3 June 2016

NSW Health Infrastructure
PO Box 1060
NORTH SYDNEY NSW 2059

Attention: John Armstrong

Dear John,

RE: ROYAL PRINCE ALFRED HOSPITAL STAFF CARPARK
106-112 CHURCH STREET, CAMPERDOWN
BUILDING CODE OF AUSTRALIA 2016 (BCA)
COMPLIANCE CAPABILITY STATEMENT

Blackett Maguire + Goldsmith Pty Ltd have been commissioned to carry out an assessment of the proposed development against the requirements of the National Construction Code Series (Volume 1) - Building Code of Australia (BCA) 2016.

It is understood that the proposed development will be subject to a SSD application and this BCA Capability Statement will form part of the submission for consideration as part of the determination.

The overall project involves demolition of the existing buildings and structures and construction of a new-build multi-storey staff car park facility.

The site is located at 106-112 Church Street, Camperdown.

SITE LOCATION PLAN
SCALE 1 : 1000

Address Suite 2.01, 22-36 Mountain St Ultimo
Postal PO Box 167 Broadway NSW 2007
Contact Ph: 02 9211 7777 Fax: 02 9211 7774

Our assessment of the concept design documentation was based on the following:

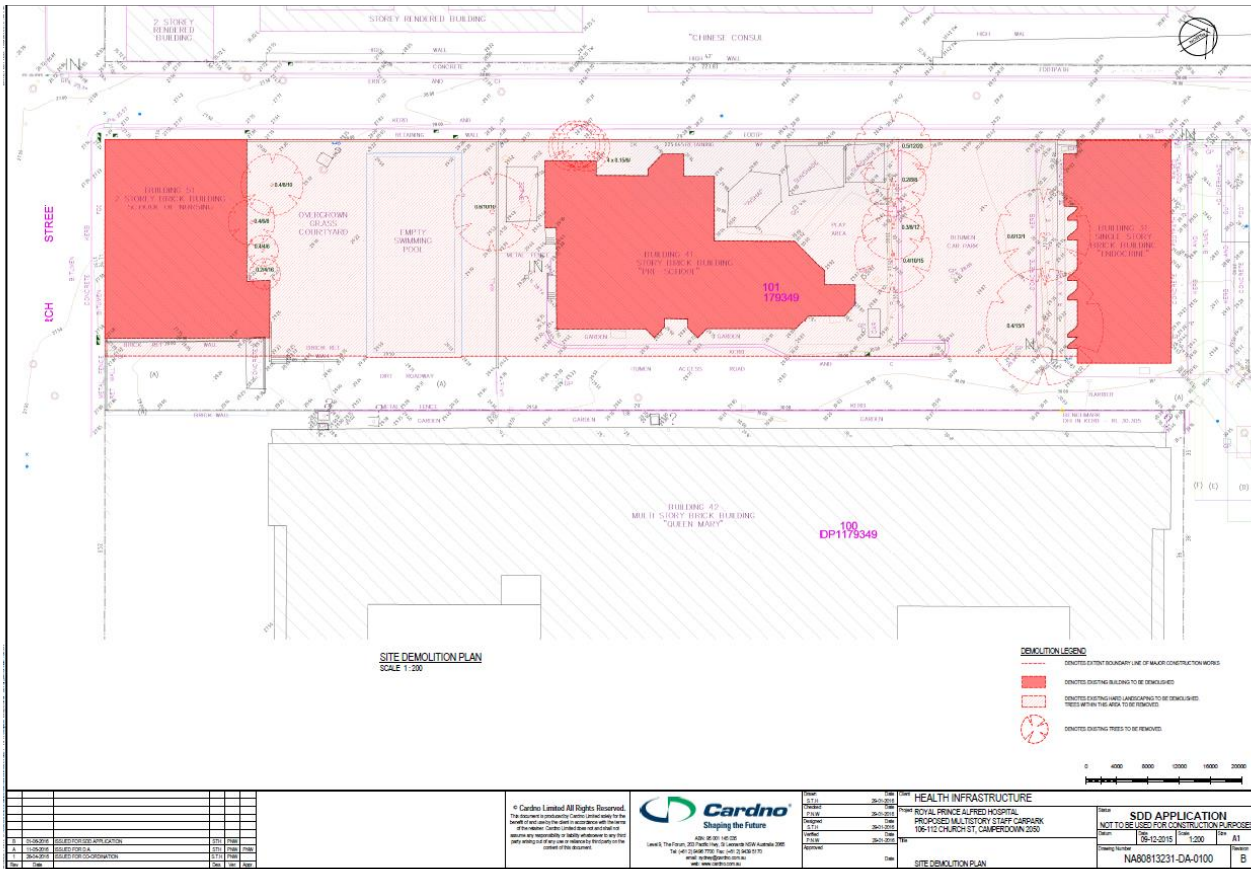
- National Construction Code Series (Volume 1) Building Code of Australia 2016 (BCA)
- Guide to the Building Code of Australia 2016 (BCA Guide)
- Environmental Planning and Assessment Act 1979 (EP&A)
- Environmental Planning and Assessment Regulation 2000 (EP&AR)
- Architectural plans prepared by Cardno Limited

