/-/-	-/-/-

Table S5C11d: Type A construction: FRL of common walls and fire walls

Wall Type	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Loadbearing or non-bearing	90/90/90	120/120/120	180/180/180	240/240/240

Table S5C11e: Type A construction: FRL of loadbearing internal walls

Location	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Fire-resisting lift and stair shafts	90/90/90	120/120/120	180/120/120	240/120/120
Bounding public corridors, public lobbies and the like	90/90/90	120/-/-	180/-/-	240/-/-
Between or bounding sole-occupancy unit	90/90/90	120/-/-	180/-/-	240/-/-
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion	90/90/90	120/90/90	180/120/120	240/120/120

Table S5C11f: Type A construction: FRL of non-loadbearing internal walls

Location	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Fire-resisting lift and stair shafts	-/90/90	-/120/120	-/120/120	-/120/120
Bounding public corridors, public lobbies and the like	-/60/60	-/-/-	-/-/-	-/-/-
Between or bounding sole-occupancy unit	-/60/60	-/-/-	-/-/-	-/-/-
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion	-/90/90	-/90/90	-/120/120	-/120/120

Table S5C11g: Table A construction: FRL of other building elements not covered by Tables S5C11a to S5C11f

Building Element	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
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

Appendix D Definitions

Average specific extinction area

Average specific extinction area means the average specific extinction area for smoke as determined by AS 5637.1:2015.

Critical radiant flux

Critical radiant flux (CRF) means the critical heat flux at extinguishment (CHF in kW/m²) as determined by AS ISO 9239.1:2003.

Designated bushfire prone area

Designated bushfire prone area means land which has been designated under a power of legislation as being subject, or likely to be subject, to bushfires.

Effective height

Effective height means the vertical distance between the floor of the lowest storey included in a determination 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).

Envelope

Envelope, for the purposes of Section J in Volume One, means the parts of a building's fabric that separate a conditioned space or habitable room from—

1. the exterior of the building; or
2. a non-conditioned space including—
 - a. the floor of a rooftop plant room, lift-machine room or the like; and
 - b. the floor above a carpark or warehouse; and
 - c. the common wall with a carpark, warehouse or the like.

Exit

Exit means –

1. Any, or any combination of the following if they provide egress to a road or open space—
 - a. An internal or external stairway.
 - b. A ramp.
 - c. A fire-isolated passageway.
 - d. A doorway opening to a road or open space.
 - e. A horizontal exit or a fire-isolated passageway leading to a horizontal exit.

Fire compartment

Fire compartment means –

1. the total space of a building; or

2. when referred to in—
 - a. 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
 - b. 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)

Fire-resistance level (FRL) means the grading periods in minutes determined in accordance with Specification A2.3, for the following criteria—

1. structural adequacy; and
2. integrity; and
3. insulation,

and expressed in that order.

Note: A dash means that there is no requirement for that criterion. For example, 90/–/– means there is no requirement for an FRL for integrity and insulation, and –/–/– means there is no requirement for an FRL.

Fire-source feature

1. the far boundary of a road, river, lake or the like adjoining the allotment; or
2. a side or rear boundary of the allotment; or
3. an external wall of another building on the allotment which is not a Class 10 building.

Fire wall

Fire wall means a wall with an appropriate resistance to the spread of fire that divides a storey or building into fire compartments.

Flammability index

Flammability Index means the index number as determined by AS 1530.2:1993.

Group number

Group number means the number of one of 4 groups of materials used in the regulation of fire hazard properties and applied to materials used as a finish, surface, lining, or attachment to a wall or ceiling.

Horizontal exit

Horizontal exit means a required doorway between 2 parts of a building separated from each other by a fire wall.

Loadbearing

Intended to resist vertical forces additional to those due to its own weight.

Non-combustible

Non-combustible means—

1. applied to a material — not deemed combustible as determined by AS 1530.1:1994 — Combustibility Tests for Materials; and
2. applied to construction or part of a building — constructed wholly of materials that are not deemed combustible.

Occupiable outdoor area

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

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

Open space

Open space means a space on the allotment, or a roof or similar part of a building adequately protected from fire, open to the sky and connected directly with a public road.

Performance Requirement

Performance Requirement means a requirement which states the level of performance which a Performance Solution or Deemed-to-Satisfy Solution must meet.

