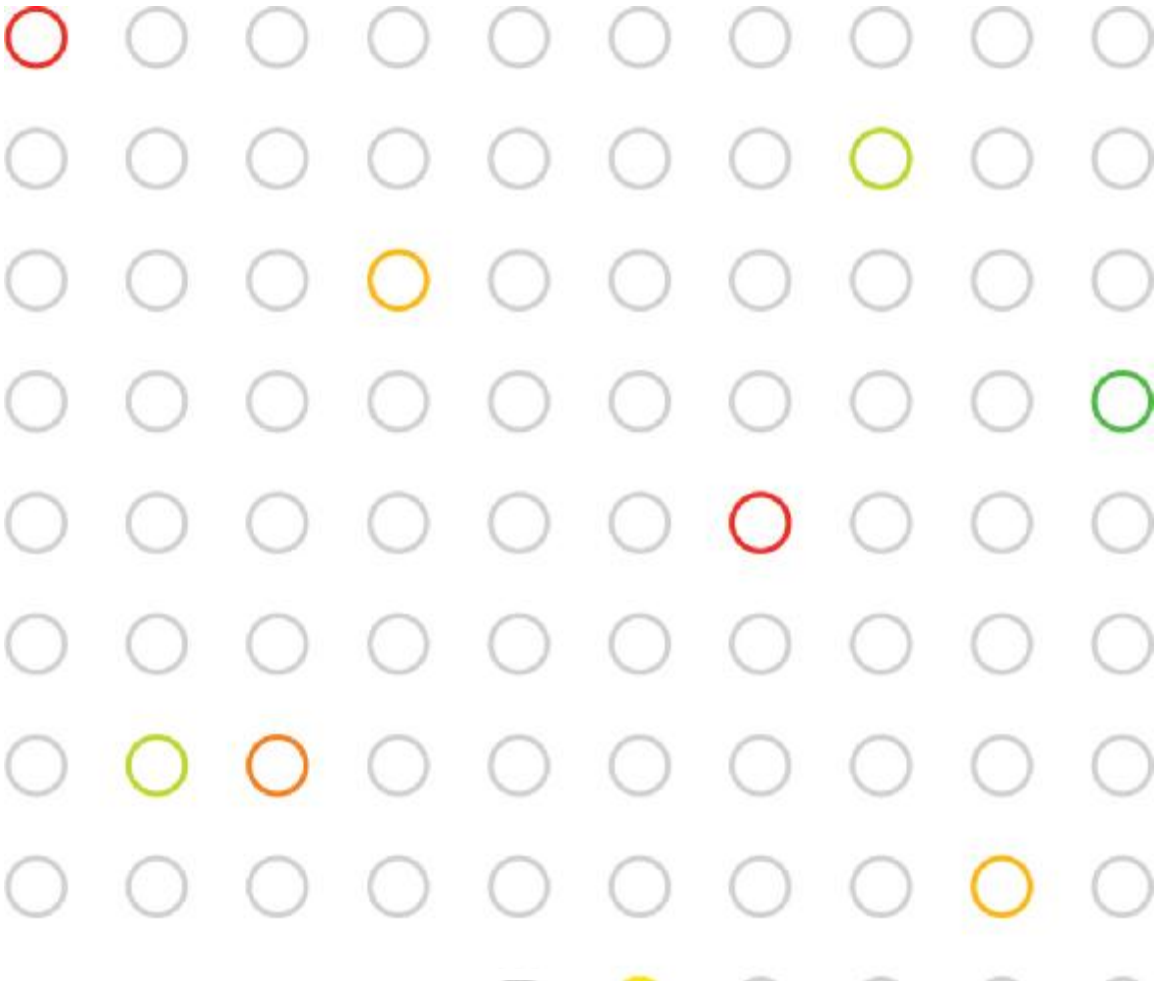
Davis Langdon

BUILDING CODE OF AUSTRALIA 2010

BCA Report
Central Coast Integrated Regional Cancer Care
27 September 2010



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1. INTRODUCTION

The report is for the assessment of Gosford Hospitals proposed Central Cost Regional Cancer Centre development for compliance with the Building Code of Australia 2010 Volume 1 ("BCA"), being portions of the existing Stage 3 building and the proposed Regional Cancer Centre extension located to the east of the hospital campus.

The report is limited to the existing areas of the building illustrated in within DoP 07 Rev 01, from grids N-S and 1-12.

The report is prepared based on a review of the developed design development documentation provided by Silver Thomas Hanley and is intended to provide the basis of a department of Planning Part 3A planning submission.

We have made every attempt to cover the main issues under Parts C, D, E, F, G & J of the BCA. This assessment is based on documentation that is at design development stage with many areas still to be finalised therefore this report represents an overall comprehension of the key issues as well as highlighting general BCA requirements that will need to be addressed at the detailed design development stage of the program.

This document will be a working assessment and review report aimed as being a tool for the design team to refer to, question and provide detailed information to up-date this report. It will also provide the basis for the Fire Safety Strategy which is required to be developed by an accredited fire safety engineer. At this stage of the assessment no fire engineer has been appointed and therefore we are unable to determine the likelihood of certain issues being able to be addressed via compliance with the relevant BCA Performance Requirements.

Reporting Team

The information contained within this report was prepared by Shane Berry, Accredited Certifier Grade 1 (BPB0721) and has been reviewed by Robert Briant, Accredited Certifier Grade 1 (BPB0048) from Davis Langdon.

Current Legislation

The applicable legislation governing the design of buildings is the Environmental Planning and Assessment Act 1979.

This work is to be carried out on behalf of the Crown.

The provisions of Part 5A Development by the Crown, Section 109R of this act require that the building be designed in accordance with the technical provisions of the State's building laws and in particular, the Building Code of Australia. The application of compliance with the particular version of the BCA is either the date of invitation of tenders or in the absence of tenders the date on which building work commences. As tenders were called prior to 1 May 2011 the Building Code of Australia 2010 applies to this project.

Clause 94 of the Environmental Planning and Assessment Regulation 2000 requires the consent authority to take into consideration whether it would be appropriate to require the existing building to be brought into total or partial conformity with the Building Code of Australia. This clause applies to a development application for development involving the rebuilding, alteration, enlargement or extension of an existing building where:

> *(a) the proposed building work, together with any other building work completed or authorised within the previous 3 years, represents more than half the total volume of the building, as it was before any such work was commenced, measured over its roof and external walls, or*
> *(b) the measures contained in the building are inadequate:*
> *(i) to protect persons using the building, and to facilitate their egress from the building, in the event of fire, or*

(c) the development also involves the use of the building as a place of public entertainment.

In determining a development application to which this clause applies, a consent authority is to take into consideration whether it would be appropriate to require the existing building to be brought into total or partial conformity with the Building Code of Australia.

The matters prescribed by Clause 94 (above) are prescribed for the purposes of section 79C (1) (a) (iv) of the Act.

2. BUILDING DESCRIPTION

The Project

The project is Gosford Hospitals proposed Central Cost Regional Cancer Centre development being portions of the existing Stage 3 building (Level 3) and the proposed Regional Cancer Centre addition located to the eastern side of the hospital campus facing Holden Street. The portions of Stage 3 applicable to this development are to have substantial refurbishment to allow for the integration between old and new.

The report is limited to the existing areas of the building illustrated in within DoP 07 Rev 01, from grids N-S and 1-12.

Building Description

Building Use:	Patient Care Areas – Health Care Building, Administrative Support Services areas to Health Care Services, Storage, Carpark.
Class of Occupancy:	7a & 9a
Type of Construction:	A
Rise in Storeys:	4
Levels Contained:	5
Effective Height:	Less than 25m

3. BCA REQUIREMENTS

The following assessment will provide an overview of compliance with the BCA and identify issues that require attention at this particular stage of the development.

C1 – Fire Resistance and Stability

The additions and alterations are required to be constructed in Type A Construction, see Appendix 2. The existing compartment wall forming the outer perimeter of the construction zone is nominated as a 2 hour compartment wall.

C2 – Compartmentation and Separation

The does not illustrate fire or smoke compartmentation at this stage. Such compartmentation is required under Clause C2.5 of the BCA and are not to be exceeded without the consent of the fire engineer. The proposed development is located within a BCA defined [1]*Patient Care Area*, which also consist of [2]*Treatment Areas*. These BCA compartmentation requirements for this project are noted as follows:

Use	Fire Rating	Maximum Compartment Size
Patient Care Area	120/120/120	2000m^2
Ward Areas	N/A	N/A to this project
Treatment Areas	Smoke Walls	1000m^2

Note: Office areas and the like located within the above compartments will be subject to the same fire services provisions of the BCA, i.e. offices located within Patient Care areas will require smoke detection as per if it were a Patient Care Area.

It should be noted that as part of the project the integrity of all existing fire rated walls and floors that separate the existing building form areas subject to upgrading must be reviewed and upgraded to the required levels where necessary with attention being paid to penetrations.

The following ancillary use areas located within a patient care area must be separated from the remainder of the patient care area by walls with an FRL of not less than 60/60/60:

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

Equipment comprising of lift motors and control plant, emergency generators or central smoke control plant, boilers or batteries are required to be separated from the remainder of the building by construction achieving an FRL of 120/120/120 as required under Clause C2.12 of the BCA.

Note 1: BCA Definition of Patient Care Areas - means 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.
Note 2: BCA Definition of Treatment Areas - means 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.

C3 – Protection of Openings

Adequate Separation of Openings in Different Fire Compartments required under Clause C3.3 of the BCA will need to be achieved if this provision becomes relevant. Further assessment of the pending fire compartmentation detail will be required for confirmation. Openings within the zones given below will require protection in accordance with a method stipulated within BCA Clause C3.4, i.e. fire doors and/or windows of no less than 60 minutes or wall wetting sprinklers to self closing doors or windows.