BUILDING DESCRIPTION:

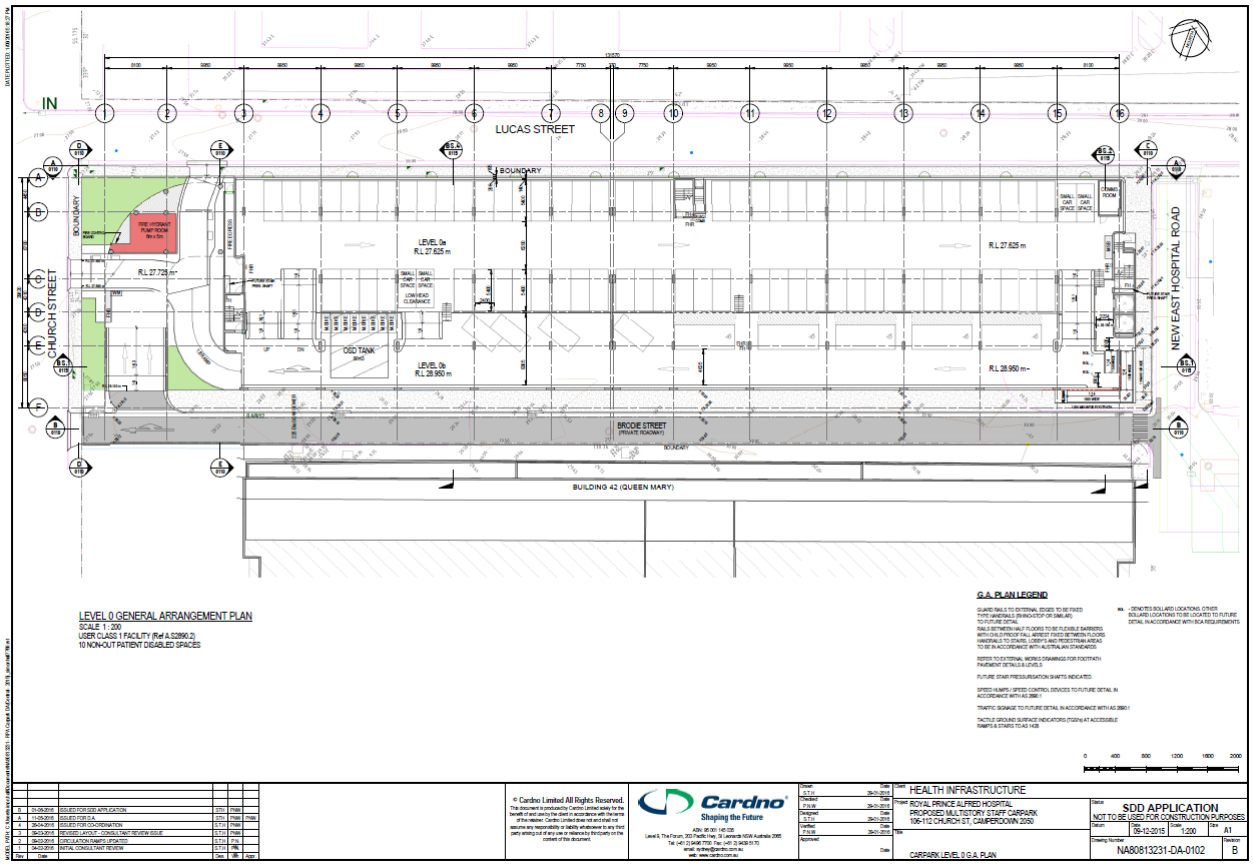
The building is classified as follows:-

- Level 0-9 - Class 7a – staff car park

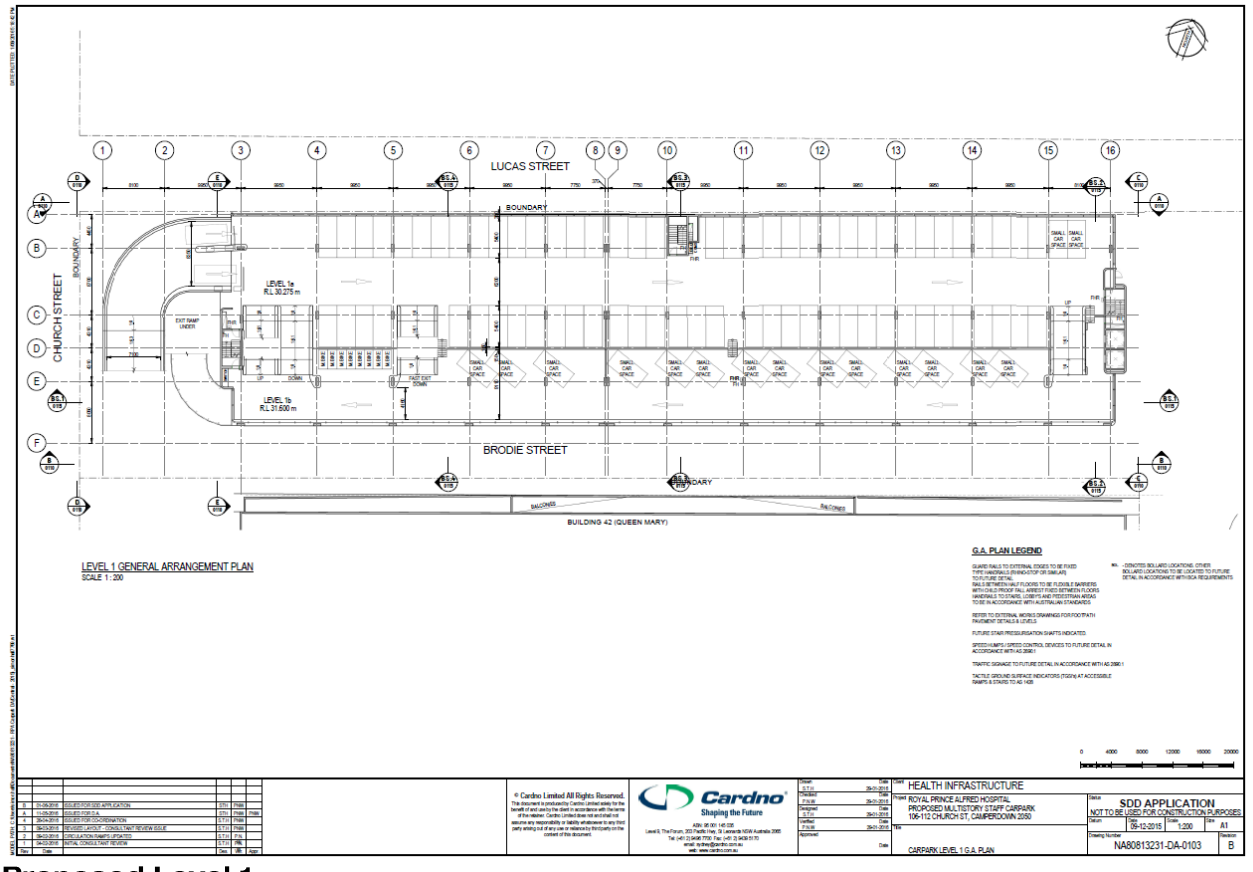
The new-build will have a rise in storeys of 9 and is required to comply with ***Type A Construction***.



