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Building Code of Australia 2009 Compliance Report

LAKE MACQUARIE YACHT CLUB
ADA STREET, BELMONT

Prepared for: Lake Macquarie Yacht Club
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Newcastle NSW 2300

Project No.: 08-0717

Date: 22 May 2009

Status: Final – Issue 2

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Table of Contents

DATE	ISSUE	STATUS	PREPARED BY	REVIEWED BY
09.01.2009	1	Draft	AR	RS
21.05.2009	2	Final	AR	RS

1.0 INTRODUCTION

In accordance with the Accredited Certifier's role under clause 145 of the *Environmental Planning & Assessment Regulation 2000*, this report comprises an assessment of the proposed new club building at Lake Macquarie Yacht Club against the Deemed-to-Satisfy provisions of the Building Code of Australia 2009 (BCA).

1.1 Referenced Documents

The report is based on the review of the following documents:

- Building Code of Australia 2009
- Guide to the Building Code of Australia 2009
- Environmental Planning & Assessment Act 1979
- Environmental Planning & Assessment Regulation 2000
- Architectural drawings prepared by EJE Architecture as follows:

Project no. 4000, Phase DA

Drawing Number
A00
A06
A09
A10
A11
A12
A13
A14
A15
A16

1.2 Limitations

- This report comprises an assessment of the building against the BCA 2009, being the version of the BCA in force at the time of the assessment.

- No assessment has been undertaken with respect to the Disability Discrimination Act 1992 (DDA). The building owner should be satisfied that their obligations under the DDA have been addressed. In this instance, further advice should be sought from an access consultant where required.

1.3 Terminology

Building Code of Australia 2009 - Document published on behalf of the Australian Building Codes Board. The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia and is adopted in NSW under the provisions of the Environmental Planning & Assessment Act & Regulation.

Conditioned space - means a space within a building where the environment can be controlled by air-conditioning, but does not include a non-habitable room in

which a heater with a capacity of not more than 1.2 kW provides the air-conditioning.

Exit means—

(a) Any, or any combination of the following if they provide egress to a road or open space—

(i) An internal or external stairway.

(ii) A ramp.

(iii) A fire-isolated passageway.

(iv) A doorway opening to a road or open space.

(b) A horizontal exit or a fire-isolated passageway leading to a horizontal exit.

Fire-protective covering means—

(a) 13 mm fire-protective grade plasterboard; or

(b) 12 mm cellulose cement flat sheeting complying with AS/NZS 2908.2 or ISO 8336; or

(c) 12 mm fibrous plaster reinforced with 13 mm x 13 mm x 0.7 mm galvanised steel wire mesh located not more than 6 mm from the exposed face; or

(d) other material not less fire-protective than 13 mm fire-protective grade plasterboard,

fixed in accordance with the normal trade practice for a *fire-protective covering*.

Fire Resistance Level (FRL) - means the grading periods in minutes for the following criteria -

(a) structural adequacy; and
(b) integrity; and
(c) insulation,

and expressed in that order.

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

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

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

Compliance with the Performance Requirements can only be achieved by-
(a) complying with the Deemed-to-Satisfy Provisions; or
(b) formulating an Alternative Solution which-
(i) complies with the Performance Requirements; or
(ii) is shown to be at least equivalent to the Deemed-to-Satisfy Provisions; or
(c) a combination of (a) and (b).

Resistance to the incipient spread of fire, in relation to a ceiling membrane, means the ability of the membrane to insulate the space between the ceiling and roof, or ceiling and floor above, so as to limit the temperature rise of materials in this space to a level which will not permit the rapid and general spread of fire throughout the space.

NSW A1.1 Definitions

Note: BCA 2009 replaces the term “place of public entertainment” with the term “entertainment venue”. The definition of “entertainment venue” in BCA 2009 is as defined in the EP&A Regulation 2000, which at 19 May 2009 states:

(2A) ….. any amendment or variation to the BCA that replaces references to places of public entertainment with references to entertainment venues comes into effect on the date on which this Regulation is amended to make provision for entertainment venues, and until that date, the BCA continues to apply as if the amendment or variation had not been made.

Auditorium means such part of a place of public entertainment as is designed to accommodate the audience to an entertainment or public meeting.

Place of public entertainment means—

(a) a drive-in theatre; or

(b) an open-air theatre or open-air cinema; or

(c) a theatre, cinema or public hall; or

(d) licensed premises providing entertainment.

Public entertainment means entertainment to which admission may ordinarily be gained by members of the public on payment of money or other consideration.

Stage means such part of a place of public entertainment or other Class 9b building as is used by performers or speakers in an entertainment, public meeting or other such assembly.

2.0 BUILDING DESCRIPTION

2.1 Site

The site is accessed via an existing bridge from Ada Street.

2.2 Development

The proposed works include the construction of a new club building, an extension of the existing marina and alterations to the carparking arrangement. This report assesses the new club building only.

2.3 Building Characteristics

Main Building

- BCA CLASSIFICATION: Class 9b Place of Public Entertainment

  Note: we have applied the class 9b POPE classification to the whole building. The POPE part contains areas accessible by the public and areas not accessible by the public.
- RISE IN STOREYS: 2
- FLOOR AREA: (approx) Ground floor = 1,100m^2

  First floor = 700m^2

  Total = 1,800m^2
- VOLUME: (approx) 5,000m^3
- EFFECTIVE HEIGHT: 3m
- TYPE OF CONSTRUCTION: Type B

Detached Store / Workshop / Sanitary Facilities

- BCA CLASSIFICATION: Class 10a

3.0 BCA ASSESSMENT

CLAUSE	REFERENCE	COMMENTS
SECTION A – GENERAL PROVISIONS		
Part A3.2	Classification	Class 9b Place of Public Entertainment
SECTION B – STRUCTURE		
PART B1 – STRUCTURAL PROVISIONS		
B1.2	Determination of individual actions	Structural engineering details prepared by an appropriately qualified structural engineer should be submitted prior to issue of the Construction Certificate.
B1.3	Loads	Structural engineering details prepared by an appropriately qualified structural engineer should be submitted prior to issue of the Construction Certificate.
B1.4	Materials & Forms of Construction	The structural resistance of materials and forms of construction must be determined in accordance with the following, details of which should accompany the Application for Construction Certificate: (a) Masonry (including masonry-veneer, unreinforced masonry and reinforced masonry): AS 3700. (b) Concrete construction (including reinforced and prestressed concrete): AS 3600. (c) Steel construction— (i) Steel structures: AS 4100. (ii) Cold-formed steel structures: AS/NZS 4600. (iii) Residential and low-rise steel framing: NASH Standard . (d) Composite steel and concrete: AS 2327.1. (e) Aluminium construction: AS/NZS 1664.1 or AS/NZS 1664.2. (g) Piling: AS 2159. (h) Glazed assemblies: AS 2047:and AS 1288: (j) Roof construction AS/NZS 1562.3, AS/NZS 4256 Parts 1, 2, 3 and 5. AS 2049, AS 2050. AS/NZS 2908.1 AS/NZS 1562.3 AS 1562.1.
SECTION C - FIRE RESISTANCE		
PART C1 – Fire Resista**NCE & STABILITY**		
C1.1	Type of Construction	Type B Construction in accordance with Specification C1.1.
C1.3	Calculation of Rise In Storeys	The building has a Rise in Storeys of 2.
C1.3	Buildings of Multiple Classification	Noted.
C1.4	Mixed Types of Construction	Not applicable
C1.5	Two Storey Class 2, 3 or 9c Buildings	Not applicable
C1.6	Class 4 Parts of Buildings	Not applicable

CLAUSE	REFERENCE	COMMENTS
C1.7	Open Spectator Stands & Indoor Sports Stadiums	Not applicable
C1.8	Lightweight Construction	Not applicable
C1.9	*Repealed*	-
C1.10	Early Fire Hazard Properties	The fire hazard properties of any new material or assemblies, and sarking material are to comply with Specification C1.10 or C1.10a.
NSW Spec C1.10	Class 2, 3 & 9 buildings	A material used as a curtain, blind or similar decor in any part available to the public, must have a *Flammability Index* no greater than 6.
C1.11	Performance of External Walls	Not applicable
C1.12	Non-Combustible Material	Note: Materials listed in clause C1.12, though combustible or containing combustible fibres, may be used wherever a non-combustible material is required.
PART C2 – FIRE COMPARTMENTATION & SEPARATION		
C2.1	Application	Noted.
C2.2	General Floor Area Limitations	Complies (for Type B construction).
C2.3	Large Isolated Buildings	Not applicable
C2.4	Requirements for open space	Not applicable
C2.5 (NSW)	Class 9a & 9c Buildings	Not applicable
C2.6	Vertical separation of openings in external Walls	Not applicable
C2.7	Separation by fire walls	Not applicable – however, refer to H101.16
C2.8	Separation of classifications in the same storey	Not applicable – whole building assessed as class 9b POPE
C2.9	Separation of classifications in different storeys	Not applicable
C2.10	Separation of lift shafts	Not applicable – lift connects 2 storeys only
C2.11	Stairways and lifts in one shaft	Not applicable
C2.12	Separation of equipment	Not applicable
C2.13	Electricity supply system	A main switchboard located within the building which sustains emergency equipment operating in the emergency mode must— (i) be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and (ii) have any doorway in that construction protected with a self-closing fire door having an FRL of not less than –/120/30. All switchboards in the electrical distribution system, which sustain the electricity supply to the emergency equipment, must provide full segregation by way of enclosed metal partitions designed to prevent the spread of any fault from non-emergency equipment