Performance Solution

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

Sarking-type material

Sarking-type material means a material such as a reflective insulation or other flexible membrane of a type normally used for a purpose such as waterproofing, vapour management or thermal reflectance.

Smoke developed index.

Smoke developed index means the index number for smoke as determined by AS/NZS 1530.3.

Smoke development rate

Smoke development rate means the development rate for smoke as determined by testing flooring materials in accordance with AS ISO 9239.1.

Smoke growth rate index

Smoke growth rate index (SMOGRA RC) means the index number for smoke used in the regulation of fire hazard properties and applied to materials used as a finish, surface, lining or attachment to a wall or ceiling.

Sole-occupancy unit

Sole-occupancy unit means a room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and includes—

1. a dwelling; or
2. a room or suite of rooms in a Class 3 building which includes sleeping facilities; or
3. a room or suite of associated rooms in a Class 5, 6, 7, 8 or 9 building; or
4. a room or suite of associated rooms in a Class 9c building, which includes sleeping facilities and any area for the exclusive use of a resident.

Appendix E BCA compliance specification

The following BCA matters are to be addressed by specific BCA Design Certificate to be issued by the relevant architectural, services and engineering consultants at the Construction Certificate Stage. This schedule should be forwarded to all consultants to obtain verification that these items have and will be included in the design documentation / specifications:

Architectural Design Certification

1. The FRL's of building elements for the proposed works have been designed in accordance with S5C11 of Specification 5 of BCA2022 for a building of Type A Construction,.
2. Lightweight construction used to achieve required fire resistance levels will comply with Specification 6 of BCA2022.
3. Building elements, including external walls and their components in buildings of Type A Construction, must be non-combustible in accordance with C2D10 of BCA2022.
4. Materials, floor and wall linings/coverings, surface finishes and air-handling ductwork used in the works will comply with the fire hazard properties of Clause C2D11 and Specification 7 of BCA2022.
5. Any ancillary elements fixed, installed, or attached to the internal parts or external face of an external wall that is required to be non-combustible will comply with Clause C2D14 of BCA2022.
6. The buildings 9a and/or 9c will be separated in accordance with Clause C3D6 of BCA2022.
7. The external walls and openings of separate fire compartments will be protected in accordance with Clause C4D4.
8. The parts of different classifications located alongside one another in the same storey will be separated in accordance with Clause C3D9 and Specification 5 of BCA2022.
9. Floors separating storeys of different classifications will comply with BCA Clause C3D10 of BCA2022.
10. Equipment will be separated in accordance with Clause C3D13 of BCA2022.
11. Any electricity substation, any main switch room sustaining emergency equipment required to operate in emergency mode, will be separated from the remaining building with construction having an FRL 120/120/120 and provided with self-closing -/120/130 fire doors in accordance with Clause C3D14 of BCA2022.
12. Openings in the external walls that are required to have an FRL will be in located in accordance with Clause C4D3 and C4D4 of BCA2022 or protected in accordance with Clause C4D5 of BCA2022.
13. Doorways in any fire walls separating fire compartments will be protected in accordance with Clause C4D6 of BCA2022.
14. Doorways in horizontal exits will be protected in accordance with Clause C4D8 of BCA2022.
15. Doors in a fire-isolated exit will be self-closing or automatic closing fire doors with an FRL of not less than -/60/30 in accordance with Clause C4D9 of BCA2022.
16. Fire-isolated stairways will not be penetrated by services other than those permitted by Clause C4D10 of BCA2022.
17. Services penetrating elements required to possess an FRL including the floor slabs, walls, shafts, etc. will be protected in accordance with Clause C4D13, C4D14 and C4D15 and Specification 13 of BCA2022.

18. Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation will be protected in accordance with BCA Clause C4D16.
19. The lift doors will be -/60/- fire doors complying with AS 1735.11:1986 in accordance Clause C4D11 of BCA2022.
20. Doorways and other opening in internal walls required to have an FRL will be protected in accordance with Clause C4D12 of BCA2022.
21. Columns protected by light weight construction will achieve an FRL not less than the FRL for the element it is penetrating, in accordance with Clause C4D17 of BCA2022.
22. A lintel will have the FRL required for the part of the building in which it is situated, unless it does not contribute to the support of a fire door, fire window or fire shutter, and it spans an opening in masonry which is not more than 150 mm thick and is not more than 3m wide if the masonry is non- loadbearing; or not more than 1.8m wide if the masonry is loadbearing and part of a solid wall or one of the leaves of a cavity wall, or it spans an opening in a non-loadbearing wall of the Class 2 or 3 building, in accordance with Specification 5 Clause S5C4 BCA2022.
23. The top and bottom of the riser shafts will achieve an FRL not less than the FRL required for the walls of the shaft in accordance with Clause S5C8 of Specification 5 of BCA2022.
24. Smoke-proof walls and doorways required in the health care or aged care building will be in accordance with Specification 11 of BCA2022.
25. Fire doors will comply with AS 1905.1:2015 and Specification C4D5 of BCA2022.
26. Smoke doors will be installed in accordance with Specification 12 of BCA2022.
27. The number of exits provided to the building will be in accordance with Clause D2D3 of BCA2022.
28. The required exits will be fire-isolated in accordance with Clause D2D4 of BCA2022.
29. Travel distances to exits will be in accordance with Clause D2D5 of BCA2022.
30. The alternative exits will be distributed uniformly around the storey and will be not be less than 9m apart, and not more that 45m apart in any residential portions or patient care areas in the health-care building, or otherwise not more than 60m apart, in accordance with Clause D2D6 of BCA2022.
31. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D2D7 to D2D11 of BCA2022.
32. The fire-isolated exits will be in accordance with Clause D2D12 of BCA2022.
33. Discharge from exits will be in accordance with Clause D2D15 of BCA2022.
34. Horizontal exits will be in accordance with Clause D2D16 of BCA2022.
35. The non-required stairways, ramps and escalators will be in accordance with Clause D2D17 of BCA2022.
36. The ladder from the plant, lift machine rooms, and electricity network substation in lieu of a stairway will be in accordance with Clause D2D21 of BCA2022.
37. Access to the lift pit will be in accordance with Clause D2D22 of BCA2022.
38. The stairway or ramp within the fire-isolated shaft is to be non-combustible, and if there is a local failure not cause structural damage or impair the fire resistance of the shaft, in accordance with Clause D3D3 of BCA2022.
39. The non-fire isolated stairs will be constructed in accordance with Clause D3D4 of BCA2022.

40. The construction separating rising and descending stairs in the fire-isolated exit stairway will be non-combustible and smoke proof, in accordance with Clause D3D5 of BCA2022.
41. The construction of EDB's and telecommunications distribution boards will be in accordance with Clause D3D8 of BCA2022 with the enclosure bounded by non-combustible construction or fire protective covering and smoke seals provided around the perimeter of the non-combustible doors and any openings sealed with non-combustible mastic to prevent smoke spreading from the enclosure.
42. New pedestrian ramps will comply with AS 1428.1:2009, Clause D3D11 and Part D4 of BCA2022. The floor surface of a ramp must have a slip-resistance classification complying with Table D3D15 when tested in accordance with AS 4586:2013.
43. The fire-isolated passageway will be in accordance with Clause D3D12 of BCA2022.
44. The roof of the building where the exit discharges will have an FRL of 120/120/120 and will not have roof lights or openings within 3m of the path of travel in accordance with Clause D3D13 of BCA2022.
45. Stair geometry to the new stairways will be in accordance with Clause D3D14 of BCA2022. Stair treads are to have a surface with a slip-resistance classification complying with Table D3D15 when tested in accordance with AS 4586:2013.
46. Landings and door thresholds throughout the development will be provided in accordance with Clause D3D15 and D3D16 of BCA2022. Landings to have either a surface with a slip-resistance classification complying with Table D3D15 when tested in accordance with AS 4586:2013 or a strip at the edge of the landing with a slip-resistance classification complying with Table D3D15 when tested in accordance with AS 4586:2013 where the edge ledge to a flight below.
47. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D3D17 to D3D21, and D3D22 of BCA2022.
48. The fixed platform, walkway, stairway and ladder and any associated going and riser, landing handrail, balustrade, located within the machinery room, boiler house, lift-machine room, plantroom, or non-habitable attic/storeroom within the sole occupancy unit will comply with AS 1657:2018 or Part D3 of BCA2022.
49. The doorways and doors will be in accordance with Clause D3D24 and D3D25 of BCA2022.
50. Door latching mechanisms will be in accordance with Clause D3D26 of BCA2022.
51. Re-entry doors from the fire-isolated exits will be in accordance with Clause D3D27 of BCA2022.
52. Signage will be provided on fire and smoke doors in accordance with Clause D3D28 of BCA2022.
53. The new works will be accessible in accordance with Clause D4D2, D4D3, D4D4 of BCA2022, and with AS 1428.1:2009, with particular note to door circulation spaces, accessway widths, turning spaces and floor coverings, in accordance with Part D4 of BCA2022.
54. Accessible carparking will be in accordance with Clause D4D6 of BCA2022.
55. Braille and tactile signage will in accordance with Clause D4D7, and Specification 15 of BCA2022.
56. Hearing augmentation system(s) will be provided in accordance with Clause D4D8 of BCA2022.
57. Tactile ground surface indicators will be provided in accordance with Clause D4D9 of BCA2022 and AS/NZS 1428.4.1:2009.
58. The ramps associated with the accessway will not have a combined vertical rise of more than 3.6m and a landing for a step ramp will not overlap a landing for another step ramp of ramp in accordance with Clause D4D12 of BCA2022.