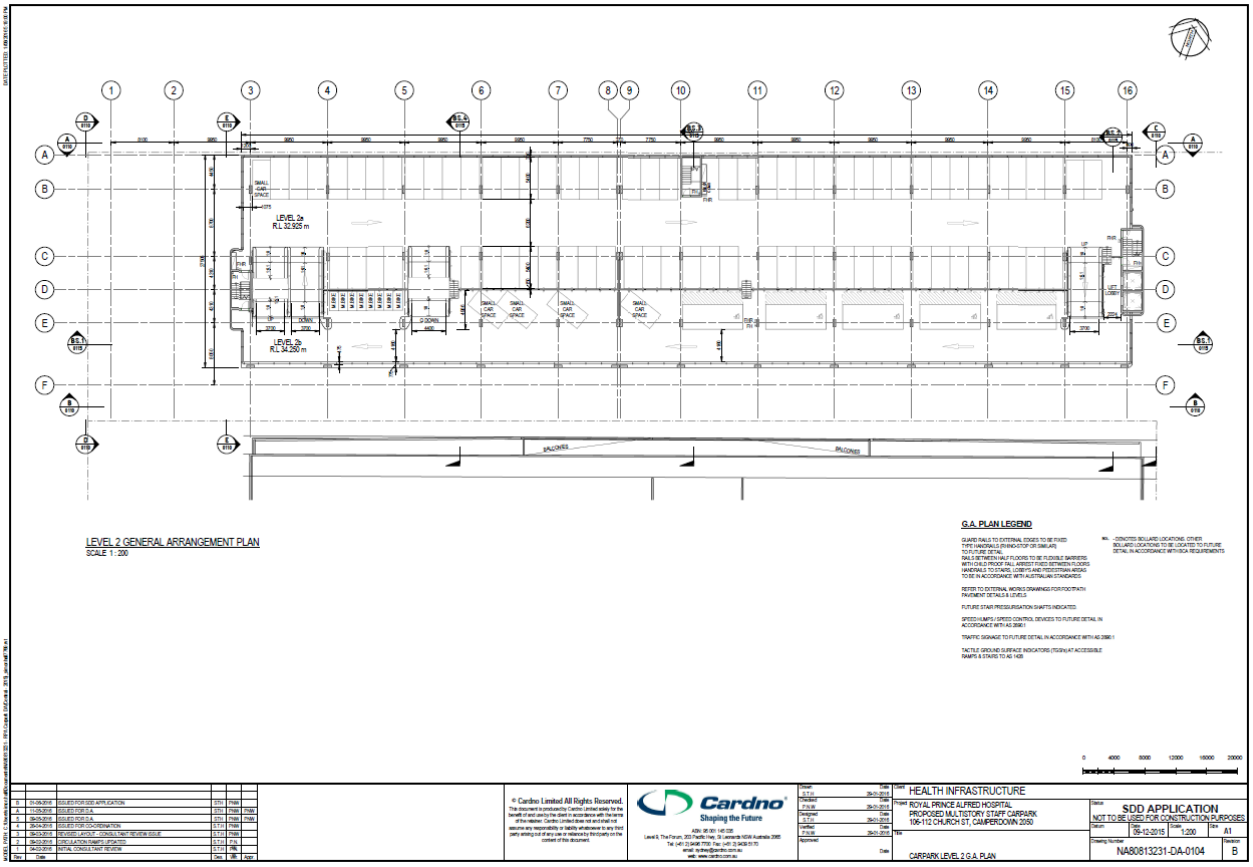
Demolition Plan



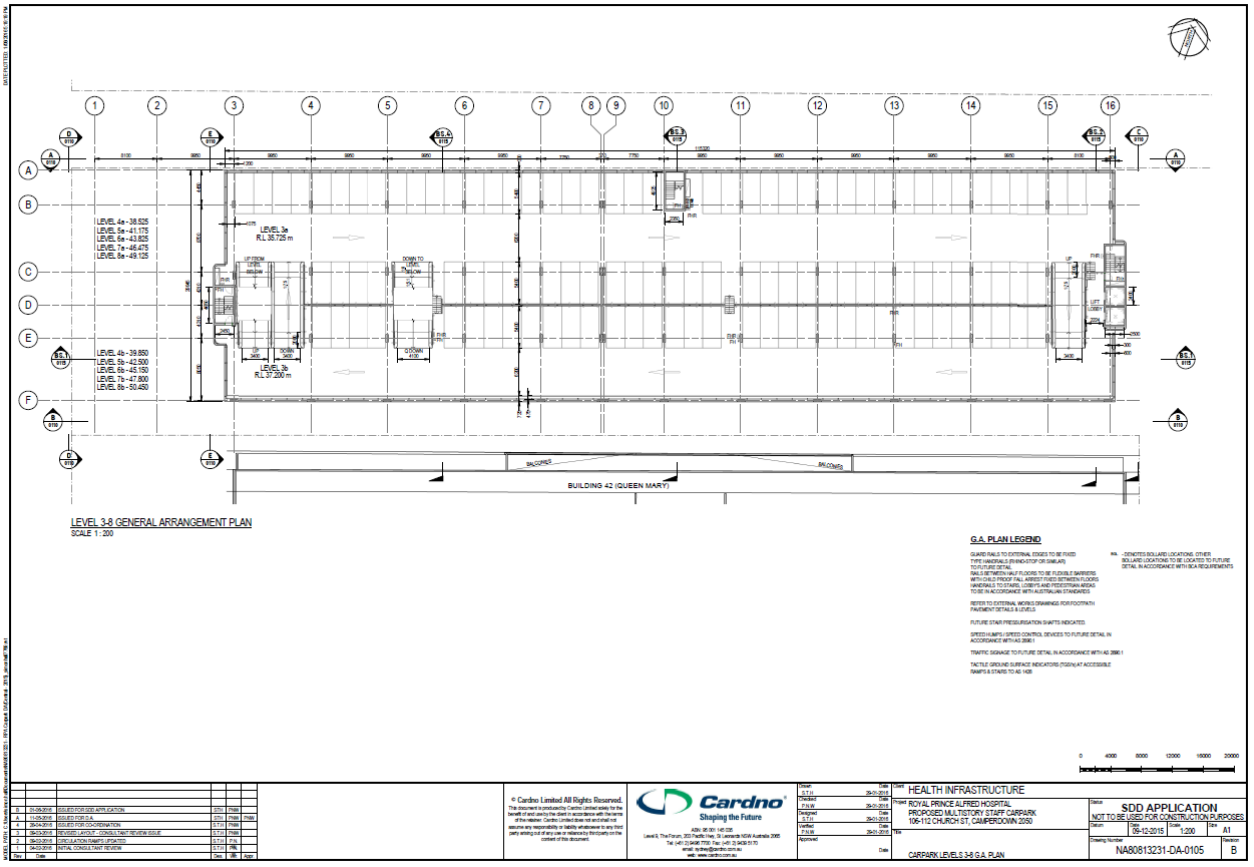