CLAUSE	REFERENCE	COMMENTS
		switchgear to the emergency equipment switchgear. Electrical consultant to comment.
C2.14	Public corridors in Class 2 & 3 buildings	Not applicable
PART C3 – PROTECTION OF OPENINGS		
C3.1	Application of Part	Noted
C3.2	Protection of openings in external walls	Not applicable. All fire-source features are greater than 3m from the external walls of the building. Note: the detached building adjacent to the subject building is a class 10a building and is not a fire-source feature in accordance with C3.2.
C3.3	Separation of openings in different fire compartments	Not applicable
C3.4	Acceptable methods of protection	Not applicable
C3.5	Doorways in fire walls	Not applicable
C3.6	Sliding fire doors	Not applicable
C3.7	Protection of doorways in horizontal exits	Not applicable
C3.8	Openings in fire isolated exits	Not applicable
C3.9	Service penetrations in fire Isolated exits	Not applicable
C3.10	Openings in fire isolated lift shafts	Not applicable
C3.11	Bounding construction Class 2, 3 and 4 buildings	Not applicable
NSW C3.11 (d) & (h)	Bounding construction Class 2, 3, 4 & 9b buildings	In a Class 9b building used as a place of public entertainment, openings in construction required to separate one space from another must be protected in accordance with C3.4. Refer to H101.16.
C3.12	Openings in floors for services	(a) Where a service passes through— (i) a floor that is required to have an FRL with respect to integrity and insulation; or (ii) a ceiling required to have a resistance to the incipient spread of fire, the service must be installed in accordance with (b). (b) A service must be protected— (ii) in a building of Type B or C construction, by a shaft that will not reduce the fire performance of the building elements it penetrates; or (iii) in accordance with C3.15. (c) Where a service passes through a floor which is required to be protected by a fire-protective covering, the penetration must not reduce the fire performance of the covering.
C3.13	Openings in shafts	Not applicable
C3.14	Repealed	-

CLAUSE	REFERENCE	COMMENTS
C3.15	Openings for service installations	Where an electrical, electronic, plumbing, mechanical ventilation, air-conditioning or other service penetrates a building element (other than an external wall or roof) that is required to have an FRL or a resistance to the incipient spread of fire, that installation must comply with clause C3.15.
C3.16	Construction Joints	Not applicable
C3.17	Columns protected with lightweight construction to achieve an FRL	Not applicable
SPEC C1.1 FIRE RESISTING CONSTRUCTION		
2	**General Requirements**	
2.1	Exposure to FSF	Noted
2.2	Fire protection for a support of another part	Noted
2.3	Lintels	Noted
2.4	Attachments not to impair fire resistance	Noted
2.5	General Concessions	Noted
2.6	Mezzanine floors: Concession	Noted
2.7	Enclosure of shafts	Not applicable
2.8	Carparks in Class 2 & 3 buildings	Not applicable
2.9	Residential aged care building: Concession	Not applicable
3	Type A Construction	Not applicable
4	Type B Construction	External walls do not require an FRL (all external walls are greater than 18m to a fire-source-feature) Loadbearing internal walls and columns to ground floor only must achieve FRL 120/-/-. External walls must be non-combustible. Internal columns and loadbearing internal walls to first floor need not achieve an FRL. A loadbearing internal wall must be of concrete or masonry. Roof does not require an FRL. Floor separating storeys: the floor must achieve one of the following: (i) be constructed so that it is at least of the standard achieved by a floor/ceiling system incorporating a ceiling which has a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes; or (ii) have an FRL of at least 30/30/30; or (iii) have a fire-protective covering on the underside of the floor, including beams incorporated in it, if the floor is combustible or of metal. Fire ratings must comply with the above and Table 4 of Spec C1.1 – refer Appendix A.

CLAUSE	REFERENCE	COMMENTS
5	Type C Construction	Not applicable
SECTION D – ACCESS AND EGRESS		
PART D1 – PROVISION FOR ESCAPE		
D1.1	Application	Part D1 applies to the subject building.
D1.2	Number of exits required	Complies – minimum 2 exits required from each storey.
NSW D1.2 (d) (vii)	Number of exits required	Complies
D1.3	When Fire isolated exits are required	Not required.
D1.4	Exit Travel Distances	Complies.
D1.5	Distances between alternative exits	Complies.
D1.6	Dimensions of exits	In a required exit or path of travel to an exit— (a) the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm; (b) the unobstructed width of each exit or path of travel to an exit, except for doorways, must be not less than 1 m; (f) the unobstructed width of a doorway in an exit or a path of travel to an exit must be not less than 1m for any areas used by the public (refer NSW D1.6) and 800mm for areas used only by employees.
NSW D1.6 (f) (vi) (h) (i-iv)	Dimensions of exits	In a Class 9b building used as a POPE, min 1m clear width is required to exits and paths of travel to exits (including doorways) in parts of the building used by the public. Complies. In a Class 9b building used as a place of public entertainment— (i) the aggregate width must be not less than 2 m plus 500 mm for every 50 persons or part in excess of 200; and (ii) D1.6(b), (c) and (d) do not apply; and (iii) where one or more paths of travel merge, the width of the combined path of travel must be not less than the sum of the required widths of those paths of travel; and (iv) the required widths of the paths of travel connecting the exits from the building to a public road or open space must comply with (iii). Ground Floor • aggregate exit width provided = 6.4m less 1.7m = 4.7m • estimated population (refer D1.13) = 380 people (3.8m aggregate exit width required) • complies • Note: 1.7m of the ground floor aggregate exit width is used-up by people egressing from the first floor down the internal stairs.

CLAUSE	REFERENCE	COMMENTS
		First floor • aggregate exit width provided = 3.2m • estimated population (refer D1.13) = 295 people (3m aggregate exit width required) • Complies. • NOTE: Refer NSW D1.10 below. This clause requires that minimum 50% of aggregate egress width is other than via the main entrance. As such, we note that the external stairway provides 1.5m clear width, which is 50% of the required aggregate exit width. We note that where paths of travel merge e.g. exits discharging to the north and west elevations, there is sufficient egress width to the public road, via the BBQ area.
D1.7	Travel via fire isolated exits	Not applicable
D1.8	External stairways in lieu of fire-isolated exits	Not applicable
D1.9	Travel by non fire isolated stairways or ramps	Complies.
D1.10	Discharge from exits	The path of travel from the external stairs as well as from exits located along the northwest and northeast elevations must be via the BBQ area (rather than past the "members entry"). The width of the path adjacent to the "member's entry" is less than 1m. Refer to clause NSW E4.6 in relation to external exit signage.
NSW D1.10 (f)	Discharge from exits	In a Class 9b building used as a place of public entertainment, at least half of the required number of exits from each storey or mezzanine, and at least half of the aggregate width of such exits must discharge otherwise than through the main entrance, or the area immediately adjacent to the main entrance of the building. Ground Floor • complies First floor • required exit width = 3m • therefore minimum 1.5m exit width required for each exit • complies.
D1.11	Horizontal exits	Not applicable
D1.12	Non-Required stairways ramps and escalators	Not applicable
D1.13	Number of persons accommodated	Ground floor • Auditorium = 260 • Restaurant = 90 • Employees = 30 • **Total = 380 people** First floor • Function Room 1 = 140