Table C3.3 DISTANCE BETWEEN EXTERNAL WALLS AND ASSOCIATED OPENINGS IN DIFFERENT FIRE COMPARTMENTS

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

Particular attention will need to be paid to the existing openings in the external walls of Stage 4 as they may be less than 6m from the proposed development. Further assessment of the pending detailed plans is required for confirmation.

D1 – Provision for Escape

In a patient care area in a Class 9a building no point on the floor must be more than 12 m from a point from which travel in different directions to 2 of the required exits is available; and the maximum distance to one of those exits must not be more than 30 m from the starting point. The maximum distance between alternative exits must not exceed 45m when measure back through the relevant point of choice.

The distance to a point of choice is 19m from the Bunker Areas (maximum of 12m under Clause D1.4 of the BCA). This will need to be considered by the fire engineer for justification as a Fire Engineered Solution Alternate Solution.

The doorways in 9a buildings are to be no less than 800mm and where a doorway is fitted with two leaves and one leaf is secured in the closed position in accordance with D2.21 (a)(v) and in patient care areas in a horizontal exit 1250mm.

In patient care areas a required exit or path of travel to an exit is to have an unobstructed width of not less than in a public corridor in a Class 9a health care building, 1.8 m wide in passageways, corridors or ramp normally used for the transportation of patients in beds within treatment area or ward area for the full width of the doorway.

Detail of fire hose reel cabinets is required to ensure these do not encroach into the required widths.

Horizontal exits (Clause D1.11 of the BCA) 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. Further assessment of the pending fire compartmentation plans is required alone with determination of the occupant numbers which are to be confirmed by the client.

The existing building currently allows for emergency evacuation from Level 5 & 4 of Stage 3 and Level 5 & 4 of Stage 1 Block C, to the open area of which will be the subject of proposed development. The proposed development will hinder this evacuation to the extent that evacuating occupants will be required to travel back into the new development after discharging to the open space, or by requiring them to descend to ground level via new stairs which are not permitted for 9a classifications. Further investigation from a fire engineer is required for comment on this issue.

D2 – Construction of Exits

The location of any new landing valves within the fire stairs is required to ensure the required size of 2.7 x 1.6m is maintained.

In a Class 9a health care building handrails must be provided along a least one side of every passageway or corridor used by patients, and must be fixed not less than 50 mm clear of the wall; and where practicable, continuous for their full length. Details plans will be required to be provided for assessment.

The BCA does not permit non-fire isolated stairs within Patient Care Areas of Hospital buildings, nor does it permit external stairways that are required paths of travel to the road. It is understood that external stairways may be included within the pending design to allow for travel from the existing building as the proposed design will cut of an existing evacuation path or require occupants to travel back into the proposed development. Further investigation from a fire engineer is required for comment on this issue.

D3 – Access for People with Disabilities

Access to AS1428.1-2001 must be provided to all areas within the proposed development and to the existing parts which are subject of the refurbishment. Justification from the hospital should be provided that access to certain rooms would be inappropriate as permitted under Clause D3.4 of the BCA, if so desired.

The Premises Standard is expected to be adopted on 1 May 2011. It is our understanding this will require full upgrade of access provisions to any Crown Building Work where the works have not commenced before that date.

See the access consultants report for further clarification and comment.

E1 – Fire Fighting Equipment

The current and proposed locations of fire hydrants, fire hose reels and portable fire extinguishers are yet to be assessed. The fire services consultant has advised that there may be an issue with regards to the compliance with existing fire hose reel services within the areas to be refurbished. Apparently they feed off the hydrant mains which are now required to be boosted to 700kPa under the new Standard which may affect the integrity of the existing fire hose reel system. If this issue remains it will require addressing within the pending Fire Engineered Solution in consultation with the NSWFB.

Clause 10.4.4 of AS2441 – 2005 (Installation of Fire Hose Reels) requires where a cabinet or enclosure is used, the open door (a) shall not encroach on the required width or path of travel to an exit or doorway; and (b) shall not obstruct the hose from being run out in any of its intended directions of use. The corridor width where patients are transported in beds are a minimum of 1.8m wide and other areas 1.0m. This is to be addressed on the layout plans.

E2 – Smoke Hazard Management

The proposed and refurbished areas must be provided with an automatic smoke detection and alarm system to Spec E2.2a; and automatic shutdown of the air handling system (other than zone smoke control or air pressurisation); and either zone smoke control in accordance with AS/NZS1668.1, or automatic sprinkler system to Spec E1.5. It is understood all altered areas are to be fitted with a compliant sprinkler system.

The existing area to be refurbished does contain a smoke detection system but the standard of performance is yet to be determined and the engineer is to confirm this system has the capacity to be extended.

Fire isolated stairs for a Class 9a building having a RIS of more than 2 are to be provided with Automatic air pressurisation system to AS/NZS1668.1. Due to the extent of the alterations on the lower levels any fire stairs serving the proposed or refurbished areas should be provided with this system.

E3 - Lifts

Certification of the existing lift banks is required. The capability to allow for stretcher facilities to BCA must also be assessed.

E4 - Emergency Lighting, Exit Signs and Warning Systems

A sound system and intercom system for emergency purposes that provides warning for occupants complying with AS1670.4 must be installed throughout the refurbished and proposed areas. In ward areas the alarm volume may be adjusted to minimise trauma consistent with the type and condition of patients if the client requires similar adjustment to the treatment areas of this proposed development, this will need to be justified as part of a Fire Engineered Solution.

The illuminated exit and directional signage to the refurbished and proposed areas will need to be the running man type. Therefore the existing “EXIT” signage within the refurbished areas will need to be replaced with the running man pictorial.

F2 – Sanitary and Other Facilities

Facilities for patients and employees will be required as nominated Clause F2.3 and Table F2.3 of the BCA.

Facilities for patients with disabilities are to be provided in accordance with Clause F2.4 and Table 2.4.

Staff and patient occupancy numbers from the room data sheets will be required to calculate the number and type of fixtures required.

J1 to J8 – Energy Efficiency

All refurbishment works within the proposed refurbishment areas will be required to comply with all of Part J.

Particular attention at this stage is to be paid to the proposed external glazing, insulation to new floors, walls and roof, new electrical systems and new mechanical systems.

Documentation Assessed

This report is based on the following plans by Silver Thomas Hanley:

Description	Drawing No.	Revision	Date
Photo Realistic Views	DoP 01	01	24 Sep 2010
Massing Images	DoP 02	01	24 Sep 2010
Site Analysis Plan	DoP 03	01	24 Sep 2010
Urban Analysis Plan	DoP 04	01	24 Sep 2010
Campus Site Plan	DoP 05	01	24 Sep 2010
Detailed Site Plan	DoP 06	01	24 Sep 2010
Floor Plan	DoP 07	01	24 Sep 2010
Demolition Plan	DoP 08	01	24 Sep 2010
Elevations & Sections	DoP 09	01	24 Sep 2010

Note: We have not been provided with full sized detailed fitout plans for assessment at this stage

4. ESSENTIAL FIRE & OTHER SAFETY MEASURES

Below is a list of essential fire safety services that are required to be installed within the building.

All services are required to be inspected by a competent person for installation compliance to the relevant Australian Standard and the BCA and certified accordingly. This is required to be carried out on a yearly basis and in accordance with AS 1851.

Fire Safety Measure	Standard	BCA Clause(s)	Existing Fire Safety Measures *	Proposed Fire Safety Measures
Access panels, doors & hoppers to fire resisting shafts	AS 1905.1 - 2005	C3.13	☐	☒
Automatic fail safe devices	-	C3.8, D2.21, Spec C3.4	☐	☒
Automatic fire detection & alarm systems	AS 1670.1 – 2004 AS 4428.1 – 1998	Spec E2.2a	☐	☒
Automatic fire suppression systems	AS 2118.1 – 1999	Spec E1.5	☐	☒
Emergency lighting	AS/NZS 2293.1 - 2005	E4.2, E4.4	☐	☒
Emergency lifts	AS 1735.2 – 2001	E3.4	☐	☒
Emergency warning and intercommunication systems	AS 1670.4 – 2004 AS 4428.4 – 2004	E4.9	☐	☒
Exit signs	AS/NZS 2293.1 – 2005	E4.5, E4.6, E4.7 & E4.8	☐	☒
Fire control centres and rooms	-	E1.8, Spec E1.8	☐	☒
Fire dampers	AS 1668.1	Spec E2.2a	☐	☒
Fire doors	AS/NZS 1905.1 – 2005	Spec C3.4	☐	☒
Fire hydrant systems**	AS 2419.1 – 2005	E1.3	☐	☒
Fire seals protecting openings in fire resisting components	AS 4072.1 – 1992 AS 1530.4 – 1997 AS 1038.15 – 1995	Spec C3.15	☐	☒
Fire shutters	AS/NZS 1905.2 - 2005	Spec C3.4	☐	☒
Fire windows	-	Spec C3.4	☐	☐
Fire hose reel systems**	AS 2441 – 2005	E1.4	☐	☒
Lightweight construction	-	C1.8, Spec C1.8	☐	☒
Mechanical air handling systems (stair pressurisation)	AS 1668.1 – 1998 AS 1668.2 – 1991	E2.2	☐	☒
Portable fire extinguishers & fire blankets	AS 2444 – 2001	E1.6	☐	☒
Smoke dampers	AS 1668.1 & 2	-	☐	☒
Smoke doors	-	Spec C3.4	☐	☒
Wall wetting sprinklers & drencher systems	AS 2118.1 – 1999	C3.2, C3.4, D1.7, Spec G3.8	☐	☒
Warning and operational signs	-	C3.6, E3.3, D2.23 & Spec E1.8	☐	☒
Other Measures: Alternate Solution **			☐	☒
Paths of Travel**		Section D BCA	☐	☒

* The schedule for the existing building has not been provided

** The alternate solution will address various issues contained in this report

5. CONCLUSIONS

In summary, the design documentation has been assessed against the applicable provisions of the Building Code of Australia 2010, and it is considered that such documentation depicts the Central Coast Integrated Regional Cancer Care extension and refurbishment as a building that will rely upon alternate solutions to meet compliance the requirements BCA 2010. Notwithstanding this, confirmation from an accredited fire safety engineer in consultation with the NSWFB will be required

A detailed review of the existing fire services will be required to be conducted by the fire services consultant. Any deficiencies noted will need to be rectified or considered the subject of the fire engineered solution if the fire engineer and NSWFB see fit.