Proposed Level 0



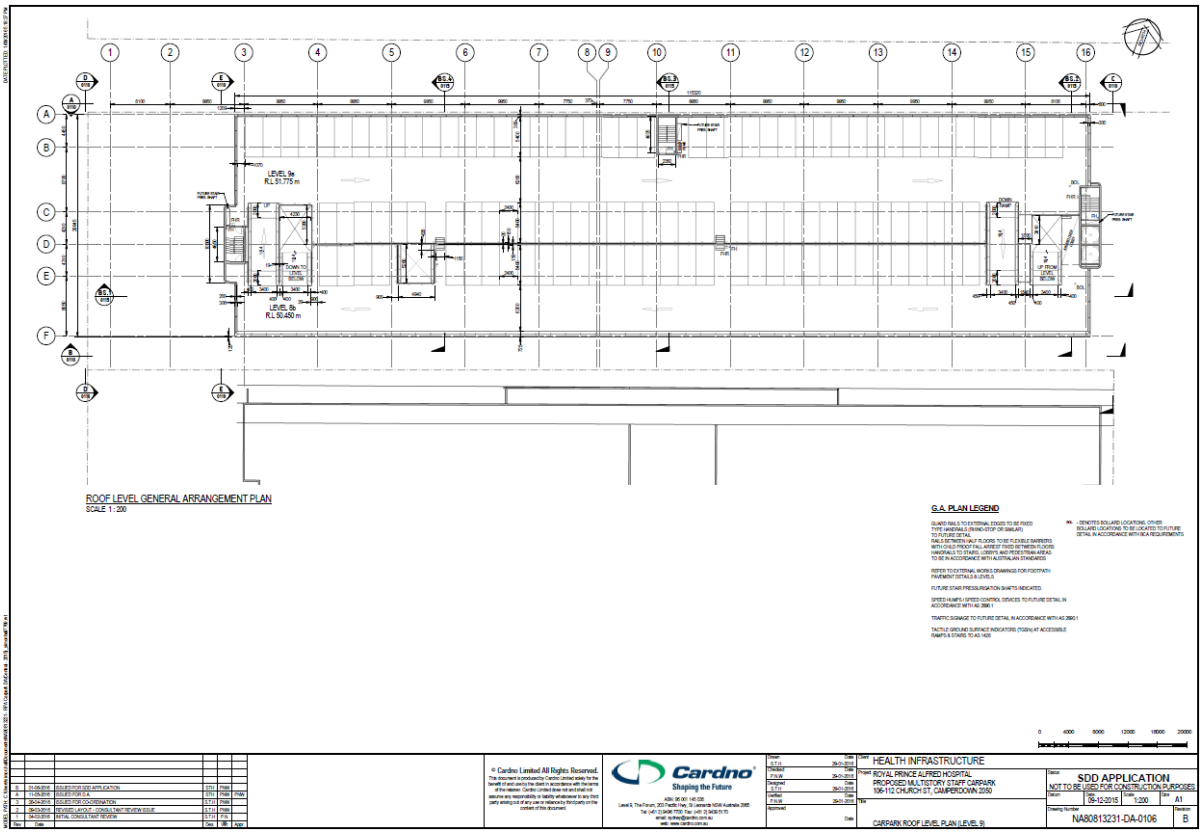
Proposed Level 1