CLAUSE	REFERENCE	COMMENTS
		• Pre-function = 100 (assumed people from pre-function also counted in function rooms, therefore 100 people estimated) • Function Room 2 = 40 • Employees = 15 • **Total = 295 people**
NSW Table D1.13	Number of persons accommodated	Table D1.13 states specific population related to POPE's however the population numbers referred to above are based on the notations on the plans.
D1.14	Measurement of distances	Noted.
D1.15	Method of measurement	Noted.
D1.16	Plant rooms & lift motor rooms: Concession	Noted.
D1.17	Access to lift pits	Noted.
PART D2 – CONSTRUCTION OF EXITS		
D2.1	Application of Part	Noted.
NSW D2.1 (b)	Application of Part	(b) In a Class 9b building used as a place of public entertainment— (i) Clauses NSW D2.13(j), (k), and (l), NSW D2.15(c), NSW D2.16(f)(v), and NSW D2.19(b)(v) apply to only those parts of the building used by the public; and (ii) the general requirements of Part D2 apply to all other parts of the building.
D2.2	Fire-Isolated stairways & ramps	Not applicable
D2.3	Non-Fire-Isolated stairways and ramps	Not applicable – rise in storeys of only 2.
D2.4	Separation of rising and descending stair flights	Not applicable
D2.5	Open access ramps and balconies	Not applicable
D2.6	Smoke lobbies	Not applicable
D2.7	Installations in exits and paths of travel	Services or equipment comprising electricity meters, distribution boards or ducts; or central telecommunications distribution boards or equipment; or electrical motors or other motors serving equipment in the building, may be installed in a required exit, or in any corridor, hallway, lobby or the like leading to a required exit, if the services or equipment are enclosed by non-combustible construction or a fire-protective covering with doorways or openings suitably sealed against smoke spreading from the enclosure.
D2.8	Enclosure of space under stairs and ramps	The space below both required non fire-isolated stairways (including the external stairway) must not be enclosed to form a cupboard or other enclosed space unless— (i) the enclosing walls and ceilings have an FRL of not less than 60/60/60; and (ii) any access doorway to the enclosed space is fitted with a self-closing –/60/30 fire door.
D2.9	Width of stairways	Noted.

CLAUSE	REFERENCE	COMMENTS
D2.10	Pedestrian ramps	Not applicable
D2.11	Fire Isolated passageways	Not applicable
D2.12	Roof as open space	Not applicable
D2.13	Treads and risers	The stair construction must comply with D2.13. Going & Riser dimensions must comply with D2.13. The stair treads must be non-slip.
NSW D2.13 (j) (k) (l)	Treads and risers	Conspicuous edges must be provided to the treads of all stairways.
D2.14	Landings	Stair landings must be non-slip with maximum gradient 1:50.
NSW D2.15 (c) (d)	Thresholds	In a Class 9b building used as a place of public entertainment, the door sill of a doorway opening to a road, open space, external stair landing or external balcony must not be more than 50 mm above the finished floor level to which the doorway opens. This clause applies to only those parts of the building used by the public
NSW D2.16 (f)	Balustrades	For a balustrade in a Class 9b building used as a place of public entertainment, the height above the nosings of the stair treads and the floors of ramps, and the floor of any access path, balcony, landing or the like, must not be less than— (A) 1 m when provided inside the building; and (B) 1200 mm when provided externally to the building. Maximum 125mm gaps apply to the balustrades. The plans comply in this regard.
D2.17	Handrails	A handrail is required along at least one side of all stairways and both sides where the width of the stairway is 2m or greater.
D2.18	Fixed platforms, walkways stairways and ladders	Not applicable
D2.19	Doorways and doors	Class 9b part – Complies (also refer to NSW D2.19 below).
NSW D2.19 (b)	Doorways and doors	In a Class 9b building used as a place of public entertainment, a required exit — (B) if fitted with a door, must be— (aa) a swing door which opens in the direction of egress; (bb) doors hung in two folds where the unobstructed width of the doorway is more than 1 m; Complies. (C) a doorway or opening within sight of the audience but not intended for egress must have a notice displayed clearly indicating its purpose and such a notice must not be internally illuminated; This clause applies only to those parts of the building used by the public.
D2.20	Swinging doors	All swinging exit doors must swing in the direction of egress. Complies.

CLAUSE	REFERENCE	COMMENTS
D2.21	Operation of latch	A door in a required exit, forming part of a required exit or in the path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by a single hand downward action or pushing action on a single device which is located between 900 mm and 1.1 m from the floor. Also refer to NSW D2.21 below.
NSW D2.21	Operation of latch	The following provisions apply to a door in a required exit, forming part of a required exit or in the path of travel to a required exit that is used by the public— (i) on a door, the single device operating the latch or bolts must be a panic bar if those doors are to be secured; or (ii) an exit door or gate used by the public as the main entrance may be fitted with key-operated fastenings only, the tongues of which must be locked in the retracted position whenever the building is occupied by the public so the door or gate can yield to pressure from within; or (iii) a door from a balcony, terrace or the like, being a door in a path of travel providing re-entry to the building, may comply with the locking provision of (ii) above.
NSW D2.101	Doors in path of travel in a place of public entertainment	In a Class 9b building used as a place of public entertainment, a doorway in a path of travel must comply with NSW D2.19(b)(v), i.e. must be a swing door which swings in the direction of egress. N.B. clause NSW D1.6 also requires all doorways in the path of travel to have a minimum clear width of 1m. Complies.
D2.22	Re-entry from fire isolated exits	Not applicable
D2.23	Signs on doors	Not applicable
PART D3 – ACCESS FOR PEOPLE WITH DISABILITIES		
D3.1	Application of part	Applies. Also refer to Access Consultant's report where applicable.
D3.2	Access to building	Disabled access is required from: • allotment boundary at the main points of entry • any accessible car parking spaces • through the principal public entrance …….. to and within: • all areas normally used by the occupants i.e. auditorium, restaurant, external deck area, accessible sanitary facility & back-of-house / administration areas.
D3.3	Parts of building to be accessible	A path of travel required to be accessible must not include a stairway, turnstile, revolving door, escalator or other impediment which would prevent a person in a wheelchair using it. Access, finishes and fittings, including passageways, ramps, step ramps or kerb ramps, signs, doorways and other parts of the building required by this Part must comply with the provisions of AS 1428.1, including. • The required internal stairway need not comply with clause 9 of AS1428.1 i.e. handrails both sides and opaque risers,

CLAUSE	REFERENCE	COMMENTS
		as there is a lift provided. • The circulation space around doorways must comply with AS1428.1. o The door serving the first floor kitchen does not comply in relation to circulation spaces. o The door serving the ground floor reception area does not comply in relation to circulation spaces. • The external disabled accessible ramp must comply with AS1428.1. This includes handrails to both sides continuous around landings. Maximum gradient 1:14. Landings must be minimum 1200mm depth. The plans appear capable of complying – further details required at CC stage. • Minimum door clear width for accessible paths of travel is 800mm. This applies to all office doorways. • Controls such as doors handles and light switches must be located between 900 and 1100mm from the floor.
D3.4	Concessions	Not applicable
D3.5	Car Parking	1 space for every 50 or part thereof. Based on 127 car parking spaces, 3 accessible spaces are required. The plans comply in this regard. The dimensions of the proposed accessible car spaces comply with AS2890.1 (minimum 3.2m width). The maximum crossfall of the disabled spaces is 1:40.
D3.6	Identification of access facilities	In every building required to be accessible, clear and legible Braille and tactile signage complying with Specification D3.6 and incorporating the international symbol of access or deafness or other symbol as appropriate, in accordance with AS 1428.1 must identify— (a) each— (i) sanitary facility; and (ii) accessible space with a hearing augmentation system; and (b) where an entrance or lift is not accessible, identify each accessible— (i) entrance; and (ii) lift or bank of lifts; and the path of travel from the principal public entrance to these features and facilities where their location is not apparent to the building occupant.
D3.7	Hearing augmentation-listening system	(a) Where an inbuilt amplification system, other than one used for emergency warning purposes only, is installed, a hearing augmentation system complying with AS 1428.1 must be provided in the following locations: (i) In any conference room, meeting room or the like with a floor area of more than 100 m^2. (ii) In any room used for judicatory purposes. (iii) In any auditorium in a Class 9b building, equitably

CLAUSE	REFERENCE	COMMENTS
		distributed and to not less than 15% of the floor area. (iv) At any ticket office, tellers booth, reception area or the like where the public is screened from the service provider. (b) In a Class 9b building, any screen or scoreboard capable of displaying public announcements, must be capable of supplementing any public address system, other than a public address system used for emergency warning purposes only.
D3.8	Tactile Indicators	Tactile ground surface indicators are required to the internal stairway and the external stairways and ramps and must be Type B indicators in accordance with AS 1428.4.
SECTION E – SERVICES AND EQUIPMENT		
PART E1 – FIRE FIGHTING EQUIPMENT		
E1.1	-	-
E1.2	-	-
E1.3	Fire Hydrants	Fire hydrants are required to serve the whole building. The design of the hydrant system must be prepared and certified by a qualified hydraulic engineer in accordance with E1.3.
E1.4	Hose Reels	Hose reels are required to serve the whole building. Fire hose reels must be located within 4m of an exit or hydrant or located externally. The design of the hose reel system must be prepared and certified by a qualified hydraulic engineer in accordance with E1.4.
E1.5	Sprinklers	Not required – refer comments under E2.2 below.
E1.6	Portable Extinguishers	Required to cover Class AE or E fire risks associated with emergency services switchboards.
E1.7	Repealed	-
E1.8	Fire Control Centres	Not applicable
E1.9	Fire precautions during construction	Note. 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.
E1.10	Provision for special hazards	Not applicable
PART E2 – SMOKE HAZARD MANAGEMENT		
E2.1	Application of Part	Noted
E2.2	General requirements (including Tables E2.2a & b)	
Table E2.2a	Fire-isolated exits	Not applicable.

