



BUILDING CODE OF AUSTRALIA PRELIMINARY REPORT

**Prince of Wales
Mental Health Intensive Care Unit**

Dated: **January 2011**

Prepared for: **Health Infrastructure NSW**

Prepared by: **McKenzie Group Consulting (NSW) Pty Ltd
ACN 093 211 995**

BUILDING REGULATIONS CONSULTANTS
McKenzie Group Consulting (NSW) Pty Ltd – ACN 093 211 995
Suite 601, Level 6 / 189 Kent Street Sydney New South Wales 2000
Telephone 02 8298 6800 Facsimile 02 8298 6899 www.mckenzie-group.com.au

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Date	Rev No	No. of Pages	Issue or Description of Amendment	Checked By	Approved By	Date Approved
11.10.10	1	9	Preliminary Assessment	Eric Bailey	Mike Gooley	11.10.10
28.10.10	2	9	Preliminary Assessment	Eric Bailey	Mike Gooley	28.10.10
10.01.2011	3	9	Final	Eric Bailey	Mike Gooley	10.01.2011



Executive Summary

As Accredited Certifiers, we have reviewed the preliminary architectural design documents prepared by BVN Architects (refer appendix A) for general compliance with the Building Code of Australia 2010.

The assessment of the design documentation has found that the following areas are required to be assessed against the relevant performance provisions of the BCA, or insufficient detail has been provided for assessment. It is assumed the building is classified 9a health care.

- It appears a plunge bath and kitchen facilities have not been provided.
- The size of the proposed smoke and fire compartments is yet to be confirmed.
- Openings at first floor level potentially exposed to building 18

The application for Construction Certificate shall be assessed under the relevant provisions of the Environmental Planning & Assessment Act 1979 (As Amended) and the Environmental Planning & Assessment Regulation 2000.

Assessed By



Eric Bailey



1.0 Introduction

The proposed development comprises the construction of a new mental health facility at Prince of Wales Hospital.

The site is located within the grounds of the existing hospital site.

2.0 Building Assessment Data

Summary of Construction Determination: -

Part of Project	
Classification	7a, 5 & 9a
Number of Storeys Contained	2
Rise In Storeys	2
Required Type of Construction	B
Effective Height (m)	<12m

Summary of the floor areas and relevant populations where applicable: -

Part of Project	BCA Classification	Approx. Floor Area (m ²)	Assumed Population
Basement Plan	7a *	Future construction	
Ground Floor Plan	5 *	250m ²	TBA
Level 1 Floor Plan	9a *	1000m ²	TBA
Total		1250m²	TBA

* Offices – Class 5

* Carpark – Class 7a

* Healthcare Building – Class 9a

3.0 Fire Resistance

The building should be constructed generally in accordance with Table 4 specification C1.1 of the Building Code of Australia 2010. The building has been assessed as a health care building and offices in accordance with the provisions of the Buildings Code of Australia.

The class 9a portions shall require:

1. Patient care areas with maximum compartments of 2000m²,
2. Ward areas shall require additional separation with a maximum area of 1000m² by construction achieving an FRL of 60/60/60 and smoke separation to a maximum area of 500m²,
3. Treatment areas smoke separation to a maximum area of 1000m²

The location of fire and smoke compartmentation shall be reviewed at detailed design phase to ensure the above noted parameters are maintained.



Other passive fire protection issues that will need to be addressed in detailed documentation phase include:

- Separation of ancillary areas such as kitchens, hyperbaric facility, medical storage and laundries,
- Fire doors, seals and collars,
- Openings to external walls and between compartments,
- Lift motor rooms and lift shafts,
- Emergency power supply,
- Emergency generators,
- Electricity supply,
- Boilers or batteries,

The fire hazard properties of fixed surface linings and mechanical ductwork will also need to be addressed within the detailed documentation phase pursuant to specification C1.10 and C1.10a Building Code of Australia.

4.0 Egress

The egress provisions from the proposed building are provided by external doors and stairs. The travel distances and distance between alternate exits has been assessed and may need to verify as part of the alternate solutions to verify DP4. Further detailing will be required as the design progresses.

The detailed assessment of egress shall be undertaken during design development to ensure adequate provisions are allowed for.

The Deemed-to-Satisfy outcomes for travel and exiting in this building are as follows:

Class 5 & 7a

- 20m to a single exit or point of choice to 2 or more exits.
- 40m to an alternative exit
- 60m between exits measured through a point of choice

Class 9a

- 12m to a single exit or point of choice to 2 or more exits
- 30m to an alternative exit
- 45m between exits measured through a point of choice

Other detailing issues that will need to be addressed include:

- Door Hardware,
- Exit door operation,
- Stair construction,
- Handrail and balustrade construction,
- Separation of rising and descending stairs,
- Details of the egress provisions to the road.

4.1 Access for Persons with a Disability

Access for people with disabilities shall be provided to and within the building in accordance with the requirements of Clause D3.2, D3.3 and D3.4 of the BCA. Parts of the building required to be accessible shall comply with the requirements of AS1428.1-2001.

Where the main public entrance is via a ramp, tactile indicators shall be provided in accordance with AS 1428.4 at the top and bottom. Parking shall be provided for people with disabilities in accordance with in accordance with Clause D3.5 of the BCA. Facilities services and features of the building accessible to people with disabilities shall be identified by signage complying with Clause D3.6 of the BCA.