59. On an accessway, where there is no chair rail, handrail, or transom, all frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, will be clearly marked in accordance with AS 1428.1:2009 and Clause D4D13 of BCA2022.
60. The fire control centre will be in accordance with Clause E1D15 and Specification 19 of BCA2022.
61. Fire precautions whilst the building is under construction will be in accordance with Clause E1D16 of BCA2022.
62. Additional provisions will be made in accordance with Clause E1D17 and E2D21 of BCA2022, due to the special hazards associated with the building works or the location of the building works.
63. Non-illuminated exit signage will be installed in accordance with Clause E4D7, and of BCA2022.
64. External above ground waterproofing membranes will comply with Clause F1D5 of BCA2022 and AS 4654 Parts 1 & 2:2012.
65. The new roof covering will be in accordance with Clause F3D2 of BCA2022.
66. Any sarking proposed will be installed in accordance with Clause F3D3 of BCA2022.
67. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F2D2 and F2D3 of BCA2022 and AS 3740:2010.
68. Damp proofing of the proposed structure will be carried out in accordance with Clause F1D6 and F1D7 of BCA2022.
69. Floor wastes, including falls to floor wastes (including any voluntarily proposed floor wastes), will be installed in accordance with Clause F2D4 of BCA2022.
70. Sub-floor ventilation will be provided in accordance with Clause F1D8 of BCA2022.
71. All new glazing to be installed throughout the development will be in accordance with Clause F3D4 of BCA2022 and AS 1288:2006 / AS 2047:2014.
72. Sanitary facilities will be provided in the building in accordance with Clause F4D2, Table F4D2, Clause F4D4 and Table F4D4 of BCA2022.
73. Accessible sanitary facilities will be provided in the building in accordance with Clause F4D5, F4D6, Table F4D6 of BCA2022 and AS1428.1:2009.
74. The construction of the sanitary facilities will be in accordance with Clause F4D8 of BCA2022.
75. A slop-hopper will be provided in accordance with Clause F4D11 of BCA2022.
76. Ceiling heights will be in accordance with Clause F5D2 of BCA2022.
77. Natural light will be provided in accordance with Clause F6D2, F6D3, and F6D4 of BCA2022.
78. Natural or mechanical ventilation will be provided in accordance with Clause F6D6, F6D7 and F6D8 of BCA2022.
79. Water closets and urinals will be located in accordance with Clause F6D9 of BCA2022.
80. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F6D10 of BCA2022.
81. Every storey of the carpark will be provided with an adequate system of permanent natural or mechanical ventilation in accordance with Clause F6D11 of BCA2022.