CLAUSE	REFERENCE	COMMENTS
Table E2.2a	Buildings more than 25m in effective height	Not applicable
Table E2.2a	Buildings NOT more than 25m in effective height	Not applicable – refer Table E2.2b
Table E2.2a	Class 7a buildings	Not applicable
Table E2.2a	Basements (other than Class 7a bldgs)	Not applicable
Table E2.2b	Class 6 buildings	Not applicable
NSW Table E2.2b	Class 9b assembly buildings	Auto shutdown of air-handling systems is required upon activation of smoke detectors or other detection system. N.B we note there is no proposed stage. A building or part of a building being a licensed premises providing entertainment, must be provided with— (a) in an auditorium— (i) an automatic smoke exhaust system complying with Specification E2.2b; or (ii) roof mounted automatic smoke-and-heat vents complying with Specification E2.2c, in a single storey building or the top storey of a multi storey building; or (iii) a sprinkler system complying with Specification E1.5 with fast response sprinkler heads; and (b) in all other areas— (i) where a building or part of a building has a floor area not more than 2000 m^2— (note: the building has a floor area of 1,800m^2) (A) one of the smoke hazard management measures listed under (a) above; or (B) an automatic smoke detection and alarm system complying with Specification E2.2a; or Note: Paragraph (a) applies only to an auditorium designed principally to accommodate an audience to an entertainment. We note that the ground floor has been named as an “auditorium” on the plans. It is questionable as to whether this area is designed principally to accommodate an audience to an entertainment. It may be considered more as a multi-purpose room. Due to the fact that the Council issues the DA for use as a POPE or “entertainment venue”, it should be confirmed with Council as to whether the “auditorium” requirements are imposed on the building, or whether a smoke detection and alarm system will suffice.
E2.3	Provision for special hazard	Not applicable
PART E3 – LIFT INSTALLATIONS		
E3.1	Repealed	-
E3.2	Stretcher facility in lifts	Not applicable
E3.3	Warning against use of lifts	Warning signage must be provide to the lift.

CLAUSE	REFERENCE	COMMENTS
	in fire	
E3.4	Emergency lifts	Not applicable
E3.5	Landings	Complies.
E3.6	Facilities for people with disabilities	The passenger lift must— (a) be provided with a handrail complying with the provisions for a mandatory handrail in AS 1735.12; and (b) have minimum internal floor dimensions complying with AS 1735.12 (i.e. 1100mm wide & 1400mm deep); and complies (c) have doors with a minimum clear opening complying with AS 1735.12 (i.e. 900mm); and complies (d) be fitted with a series of door opening sensory devices which will detect a 75 mm diameter rod across the door opening between 50 mm and 1550 mm above floor level; and (e) have car control buttons complying with Section 7 of AS 1735.12.
E3.7	Fire Service Controls	Not applicable
E3.8	Aged Care Buildings	Not applicable.
PART E4 – EMERGENCY LIGHTING, EXIT SIGNS AND WARNING SYSTEMS		
E4.1	Repealed	-
E4.2	Emergency Lighting	An emergency lighting system is required throughout the building as follows: • In all rooms or spaces accessible by the public • in every passageway, corridor, hallway, or the like, that is part of the path of travel to an exit; and • in any room having a floor area more than 100 m2 that does not open to a corridor or space that has emergency lighting or to a road or open space; and • in any room having a floor area more than 300 m2 • in every required non fire-isolated stairway
E4.3	Measurement of distances	Noted.
E4.4	Design and operation of emergency lighting	The emergency lighting system must comply with AS2293.1.
E4.5	Exit signs	Exit signs are required throughout the building as follows: • All exit doors on ground floor. • Exit stairways on first floor
E4.6	Direction signs	In addition to E4.5, exit signs must be provided in appropriate positions to indicate the direction to the required exits.
E4.6 NSW (b)	Direction signs	Class 9b – external exit signs are required to any external egress path to the street.
E4.7	Class 2 and 3 Buildings and Class 4 parts	Not applicable

CLAUSE	REFERENCE	COMMENTS
	exemptions	
E4.8	Design and operation of exit signs	Exit signs must comply with AS2293.1.
E4.9	Sound Systems and Intercom Systems for Emergency Purposes	A sound system and intercom system for emergency purposes complying where applicable with AS 1670.4 must be installed.
SECTION F – HEALTH AND AMENITY		
PART F1 – DAMP & WEATHERPROOFING		
F1.1	Stormwater drainage	Stormwater drainage must comply with AS/NZS 3500.3.
F1.2	Repealed	-
F1.3	Repealed	-
F1.4	Repealed	-
F1.5	Roof coverings	Roof system to be confirmed.
F1.6	Sarking	Roof system to be confirmed.
F1.7	Waterproofing of wet areas in buildings	Water proofing of wet areas must comply with the relevant parts of AS 3740.
F1.8	Repealed	-
F1.9	Damp-proofing	Not applicable
F1.10	Damp-proofing of floors on the ground.	Not applicable
F1.11	Provision of floor wastes	Not applicable
F1.12	Sub-floor ventilation	Not applicable
F1.13	Glazed assemblies	Glazed assemblies in an external wall must comply with AS 2047 requirements for resistance to water penetration.
PART F2 – SANITARY & OTHER FACILITIES		
F2.1	Facilities in residential buildings	Not applicable.
F2.2	Calculation of number of occupants and fixtures	Noted
F2.3	Facilities in Class 3 to 9 Buildings, Table F2.3	The proposed number of facilities easily complies for the estimated population.
F2.4	Facilities for people with disabilities	Minimum 1 disabled accessible facility complying with AS1428.1 is required. 2 accessible facilities are provided. The dimensions of both accessible facilities are capable of complying with AS1428.1.
F2.5	Construction of sanitary compartments	Sanitary compartments must have doors and partitions that separate adjacent compartments and extend 1.8 m above the floor. The door to a fully enclosed sanitary compartment must— (i) open outwards; or (ii) slide; or (iii) be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2 m between the closet

CLAUSE	REFERENCE	COMMENTS
		pan within the sanitary compartment and the nearest part of the doorway or a gap underneath the doorway.
F2.6	Interpretation: urinals and wash basins	Noted
F2.7	Microbial control	Clause F2.7 does not apply in NSW.
F2.8	Waste management	Not applicable
PART F3 – ROOM SIZES		
F3.1	Height of rooms	2.7m required to the functions rooms and general public areas. 2.4m required to the back-of-house and office areas Complies.
PART F4 – LIGHT & VENTILATION		
F4.1	Provision of Natural light	Not applicable
F4.2	Methods and extent of natural lighting	Not applicable
F4.3	Natural light borrowed from adjoining room	Not applicable
F4.4	Artificial lighting	Artificial lighting must comply with AS/NZS 1680.0 and be provided throughout the building. Electrical consultant to certify. Also refer to Part J6.
F4.5	Ventilation of rooms	A habitable room, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have natural ventilation complying with F4.6; or a mechanical ventilation or air-conditioning system complying with AS 1668.2. Mechanical consultant to certify. Also refer to Part J5.
F4.6	Natural ventilation	If provided, natural ventilation must consist of permanent openings, windows, doors or other devices which can be opened: (a) with an aggregate opening or openable size not less than 5% of the floor area of the room required to be ventilated; and (b) open to— (i) suitably sized court, or space open to the sky; or (ii) an open verandah, carport, or the like; or (iii) an adjoining room in accordance with F4.7.
F4.7	Ventilation borrowed from adjoining rooms	Noted
F4.8	Restriction on position of water closets and urinals	Complies
F4.9	Airlocks	Noted
F4.10	Repealed	-
F4.11	Carparks	Not applicable
F4.12	Kitchen local exhaust ventilation	A commercial kitchen must be provided with a kitchen exhaust hood complying with AS/NZS 1668.1 and AS 1668.2 where—

