REF: 03566-02BCA

BUILDING CODE OF AUSTRALIA
PRELIMINARY REPORT

Proposed extensions and alterations
At Kareena Private Hospital, 86 Kareena Road, Miranda

Dated: **November 2008**

Prepared for: **Ramsay Health Care Limited**

Prepared by: **McKenzie Group Consulting (NSW) Pty Ltd**
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Date	Rev No	No. of Pages	Issue or Description of Amendment	Checked By	Approved By	Date Approved
21.10.08	1	12	Preliminary Assessment	Stephen Natilli	Mike Gooley	1.12.08

Executive Summary

As Accredited Certifiers, we have reviewed architectural design documents prepared by Hassell Pty Ltd (refer appendix A) for general compliance with the Building Code of Australia 2008.

The assessment of the design documentation has revealed that the following areas may require assessment against the relevant performance requirements of the BCA. The submission for Construction certificate will likely need to include verification from a suitably accredited fire engineer: -

1. Egress Travel Distances (DP4),
2. Smoke Hazard Management (EP2.2)
3. Compartment sizes (CP2)

If proposed, a fire engineered solution will need to be approved after consultation with the NSW Fire Brigade as part of the Construction Certificate process. It should be noted that provision of additional exit routes within the building may alleviate the need for this and satisfy a number of egress issues.

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

Stephen Natilli

1.0 Introduction

The proposed development comprises the construction of new ward, patient care and treatment areas, along with vehicle parking to the basement level.

The site is located at the junction of Kareena Road and Kingsway, Miranda.

2.0 Building Assessment Data

Summary of Construction Determination: -

Part of Project	
Classification	7a,9a
Number of Storeys Contained	5
Rise In Storeys	5
Assumed Type of Construction	A
Effective Height (m)	15

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

Part of Project	**BCA Classification**	**Approx. Floor Area (m^2)**	**Assumed Population**
Basement Level Plan	7a	1,550	88
Lower Ground Floor Plan	9a	4,205	421
Ground Floor Plan	9a	5,063	507
First Floor Plan	9a	1,293	130
Second Floor Plan	9a	400	40
Roof Plan	9a	375	13
Total		**13,062**	**1217**

Notes:
1. The above populations have been based on the guidance given in D1.13 BCA 2008.
2. The basement car park populations have been calculated on a rate of 1.6 occupants per vehicle across the 55 spaces indicated on the drawings.

3.0 Fire Resistance

The building should be constructed generally in accordance with Table 3 specification C1.1 of the Building Code of Australia 200*. The building has been assessed as a health care building in accordance with the provisions of section C2.5 of the Buildings code of Australia.

The class 9a portions shall require:

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

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 Building Code of Australia.

4.0 Egress

The egress provisions from the proposed building are provided by entrance doors, fire exit doors, hard standing areas, accommodation and fire protected stairs located around the facility. The travel distances and distance between alternate exits has been assessed and may need to verified as part of the alternate solutions to verify DP4.

The detailed assessment of egress via exits and horizontal exist shall be undertaken at construction certificate stage to ensure adequate provisions are maintained.

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.

A hearing augmentation-listening system shall be installed throughout the building in accordance with the requirements of Clause D3.7 of the BCA.

5.0 Fire Services & Equipment

The following fire services will need to be provided to the **new and re-configured** parts of 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,
- A zone smoke control system in accordance with Table E2.2a and AS 1668.1 or a sprinkler system compliant with specification E1.5 of the BCA throughout the building.
- Emergency lift provision in accordance with clauses E3.2-3.4 of the BCA and AS-1735.2,
- Emergency warning and intercommunication system in accordance with E4.9 and AS 1670.4 and 4428.4

In addition, a minimum sprinkler system in accordance with clause E1.5 of the BCA and AS 2118.4-1999 will need to be provided to the basement car park area.

A fire control centre is not required for this building, however facility for the co-ordination of fire brigade operations shall be provided within the building.

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 to ensure that the requirements of EP2.2 of the BCA have been verified. The report shall be referred to the NSW Fire Brigades for comments as part of the Construction Certificate process.