The following issues must be addressed at this stage to ensure the project can comply with the BCA:

a) Part C2 – Compartmentation: provide details of fire and smoke compartmentation for further assessment.
b) Part D1 – Provision for Escape: Further assessment and consultation with the fire engineer with regards to travel distances, discharge from existing exits and horizontal exits.
c) Part E1 & E2 – Fire Services: Further assessment of the extent of the upgrade of the existing fire services is required.

6. RECOMMENDATIONS

It is recommended the alternate solutions and design issues be addressed for further clarification in future BCA Revisions.

Appendix 1

BCA Provisions

The following is a clause-by-clause assessment of the architectural drawings against the deemed-to-satisfy provisions of the BCA 2010.

Notes:

ü	The building complies with this clause.
X	The building does not comply with this clause.
?	Further documentation required.
CR	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the design stage & completion of the project.
N/A	This clause is not applicable to this project.
AS	Alternative Solution using Performance Requirements.
Noted	This clause is for information.

Section A: General Provisions

Icon	Clause	Reference	Comment
	A3	***Classification of buildings and structures***	
Noted		The classification of a building is determined by the purpose for which it is designed, constructed or adapted.	The proposed development part is classified 9a.
	A3.3	***Multiple classification***	
Noted		Each part must be classified separately: (a) Classified to the major use if not more than 10% of the floor area of the storey. (b) Plant rooms are classified as the same part.	The proposed development part is classified 9a.
	A4	***PART A4 – UNITED BUILDINGS***	
	A4.1	***When buildings are united***	
N/A		Two or more buildings adjoining each other form one united building if they are connected through openings in the walls dividing them and both buildings comply with the requirements of the BCA as though they are a single building.	This clause is not applicable to this project.

Section B: Structural Provisions

Icon	Clause	Reference	Comment
	B1.0	***Deemed to Satisfy Provisions***	
Noted		(a) Where DTS compliance is achieved by complying with either - (i) B1.1, B1.2 and B1.4; or (ii) B1.3 and B1.4	Structural engineer's design must comply.
	B1.1	***Resistance to actions***	
CR		The resistance of a building or structure must be greater than the most critical action effect resulting from different combinations of actions, where— (a) the most critical action effect on a building or structure is determined in accordance with B1.2 and the general design procedures contained in AS/NZS 1170.0; and (b) the resistance of a building or structure is determined in accordance with B1.4	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	B1.2	***Determination of individual actions***	
CR		The building or structure must resist loads determined in accordance with the following: (a) Dead and live load combinations: AS 1170.1 (b) Wind loads AS 1170.2 (c) Snow loads AS 1170.3 (d) Earthquake loads AS 1170.4	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	B1.3	***Materials and forms of construction***	
CR		The building or structure must resist loads determined in accordance with the following: (a) Dead and live load combinations: AS 1170.1 (b) Wind loads AS 1170.2 (c) Snow loads AS 1170.3 (d) Earthquake loads AS 1170.4	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	B1.4	***Materials and forms of construction***	
CR		New materials and forms of construction are to be designed to the following Australian Standards as applicable: (a) AS 3700 (b) AS 3600 (c) AS 4100 (d) AS 1288 or AS 2047 (e) AS 1562.1 (f) AS 1720.1 (g) AS 3660.1	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.

Section C: Fire Provisions

Part C1 – Fire Resistance and Stability

Icon	Clause	Reference	Comment
	C1.1	***Type of construction***	
Noted		Type of Construction required is determined by the Table C1.1	Type A Construction required.
	C.1.2	***Calculation of rise in storeys***	
Noted		The rise in storeys is the greatest number of storeys at any part of the external walls of the building above the finished ground next to that part.	RIS of 4
	C1.3	***Building of multiple classification***	
Noted		The Type of construction required is determined on the basis that the classification of the top storey applies to all storeys.	Type A Construction required.
	C1.4	***Mixed types of construction***	
N/A		Building may be of mixed Types of Construction where it is separated in accordance with C2.7	This clause is not applicable to this project.
	C1.5	***Two storey Class 2 or 9c buildings***	
N/A		Class 2 or 3 of two storeys may be Type C construction if each SOU has: 1. Access to at least 2 exits; or 2. Its own direct access to a road or open space.	This clause is not applicable to this project.
	C1.6	***Class 4 parts of a building***	
N/A		Class 4 part of a building requires same FRL as that required by a Class 2 in similar circumstances.	This clause is not applicable to this project.
	C1.7	***Open spectator stands and indoor sports stadium***	
N/A		May be of Type C construction if it contains only 1 tier and is of non-combustible material.	This clause is not applicable to this project.
	C1.8	***Lightweight construction***	
N/A		Lightweight construction may be used if it is in compliance with Specification C1.8.	This clause is not applicable to this project.
	C1.10	***Fire hazard properties***	
Noted		Materials and assemblies used in the building must comply with the requirements of Specification C1.10. In the case of a sarking material the Flammability Index shall not be more than 5. Floor materials – Critical Radiant Flux of not less than 2.2 Wall and Ceiling materials – Either Group 1 or 2 material If unsprinklered additional requirements apply, as well as lift finishes, and fire isolated exits have different requirements	Materials to comply with Spec C1.10a and assemblies to comply with Spec C1.10
	C1.11	***Performance of external wall in fire***	
?		In buildings of up to two storeys, any concrete external walls that could collapse as complete panels to comply with specification C1.11	Structural engineer will be required to review if compliance expected.

	C1.12	***Non-combustible materials***	
Noted		The following materials may be used where non-combustible materials are required: 1. Plasterboard. 2. Perforated gypsum. 3. Fibrous-plaster sheeting to AS 2185. 4. Fibre-reinforced cement sheeting. 5. Pre-finished metal sheeting. 6. Bonded laminated materials.	This clause is for information only.

Part C2 – Compartmentation and Separation

Icon	Clause	Reference	Comment
	C2.2	***General floor area limitations***	
NA		Table C2.2 limits the size of fire compartments to:- • Class 5 or 9b Type A, 8,000m^2 & 48,000m^3 Type B, 5,500m^2 & 33,000m^3 Type C, 3,000m^2 & 18,000m^3 • Class 6, 7, 8 Type A, 5,000 m^2 & 30,000 m^3 Type B 3,500m^2 & 21,000m^3 Type C, 2,000m^2 & 12,000m^3 See Section 3,4 or 5 of Specification C1.1 for specific fire rating requirements (a brief table of FRL's is included in the appendix for information – detailed requirements in abovementioned section of the BCA)	See C2.5 below for Class 9a.
	C2.3	***Large isolated buildings***	
N/A		A fire compartment may exceed that specified in Table C2.2. Buildings under of exceeding 18,000m^2 in floor area to be provided with specific requirements Generally a sprinkler system complying with Specification E1.5 provided with a perimeter vehicular access complying with C2.4 (b) – additional measures may include a smoke exhaust system in accordance with Specification E2.2b or smoke-and-heat vents in accordance with Specification E2.2c.	This clause is not applicable to this project.
N/A		A fire compartment may exceed that specified in Table C2.2, subject to: (a) Buildings does not exceed 18,000m^2 in floor area or 108,000m^3 in volume,	This clause is not applicable to this project.
N/A		(b) Buildings exceeding 18,000m^2 in floor area or 108,000m^3 in volume to be protected throughout with a sprinkler system Buildings closer than 6m are regarded as one building and collectively must comply with the above.	This clause is not applicable to this project.