CLAUSE	REFERENCE	COMMENTS
		(a) any cooking apparatus has— (i) a total maximum electrical power input exceeding 8 kW; or (ii) a total gas power input exceeding 29 MJ/h; or (b) the total maximum power input to more than one apparatus exceeds— (i) 0.5 kW electrical power; or (ii) 1.8 MJ gas, per m2 of floor area of the room or enclosure.
PART F5 – SOUND TRANSMISSION & INSTALLATION		
F5.0	Deemed-to-Satisfy Provisions	
F5.1	Application of Part	Not applicable
F5.2	Determination of airborne sound insulation ratings	Not applicable
F5.3	Determination of impact sound insulation ratings	Not applicable
F5.4	Sound Insulation ratings of floors	Not applicable
F5.5	Sound Insulation ratings of walls	Not applicable
F5.6	Sound insulation rating of services	Not applicable
F5.7	Sound isolation of pumps	Not applicable
SECTION G – ANCILLARY PROVISIONS		
G1.1	Swimming pools	Not applicable
G1.2	Coolrooms, strongrooms etc.	(a) A refrigerated or cooling chamber, strongroom or vault which is of sufficient size for a person to enter must have— (i) a door which is capable of being opened by hand from inside without a key; and (ii) internal lighting controlled only by a switch which is located adjacent to the entrance doorway inside the chamber, strongroom or vault; and (iii) an indicator lamp positioned outside the chamber, strongroom or vault which is illuminated when the interior lights required by (a)(ii) are switched on; and (iv) an alarm that is— (A) located outside but controllable only from within the chamber, strongroom or vault; and (B) able to achieve a sound pressure level outside the chamber, strongroom or vault of 90 dB(A) when measured 3 m from the sounding device. (b) A door required by (a)(i) in a refrigerated or cooling chamber must have a doorway with a clear width of not less than 600 mm and a clear height not less than 1.5 m.

CLAUSE	REFERENCE	COMMENTS
G1.101	Provision for cleaning of windows	Not applicable
G2	Heating Appliances	Not applicable
G3	Atriums	Not applicable
SECTION H	**SPECIAL USE BUILDINGS**	
NSW H1.1	Application of part	
H1.4	Seating area	Not applicable
H1.7	Aisle lights in theatres	Not applicable
NSW Part H101	Place of Public Entertainment	Noted
NSW H101.1	Application of Part	Noted
NSW H101.2	Fire separation	The whole building has been assessed as a POPE. As such, there is no requirement to separate POPE from non-POPE areas. We note all store rooms must be fire separated from the remaining parts of the building with FRL 60/60/60 – refer comments in H101.16.
NSW H101.3	Foyer space	Not applicable
NSW H101.4	Sprinkler system for common foyers	Not applicable
NSW H101.5	Conventional stages	Not applicable
NSW H101.6	Non-conventional stages	Not applicable
NSW H101.7	Flying Scenery	Not applicable
NSW H101.8	Load notice	Not applicable
NSW H101.9	----------	
NSW H101.10	Safety curtains	Not applicable
NSW H101.11	Seating in rows	Not applicable
NSW H101.12	Continental seating	Not applicable
NSW H101.13	Provision of guardrails	Not applicable
NSW H101.14	Guardrails	Not applicable
NSW H101.15	Dressing rooms	Not applicable
NSW H101.16	Storerooms	A storeroom must be separated from other parts of the building by construction having an FRL of not less than 60/60/60. Any openings in this construction must be protected in accordance with C3.4.

CLAUSE	REFERENCE	COMMENTS
		Storerooms are located on the first floor adjacent function room 1 and on the ground floor back-of-house area adjacent to the reception area.
NSW H101.17	Projection suites	Not applicable
NSW H101.18	Basement storeys	Not applicable
NSW H101.19	Electric mains installation	
NSW H101.19.1	Main switchboard	The switchboard containing the main isolation switch must— (a) be located in a position that is readily accessible to authorised persons, and to the Fire Brigade in the case of an emergency; and (b) be enclosed by construction having an FRL not less than 60/60/60.
NSW H101.19.2	Circuit protection	Protection of a final sub-circuit originating at a switchboard or distribution board must be by means of circuit breakers.
NSW H101.19.3	Separate sub-mains	Where a place of public entertainment has its mains supply in common with that of another building or where it is a part of a building— (a) the place of public entertainment must be served by a separate and independent sub-main from the main switchboard; and (b) each such sub-main, the consumer's main and the supply authority's conductors within the building must be protected against fire by means of— (i) mineral-insulated metal-sheathed cables or other cables that provide at least 2 hours' fire protection; or (ii) heavy-duty PVC conduit or metallic pipe, concrete encased in walls or slabs with a minimum of 50 mm cover; or (iii) heavy-duty PVC conduit or metallic pipe, buried at least 500 mm below ground level, for underground cabling.
NSW H101.20	Lighting	
NSW H101.20.1	Lighting switches	(a) Any switch controlling the lighting system must not be accessible. (b) Where, during normal use, general lighting may be dimmed or switched off, an override switch to switch on all the general lighting instantaneously must be installed in the auditorium in a position accessible to management.
NSW H101.20.2	Lighting levels	Where the lamps utilised in the general lighting are of a type that will not relight immediately after the restoration of the primary electricity supply to those lamps— (a) a time delay or other suitable means must be provided to maintain the emergency lighting for a period not less than that necessary to allow the general lighting lamps to restrike; or (b) lamps of a type that will provide immediate lighting must be installed and— (i) arranged in such a manner as to ensure visual conditions not inferior to those required to be provided by the

CLAUSE	REFERENCE	COMMENTS
		emergency lighting; and (ii) capable of being switched in common with the general lighting and of being controlled also by the override switch required by NSW H101.20.1(b).
NSW H101.20.3	Provision of aisle lighting	Not applicable
NSW H101.20.4	Aisle lighting power supply	Not applicable
NSW H101.20.5	Aisle lighting alternative power supply	Not applicable
NSW H101.22	Automatic smoke-and-heat vents for stages	Not applicable
NSW H101.23	Solid fuel burning stoves and open fire places	Not applicable
NSW H101.24	Fuel gas cylinders	Not applicable
SECTION I	**MAINTENANCE**	**ESSENTIAL FIRE SAFETY MEASURES MUST BE MAINTAINED IN ACCORDANCE WITH THE PROVISIONS OF THE ENVIRONMENTAL PLANNING & ASSESSMENT REGULATIONS 2000.**
SECTION J	**ENERGY EFFICIENCY**	
PART J1 – BUILDING FABRIC		
J1.1	Application of part	The climate zone is Zone 5. The entire building is deemed to be a conditioned space. Note: Query mechanical consultant as to whether the kitchens, storerooms and sanitary compartments are conditioned spaces. The building envelope is essentially the external walls and the roof.
J1.2	Thermal construction general	Insulation used to achieve required R-values must comply with J1.2. The requirements of J1.2 should be included in the contract specification and certified by the installer upon completion.
J1.3	Roof and ceiling construction	The roof must achieve an R-value of 3.2. A reduction in R-value is available where the roof upper surface solar absorptance value complies with J1.3(b)(ii). Confirmation of the roof material is required.
J1.4	Roof lights	No roof lights on plans reviewed.
J1.5	Walls	External walls forming the building envelope must achieve an R-value of 1.8 or one of the other options in Table J1.5b. Internal walls forming the building envelope do not require an R-value (zone 5).
J1.6	Floors	No R-value is required to the suspended floor over the water (zone 5).
J1.6 (NSW)	Floors of class 3 buildings	Not applicable.
PART J2 – EXTERNAL GLAZING		
J2.1	Application of part	Applies to all glazed areas of external walls forming the building envelope.
J2.2	Applicable glazing	J2.4 applies.

CLAUSE	REFERENCE	COMMENTS
	provisions	
J2.3	Glazing – method 1	Not applicable.
J2.4	Glazing – method 2	The building is capable of compliance. Refer to attached glazing calculator assessments in Appendix B. Notes: • The U-values and SHGC values used in the glazing assessments are minimum values (in terms of their thermal resistance) which confirm that J2.3 is complied with. As such, these minimum values must be specified for the relevant glazing in the construction certificate specification. The values are generally based on single clear glass with aluminium frame. • New glazing calculator assessments based on the specific dimensions of glazed areas based on the final plans and the finalised U-values and SHGC values proposed for installation should be provided prior to the issue of the Construction Certificate.
J2.5	Shading	Shading has been assessed as detailed on the attached glazing calculators. Note: The glazing to the manager's office on the first floor northeast elevation was not assessed as having any shading as this was not clear on the plans. As such, the SHGC value for this glazing was reduced to achieve compliance. Where shading is provided to this glazing, the SHGC value can be increased.
PART J3 – BUILDING SEALING		
J3.1	Application of part	Applies.
J3.1 (NSW)	Application of part	Does not apply to parts of buildings that cannot be fully enclosed.
J3.2	Chimneys and flues	Not applicable
J3.3	Roof lights	Not applicable
J3.4	Windows and doors	a) A seal to restrict air infiltration must be fitted to each edge of a door, openable window or the like forming part of— (i) the envelope of a conditioned space; or (ii) the external fabric of a habitable room or public area in climate zones 4, 6, 7 and 8. (b) The requirements of (a) do not apply to— (i) a window complying with AS 2047; or (ii) a louvre door, louvre window, or other such opening; or (iii) a fire door or smoke door; or (iv) a roller shutter door, roller shutter grille or other security door or device installed only for out-of-hours security. (c) A seal required by (a) may be a foam or rubber compressible strip, fibrous seal or the like. (d) A main entrance to a building, if leading to a conditioned space must have an airlock, self-closing door, revolving door or the like, other than— (i) where the conditioned space has a floor area of not more