82. A safe manner for cleaning of windows located 3 or more storeys above ground level will be provided in accordance with the Work Health & Safety Act 2011 and regulations made under that Act in accordance with NSW G1D5 of BCA2022.
83. The refrigerated or cooling chamber, strongroom or vault will be in accordance with Clause G1D3.
84. Boilers and pressure vessels shall be installed in accordance with Specification G2D2 of BCA2022.
85. Essential fire or other safety measures must be maintained and certified on an ongoing basis, in accordance with the provisions of the Environmental Planning and Assessment Regulation, 2021.
86. Building Fabric and Thermal Construction will be in accordance with Part J4 of BCA2022.
87. Glazing will be in accordance with Part J4 of BCA2022.
88. Building sealing will be in accordance with Part J5 of BCA2022.
89. Facilities for Energy Monitoring will be provided in accordance with Clause J9D3 of BCA2022.

Electrical Services Design Certification:

90. Hearing augmentation system(s) will be provided in accordance with Clause D4D8 of BCA2022.
91. A smoke detection and alarm system will be installed throughout the building in accordance with E2D4 to E2D13, and Specification 20 of BCA2022.
92. Emergency lighting will be installed throughout the development in accordance with Clause E4D2, E4D4 of BCA2022 and AS/NZS 2293.1:2018.
93. Exit signage will be installed in accordance with Clause E4D5, E4D7, and E4D8 of BCA2022 and AS/NZS 2293.1:2018.
94. An emergency warning and intercom system (EWIS) will be provided to the building in accordance with Clause E4D9 of BCA2022.
95. Artificial lighting will be installed throughout the development in accordance Clause F6D5 of BCA2022 and AS/NZS 1680.0:2009.
96. Lighting power and controls will be installed in accordance with Part J7 of BCA2022.
97. Electrical conductors located within the building that supply a main switchboard that sustains emergency equipment will comply with Clause C3D14 of BCA2022.

Hydraulic Services Design Certification:

98. Storm water drainage will be provided in accordance with Clause F1D3 of BCA2022 and AS/NZS 3500.3:2018
99. Fire hydrant system will be installed in accordance with Clause E1D2 of BCA2022 and AS 2419.1:2005 as required.
100. Fire hose reels will be installed in accordance with Clause E1D3 of BCA2022 and AS 2441:2005.
101. A sprinkler system will be installed in accordance with Clause E1D4 of BCA2022 Specification 17 and appropriate part(s) of AS 2118.
102. Portable fire extinguishers will be installed in accordance with Clause E1D14 of BCA2022 and AS 2444:2001.
103. The heated water supply systems will be designed and installed to NCC Volume 3 – Plumbing code and Clause J8D2 of BCA2022.

Mechanical Services Design Certification:

104. An air-handling system which does not form part of a smoke hazard management system will be installed in accordance with Clause E2D3 of BCA2022, and AS 1668.1:2015.
105. Stair pressurisation will be installed in the building in accordance with E2D4 to E2D13 of BCA2022 and AS 1668.1:2015.
106. A zone pressurisation system will be installed in the building in accordance with E2D6 of BCA2022
107. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F6D6 of BCA2022 and AS 1668.2:2012.
108. Every storey of the car park will be ventilated in accordance with Clause F6D11 of BCA2022 and where not naturally ventilated it will be mechanically ventilated in accordance with AS 1668.2:2012 as applicable.
109. The commercial kitchen will be provided with a kitchen exhaust hood in accordance with Clause F6D12 of BCA2022, and AS 1668.1:2015 and AS 1668.2:2012.
110. The air-conditioning and ventilations systems will be designed and installed in accordance with Part J6 of BCA2022
111. Rigid and flexible ductwork will comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.

Structural Engineers Design Certification:

112. The material and forms of construction for the proposed works will be in accordance with Clause B1D3, B1D4 and B1D6 of BCA2022 as follows:
 - a. Dead and Live Loads – AS/NZS 1170.1:2002
 - b. Wind Loads – AS/NZS 1170.2:2011
 - c. Earthquake actions – AS 1170.4:2007
 - d. Masonry – AS 3700:2018
 - e. Concrete Construction – AS 3600:2018
 - f. Steel Construction AS 4100:1998
 - g. Aluminium Construction – AS/NZS 1664.1 or 2:1997
 - h. Timber Construction – AS 1720.1:2010
 - i. ABCB Standard for Construction of Buildings in Flood Hazard Areas.
113. The FRL's of the structural elements for the proposed works have been designed in accordance with Specification 5 of BCA2022, including S5C11 for a building of Type A Construction.
114. The lift shaft will have an FRL in accordance with Clause C3D11 and Specification 5 of BCA2022.
115. Lightweight construction used to achieve required fire resistance levels will comply with Specification 6 of BCA2022.
116. The construction joints to the structure will be in accordance with Clause C4D16 of BCA2022 to reinstate the FRL of the element concerned.
117. The concrete panel external walls will be in accordance with Specification 5 of BCA2022.
118. Upon completion of the works, a structural engineer will be able to certify that local failure will be in accordance with Clause D3D3 of BCA2022 for the fire isolated stairs.