Icon	Clause	Reference	Comment
	C2.4	***Requirements for open spaces and vehicular access***	
N/A		Requirements for open spaces and vehicular access capable of supporting emergency vehicles, 6m wide not more than 18m from the building. Part a – 18m wide open space without any buildings or obstructions whatsoever, and must also comply with part b of this section.	This clause is not applicable to this project.
	C2.5	***Class 9a & 9c buildings***	
?		(iv) A fire compartment must be separated from the remainder of the building by fire walls and - (A) in Type A construction—floors and roof or ceiling as required in Specification C1.1; and (B) in Type B construction - floors with an FRL of not less than 120/120/120 and with the openings in external walls bounding patient care areas being vertically separated in accordance with the requirements of C2.6 as if the building were of Type A construction. (v) The following ancillary use areas located within a patient care area must be separated from the remainder of the patient care area by walls with an FRL of not less than 60/60/60: (A) A kitchen and related food preparation areas having a combined floor area of more than 30 m^2. (B) A room containing a hyperbaric facility (pressure chamber). (C) A room used predominantly for the storage of medical records having a floor area of more than 10 m^2. (D) A laundry, where items of equipment are of the type that are potential fire sources (eg gas fire dryers). (vi) A wall required by (v) to separate ancillary use areas from the remainder of the building must extend to the underside of – (A) the floor above; (B) a non-combustible roof covering; or (C) a ceiling having a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes.	Further assessment of the pending fire and smoke compartmentation plans is required.
	C2.6	***Vertical separation of openings in external walls***	
ü		Only applicable to a building of Type A Construction, that is not sprinkler-protected. – no requirement is applicable for spandrel separation of a Sprinkler protected building. If not Sprinkler protected either 900mm vertical spandrel required, or 1m horizontal projecting spandrel – specific details in this clause of the BCA	Complies in the area of the proposed design.
	C2.7	***Separation by fire walls***	
Noted		(b) A part of a building separated by firewall construction may be considered a separate building for the purposes of Parts C, D and E. (Must continue directly from on ground floor slab straight up through the building to top)	Noted.
CR		(a) & (c) Walls are to comply with Spec C1.1 and openings to comply with Part C3 and continue to the underside of the roof covering or a	All fire walls and slabs to have an FRL of 120/120/120. A design

Icon	Clause	Reference	Comment
	C2.8	***Separation of classifications in the same storey***	
N/A		Firewalls are needed to separate different classifications, or the building must be built to the higher fire resistance level.	This clause is not applicable to this project.
	C2.9	***Separation of classifications in different storeys***	
CR		The separating floors must have an FRL not less than that required for the lower storey use.	The floors are to have an FRL of 120/120/120.
	C2.10	***Separation of lift shafts***	
CR		The lift is to be enclosed in a fire-isolated shaft if it connects more than two storeys or three storeys if provided with a sprinkler system.	The existing lift shaft is required to contain an FRL of 120/120/120. Certification from a structural engineer required.
	C2.11	***Stairs and lift in one shaft***	
ü		Not to be within the same shaft if either is required to be fire isolated.	Complies as shown.
	C2.12	***Separation of equipment***	
CR		Equipment comprising lift motors and control plant, emergency generators or central smoke control plant; boilers or batteries are required to be separated from the remainder of the building by construction achieving a FRL of 120/120/120.	Compliance required but it is unlikely as these services are not indicated.
	C2.13	***Electricity supply system***	
CR		A substation located within a building or main switchboard, which sustains emergency equipment, must be separated from the remainder of the building by construction achieving a FRL of not less than 120/120/120.	Compliance required but it is unlikely as these services are not indicated.
	C2.14	***Public corridors in Class 2 & 3 buildings***	
N/A		In a Class 3 building, a public corridor, if more than 40m in length, must be divided at intervals of not more than 40m with smoke-proof walls complying with Cl. 2 of Spec C2.5.	This clause is not applicable to this project.

Part C3 – Protection of Openings

Icon	Clause	Reference	Comment
	C3.2	***Protection of opening in external walls***	
N/A		Openings in the external walls are to be protected in accordance with C3.4 if:- **q** less than 3m to side or rear boundary **q** less than 6m from the far boundary of a road if not located at or near ground level **q** less than 6m from another building on the same allotment.	This clause is not applicable to this project.
	C3.3	***Separation of external walls and associated openings in different fire compartment***	
?		External walls of a different fire compartment to be separated by a fire wall of not less than FRL 60/60/60 or any openings must be protected in accordance with Clause C3.4 if within the distance set out in Table C3.3.	Further assessment of the pending fire and smoke compartmentation plans is required.

Icon	Clause	Reference	Comment
	C3.4	***Acceptable methods of protection***	
?		Where exposed to be protected by external or internal drenchers (side of protection specified by relevant clause that calls up protection), fire doors, windows or shutters.	If required, details of protection will be needed for further assessment. See Clause C3.3 above.
	C3.5	***Doorways in fire walls***	
N/A		Doorways in a fire wall which are not part of a horizontal exit, must not exceed ½ the length of the fire wall, and: 1. have the FRL required for the fire wall, and 2. be self-closing or automatic-closing.	This clause is not applicable to this project.
	C3.6	***Sliding fire doors***	
N/A		If utilised must fail safe in the closed position, be suitably signposted with an audible alarm, signage and directional arrow to indicate direction to slide door to open when in the closed position.	This clause is not applicable to this project.
	C3.7	***Doorways in horizontal exits***	
?		To be suitably protected by fire doors with FRL of not less than that required for the fire wall, and be self-closing or automatic-closing. And must swing in the direction of travel (this may be both ways if so either two doors or a multi directional swing fire door is required)	Further assessment of the pending fire and smoke compartmentation plans is required.
	C3.8	***Openings in fire isolated exits***	
CR		To be automatic magnamatic or self closing -/60/30 fire doors.	No details indicated on drawings
	C3.9	***Service penetrations in fire isolated exits***	
CR		Fire exits must not be penetrated by services other than electrical wiring associated with lighting, stair pressurisation or the intercommunication system & hydrant system.	No details indicated on drawings
	C3.10	***Openings in fire rated lift shafts***	
CR		Doors to be - /60/ - fire doors to AS1735.11. Lift indicator panels to be backed by - /60/60 construction if exceeding 35,000mm2 in area.	This clause is applicable to this project. Confirmation of existing compliance required from a lift services consultant.
	C3.11	***Bounding Construction; Class 2, 3 & 4 buildings***	
N/A		Doorway to each SOU to be protected; -/60/30 in Type A construction or Self-closing, tight fitting, solid core door, not less than 35mm thick in Type B or C construction	This clause is not applicable to this project.
	C3.12	***Openings in floors for services***	
CR		To be enclosed in a fire rated shaft with a FRL in accordance with Specification C1.1 or protected by Clause C3.15 of BCA	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project. The integrity of all existing penetrations is addressed during construction to ensure compliance.

Icon	Clause	Reference	Comment
	C3.13	***Openings in shafts***	
CR		Openings in ventilating, pipe, garbage or other service shaft to be protected by:- -/60/30 fire doors / hoppers / access panel.	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	C3.15	***Openings for service installations***	
CR		Electrical, plumbing mechanical ventilation shafts etc not to impair the FRL of rated members.	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.

Specification C1.1 – Fire Resisting Construction

Icon	Clause	Reference	Comment
	3	***Type A Fire Resisting Construction.***	
CR	***3.1***	*The building is to be designed to comply with Table 3.* External Loadbearing Walls within 1.5m of the boundary require a FRL of 120/120/120. External Non-Loadbearing Walls within 1.5m of the boundary require a FRL of - /120/120. External Columns not incorporated within the external wall and within 3m of the boundary requires a FRL of 120/ - / -.	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project. See Table 3 under Annexure 2 of this report for the full list of FRL required.

Specification C1.10 – Early Fire Hazard Indices

Icon	Clause	Reference	Comment
	4	***Class 2, 3 and 9 Buildings***	
CR		Further specific provisions relate to POPE for NSW for closed back seats, screens, curtains, blinds or similar decor.	Applies to assemblies only.

Specification C1.10a – Fire Hazard Properties – Floors, Walls and Ceilings

Icon	Clause	Reference	Comment
	2	***Floor materials and floor coverings***	
CR		A floor material or floor covering must have (a) a Critical radiant heat flux not less than that listed in Table 1; and (b) in a building not protected by a sprinkler system complying with specification E1.5, a maximum smoke development rate of 750 percent-minutes.	No details of existing finishes but it is assumed these will be removed as part of the works and new finishes will comply. Design statement (or other means) required.
	3	*Walls and ceilings*	
CR		A material used as a finish, surface, lining or attachment to a wall or ceiling must be a Group 1, 2 or 3 material used in accordance with Table 2 and for a building not protected by a sprinkler system complying with specification E1.5, have - (iii) a smoke growth rate of not more than 100; or (iv) an average specific extinction area less than 250m^2/kg..	No details of existing finishes but it is assumed these will be removed as part of the works and new finishes will comply. Design statement (or other means) required from appropriate persons that the building will comply
	4	*Lift cars*	
CR		In a lift car, the floor materials and floor coverings must have a Critical radiant heat flux not less than 2.2 and wall and ceiling linings must be a Group 1 or Group 2 material in accordance with Clause 3(b).	Design statement (or other means) required from appropriate persons that the building will comply

Section D: Access and Egress

Part D1 – Provision for Escape

Icon	Clause	Reference	Comment
	D1.2	***Number of exits required***	
ü		The number of exits is to be designed to satisfy performance standard DP4 of the BCA. A minimum of one exit is required from all buildings, and Two (2) exits for each storey are required for buildings over 25m, basement storeys or for class 9b of 6 storey or greater, buildings that exceed 50 persons, school buildings, class 9a patient care areas or class 9c sleeping areas, etc.	Two exits required. Further assessment of the developed detail plan documentation required.
	D1.3	***When fire isolated exits are required***	
Noted		Every stair in a building must be fire isolated unless it does not connect or pass through more than 3 consecutive floors in a sprinkler protected building or 2 storeys in a non-sprinkler protected building. Class 9a & 9c buildings require stairs to be fire isolated. Those stairs not requiring fire isolating must discharge at a level of road or open space	Fire isolated exits are provided as required. Non-fire isolated exit stairs are not permitted.
	D1.4	***Exit travel distances***	
X / AS		No point on the floor must be more than 20m to an exit or a point in which travel in different directions to 2 exits is available, in which case, the maximum distance to 1 exit cannot exceed 40m. Class 5 or 6 buildings with only one exit, and opening to road or street may have greater distance of up to 30m to that single exit. Class 9a buildings –In a patient care area - (i) No point on the floor must be more than 12m from a point in which travel in different directions to 2 exits is available; and (ii) The maximum distance to one of those exits must not be more than 30m from the starting point.	Travel distances in various areas exceed 12/30m (in patient care areas). Fire Engineer review and comment. NSWFB consultation also required.
N/A		Class 2 and 3 buildings - (i) The entrance doorway of any sole occupancy unit must be not more than: (A) 6m from an exit or from a point from which travel in different directions to 2 exits is available; or (B) 20m from a single exit serving the storey at the level of egress to a road or open space; and (ii) No point on the floor of a room which is not in a sole occupancy unit must be more than 20m from an exit or from a point at which travel in different directions to 2 exits is available.	This clause is not applicable to this project.