CLAUSE	REFERENCE	COMMENTS
		than 50 m2; or (ii) where a café, restaurant, open front shop or the like has— (A) a 3 m deep un-conditioned zone between the main entrance, including an open front, and the conditioned space; and (B) all other entrances to the café, restaurant, open front shop or the like, have self-closing doors.
J3.5	Exhaust fans	A miscellaneous exhaust fan, such as a bathroom exhaust fan, must be fitted with a sealing device such as a self-closing damper or the like when serving a conditioned space.
J3.6	Construction of roofs, walls and floors	(a) Roofs, walls, floors and any opening such as a window, door or the like must be constructed to minimise air leakage in accordance with (b) when forming part of— (i) the envelope of a conditioned space; (b) Construction required by (a) must be— (i) enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or (ii) sealed by caulking, skirting, architraves, cornices or the like. (c) The requirements of (a) do not apply to openings, grilles and the like required for smoke hazard management. The requirements of J3.6 should be included in the contract specification and certified by the installer upon completion.
J3.7	Evaporative coolers	Mechanical consultant to advise if applicable.
PART J4 – AIR MOVEMENT		
J4.1	Application of part	Not applicable
J4.2	Air movement	Not applicable
J4.3	Ventilation openings	Not applicable
J4.4	Ceiling fans and evaporative coolers	Not applicable
PART J5 – AIR-CONDITIONING AND VENTILATION SYSTEMS		
J5.1	Blank	
J5.2	Air-con and ventilation systems	All new air-conditioning and mechanical systems must comply with the relevant parts of J5.2. The mechanical design consultant must certify compliance in this regard.
J5.3	Time switch	All new air-conditioning and mechanical systems must comply with the relevant parts of J5.3. The mechanical design consultant must certify compliance in this regard.
J5.4	Heating and chilling systems	All new air-conditioning and mechanical systems must comply with the relevant parts of J5.4. The mechanical design consultant must certify compliance in this regard.
J5.5	Miscellaneous exhaust	All new air-conditioning and mechanical systems must comply with

CLAUSE	REFERENCE	COMMENTS
	systems	the relevant parts of J5.5. The mechanical design consultant must certify compliance in this regard.
PART J6 – ARTIFICIAL LIGHTING AND POWER		
J6.1	Application of part	
J6.2	Interior artificial lighting	All new artificial lighting must comply with the relevant parts of J6.2. The electrical design consultant must certify compliance in this regard.
J6.3	Interior artificial lighting and power control	All new artificial lighting and power controls must comply with the relevant parts of J6.3. The electrical design consultant must certify compliance in this regard.
J6.4	Interior decorative and display lighting	Comment required from electrical consultant.
J6.5	Artificial lighting around the perimeter of a building	Comment required from electrical consultant.
J6.6	Boiling water and chilled water storage units	Comment required from electrical consultant.
PART J7 – HOT WATER SUPPLY		
J7.2	Hot water supply	Any new hot water supply system for sanitary purposes must be designed and installed in accordance with Section 8 of AS/NZS 3500.4. The electrical / hydraulic design consultant must certify compliance in this regard.
PART J8 – ACCESS FOR MAINTENANCE		
J8.1	Application of part	
J8.2 (NSW)	Access for maintenance	Access for maintenance must be provided to— (a) all new services and their components, including— (i) time switches and motion detectors; and (ii) room temperature thermostats; and (iii) plant thermostats such as on boilers or refrigeration units; and (iv) outside air dampers; and (v) reflectors, lenses and diffusers of light fittings; and (vi) heat transfer equipment. The electrical and mechanical design consultants must certify compliance in this regard.

4.0 SUMMARY OF COMPLIANCE ISSUES

The following comprises the key BCA compliance issues that will need to be addressed prior to issue of the Construction Certificate:

1. BCA cl. C1.10 and NSW Spec C1.10: Early Fire Hazard Properties:

   The fire hazard properties of any new material or assemblies, and sarking material must comply with Specification C1.10 or C1.10a.

   A material used as a curtain, blind or similar decor in any part available to the public, must have a *Flammability Index* no greater than 6

2. BCA Spec C1.1 – Fire-resisting construction

   External walls do not require an FRL (all external walls are greater than 18m to a fire-source-feature)

   Loadbearing internal walls and columns to ground floor only must achieve FRL 120/-/-.

   External walls must be non-combustible.

   Internal columns and loadbearing internal walls to first floor need not achieve an FRL.

   A loadbearing internal wall must be of concrete or masonry.

   Roof does not require an FRL.

   Floor separating storeys: the floor must achieve one of the following:

   (i) be constructed so that it is at least of the standard achieved by a floor/ceiling system incorporating a ceiling which has a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes; or

   (ii) have an FRL of at least 30/30/30; or

   (iii) have a fire-protective covering on the underside of the floor, including beams incorporated in it, if the floor is combustible or of metal.

   Fire ratings must comply with the above and Table 4 of Spec C1.1 – refer Appendix A.

3. BCA clause D1.6 & NSW D1.6 – Dimensions of exits

   In a required exit or path of travel to an exit—

   (a) the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm;

   (b) the unobstructed width of each exit or path of travel to an exit, except for doorways, must be not less than 1 m;

   (f) the unobstructed width of a doorway in an exit or a path of travel to an exit must be not less than 1m for any areas used by the public (refer NSW D1.6) and 800mm for areas used only by employees.

   In a Class 9b building used as a POPE, min 1m clear width to exit and path of travel in parts of the building used by the public.

   Complies.

   In a Class 9b building used as a place of public entertainment—

   (i) the aggregate width must be not less than 2 m plus 500 mm for every 50 persons or part in excess of 200; and

   (ii) D1.6(b), (c) and (d) do not apply; and

(iii) where one or more paths of travel merge, the width of the combined path of travel must be not less than the sum of the required widths of those paths of travel; and

(iv) the required widths of the paths of travel connecting the exits from the building to a public road or open space must comply with (iii).

Ground Floor

- aggregate exit width provided = 6.4m less 1.7m = 4.7m
- estimated population (refer D1.13) = 380 people (3.8m aggregate exit width required)
- complies
- Note: 1.7m of the ground floor aggregate exit width is used-up by people egressing from the first floor down the internal stairs.

First floor

- aggregate exit width provided = 3.2m
- estimated population (refer D1.13) = 295 people (3m aggregate exit width required)
- Complies.
- NOTE: Refer NSW D1.10 below. This clause requires that minimum 50% of aggregate egress width is other than via the main entrance. As such, we note that the external stairway provides 1.5m clear width, which is 50% of the required aggregate exit width.

We note that where paths of travel merge e.g. exits discharging to the north and west elevations, there is sufficient egress width to the public road, via the BBQ area.

4. BCA clause D1.10 – Discharge from exits

The path of travel from the external stairs as well as from exits located along the northwest and northeast elevations must be via the BBQ area (rather than past the "members entry"). The width of the path adjacent to the "member's entry" is less than 1m.

Refer to clause NSW E4.6 in relation to external exit signage.

5. BCA clause NSW D1.10 – Discharge from exits

In a Class 9b building used as a place of public entertainment, at least half of the required number of exits from each storey or mezzanine, and at least half of the aggregate width of such exits must discharge otherwise than through the main entrance, or the area immediately adjacent to the main entrance of the building.

Ground Floor

- complies

First floor

- required exit width = 3m
- therefore minimum 1.5m exit width required for each exit
- complies.

6. BCA clause D1.13 – Number of persons accommodated

Ground floor

- Auditorium = 260

- Restaurant = 90
- Employees 30
- **Total = 380 people**

First floor

- Function Room 1 = 140
- Pre-function = 100 (assumed people from pre-function also counted in function rooms, therefore 100 people estimated)
- Function Room 2 = 40
- Employees = 15
- **Total = 295 people**

7. BCA clause D2.7 – Installations in exits and paths of travel

   Services or equipment comprising electricity meters, distribution boards or ducts; or central telecommunications distribution boards or equipment; or electrical motors or other motors serving equipment in the building, may be installed in a required exit, or in any corridor, hallway, lobby or the like leading to a required exit, if the services or equipment are enclosed by non-combustible construction or a fire-protective covering with doorways or openings suitably sealed against smoke spreading from the enclosure.