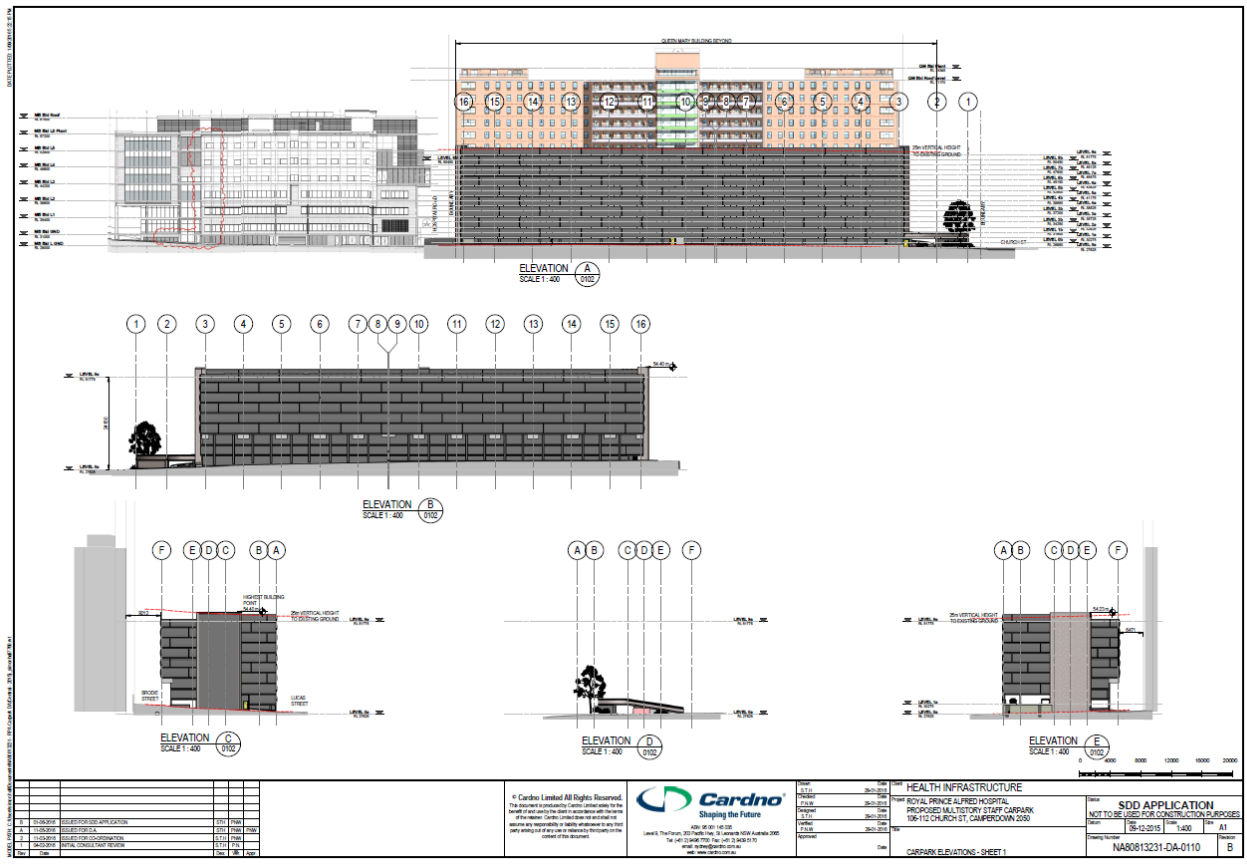
Proposed Level 2



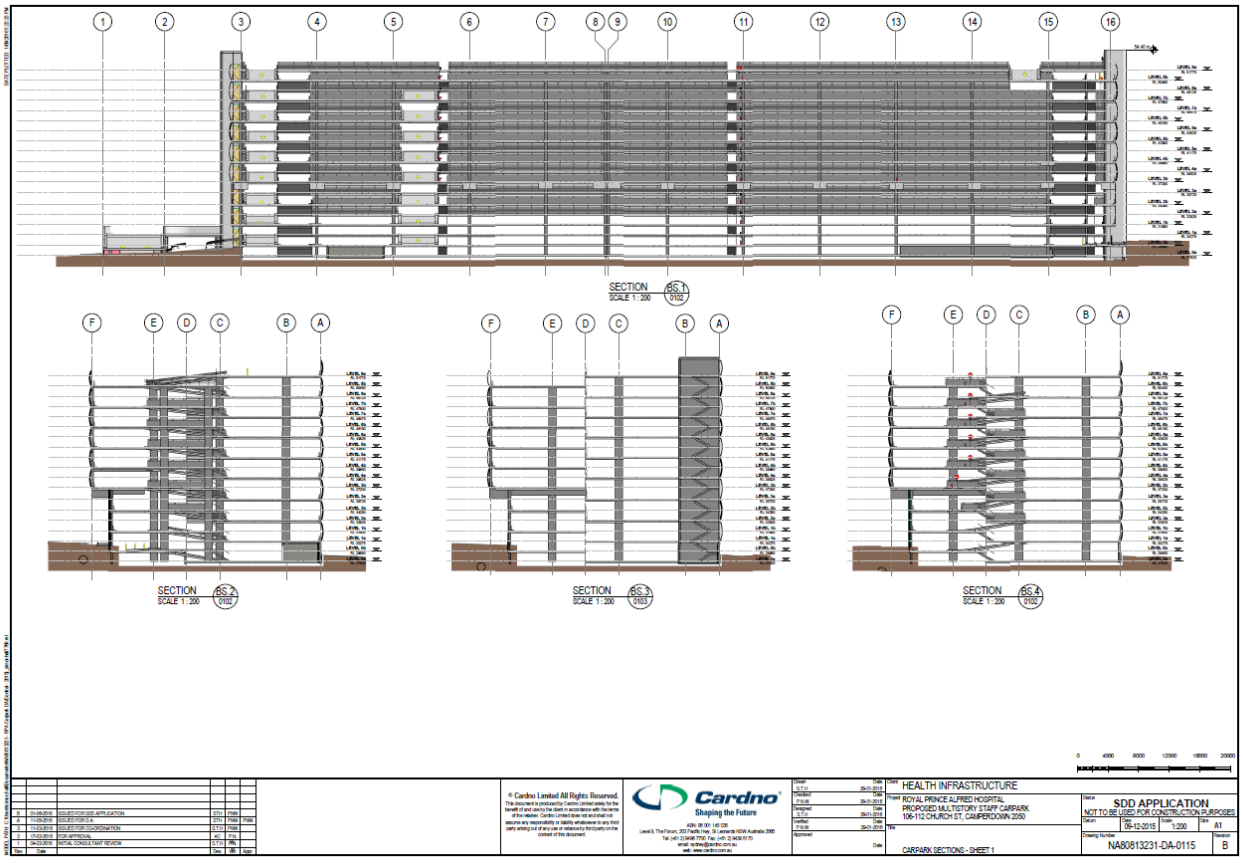