Icon	Clause	Reference	Comment
	D1.5	***Distance between alternative exits***	
?		To be no less than 9m or more than 45m in a Class 2, 3, and 9a, or 60m in all other classes, uniformly distributed with access to 2 exits if required and not converge so they become less than 6m apart.	Further assessment of the developed detail plan documentation required.
	D1.6	***Dimensions of exits and paths of travel***	
ü / ?		(a) height – minimum 2m: doorways 1980mm (b) width 1m minimum (c);(d) Width change based upon populations – generally for populations up to 100 persons require 1m of egress, up to 200 2m and then varies according to use over 200 person per floor / storey. (f) door width minimum 800mm [AS 1428] (g) not to diminish in direction of travel. Note: see also re number of exits for certain uses Clause D1.2 as may require additional exits no matter the population of the storey.	Complies, as shown but detail at fire hose reels cabinets required to ensure it complies.
	D1.7	***Travel by fire isolated stairs***	
X		Must provide independent egress and discharge to road or open space or complying covered area.	Travel from existing Stage 4 has will be hindered by the proposed design as the discharge path to the road is cut off. Further comment from the fire engineer is required.
	D1.8	***External stairs or ramps in lieu of fire isolated exits***	
N/A		External stairs or ramps may be used in lieu of a fire-isolated stair or ramp to a building under 25m in effective height.	This clause is not applicable to this project.
	D1.9	***Travel by non fire isolated stairs***	
X		Travel by Non-Fire Isolated Stairs:- (c) The distance from any point on the floor to a point of egress not to exceed 80m. (e) The stairway not to discharge at a point more than: (i) 20m to an exit (ii) 40m to one of 2 exits.	It is noted that discharge from existing Stage 3 is via DtS non-compliant external stairs. further assessment from the fire safety engineer is required as the current proposed design burdens this existing non-compliance further.
	D1.10	***Discharge from exits***	
CR		An exit must not be blocked nor be capable of being blocked at its point of discharge. Ramp to a grade of 1:8 is required to connect with open space.	Bollards required to driveway, carpark / loading areas.
	D1.11	***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 compartments which has at least one required exit which is not a horizontal exit.	Further assessment of the compartmentation plans are required. Population numbers will also need to be provided to complete this assessment.

Icon	Clause	Reference	Comment
	D1.12	***Non required stairs***	
Note		May connect 2 levels in a non-sprinkler protected building. Within a sprinkler protected building may serve 3 storeys.	Not permitted within patient care areas.
	D1.13	***Number of persons accommodated***	
Noted		To be in accordance with Table D1.13 of the BCA or count seats.	Population calculated at 10m^2 in office and patient care areas. Population figures provided by the architect are to be confirmed by the client.
	D1.16	***Plant rooms and lift motor rooms: Concessions***	
N/A		(a) Where a plant room or lift motor room has a floor area: (i) Not more than 100m^2 a ladder may be used in lieu of a stairway. (i) More than 100m^2 but less than 200m^2 where two or more points of egress are provided a ladder may be used in lieu of a stairway from all but one of those points. (c) A ladder to the plant room is to comply with AS 1657 and the ladder to the lift motor room is to comply with AS 1735.2.	This clause is not applicable to this project as all altered plant rooms accessed off floor levels.
	D1.17	***Access to lift pits***	
Noted		Pit depth less than 3m may be through landing doors and more than 3.0m must be through a door and access ladder to AS 1657 with signage.	No changes shown to lifts or pits.

Part D2 – Construction of Exits

Icon	Clause	Reference	Comment
	D2.2	***Fire isolated stairs***	
CR		Must be in a fire resisting shaft and be constructed of non-combustible materials and if there is local failure not cause structural damage or impair the fire resistance of the shaft.	All changes to fire isolated stairs must comply.
	D2.3	***Non fire isolated stairs***	
N/A		Non fire isolated stairways must be constructed of either:- (a) reinforced or pre stressed concrete (b) 6mm thick steel (c) 44mm thick timber	This clause is not applicable to this project as less than three storeys. Non-fire isolated stairs are not permitted within patient care areas.
	D2.4	***Separation of rising and descending stairs flights***	
N/A		A required fire isolated stair cannot connect above and below ground flights unless separated by fire and smoke separation.	This clause is not applicable to this project.

Icon	Clause	Reference	Comment
	D2.5	***Open access ramps and balconies***	
N/A		Open access ramp or balcony is provided to meet the requirements of smoke hazard management E2.2a, it must; 1. have ventilation openings to the outside air; & 2. not be enclosed on its open sides above height of 1m.	This clause is not applicable to this project.
	D2.6	***Smoke lobbies***	
N/A		Smoke lobby required by D1.7 must; 1. have a floor area not less than 6sqm; and 2. be separated by walls impervious to smoke; and 3. be fitted with smoke doors; and 4. be pressurised if the exit is required to be.	This clause is not applicable to this project.
	D2.7	***Installations in exits and paths of travel***	
CR		(b) No openings to ducts conveying hot products of combustion permitted. (c) Gas or fuel services not permitted in required exits. (d) Electric or services equipment not permitted unless in a non-combustible and smoke sealed enclosure.	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	D2.8	***Enclosure of space beneath stairs***	
N/A		(a) in a fire stair no cupboards are permitted under the stair (b) the space beneath the non-fire isolated stairs are not to be enclosed unless in 60/60/60 construction with 60/60/30 fire doors.	No enclosures shown.
	D2.9	***Width of stairs***	
N/A		When a measurement taken the width is to be measured clear of all obstructions and the stair must extend a minimum 2.0m above nosings. (unless specified elsewhere to require a greater height)	No proposed stairs illustrated at this stage.
	D2.10	***Pedestrian ramps***	
N/A		Pedestrian ramp to be installed in accordance with AS 1428.1, and not have a gradient steeper than 1:8, and be finished with a non-slip surface.	No ramps illustrated at this stage of the design.
	D2.11	***Fire-isolated passageways***	
Noted		To attain the same FRL as the fire isolated stair	No new passages shown.
	D2.12	***Roof as open space***	
N/A		If an exit discharges to a roof of a building, the roof must; 1. have an FRL 120/120/120; & 2. not have roof lights or other openings within 3m of the path of travel.	This clause is not applicable to this project at this stage of the design.

Icon	Clause	Reference	Comment
	D2.13	***Treads and risers***	
CR		(a) minimum 2 risers / maximum 18 in each flight (b) risers 115mm min 190 mm max - going 250mm min 355mm max - 2R+G 550mm min 700mm max. (c) goings and risers to be constant. (d) risers not to permit 125mm sphere to pass through (e) treads to be non slip (h) no stepped quarter landings	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project. It is recommended nosings receive required maintenance with regard to the existing external stairs for Stage 3.
	D2.14	***Landings***	
N/A		Maximum gradient not to exceed 1:50 and be a minimum 750 long measured from the inside edge of the landing.	No proposed stairs illustrated at this stage.
	D2.15	***Thresholds***	
CR		No step or ramp at any point closer to the door than the width of the door leaf. Generally doors opening to outside are able to be provided with a maximum 190mm step or 50mm if Class 9b POPE	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	D2.16	***Balustrades***	
CR		A continuous balustrade or barrier must be provided along the side of any roof to which public access is provided, any stairway or ramp, any floor, corridor, hallway, balcony, veranda, mezzanine, access bridge or the like and along any side of any access path to a building if it is not bounded by a wall and the level above the floor or ground surface is more than 4m where it is possible to fall through an open window or 1m in any other case. Note: Frameless glass balustrades are no longer a feasible option to achieve compliance with the BCA – see AS 1288-2006 for details of balustrade to ensure design achieves compliance.	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	D2.17	***Handrails***	
?		Required along one side and on both sides of stairs over 2m in width, 865mm above nosings and be continuous. Provided in every passageway and corridor used by patients fixed 50mm clear of wall.	Details of handrail locations is required.
	D2.18	***Fixed platforms, walkways, stairways and ladders***	
CR		Treads, risers, handrails and balustrades in plant rooms etc must comply with AS 1657	Proposed roof deck access to AS1657

Icon	Clause	Reference	Comment
	D2.19	***Doorways and doors***	
ü		Must not be revolving door, roller shutter or tilt door. Can be fitted with a sliding door if it leads directly to open space and can be opened manually under a force of not more than 110N and be fitted with a fail-safe device if the door is power operated and in patient care areas of a hospital. Class 9b POPE has specific details relating to exit doors, sliding doors and the swing of doors anywhere in the building.	Complies, as no sliding doors shown.
	D2.20	***Swinging doors***	
Noted		Must not encroach more than 500mm into the required width of the stair or 100mm when fully open and swing in the direction of travel. Note: Class 9b POPE doors and smoke doors must swing in the direction of egress – if multi exit required then the doors must swing in both directions	Noted
	D2.21	***Operation of latch***	
CR		To be located 900mm to 1100mm above the floor and be openable with a single-handed downward action. Fail safe unlock is permitted as long as linked to the base building fire alarm system. Class 9b or POPE doors if to be secured must be provided with panic bars only (fail safe option does not comply)	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	D2.22	***Re-entry from fire-isolated exits***	
Noted		Every door in a fire stair must not be locked from inside the fire-isolated stairway to prevent re-entry to the storey or room it services for any stair that serves a storey over 25m in height. Specific details of compliance are defined in this clause of the BCA – the doors all must unlock on fire trip, if needed to be locked may be provided with alarm to allow re entry in a non-fire situation	Re-entry required from all fire stairs.
	D2.23	***Signs on doors***	
CR		To fire doors signage required to alert persons that blockage, obstruction or being chocked open is not allowable	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.