8. BCA clause D2.8 – Enclosure of space under stairs and ramps

   The space below both required non fire-isolated stairways (including the external stairway) must not be enclosed to form a cupboard or other enclosed space unless—

   (i) the enclosing walls and ceilings have an FRL of not less than 60/60/60; and

   (ii) any access doorway to the enclosed space is fitted with a self-closing –/60/30 fire door.

9. BCA clause NSW D2.13 – Treads and risers

   Conspicuous edges must be provided to the treads of all stairways.

10. BCA clause NSW D2.15 – Thresholds

    In a Class 9b building used as a place of public entertainment, the door sill of a doorway opening to a road, open space, external stair landing or external balcony must not be more than 50 mm above the finished floor level to which the doorway opens.

    This clause applies to only those parts of the building used by the public

11. BCA clause NSW D2.16 – Balustrades

    For a balustrade in a Class 9b building used as a place of public entertainment, the height above the nosings of the stair treads and the floors of ramps, and the floor of any access path, balcony, landing or the like, must not be less than—

    (A) 1 m when provided inside the building; and

    (B) 1200 mm when provided externally to the building.

    Maximum 125mm gaps apply to the balustrades.

12. BCA clause D2.17 – Handrails

    A handrail is required along at least one side of all stairways and both sides where the width of the stairway is 2m or greater.

13. BCA clause D2.19 – Doorways and doors

    Complies (also refer to NSW D2.19 below).

14. BCA clause NSW D2.19 – Doorways and doors

    In a Class 9b building used as a place of public entertainment, a required exit —

    (B) if fitted with a door, must be—

        (aa) a swing door which opens in the direction of egress;

        (bb) doors hung in two folds where the unobstructed width of the doorway is more than 1 m;

        Complies

    (C) a doorway or opening within sight of the audience but not intended for egress must have a notice displayed clearly indicating its purpose and such a notice must not be internally illuminated;

    This clause applies only to those parts of the building used by the public.

15. BCA clause D2.20 – Swinging doors

    All swinging exit doors must swing in the direction of egress.

    Complies.

16. BCA clause NSW D2.21 – Operation of latch

    A door in a required exit, forming part of a required exit or in the path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by a single hand downward action or pushing action on a single device which is located between 900 mm and 1.1 m from the floor.

    The following provisions apply to a door in a required exit, forming part of a required exit or in the path of travel to a required exit that is used by the public—

        (i) on a door, the single device operating the latch or bolts must be a panic bar if those doors are to be secured; or

        (ii) an exit door or gate used by the public as the main entrance may be fitted with key-operated fastenings only, the tongues of which must be locked in the retracted position whenever the building is occupied by the public so the door or gate can yield to pressure from within; or

        (iii) a door from a balcony, terrace or the like, being a door in a path of travel providing re-entry to the building, may comply with the locking provision of (ii) above.

17. BCA clause NSW D2.101 – Doors in path of travel in a place of public entertainment

    In a Class 9b building used as a place of public entertainment, a doorway in a path of travel must comply with NSW D2.19(b)(v), i.e. must be a swing door which swings in the direction of egress.

    N.B. clause NSW D1.6 also requires all doorways in the path of travel to have a minimum clear width of 1m.

    Complies.

18. Part D3 – Access for people with disabilities

Note: also refer to Access Consultant's report, where applicable.

Disabled access is required from:

- allotment boundary at the main points of entry
- any accessible car parking spaces
- through the principal public entrance

…….. to and within:

- all areas normally used by the occupants i.e. auditorium, restaurant, external deck area, accessible sanitary facility & back-of-house / administration areas.

A path of travel required to be accessible must not include a stairway, turnstile, revolving door, escalator or other impediment which would prevent a person in a wheelchair using it.

Access, finishes and fittings, including passageways, ramps, step ramps or kerb ramps, signs, doorways and other parts of the building required by this Part must comply with the provisions of AS 1428.1, including.

- The required internal stairway need not comply with clause 9 of AS1428.1 i.e. handrails both sides and opaque risers, as there is a lift provided.
- The circulation space around doorways must comply with AS1428.1.
    - The door serving the first floor kitchen does not comply in relation to circulation spaces.
    - The door serving the ground floor reception area does not comply in relation to circulation spaces.
- The external disabled accessible ramp must comply with AS1428.1. This includes handrails to both sides continuous around landings. Maximum gradient 1:14. Landings must be minimum 1200mm depth. The plans appear capable of complying – further details required at CC stage.
- Minimum door clear width for accessible paths of travel is 800mm. This applies to all office doorways.
- Controls such as doors handles and light switches must be located between 900 and 1100mm from the floor.

Accessible carparking – Based on 127 car parking spaces, 3 accessible spaces are required. The plans comply in this regard.

In every building required to be accessible, clear and legible Braille and tactile signage complying with Specification D3.6 and incorporating the international symbol of access or deafness or other symbol as appropriate, in accordance with AS 1428.1 must identify—

(a) each—

(i) sanitary facility; and

(ii) accessible space with a hearing augmentation system; and

(b) where an entrance or lift is not accessible, identify each accessible—

(i) entrance; and

(ii) lift or bank of lifts; and

the path of travel from the principal public entrance to these features and facilities where their location is not apparent to the building occupant.

Where an inbuilt amplification system, other than one used for emergency warning purposes only, is installed, a hearing augmentation system complying with AS 1428.1 must be provided in the following locations:

(i) In any conference room, meeting room or the like with a floor area of more than 100 m2.

(ii) In any room used for judicatory purposes.

(iii) In any auditorium in a Class 9b building, equitably distributed and to not less than 15% of the floor area.

(iv) At any ticket office, tellers booth, reception area or the like where the public is screened from the service provider.

In a Class 9b building, any screen or scoreboard capable of displaying public announcements, must be capable of supplementing any public address system, other than a public address system used for emergency warning purposes only.

Tactile ground surface indicators are required to the internal stairway and the external stairways and ramps and must be Type B indicators in accordance with AS 1428.4.

19. Section E – Services and Equipment

The following fire safety measures must be provided to the building:

Automatic fire detection and alarm system **See Note 1 below.**	BCA Spec. E2.2a and AS 1670.1-2004
Emergency Lighting	BCA Clauses E4.2/E4.4 & AS/NZS 2293.1-2005
Exit Signs	BCA Clauses E4.5/NSW E4.6/E4.7/E4.8 and AS/NZS 2293.1-2005
Fire dampers (if provided)	AS/NZS 1668.1-1998, AS 1682.1-1990
Fire doors	BCA Spec. C3.4 and AS1905.1-2005
Fire hydrant systems	BCA Clause E1.3 & AS 2419.1-2005
Fire seals (protecting openings in fire resisting components of the building)	BCA Clause C3.15
Hose reel system	BCA Clause E1.4 & AS 2441-2005
Mechanical air handling systems (auto shutdown) **See Note 1 below.**	BCA Clauses E2.2/NSW F4.5(b)/F4.12 and AS/NZS 1668.1-1998
Portable fire extinguishers	BCA Clause E1.6 and AS 2444-2001
Sound Systems and Intercom Systems for Emergency Purposes	BCA Clause E4.9 & AS 1670.4 & AS4428.4
Warning and Operational Signs	BCA Clauses E3.3/NSW D2.19

Note 1:

A building or part of a building being a licensed premises providing entertainment, must be provided with—

(a) in an auditorium—

(i) an automatic smoke exhaust system complying with Specification E2.2b; or

(ii) roof mounted automatic smoke-and-heat vents complying with Specification E2.2c, in a single storey building or the top storey of a multi storey building; or

(iii) a sprinkler system complying with Specification E1.5 with fast response sprinkler heads; and

(b) in all other areas—

(i) where a building or part of a building has a floor area not more than 2000 m^2— (*note: the building has a floor area of 1,800m^2*)

(A) one of the smoke hazard management measures listed under (a) above; or

(B) an automatic smoke detection and alarm system complying with Specification E2.2a; or

Paragraph (a) applies only to an auditorium designed principally to accommodate an audience to an entertainment.

We note that the ground floor has been named as an "auditorium" on the plans. It is questionable as to whether this area is designed principally to accommodate an audience to an entertainment. It may be considered more as a multi-purpose function room in terms of NSW Table E2.2b. Due to the fact that the Council issues the DA for use as a POPE or "entertainment venue", it should be confirmed with Council as to whether the "auditorium" requirements are imposed on the building, or whether a smoke detection and alarm system will suffice.

20. BCA clause F4.12: Kitchen local exhaust ventilation

A commercial kitchen must be provided with a kitchen exhaust hood complying with AS/NZS 1668.1 and AS 1668.2 where—

(a) any cooking apparatus has—

(i) a total maximum electrical power input exceeding 8 kW; or

(ii) a total gas power input exceeding 29 MJ/h; or

(b) the total maximum power input to more than one apparatus exceeds—

(i) 0.5 kW electrical power; or

(ii) 1.8 MJ gas,

per m2 of floor area of the room or enclosure.