Lift Services Design Certification:

119. The lifts throughout the development will be provided with stretcher facilities in accordance with Clause E3D3 of BCA2022 and will be capable of accommodating a stretcher with a patient lying horizontally by providing a clear space not less than 600mm wide x 2000mm long x 1400mm high above the floor level.
120. Warning signage in accordance with Clause E3D4 of BCA2022 will be provided to the lifts to advise not to use the lifts in a fire.
121. An emergency lift will be provided in the building in accordance with Clause E3D5 of BCA2022.
122. A fire service recall control switch is to be installed on a landing at a location nominated by the appropriate authority in accordance with Clause E3D11.
123. A lift car fire service drive control switch is to be installed within the lift car in accordance with Clause E3D12.
124. Access and egress to the lift well landings will comply with the Deemed-to-Satisfy Provisions of D4 of the BCA2022 and will be suitable to accommodate disabled persons.
125. The type of lifts will also be suitable to accommodate persons with a disability in accordance with Clause E3D7 and E3D8 and will also have accessible features in accordance with E3D7 and E3D8 of BCA2022.
126. The lifts will comply with AS 1735.12:1999 in accordance with Clause E3D7 and E3D8 of BCA2022.
127. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification 24 of BCA2022.

Acoustic Services Design Certification:

128. The sound transmission and insulation of the residential portions of the development will comply with Part F7 of BCA2022.

NSW Specification Design Certificate:

129. Materials, floor and wall linings/coverings, surface finished, and air-handling ductwork used in the works will comply with the fire hazard properties in accordance with Clause C2D11, NSW Clause C2D11, Specification 5 and NSW Specification 5 of BCA2022.
130. The building will be separated in accordance with Clause C3D6, and NSW Clause C3D6 of BCA2022.
131. The number of exits provided to the building will be in accordance with Clause D2D3 and NSW Clause D2D3(4) of BCA2022.
132. The discharge points of exits will be in accordance with Clause D2D15, and NSW Clause D2D15(6) of BCA2022.
133. The width of doorways in exits and paths of travel to exits will be provided in accordance with Clause D2D9, and NSW Clause D2D9(a) to (f) of the BCA2022.
134. Stair geometry to the new stairways will be in accordance with Clause D3D14, and NSW Clause D3D14(1) of the BCA. Stair treads are to have a surface with a slip-resistance classification complying with Table D3D154 when tested in accordance with AS 4586:2013 or a nosing strip with a slip-resistance classification complying with Table D3D15 when tested in accordance with AS 4586:2013.
135. Landings and door thresholds throughout the development will be provided in accordance with Clause D3D15 and D3D16.15, and NSW Clause D3D16(a) to (e) of the BCA. Landings to have either a

surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 or a strip at the edge of the landing with a slip-resistance classification complying with Table D3D15 when tested in accordance with AS 4586:2013 where the edge leads to a flight below.

136. The height of barriers is to be in accordance with D3D18 and NSW D3D18(1) of the BCA2022.
137. The doorways and doors will be in accordance with Clause D3D24, NSW Clause D23D24(2) of the BCA2022.
138. The door latching mechanisms to the proposed required exit doors will be in accordance with Clause D3D26 and NSW Clause D3D26(5) and (6) of the BCA2022.
139. Insulation will be in accordance with AS/NZS 4859.1:2018 and will be installed as required by NSW Part J4 of the BCA.
140. A smoke detection and alarm systems will be installed throughout the building in accordance with E2D10, NSW E2D10 and NSW Specification 20 of BCA2022.
141. Exit signage will be installed in accordance with Clause E4D5, NSW Clause E4D6, E4D7, and E4D8 of BCA2022 and AS/NZS 2293.1:2018.
142. The building will be mechanically ventilated in accordance with Clause F6D6, NSW F6D6 of BCA2022 and AS 1668.2:2012.