BLACKETT MAGUIRE+ GOLDSMITH

BCA Assessment Report

Penrith Health Redevelopment – Mental Health Services

Prepared for Health Infrastructure

Revision A

7th September 2010

Project No.: 10-0321

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CONTENTS

REPORT STATUS				
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Accredited Certifier

A. INTRODUCTION

A.1 BACKGROUND & PROPOSAL

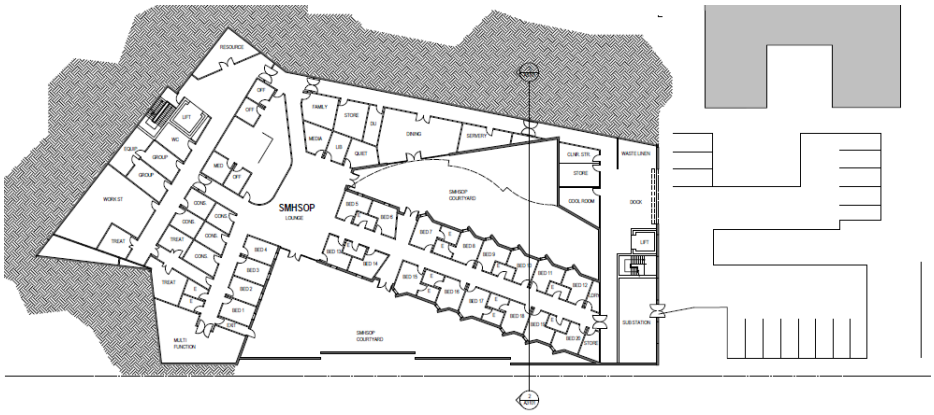
Blackett Maguire + Goldsmith Pty Ltd (BM+G) have been commissioned by Health Infrastructure to review the Part 3A architectural design documentation against the requirements of BCA and prepare a BCA compliance report for submission with the Part 3A Application to the Dept of Planning.

The project is known as Penrith Health Redevelopment – Mental Health Services.

The project is a new-build and consists of a three (3) storey building to accommodate:

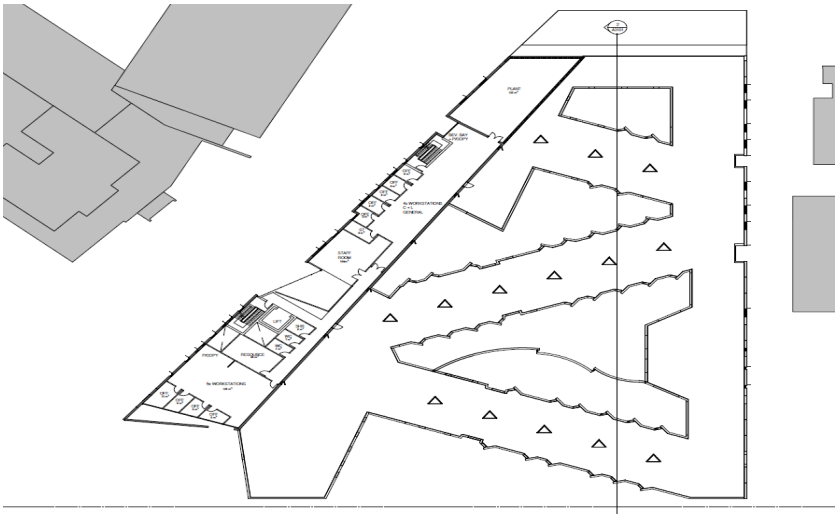
- SMHSOP at level 1
- Acute & HDU mental Health at level 2
- Administration and staff facilities at level 3

The design plans are included below:



Level 1

Level 2



Level 3

Section

A.2 Aim

The aim of this compliance report is to:-

1. Undertake an assessment of the architectural design documentation against the Performance Requirements of the BCA

2. Accompany submission of the Part 3A Application to the Dept of Planning to enable the Consent Authority to be satisfied that the building design is capable of complying with the BCA and that subsequent compliance with the fire & life safety, health & amenity and energy efficiency requirements of the BCA, will not give rise to design changes to the building which may necessitate the submission of an application under Section 75W of the Environmental Planning and Assessment Act, 1979.