Proposed Level 3-8



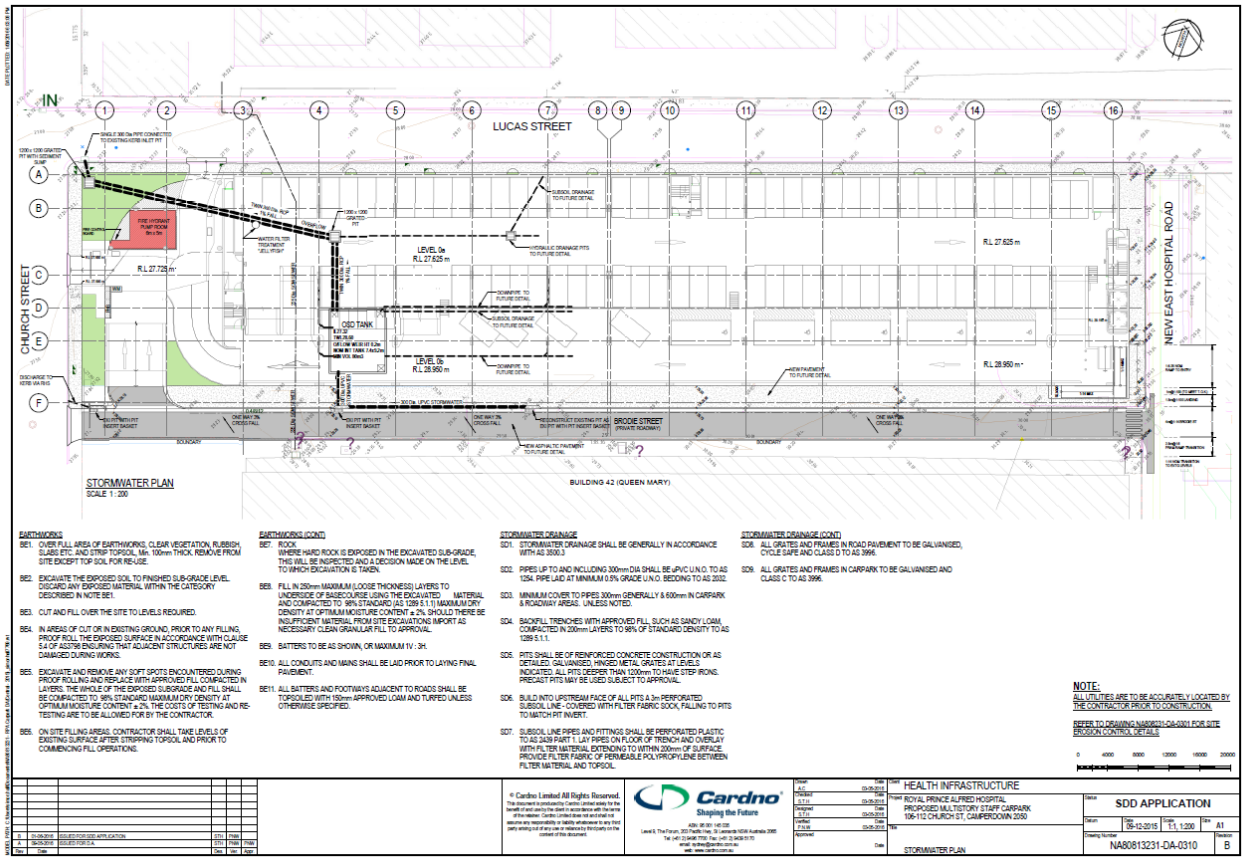
Proposed Level 9 (Roof)