21. BCA clause G1.2: Coolrooms, strongrooms etc.

A refrigerated or cooling chamber, strongroom or vault which is of sufficient size for a person to enter must have—

(i) a door which is capable of being opened by hand from inside without a key; and

(ii) internal lighting controlled only by a switch which is located adjacent to the entrance doorway inside the chamber, strongroom or vault; and

(iii) an indicator lamp positioned outside the chamber, strongroom or vault which is illuminated when the interior lights required by (a)(ii) are switched on; and

(iv) an alarm that is—

(A) located outside but controllable only from within the chamber, strongroom or vault; and

(B) able to achieve a sound pressure level outside the chamber, strongroom or vault of 90 dB(A) when measured 3 m from the sounding device.

A door required by (i) in a refrigerated or cooling chamber must have a doorway with a clear width of not less than 600 mm and a clear height not less than 1.5 m.

22. BCA NSW Part H101: Place of Public Entertainment

H101.16

A storeroom must be separated from other parts of the building by construction having an FRL of not less than 60/60/60. Any openings in this construction must be protected in accordance with C3.4.

Storerooms are located on the first floor adjacent function room 1 and on the ground floor back-of-house area adjacent to the reception area.

H101.19

The switchboard containing the main isolation switch must—

(a) be located in a position that is readily accessible to authorised persons, and to the Fire Brigade in the case of an emergency; and

(b) be enclosed by construction having an FRL not less than 60/60/60.

H101.20

(a) Any switch controlling the lighting system must not be accessible.

(b) Where, during normal use, general lighting may be dimmed or switched off, an override switch to switch on all the general lighting instantaneously must be installed in the auditorium in a position accessible to management.

Where the lamps utilised in the general lighting are of a type that will not relight immediately after the restoration of the primary electricity supply to those lamps—

(a) a time delay or other suitable means must be provided to maintain the emergency lighting for a period not less than that necessary to allow the general lighting lamps to restrike; or

(b) lamps of a type that will provide immediate lighting must be installed and—

(i) arranged in such a manner as to ensure visual conditions not inferior to those required to be provided by the emergency lighting; and

(ii) capable of being switched in common with the general lighting and of being controlled also by the override switch required by NSW H101.20.1(b).

23. BCA Section J: Energy Efficiency

Refer to comments in table under Section 3.0 of this report.

5.0 CONCLUSION

This report contains an assessment of the architectural documentation for the proposed development against the deemed-to-satisfy provisions of the Building Code of Australia 2009 (BCA).

It is considered that the proposed development can comply with the BCA provided the compliance issues identified in sections 3.0 & 4.0 of this report are addressed prior to the issue of a construction certificate or during the works, as necessary.

Signed: 

Antony Ridgway
Building Surveyor
Accredited Certifier – BPB0344
Dix Gardner Pty Ltd

Date: 22 May 2009

Issue: 2 – Final

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APPENDIX A – BCA Spec C1.1, Table 4

Table 4 TYPE B CONSTRUCTION: FRL OF BUILDING ELEMENTS **Building element**	**Class of building—FRL: (in minutes)** ***Structural adequacy/Integrity/Insulation***			
	2, 3 or 4 part	**5, 7a or 9**	**6**	**7b or 8**
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* parts—				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 30	120/ 90/ 60	180/120/ 90	240/180/120
3 to less than 9 m	90/ 30/ 30	120/ 30/ 30	180/ 90/ 60	240/ 90/ 60
9 to less than 18 m	90/ 30/ -	120/ 30/ -	180/ 60/ -	240/ 60/ -
18 m or more	- / - / -	- / - / -	- / - / -	- / - / -
For non-*loadbearing* parts—				
less than 1.5 m	- / 90/ 90	- /120/120	- /180/180	- /240/240
1.5 to less than 3 m	- / 60/ 30	- / 90/ 60	- /120/ 90	- /180/120
3 m 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 3 m	90/ - / -	120/ - / -	180/ - / -	240/ - / -
3 m 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
Fire-resisting stair *shafts*				
Non-*loadbearing*	- / 90/ 90	- /120/120	- /120/120	- /120/120
Bounding *public corridors*, public lobbies and the like—				
Loadbearing	60/ 60/ 60	120/ - / -	180/ - / -	240/ - / -
Non-*loadbearing*	- / 60/ 60	- / - / -	- / - / -	- / - / -
Between or bounding *sole-occupancy units—*				
Loadbearing	60/ 60/ 60	120/ - / -	180/ - / -	240/ - / -
Non-*loadbearing*	- / 60/ 60	- / - / -	- / - / -	- / - / -
OTHER LOADBEARING INTERNAL WALLS and COLUMNS—	60/ - / -	120/ - / -	180/ - / -	240/ - / -
ROOFS	- / - / -	- / - / -	- / - / -	- / - / -

APPENDIX B – Glazing Calculator Assessments

GLAZING CALCULATOR FOR USE WITH CLAUSE J2.4, BCA VOLUME ONE (METHOD 2)

Building name/description: **Lake Macquarie Yacht Club**

Climate zone: **5**

Storey: **Ground**

Facade areas	N	NE	E	SE	S	SW	W	NW
Option A		156m²		118m²		156m²		118m²
Option B								
Glazing area (A)		*52.3m²*		*29.6m²*		*29.4m²*		*60.8m²*

Number of rows preferred in table below: **10** *(as currently displayed)*

GLAZING ELEMENTS, ORIENTATION, SIZE and PERFORMANCE CHARACTERISTICS											SHADING		CALCULATED OUTCOMES - OK (if inputs are valid)				
Glazing element		Sector faced		Size			Performance				P&H or device		Shading		Multipliers		Size	
ID	Description (optional)	Option A facades	Option B facades	Height (m)	Width (m)	Area (m²)	*Total U-Value* (NFRC)	*SHGC* (NFRC)			P (m)	H (m)	P/H	G (m)	Heating (S_H)	Cooling (S_C)	Area used (m²)	Element share of % of allowance used
1	NE no BBQ shade	NE				27.50	7.9	0.81						0.00	1.00	1.00	27.50	84% of 91%
2	SE combined	SE				29.60	7.9	0.81						0.00	1.00	1.00	29.60	100% of 66%
3	SW combined	SW				29.40	7.9	0.81						0.00	1.00	1.00	29.40	100% of 44%
4	NW combined	NW		2.70		60.75	7.9	0.81			6.000	3.000	2.00	0.30		0.25	60.75	100% of 41%
5	NE BBQ shade	NE		2.70		24.80	7.9	0.81			10.000	3.000	3.33	0.30		0.25	24.80	16% of 91%
7																		
8																		
9																		
10																		

IMPORTANT NOTICE AND DISCLAIMER IN RESPECT OF THE GLAZING CALCULATOR

The Glazing Calculator has been developed by the ABCB to assist in developing a better understanding of glazing energy efficiency parameters.
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if inputs are valid

GLAZING CALCULATOR FOR USE WITH CLAUSE J2.4, BCA VOLUME ONE (METHOD 2)

Building name/description: **Lake Macquarie Yacht Club**

Climate zone: **5**

Storey: **First floor**

Facade areas	N	NE	E	SE	S	SW	W	NW
Option A		93m²		84m²		93m²		84m²
Option B								
Glazing area (A)		*27.5m²*		*17m²*		*29m²*		*48.6m²*

Number of rows preferred in table below: **10** *(as currently displayed)*

GLAZING ELEMENTS, ORIENTATION, SIZE and PERFORMANCE CHARACTERISTICS											SHADING		CALCULATED OUTCOMES - OK (if inputs are valid)				
Glazing element		Sector faced		Size			Performance				P&H or device		Shading		Multipliers		Size	
ID	Description (optional)	Option A facades	Option B facades	Height (m)	Width (m)	Area (m²)	*Total U-Value* (NFRC)	*SHGC* (NFRC)			P (m)	H (m)	P/H	G (m)	Heating (S_H)	Cooling (S_C)	Area used (m²)	Element share of % of allowance used
1	NE function	NE		1.10		23.00	7.9	0.81			1.100	1.700	0.65	0.60	0.96	0.84	23.00	87% of 100%
2	SE combined	SE				17.00	7.9	0.81						0.00	1.00	1.00	17.00	100% of 53%
3	SW combined	SW				29.00	7.9	0.81						0.00	1.00	1.00	29.00	100% of 73%
4	NW combined	NW		2.70		48.60	7.9	0.81			6.000	3.000	2.00	0.30		0.25	48.60	100% of 46%
5	NE manager	NE				4.50	7.9	0.52						0.00	1.00	1.00	4.50	13% of 100%
6																		
7																		
8																		
9																		
10																		

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if inputs are valid