Part D3 – Access for People with Disabilities

Icon	Clause	Reference	Comment
	D3.2	***Access to building in general***	
Noted		a) From the boundary to main points of entry b) From a disabled car space c) Other buildings on the allotment d) Through the principal public entrance. Access to and within the building must comply with AS 1428.1 and Part D3 of the BCA.	Access required to main entrances and from the street. Full report required from an access consultant.
	D3.3	***Parts to be accessible***	
Noted		a) (i) (A) To sanitary compartment: (B) To areas normally used by occupants (excluding plant and service areas) (iii) Every lift to comply with E3.6.	Access required to main entrances and from the street. Full report required from an access consultant.
	D3.4	***Concessions***	
N/A		It is not necessary to provide access for people with disabilities to: a) more than 30% of the public space in Class 6 restaurant, café, bar b) any area if access would be inappropriate due to use.	This clause is not applicable to this project.
	D3.5	***Car parking***	
CR		Spaces provided as to AS 2890.1 Disabled car spaces must be provided within the carpark at the ratio of 1 disabled car space per 50 /100 spaces.	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	D3.6	***Signage regarding disabled access***	
CR		To be provided at entrance, lifts and sanitary accommodation.	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	D3.7	***Hearing augmentation***	
N/A		Where an inbuilt amplification system other than an EWIS is provided a hearing augmentation system is to be provided in the following locations:- • Conference room with a floor area greater than 100m^2, • Judicatory room, • Auditorium in a Class 9b building, • Ticket office, reception area where the public is screened from the service provider.	This clause is not applicable to this project.
	D3.8	***Tactile indicators***	
CR		Required to public stairs and ramps in accordance with AS 1428.4.	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.

Section E: Services and Equipment

Part E1 – Fire Fighting Equipment

Icon	Clause	Reference	Comment
	E1.3	***Hydrants***	
?		a) System to be provided to serve whole building:- (i) Floor area exceeds 500m^2 b) (i) Installed to AS 2419.1-2005 (iii) Pump set to AS 2419.1.	Further assessment of the existing and proposed hydrant systems is required by the fire services consultant. Any issues to be rectified or addressed via a fire engineered solution with consultation from the NSWFB.
	E1.4	***Hose reels***	
?		a) System to be provided to serve whole building:- (i) Where hydrants installed internally or to serve any fire compartment greater than 500m^2: b) (i) Installed to AS 2441-2005 (iii) Hose to reach every part (iv) (A) Located externally or, (B) Within 4m of exit or, (C) Adjacent to hydrant (not within fire isolated exit).	Further assessment of the existing and proposed hydrant systems is required by the fire services consultant. Any issues to be rectified or addressed via a fire engineered solution with consultation from the NSWFB.
	E1.5	***Sprinklers***	
Noted		System may be required to be provided to serve the entire building to AS 2118.1 and Spec E1.5 as applicable, see Table E1.5 for details when required	If sprinklers are proposed, a Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	E1.6	***Portable fire extinguishers***	
CR		To be installed to Table E1.6 and AS 2444.	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	E1.8	***Fire control centres***	
Noted		A fire control centre facility is required for a building that exceeds 18,000m^2 in total floor space or where the building exceeds 25m effective height. A Building that exceeds 50m in height is required to be provided with a dedicated fire control room that complies with Spec E1.8	Further assessment of the existing and proposed hydrant systems is required by the fire services consultant. Any issues to be rectified or addressed via a fire engineered solution with consultation from the NSWFB.

Icon	Clause	Reference	Comment
	E1.9	*Fire Precautions During Construction*	
Noted		In a building under construction— (a) not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each *storey* adjacent to each *required exit* or temporary stairway or *exit*; and (b) after the building has reached an *effective height* of 12 m— (i) the *required* fire hydrants and fire hose reels must be operational in at least every *storey* that is covered by the roof or the floor structure above, except the 2 uppermost *storeys*; and (ii) any *required* booster connections must be installed.	All existing fire services in the building are to be fully operational during works.
	E1.10	*Provision for Special Hazards*	
Noted		Suitable additional provision must be made if special problems of fighting fire could arise because of— (a) the nature or quantity of materials stored, displayed or used in a building or on the allotment; or (b) the location of the building in relation to a water supply for fire-fighting purposes.	None identified.

Part E2 – Smoke Hazard Management

Icon	Clause	Reference	Comment
	E2.2	***General requirements***	
?	***E2.2a***	One the following smoke hazard management strategies is required:- Automatic smoke exhausting to Spec E2.2b, or Automatic smoke and heat vents to Spec E2.2c, or Automatic smoke detection and alarm system to Spec E2.2a and AS 1670.1-2004 , or Automatic sprinkler system to Spec E1.5 & AS 2118.1-1999.	The proposed and refurbished areas must be provided with an automatic smoke detection and alarm system to Spec E2.2a; and automatic shutdown of the air handling system (other than zone smoke control or air pressurisation); and either zone smoke control in accordance with AS/NZS1668.1, or automatic sprinkler system to Spec E1.5. It is understood all altered areas are to be fitted with a compliant sprinkler system. Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.

N/A	***E2.2b***	All Class 9b Buildings are required to be provided with automatic shutdown. A licensed premises providing entertainment, must be provided with:- (a) in an auditorium 1. Automatic smoke exhausting to Spec E2.2b, or 2. Automatic smoke and heat vents to Spec E2.2c, or 3. Automatic sprinkler system to Spec E1.5. (b) in all other cases 1. One of the smoke hazard management measures listed under (a) above; or 2. Automatic smoke detection and alarm system to Spec E2.2a.	This clause is not applicable to this project.
	E2.3	***Provision for special hazards***	
N/A		Additional smoke hazard management measures may be necessary due to the: a) Special characteristics of the building	This clause is not applicable to this project.

Part E3 – Lift Installations

Icon	Clause	Reference	Comment
	E3.2	***Stretcher facility in lifts***	
CR		(a) Must be provided with: (i) at least 1 emergency lift required by E3.4 (ii) where emergency lift is not required, in at least 1 passenger lift in buildings over 12m. (b) Not less than 600mm wide and 2,000mm long x 1,400mm height.	Assessment of the existing lift is required from a lift services consultant.
	E3.3	***Warning against use of lift in fire***	
Noted		Warning signs are required at each lift landing located near every call button in accordance with Figure E3.3.	Required.
	E3.4	***Emergency lifts***	
N/A		Required to buildings over 25m in effective height, complying with AS 1735.2.	This clause is not applicable to this project.
	E3.6	***Facilities for people with disabilities***	
CR		Where required by D3.3 (a) every lift must be installed to meet requirements of AS 1735.2 and AS 1735.12.	Either lifts to be upgraded or the access consultant is to address in a report, if any non-compliances are noted.
	E3.7	***Fire service controls***	
CR		All passenger lift cars require fire service controls in accordance with AS 1735.2	Assessment of the existing lift is required from a lift services consultant.

Part E4 – Emergency Lighting, Exit and Warning Systems

Icon	Clause	Reference	Comment
	E4.2	***Emergency lighting***	
CR		Required in every path of travel to an exit and any room having a floor area more than 100m^2 that does not open to a corridor or space with emergency lighting and any room having a floor area in excess of 300m^2 and required in every required non fire isolated stair. Emergency signage to be installed to AS 2293.1	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	E4.3	***Measurement of distance***	
Noted		Distances other than vertical rise must be measured along the shortest path of travel whether by straight lines, curves or a combination of both.	This cause is for information only.

Icon	Clause	Reference	Comment
	E4.4	***Design and operation of exit signs***	
Noted		Every required exit sign must comply with AS 2293.1	This cause is for information only.
	E4.5	***Exit signage***	
CR		Required above egress doors and doors from an enclosed stair to open space. Directorial signs required to designate paths of travel. Exit signage to be installed to AS 2293.1	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project. Existing "EXIT" signage to be replaced with running man pictorials.
	E4.6	***Direction signs***	
CR		Where an exit is not apparent, exit signs with directional arrows are required. Class 9b POPE must have exit signs external to the building to show the way to the road if not apparent when in the open space.	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	E4.7	***Class 2, 3 and 4 parts: Exemptions***	
N/A		E4.5 does not apply to- 1. Class 2 building if the word "EXIT" is placed on the side of door remote from an exit, 2. An entrance door of a SOU in Class 2, 3 or 4.	This clause is not applicable to this project.
	E4.8	***Design and operation of exit signs***	
Noted		Every required exit sign must - (a) Comply with AS 2293.1; and (b) Be clearly visible at all times when the building is occupied.	This clause is not applicable to this project.
	E4.9	*Emergency Warning & Intercommunication Systems*	
CR		Sound systems and intercom systems for emergency purposes required to comply with AS 1670.4-2004; 1. Class 9b used as a school with RIS of more than 3, or public Hall/POPE with floor area over 1000m2 or RIS of more than 2. 2. Class 9a having a area of more than 1000m^2 or a rise in storeys of more than 2.	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.