3. Enable the certifying authority to satisfy its statutory obligations under Clause 145 of the Environmental Planning and Assessment Regulation, 2000.

4. Enable the certifying authority to satisfy its statutory obligations under Clause 18 of the Building Professionals Regulation 2007.

The compliance statement is not intended to identify all issues of compliance or non-compliance with the BCA with such other issues to be appropriately addressed prior to issue of the Crown Certification.

In our assessment we have used Architectural plans prepared by Woods Bagot.

A.3 PROJECT TEAM

The following BM+G Team Members have contributed to this Report:

- David Blackett – accredited certifier
- Matt Morrisey – accredited certifier.

A.4 DOCUMENTATION

The following documentation has been reviewed, referenced and/or relied upon in the preparation of this report:

- Building Code of Australia 2010 (BCA)
- Guide to the Building Code of Australia.

A.5 LIMITATIONS & EXCLUSIONS

The limitations and exclusions of this report are as follows:

- The following assessment is based upon a review of the architectural documentation. It is considered that the final architectural design will need to be reviewed having regards to our comments.
- Our comments relate to the relevant BCA Issues associated with Sections C, D, E, F, G & J of the Building Code of Australia only.
- 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.

  Please note that whilst the BCA specifies a minimum standard of compliance with AS1428.1 and Part D3 of the BCA for access and facilities for people with disabilities, compliance with such requirements may not necessarily preclude the possibility of a future complaint made under the Disability Discrimination Act 1992 (DDA). The DDA is a complaint based legislation and is presently not identified by the State Building Codes and Regulations. In this regard the building owner should be satisfied that their obligations under the DDA have been addressed.
- The Report does not address matters in relation to the following:
  i. Local Government Act and Regulations.
  ii. Occupational Health and Safety Act and Regulations.
  iii. WorkCover Authority requirements.
  iv. Water, drainage, gas, telecommunications and electricity supply authority requirements.
  v. Disability Discrimination Act 1992.
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A.6 TERMINOLOGY

Building Code of Australia - 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.

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.

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

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

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).

Rise in storeys - means the greatest number of *storeys* calculated in accordance with BCA C1.2.

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

B. BCA ASSESSMENT/AUDIT

In summary, the key building characteristics have been identified as follows:

BCA Classification: *Class 5 (administration & consultation) & Class 9a (health care)*.

Rise in Storeys: 3

Type of Construction: Type A

Effective Height: Less than 12m (*9m*)

Climate Zone: Zone 6

B.1 SUMMARY OF ASSESSMENT & COMPLIANCE ISSUES:

Section B – Structural Provisions:

The proposed development will generally satisfy the requirements of Section B of the BCA subject to the following:

1. Structural engineering documentation to comply with the structural provisions of BCA clauses B1.2 & B1.3. Structural engineer to verify at Construction Certificate stage.
2. Structural resistance of materials and forms of construction to comply with BCA clause B1.4.

Section C – Fire Resistance and Compartmentation:

The proposed development will generally satisfy the requirements of Section C of the BCA subject to the following:

1. All new surface finishes, assemblies and linings are to comply with clause C1.10 (Specification C1.10 & C1.10a) with regard to Fire Hazard Properties.

2. The proposed Class 9a storey (level 2) are to be separated into individual fire compartments by 120/120/120 FRL construction (maximum 2000m^2).

   Each new fire compartment within level 2 is to be separated into maximum 1000m^2 fire zones by 60/60/60 FRL.

   In additional the level 2 ward areas are to be separated into maximum 500m^2 smoke compartments.

   Fire and smoke doors associated with the above are to swing in the direction of egress.

3. Any rooms used for medical record storage (>10m^2) are to be 60/60/60 FRL fire separated.

4. Spandrel separation (either vertical and or horizontal) will be required between openings in external walls of consecutive storeys to minimise the risk of fire spreading from one floor to another in accordance with BCA Clause C2.6. Spandrels will be required in the instance that a fire sprinkler system throughout is not proposed.