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 have been provided and a detailed assessment shall be undertaken at construction certificate stage. 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 2008. 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: -

DRAWING NO.	Title	Issue	Date	Drawn By
PSA-7536-DA01	Existing Site Roof Plan	Rev D	17.06.08	Hassell Architects
PSA-7536-DA02	Existing Lower Ground Floor	Rev D	17.06.08	Hassell Architects
PSA-7536-DA03	Existing Ground Floor Plan	Rev D	17.06.08	Hassell Architects
PSA-7536-DA05	Proposed Site Plan/ Roof Plan	Rev H	17.06.08	Hassell Architects
PSA-7536-DA07	Proposed Lower Ground Floor Plan	Rev J	17.06.08	Hassell Architects
PSA-7536-DA08	Proposed Ground Floor Plan	Rev I	17.06.08	Hassell Architects
PSA-7536-DA09	Proposed First Floor Plan	Rev H	17.06.08	Hassell Architects
PSA-7536-DA10	Proposed Second Floor Plan	Rev B	17.06.08	Hassell Architects
PSA-7536-DA12	Elevations	Rev G	17.06.08	Hassell Architects
PSA-7536-DA13	Elevations	Rev G	17.06.08	Hassell Architects

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.	Automatic Fire Suppression System	BCA Spec. E1.5 & AS 2118.1 – 1999,
5.	Building Occupant Warning System activated by the Sprinkler System	BCA Spec. E1.5 & AS 1670 – 2004
6.	Emergency Lifts	BCA Clause E3.4 & AS 1735.2 – 2001
7.	Emergency Lighting	BCA Clause E4.2, E4.4 & AS/NZS 2293.1 – 1998
8.	EWIS	BCA Clause E4.9 & AS 1670.4 - 2004 & AS 4428.2 – 2004
9.	Exit Signs	BCA Clauses E4.5, E4.6 & E4.8 and AS/NZS 2293.1 – 1998
10.	Fire Blankets	AS 2444 – 2001
11.	Fire Dampers	BCA Clause C3.15, AS 1668.1 – 1998 & AS 1682.1 & 2 – 1990
12.	Fire Doors	BCA Clause C3.2, C3.4, C3.5, C3.6, C3.7 & C3.8 and AS 1905.1 – 1997
13.	Fire Hose Reels	BCA Clause E1.4 & AS 2441 – 2005
14.	Fire Hydrant System	Clause E1.3 & AS 2419.1 – 2005
15.	Lightweight Construction	BCA Clause C1.8 & AS 1530.3 – 1999
16.	Mechanical Air Handling System	BCA Clause E2.2, AS/NZS 1668.1 – 1998 & AS 1668.2 – 1991
17.	Paths of Travel	EP&A Reg 2000 Clause 186
18.	Pressurising Systems	BCA Clause E2.2 & AS/NZS 1668.1 – 1998
19.	Required Exit Doors (power operated)	BCA Clause D2.19(d)
20.	Smoke Hazard Management System	BCA Part E2 & AS/NZS 1668.1 – 1998
21.	Smoke Doors	BCA Spec. C3.4
22.	Solid Core Doors	BCA Clause C3.11
23.	Wall-Wetting Sprinklers	BCA Clause C3.4 & AS 2118.2 – 1995
24.	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 3 TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS

Building element	Class of building — FRL: (in minutes) *Structural adequacy*/*Integrity*/*Insulation*			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* parts—				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 60	120/ 90/ 90	180/180/120	240/240/180
3 m or more	90/ 60/ 30	120/ 60/ 30	180/120/ 90	240/180/ 90
For non-*loadbearing* parts—				
less than 1.5 m	- / 90/ 90	- /120/120	- /180/180	- /240/240
1.5 to less than 3 m	- / 60/ 60	- / 90/ 90	- /180/120	- /240/180
3 m or more	- / - / -	- / - / -	- / - / -	- / - / -
EXTERNAL COLUMN not incorporated in an *external wall*, 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
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

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
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