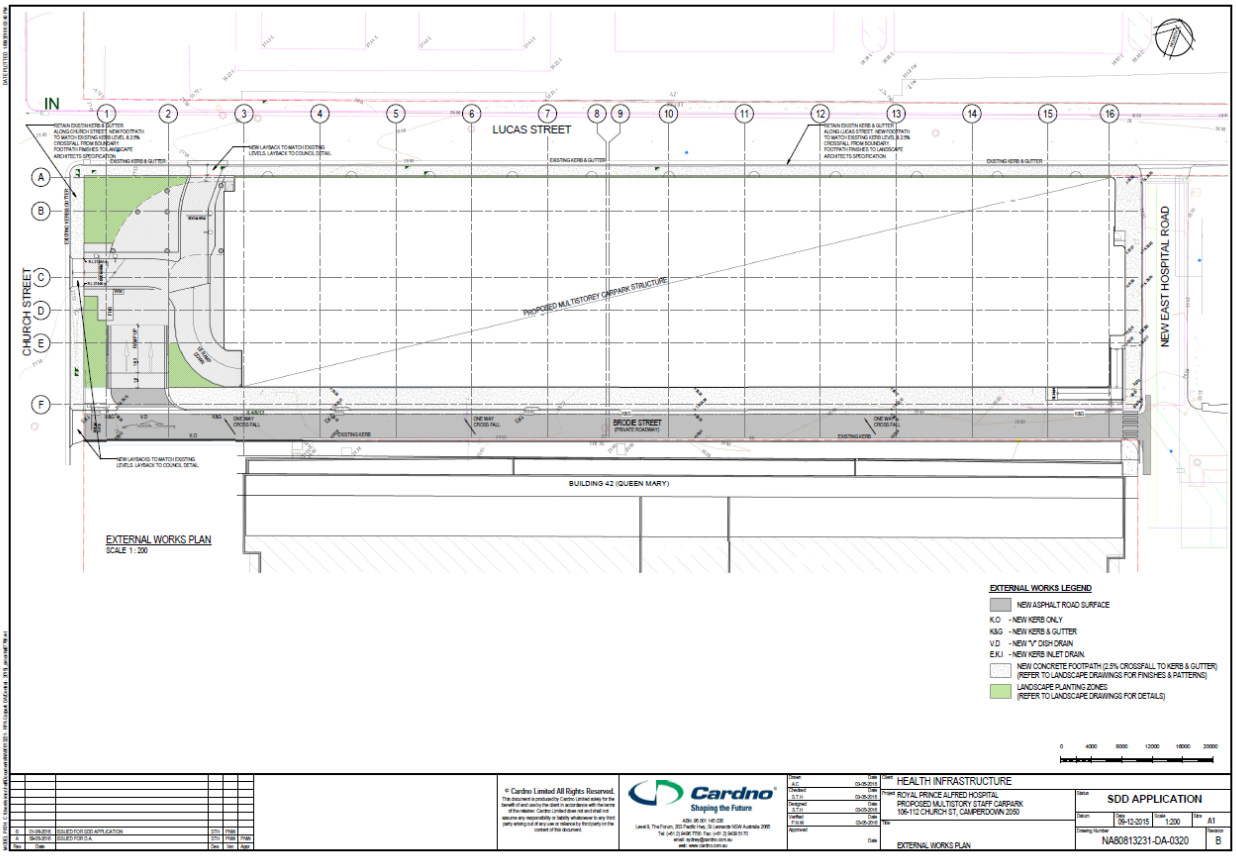
Elevations



Sections



Stormwater Plan



External Works Plan

STATEMENT OBJECTIVES:

The objectives of this statement are to:

+ Confirm that a preliminary review of the SSD architectural documentation has been reviewed by an appropriately qualified Building Surveyor and Accredited Certifier.

+ Confirm that the proposed new building works can readily achieve compliance with the BCA pursuant to clause 145 of the *Environmental Planning & Assessment Regulation 2000*.

LIMITATIONS & EXCLUSIONS

The limitations and exclusions of this report are as follows:

+ The following assessment is based upon a review of the architectural documentation.
+ No assessment has been undertaken with respect to the Disability Discrimination Act (DDA) 1992. 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. NSW Public Health Act 1991 and Regulations.
    iii. Occupational Health and Safety (OH&S) Act and Regulations.
    iv. Work Cover Authority requirements.

v. Water, drainage, gas, telecommunications and electricity supply authority requirements.

+ BM+G Pty Ltd do not guarantee acceptance of this report by Local Council, NSW Fire Brigades or other approval authorities.

+ No part of this document may be reproduced in any form or by any means without written permission from BM+G Pty Ltd. This report is based solely on client instructions, and therefore, should not be used by any third party without prior knowledge of such instructions.

BUILDING CODE OF AUSTRALIA 2016 COMPLIANCE:

Arising from our preliminary assessment of the proposed development against the Deemed-to-Satisfy provisions and Performance Requirements of National Construction Code Series – Volume 1 – Building code of Australia 2016, the following key compliance matters are noted.

The principal building characteristics as defined by the BCA are as follows:

BCA CLASSIFICATION:	Level 0-Level 9 – Class 7a carpark
RISE IN STOREYS:	Open deck carpark – Nine (9)
TYPE OF CONSTRUCTION:	Open deck carpark – Type A
EFFECTIVE HEIGHT:	Less than 25m (24.19m)
CLIMATE ZONE:	Energy Efficiency Zone 5

The detailed BCA desktop assessment was carried out against the provisions of the BCA. It is noted that the proposed development must comply with the relevant requirements of BCA and this can be achieved by complying with the following:

a) Complying with the Deemed-to-satisfy (DTS) 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 DTS provisions; or