Section F: Health and Amenity

Part F1 – General

Icon	Clause	Reference	Comment
	F1.1	***Stormwater Drainage***	
CR		Stormwater drainage must comply to AS 3500.3.2	Design statement (or other means) required.
	F1.5	***Roof Covering***	
CR		Roof covering must comply with required Australian Standard.	Design statement (or other means) required.
	F1.6	***Sarking***	
CR		Sarking used for weather proofing of roofs must comply with AS/NZS 4200.	Design statement (or other means) required.
	F1.7	***Water Proofing of Wet Areas in Buildings***	
CR		Water proofing of wet areas within a building to comply with AS 3740.	Design statement (or other means) required.
	F1.9	***Damp-proofing***	
CR		Damp-proofing where required to be installed in accordance with AS/NZS 2904 or AS 3660.1	Design statement (or other means) required.
	F1.10	***Damp-proofing of Floors on the Ground***	
CR		Damp-proofing where required to be installed in accordance with AS 2870	Design statement (or other means) required.
	F1.11	***Provision of Floor Wastes***	
N/A		In a Class 2, 3 or 4 part of a building, the floor of each bathroom and laundry located at any level above a sole-occupancy unit or public space must be graded to permit drainage to a floor waste.	This clause is not applicable to this project.
	F1.12	***Sub-floor Ventilation***	
N/A		The sub-floor space between a suspended floor of a building and the ground must be in accordance with the requirements of this clause.	This clause is not applicable to this project.
	F1.13	***Glazed assemblies***	
CR		Glazed assemblies in an external wall to comply with AS 2047 requirements for resistance to water penetration	Design statement (or other means) required.

Part F2 – Sanitary and Other Facilities

Icon	Clause	Reference	Comment
	F2.1	***Facilities in residential buildings***	
N/A		Minimum facilities required in Class 2 buildings: Within each sole occupancy unit- (a) a kitchen sink and facilities for the preparation and cooking of food; and (b) a bath or shower; and (c) a closet pan and washbasin.	This clause is not applicable to this project.
N/A		Laundry facilities, either- (a) in each sole occupancy unit (i) clothes washing facilities, comprising at least one washtub and space for a washing machine; and (ii) clothes drying facilities comprising: (A) clothes line or hoist with not less than 7.5m of line; or (B) space for one heat-operated drying cabinet or appliance in the same room as the clothes washing facilities.	This clause is not applicable to this project.
N/A		Minimum facilities required in Class 3 buildings (other than residential aged care): For each building or group of buildings- (a) a bath or shower; and (b) a closet pan and washbasin For each 10 residents.	This clause is not applicable to this project.
	F2.1/3	*Sanitary facilities in Class 3-9 buildings*	
?		The number of sanitary facilities must be based upon the number of person accommodated calculated in accordance with D1.13 See Table F2.3 for details of number of toilets, washbasins and Urinals required.	Staff numbers from room data sheets and location of alternate staff facilities required for assessment.
CR		(f) A Class 9a *health-care building* must be provided with— (i) one kitchen or other adequate facility for the preparation and cooking or reheating of food including a kitchen sink and washbasin; and (ii) 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 towels and the like and the receipt and storage of clean linen; and (iii) one shower for each 8 patients or part thereof; and (iv) one island-type plunge bath in each *storey* containing a *ward area*.	Full details are to be provided on construction plans. Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.

Class of Building	User	Max Number Served by								
		Closet Fixtures			Urinal(s)			Washbasins		
		1	2	Each Extra	1	2	Each Extra	1	2	Each Extra
3, 5, 6 and 9 other than schools	**Employees**									
	Males	**20**	**40**	**20**	**25**	**50**	**50**	**30**	**60**	**30**
	Females	**15**	**30**	**15**				**30**	**60**	**30**
9b - Schools	Employees									
	Males	20	40	20	20	45	30	30	60	30
	Females	5	20	15				30	60	30
	Students									
	Males	30	70	70	30	70	35	20	40	40
	Females	10	20	20				20	40	40
9b – churches, chapels or the like	Employees									
	Males	300	800	500	200	400	200	250	500	250
	Females	150	300	150				250	500	250
9b - public halls, function rooms or the like	Employees									
	Males	100	300	200	50	100	50	50	200	200
	Females	25	50	50				50	150	200
7 and 8	Employees									
	Males	20	40	20	25	50	50	20	40	20
	Females	15	30	15				20	40	20
6	Patrons									
	Males	100	300	200	50	100	50	50	200	200
	Females	25	50	50				50	150	200
5 and 7	Employees									
	Males	20	40	20	25	50	50	30	60	30
	Females	15	30	15				30	60	30

Icon	Clause	Reference	Comment
	F2.4	***Facilities for persons with disabilities***	
X		One wheelchair accessible disabled facility is required within the building. Layout of each facility must comply with AS 1428.1. If more than one facility proposed they must be alternative layouts for left or right handed usage. Doors to disabled toilets are required to be provided with Lift off hinges to the doors irrespective of size, and must be provided with a shelf	The access consultant is to advise on provision of these facilities. Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project (note: lift off hinges required if doors swing in).
	F2.5	***Construction of sanitary compartments***	
CR		Where clear space between closet pan and doorway is less than 1.2m, doors must open outwards, slide or be readily removable from outside. Doors to disabled toilets are required to be provided with Lift off hinges to the doors irrespective of distance between pan and doorway	Lift off hinges require if pans within 1.2m of doors.

Part F3 – Room Sizes

Icon	Clause	Reference	Comment
	F3.1	***Height of Rooms***	
ü		Room heights to be a minimum of 2.4m and 2.1m in corridors. Class 9b POPE requires ceiling heights of 2.7m if more than 100 persons in the storey or area	Complies

Part F4 – Provision of Natural Light

Icon	Clause	Reference	Comment
	F4.1	***Provision of Natural Light***	
N/A		Class 2 buildings and Class 4 parts – to all habitable rooms. Class 9a buildings– to all rooms used for sleeping	This clause is not applicable to this project.
	F4.4	***Artificial Lighting***	
ü		Required to all rooms that are frequently occupied, all spaces required to be accessible, all corridors, lobbies, internal stairways, other circulation spaces and paths of egress. Artificial lighting system is to comply with AS 1680.0 Note: See also Section J for details of energy efficiency of lighting required.	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	F4.5	***Ventilation of Rooms***	
ü		A mechanical ventilation or air conditioning system complying with AS 1668.2 is required. Note: See also Section J for details of energy efficiency of Ventilation / Mechanical Ventilation/Air-conditioning required.	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	F4.11	***Car Parks***	
N/A		Every storey of a car park, except an open deck car park, must have a system of ventilation complying with AS/NZS 1668.2 - 1991.	This clause is not applicable to this project.

Part F5 – Sound Transmission and Insulation – Residential Facilities Only

Icon	Clause	Reference	Comment
	F5.3	***Sound Insulation of floors between units***	
N/A		A floor separating sole occupancy units must have an R_W (sound reduction index) not less than 45.	This clause is not applicable to this project.
	F5.4	***Sound Insulation of walls between units***	
N/A		A wall must have an R_W not less than 45 if it separates: (a) sole occupancy units; or (b) a sole occupancy unit from a plant room, lift shaft, stairway, public corridor, hallway or the like.	This clause is not applicable to this project.
	F5.5	***Walls between a bathroom, sanitary compartment, laundry or kitchen and a habitable room in adjoining unit***	
N/A		Walls must have: (i) an R_W of not less than 50; and (ii) provide a satisfactory level of insulation against impact sound; and (iii) not incorporate a duct which reduces the R_W of the wall to less than 50.	This clause is not applicable to this project.

Section G: Ancillary Provisions

Part G1 – Minor Structures and Components

Icon	Clause	Reference	Comment
	NSW G1.101	***Provision for Cleaning of Windows***	
N/A		Provision is to be made for the cleaning of windows either within the building or to the OH& S Act 2000 for any windows three (3) or more above the ground.	This clause is not applicable to this project.

Section H: Special Use Buildings

Part NSW H101 – Place of Public Entertainment

Icon	Clause	Reference	Comment
	NSW H101.2	***Fire Separation***	
N/A		The POPE is required to be separated from the remainder of the building by construction that achieves an FLR of not less than 60/60/60, and any doors in the separating construction must achieve an Fire rating of -/60/30	This clause is not applicable to this project.
	NSW H101	***Stage Size***	
N/A		If the stage or performance areas in any of the POPE places / rooms exceed 50m2 in floor area then automatic smoke exhaust would be required directly over the stage area in order to achieve compliance	This clause is not applicable to this project.
	NSW H101.16	***Storerooms***	
N/A		Storerooms must be separated from other parts of the building by fire rating of not less than 60/60/60 with doors self closing and achieving -/60/30	This clause is not applicable to this project.
	NSW H101.19	***Electric Mains Installation***	
N/A		The Switchboard containing the main isolation switch must be located in a position that is readily accessible to authorised persons and the fire brigade, and is required to be enclosed in construction achieving an FLR of 60/60/60	This clause is not applicable to this project.
	NSW H101.19.2.3	***Circuit Protection & Separate Sub-mains***	
N/A		Protection of the final sub circuit originating at a switch board or DB must be by means of a circuit breaker Where a place of public entertainment (POPE) has its main supply in common with that of another part of the building, the POPE must be served by its one and independent sub-main, each such sub main must be protected against fire by protection that achieves protection for 2 hours fire protection	This clause is not applicable to this project.
	NSW H101.20	***Lighting Switches / controls***	
N/A		Where during normal use the lighting is dimmed or switched off there must be an override switch installed in the theatre area that is accessible by the management/staff to switch on all of the general lighting in the theatre is required	This clause is not applicable to this project.