5.0 Fire Services & Equipment

The following fire services will need to be provided to the building:

- Fire hydrants in accordance with clause E1.3 of the BCA and AS 2419.1-2005,
- Fire hose reels in accordance with clause E1.4 of the BCA and AS 2441-2005,
- Portable Fire Extinguishers in accordance with clause E1.6 of the BCA and AS 2444-2001,
- Emergency lighting, exit signage and directional exit signage is required throughout the building in accordance with Part E of the BCA and AS/NZS 2293.1,
- Automatic smoke detection and alarm system in accordance with clause E2.2 of the BCA and AS 1670-2004, including automatic shut down of the system.
- Sound system and intercom systems for emergency purpose in accordance with E4.9 and AS 1670.4 and 4428.4

6.0 Ventilation and Smoke Hazard Management

Smoke hazard management shall be assessed as either compliant with the requirements of Clause E2.2a of the BCA or part of any Fire engineering report and as noted above.

Throughout the development the provision of natural or mechanical ventilation is required to all habitable rooms in accordance with F4.5 Building Code of Australia and AS 1668 and AS/NZS 3666.1

7.0 Sanitary Facilities

The sanitary & other facilities within the development would generally consist of: -

1. a Kitchen Facility,
2. a laundry Facility,
3. one shower for every 8 patients,
4. one island type plunge bath for each ward area.
5. Wc's and washbasin for patients and staff,
6. public toilets to allow for visitors

Adequate sanitary facilities for staff and patients must be provided and a detailed assessment shall be undertaken as the design progresses. Please note the Unisex facilities provided for people with disabilities may be counted once for each sex. These facilities are to be provided in accordance with AS1428.1-2001.

8.0 Energy Efficiency

The proposed development shall be provided in accordance with NSW Part J of the BCA 2010. Relevant clauses should be noted and addressed in design specifications. Statements of compliance in relation to Part J will be required prior to issuance of a Construction Certificate for the project.



Appendix A- Design Documentation

The following documentation was used in the assessment and preparation of this report: -

Various untitled drawings described as POW – MHICU, dated November 2010.



Appendix B- Draft Fire Safety Schedule

	Items to be inspected or tested as nominated by the relevant authority	Deemed to satisfy installation standard/code/conditions of approval
1.	Access Panels, Doors and Hoppers	BCA Clause C3.13
2.	Automatic Fail Safe Devices	BCA Clause D2.19 & D2.21
3.	Automatic Fire Detection and Alarm System	BCA Spec. E2.2a & AS 1670 – 2004
4.	Building Occupant Warning System activated by the Sprinkler System	BCA Spec. E1.5 & AS 1670 – 2004
5.	Emergency Lighting	BCA Clause E4.2, E4.4 & AS/NZS 2293.1 – 1998
6.	EWIS	BCA Clause E4.9 & AS 1670.4 - 2004 & AS 4428.2 – 2004
7.	Exit Signs	BCA Clauses E4.5, E4.6 & E4.8 and AS/NZS 2293.1 – 1998
8.	Fire Blankets	AS 2444 – 2001
9.	Fire Hose Reels	BCA Clause E1.4 & AS 2441 – 2005
10.	Fire Hydrant System	Clause E1.3 & AS 2419.1 – 2005
11.	Lightweight Construction	BCA Clause C1.8 & AS 1530.3 – 1999
12.	Paths of Travel	EP&A Reg 2000 Clause 186
13.	Smoke Doors	BCA Spec. C3.4
14.	Wall-Wetting Sprinklers	BCA Clause C3.4 & AS 2118.2 – 1995
15.	Warning and Operational Signs	Section 183 of the EP & A Regulations 2000, AS 1905.1 – 1997, BCA Clause C3.6, D2.23 & E3.3



Appendix C- Fire Resistance Levels

The table below represents the Fire resistance levels required in accordance with BCA 2008:

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 <i>fire-source feature</i> to which it is exposed is—				
<i>For loadbearing parts—</i>				
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	- / - / -	- / - / -	- / - / -	- / - / -
<i>For non-loadbearing parts—</i>				
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 <i>external wall</i> , where the distance from any <i>fire-source feature</i> 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—				
<i>Fire-resisting lift and stair shafts—</i>				
<i>Loadbearing</i>	90/ 90/ 90	120/120/120	180/120/120	240/120/120
<i>Fire-resisting stair shafts</i>				
<i>Non-loadbearing</i>	- / 90/ 90	- /120/120	- /120/120	- /120/120
<i>Bounding public corridors, public lobbies and the like—</i>				
<i>Loadbearing</i>	60/ 60/ 60	120/ - / -	180/ - / -	240/ - / -
<i>Non-loadbearing</i>	- / 60/ 60	- / - / -	- / - / -	- / - / -
<i>Between or bounding sole-occupancy units—</i>				
<i>Loadbearing</i>	60/ 60/ 60	120/ - / -	180/ - / -	240/ - / -
<i>Non-loadbearing</i>	- / 60/ 60	- / - / -	- / - / -	- / - / -
OTHER LOADBEARING INTERNAL WALLS and COLUMNS—				
	60/ - / -	120/ - / -	180/ - / -	240/ - / -
ROOFS				
	- / - / -	- / - / -	- / - / -	- / - / -