5. The following FRL requirements will apply to the proposed building in accordance with Table 3 of Specification C1.1 of the BCA:

Building element	Class of building — FRL: (in minutes)
	Structural adequacy/ Integrity/ Insulation
	5 & 9a
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	120/120/120
1.5 to less than 3 m	120/ 90/ 90
3 m or more	120/ 60/ 30
For non- *loadbearing* parts—	
less than 1.5 m	- /120/120
1.5 to less than 3 m	- / 90/ 90
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	120/ - / -
3 m or more	- / - / -
COMMON WALLS and FIRE WALLS—	120/120/120
INTERNAL WALLS—	
Fire-resisting lift and stair *shafts*—	
Loadbearing	120/120/120
Non- *loadbearing*	- /120/120
Bounding *public corridors*, public lobbies and the like—	
Loadbearing	120/ - / -
Non- *loadbearing*	- / - / -
Between or bounding *sole-occupancy units*—	
Loadbearing	120/ - / -
Non- *loadbearing*	- / - / -
Ventilating, pipe, garbage, and like *shafts* not used for the discharge of hot products of combustion—	
Loadbearing	120/ 90/ 90
Non- *loadbearing*	- / 90/ 90
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES	
and COLUMNS—	120/ - / -
FLOORS	120/120/120
ROOFS	--/--/--

Note:

a. The DTS FRLs prescribed above may be subject to further change in the proposed fire engineering analysis.

6. The design will incorporate a number of situations of exposure between adjoining fire compartments at the same level. The exposure between adjoining fire compartments will be addressed by either protection in accordance with BCA Clauses C3.3 & C3.4 and or by way of a fire engineered alternative solution.

Section D – Access and Egress:

The proposed development will generally satisfy the requirements of Section D of the BCA subject to the following:

1. The proposed building will be subject of a fire engineering analysis for travel distance, distance between alternative exits and discharge from fire isolated exits within and from various Class 9a & 5 floors.

2. Latch hardware to all exit doors will comply with the DTS provisions of Part D2.21 of the BCA. The provision of hardware to the various exit doors in the building will be compatible with security requirements of the facility.

3. The doorways in the patient care areas will have a minimum unobstructed opening of:

    - 1200mm if the doorway provided access to or from a corridor of width <2200mm,

    - 1070mm if the doorway provided access to or from a corridor of width >2200mm, and

    - Horizontal exits serving the patient care areas will have a minimum unobstructed width of 1250mm.

4. The landings within the fire isolated stairways serving the Class 9a part of the building will be sufficient to move a stretcher, 2m long and 600mm wide, at a gradient not more than the gradient of the stairs, with at least one end of the stretcher on the landing while changing direction between flights, to comply with the requirements of BCA Clause D2.14

5. The following will apply in relation to the construction of all stairways:

    - Stairway must have not more than 18 and not less than 2 risers in each flight.
    - Goings and risers within the stair flights must be constant throughout.
    - Goings and risers are to be in accordance with BCA Table D2.13 i.e.:

	Riser (R)	Going (G)	Quantity (2R+G)
Maximum	190	355	700
Minimum	115	250	550

6. The height of the balustrades above the nosings of the stairways is to be a minimum 865mm whereas the height above landings and the like are to be a minimum of 1m.

7. The proposed passenger lifts will comply with BCA Part D3, AS1428.1 and AS1735.12 with respect to access and facilities for people with disabilities.

8. The provision of access and facilities for people with disabilities will be the subject of a separate report from an access consultant.

Section E – Essential Fire Safety Measures

The proposal will generally satisfy the DTS provisions of Section E of the BCA subject to implementation of the following:

Statutory Fire Safety Measure	Design/Installation Standard
Access Panels, Doors & Hoppers	BCA Clause C3.13 & AS 1530.4 - 2005
Alarm Signalling Equipment	AS1670.3 – 2004
Automatic Fail Safe Devices	BCA Clause D2.21
Automatic Fire Detection & Alarm System	BCA Spec. E2.2a & AS 1670.1 - 2004.
Automatic Fire Suppression Systems [Note 1]	BCA Spec. E1.5 & AS 2118.1-1999
Building Occupant Warning System activated by the Sprinkler System	BCA Spec E1.5 Clause 8 and/ or Clause 3.22 of AS 1670.1 – 2004
Emergency Lifts	BCA Clause E3.4 & AS 1735.2 - 2001
Emergency Lighting	BCA Clause E4.4 & AS 2293.1 - 2005
EWIS	BCA Clause E4.9 & AS 1670.4 – 2004 & AS 4428.4 - 2004
Emergency Evacuation Plan	AS 3745 - 2002
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8 and AS 2293.1 - 2005
Fire Blankets	AS 3504 - 1995 & AS 2444 – 2001
Fire Dampers	BCA Clause C3.15, AS 1668.1 - 1998 & AS 1682.1 & 2 - 1990
Fire Doors	BCA Clause C2.12, C2.13, C3.2, C3.4, C3.5, C3.6 & C3.7, C3.8, C3.11 and AS 1905.1 – 2005
Fire Hose Reels	BCA Clause E1.4 & AS 2441 – 2005
Fire Hydrant Systems	Clause E1.3 & AS 2419.1 - 2005
Fire Seals	BCA Clause C3.15, AS 1530.4 & AS4072.1 - 2005
Lightweight Construction	BCA Clause C1.8 & AS 1530.3 – 1999
Mechanical Air Handling Systems (automatic shutdown)	BCA Clause E2.2, AS/NZS 1668.1 - 1998 & AS 1668.2 – 1991
Paths of Travel	EP & A Regulation Clause 186
Portable Fire Extinguishers	BCA Clause E1.6 & AS 2444 – 2001
Required Exit Doors (power operated)	BCA Clause D2.19(b)
Smoke Hazard Management Systems [Note 2]	BCA Part E2 & AS/NZS 1668.1 - 1998
Smoke Dampers	AS/NZS 1668.1 - 1998
Smoke Doors	BCA Spec. C3.4 & C2.5
Wall-Wetting Sprinklers	BCA Clause C3.4 & AS 2118.2 – 1995
Warning & Operational signs	Section 183 of the EP & A Regulations 2000, AS 1905.1 - 2005, BCA Clause C3.6, D2.23, E3.3

- *Notes 1 & 2 – By virtue of the Class 9a & 5 building having a RIS >2 (3 in total) the BCA DTS provisions will require <u>either</u> automatic sprinkler system <u>OR</u> zone smoke control throughout.*
- *The above list of required essential fire safety measures will be subject to modification once the fire engineering analysis is prepared.*

Section F– Health and Amenity

The proposal will generally satisfy the requirements of Section F of the BCA subject to the following:

1. Ventilation of all parts of the building will be in accordance with BCA with respect to natural and or mechanical ventilation to comply with AS1668.1 & 2.
2. Stormwater drainage for the new building works will comply with AS 3500 & Council requirements where applicable.
3. Artificial lighting is required throughout the building and is to comply with AS/NZS 1680.1.
4. All patient sleeping rooms within the ward areas will have provision of natural lighting with 3.0m setbacks as required as per BCA cl. F4.2(b).
5. Toilets will be provided throughout the building will be provided to comply with the ratio requirements of Part F2 of the BCA. This includes sanitary facilities for people with disabilities.

Section J – Energy Efficiency Requirements:

The proposal will generally satisfy the DTS provisions of Section J of the BCA subject to the following:

1 Energy efficiency design measures, will be implemented into the building design as applicable to satisfy the following requirements for Climate Zone 6 under the BCA:

- building fabric (insulation)
- external glazing
- building sealing to doors, exhaust vents and windows
- efficiency of the running of air conditioning systems and mechanical ventilation systems with respect to insulation of ductwork, timer switches, etc
- performance of glazing
- artificial lighting & power controls (interior and exterior lighting)
- hot water systems
- access and maintenance of energy efficiency systems

C. CONCLUSION

In view of the above assessment it is considered that the proposed building design is capable of complying with the requirements of the BCA2010.

Detailed achievement of compliance, including preparation of any required fire engineered alternative solutions, can be appropriately addressed prior to the issue of the Crown Certification in accordance with Section 109R of the Environmental Planning & Assessment Act 1979.

We trust that the above submission is of assistance to the Dept of Planning and we are satisfied that any design modifications required to the building in order to satisfy the fire and life safety and health and amenity requirements of the BCA2010 will not necessitate the need for submission of an application under Section 75W of the Environmental Planning & Assessment Act 1979.

Should you wish to discuss please do not hesitate to contact the undersigned on 02 9211 7777.

Yours sincerely,

David J. Blackett *(MPIA, MAIBS)*
Director – Blackett Maguire + Goldsmith
Accredited Certifier
BPB Accreditation No.0032