Section I: Maintenance

Part I1 – Equipment and Safety Installations

Icon	Clause	Reference	Comment
	NSW I1.1	***Essential Services Measures***	
N/A		Essential fire or other safety measures must be maintained and certified on an ongoing basis in accordance with the provisions of the Environmental Planning & Assessment Regulation 2000.	This clause is not applicable to this project.

Section J: Energy Efficiency

Part J1 to J8 – Building Fabric

Icon	Clause	Reference	Comment
	J1.1	***Application of Part***	
Noted		This part apply to building elements forming an envelope of a Class 2 to 9 building other than – Class 7, 8 or 9b building that does not have a conditioned space or an atrium that is separated by an envelope.	A new building of this configuration will be required to comply.
	J1.2	***Thermal Construction General***	
Noted		Where required, *insulation* must comply with AS/NZS 4859.1 and be installed so that it: • Abuts or overlaps adjoining insulation and forms a continuous barrier with ceilings, walls, bulkheads, floors or the like that contribute to the thermal barrier;	Information only.
Noted		Where required, *reflective insulation* must be installed: • With the required air space to achieve the R-Value between the reflective side and the cladding. Closely fitted against penetrations, door or window openings and supported by framing members. Each sheet overlapped not less than 50mm or taped together;	Information only.
Noted		Where required, *bulk insulation* must be installed: • Maintain its thickness, other than where it crosses roof batten, water pipes, electrical cabling and the like; and in ceiling where there is no bulk insulation or reflective insulation in the wall, overlaps by 50mm	Information only.
	J1.3	***Roof and Ceiling Construction***	
CR		A roof or ceiling in Climate Zone 5 is to achieve a Total R-Value in the DOWNWARD direction of heat flow of not less than: • 3.2 – for a roof or ceiling generally;	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.

Icon	Clause	Reference	Comment
	J1.4	***Roof Lights***	
N/A		Roof lights that form part of the envelope of a Class 5, 6, 7, 8 or 9 building must satisfy Table J1.4 and must not exceed 5% of the room or space. -	None shown
	J1.5	***Walls***	
X		External walls within Climate Zone 5 achieve: • A Total R-Value of 2.8; or • A surface density of not less than 220kg/m^2	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	J1.6	***Floors***	
CR		A suspended floor that is part of a buildings envelope to comply with Specification J1.6	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.

Part J2 – External Glazing

Icon	Clause	Reference	Comment
	J2.1	***Application of Part***	
Noted		This part of the BCA does not apply to a Class 7, 8 or 9b building that does not have a conditioned space.	A new building of this configuration will be required to comply.
	J2.2	***Applicable glazing provisions***	
Noted		Glazing in a Class 5, 7, 8, 9a and 9b building must be designed and installed in accordance with Clause J2.4 of the BCA.	Information only.
	J2.3	***Glazing – Method 1***	
N/A		Deleted	This clause is not applicable to this project.
	J2.4	***Glazing***	
CR / ?		(a) the glazing in each storey of the building facing each orientation must be assessed separately in accordance with (b) and (c); (b) aggregate air-conditioning energy value attributed to glazing must not exceed the allowance obtained by multiplying the façade area of the orientation by the energy index in Table J2.4a. (c) the aggregate air-conditioning energy value must be calculated by adding the air-conditioning energy value through each glazing element. Refer to Glazing Calculator by ABCB to assess compliance with Clause J2.4 (Method 2) of the BCA.	Further assessment required. Architect to submit compliant glazing calculator.

Part J3 – Building Sealing

Icon	Clause	Reference	Comment
	J3.1	***Application of Part***	
Noted		Applies to elements forming the envelope of a class 2-9 building (doors, windows, walls, roof/ceilings etc). Except for buildings in climate 1,2,3 or 5 where the only means of cooling is by an evaporative cooler or A permanent building ventilation opening for safe operation of a gas appliance A class 6, 7, 8 or 9b building that does not have a conditioned space A building or space where the mechanical ventilation provides sufficient pressurisation to prevent infiltration	A new building of this configuration will be required to comply.
	J3.2,3,5	***Chimneys, Roof lights, exhaust fans***	
CR		Chimneys or flues must be provided with a damper or flap that can be closed to seals the chimney or flu when not in use Roof lights must be sealed by a diffuser or shutter system unless required as a building window for light Miscellaneous Exhaust fans must be provided with a damper that self closes when the fan is not in use	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	J3.4	***External Windows and Doors***	
CR		A seal to restrict air infiltration must be fitted to each edge (top, bottom and sides) of an external door or window or the like when serving a conditioned space or for habitable rooms in climate zones 4, 6, 7 & 8. Excluding: - Windows that comply with AS 2047 - fire doors Roller shutter doors or security doors installed for out of hours security only External louver door, windows or other such openings	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project. .

Part J5 – Air Condition & Ventilation Systems

Icon	Clause	Reference	Comment
	Part J5	***Air Con and Mech Vent system design***	
CR		Ductwork for supply and return air must be insulated Design of the system must achieve compliance with all parts of Part J5 of the BCA	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.

Part J6 – Artificial Lighting & Power

Icon	Clause	Reference	Comment
	J6.1	***Application of part***	
Noted		This part of the BCA does not apply to a Class 2 or 4 buildings or parts within the Sole occupancy unit/s.	A new building of this configuration will be required to comply throughout.
	J6.2	***Interior artificial lighting***	
CR		The Design Illumination power load must not exceed the sum of the allowances achieved by multiplying the area of the space by the maximum illumination power density in Table J6.2b	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	J6.5	***Artificial lighting around the perimeter of a building***	
CR		Exterior lighting must be controlled by either a daylight sensor or a time switch in accordance with Spec J6 to turn off when natural light is effective or during daylight hours and Total perimeter lighting load that exceeds 100w must – - have an average light source efficacy of not less than 60 lumens/W or - be controlled by a motion detector in accordance with Spec J6	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.
	J6.6	***Boiling water and chilled water units***	
CR		Power supply to these units (Billy units) must be controlled by a time switch that complies with Spec J6	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.

Part J7 – Hot Water Supply

Icon	Clause	Reference	Comment
	J7.2	***Hot Water Supply***	
CR		Hot water supply for food preparation and sanitary purposes must comply with Section 8 of AS/NZS 3500.4 Solar systems in climate zones 1,2 and 3 do not need to comply with this requirement	Design statement (or other means) required from appropriate persons that the building will comply with this clause at the completion of the project.

Part J8 – Access for Maintenance

Icon	Clause	Reference	Comment
CR		Access for Maintenance must be provided to all services and components, including • Time switches and motion detectors • Room temp thermostats • Plant thermostats such as on boilers or refridge units • Outside air dampers • Reflectors, lens and diffusers of light fittings • Heat transfer equipment • Adjustable or motorised shading devices	All new fittings are provided with access for maintenance.

Appendix 2

Fire Resistance Provisions

TABLE 3 – Type A Construction: FRL of Building Elements

Building Element	**Class of Building – FRL** (in minutes) **Structural Adequacy/Integrity/Insulation**			
	Class 2, 3 or 4 part	**Class 5, 9 or 7 (car park)**	**Class 6**	**Class 7 (other than carpark) or 8**
External Wall (including any column and other building element incorporated therein) or other external building element, where the distance from and fire-source feature to which it is exposed is:				
For Loadbearing Parts:				
Less than 1.5m	90/90/60	**120/120/120**	180/180/180	240/240/240
1.5m to less than 3m	90/60/60	**120/90/90**	180/180/120	240/240/180
3m or more	90/60/30	**120/60/30**	180/120/90	240/180/90
For Non-Loadbearing Parts:				
less than 1.5m	- /90/90	**- /120/120**	-/180/180	-/240/240
1.5m to less than 3m	- /60/60	**- /90/90**	-/180/120	-/240/180
3m or more	- / - / -	**- / - / -**	-/-/-	-/-/-
External Column not incorporated in an external wall, where the distance from any fire source feature to which it is exposed is:				
Less than 3m	90/-/-	**120/-/-**	180/-/-	240/-/-
3m or more	-/-/-	**-/-/-**	-/-/-	-/-/-
Common Walls and Fire Walls:				
	90/90/90	**120/120/120**	180/180/180	240/240/240
Internal Walls – Fire Resisting lift and stair shafts:				
Loadbearing	90/90/90	**120/120/120**	180/120/120	240/120/120
Non-Loadbearing	- /90/90	**- /120/120**	-/120/120	-/120/120
Bounding ***Public Corridors*** public lobbies and the like:				
Loadbearing	90/90/90	**120/ - / -**	180/ - / -	240/-/-
Non-Loadbearing	- /60/60	**- / - / -**	- / - / -	- / - / -
Between or Bounding ***Sole Occupancy Units***:				
Loadbearing	90/90/90	**120/ - / -**	180/ - / -	240/-/-
Non-Loadbearing	- /60/60	**- / - / -**	- / - / -	- / - / -
Ventilating, pipe, garbage and like ***shafts*** not used for the discharge of hot products of combustion:				
Loadbearing	90/90/90	**120/90/90**	180/120/120	240/120/120
Non-Loadbearing	- /90/90	**- /90/90**	- /120/120	- /120/120
Other Loadbearing Internal Walls, Internal Beams, Trusses and Columns:				
	90/ - / -	**120/ - / -**	180/-/-	240/-/-
Floors:	90/90/90	**120/120/120**	180/180/180	240/240/240
Roofs:	90/60/30	**120/60/30**	180/60/30	240/90/60

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