c) A combination of the above.

Regulatory Framework

Pursuant to Section 109R of the Environmental Planning & Assessment Act 1979 (Development by the Crown) the proposed development is required to be subject to compliance with the relevant requirements of the BCA as in force at the time of the invitation for the contractor tender of the project.

Limitations & Exclusions

The limitations and exclusions of this report are as follows:

+ The following assessment is based upon a review of the architectural documentation.

+ No assessment has been undertaken with respect to the Disability Discrimination Act (DDA) 1992. 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 (Parts 1-3) 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 DDA 1992. 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.

At absolute minimum, the project is to comply with the Access to Premises Standard 2010.

+ The report does not address matters in relation to the following:

  vi. Local Government Act and Regulations.

  vii. NSW Public Health Act 1991 and Regulations.

  viii. Occupational Health and Safety (OH&S) Act and Regulations.

  ix. Work Cover Authority requirements.

  x. Water, drainage, gas, telecommunications and electricity supply authority requirements.

+ No part of this document may be reproduced in any form or by any means without written permission from BM+G Pty Ltd. This report is based solely on client instructions, and therefore, should not be used by any third party without prior knowledge of such instructions.

Terminology

Alternative Solution

A Building Solution which complies with the Performance Requirements other than by reason of satisfying the DtS Provisions.

Building Code of Australia (BCA)
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 New South Wales (NSW) under the provisions of the EPA Act and Regulation. Building regulatory legislation stipulates that compliance with the BCA Performance Requirements must be attained and hence this reveals BCA's performance based format.

Construction Certificate

Building Approval issued by the Certifying Authority pursuant to Part 4A of the EP&A Act 1979.

Construction Type

The construction type is a measure of a buildings ability to resist a fire. The minimum type of fire-resisting construction of a building must be that specified in Table C1.1 and Specification C1.1, except as allowed for—

(i) certain Class 2, 3 or 9c buildings in C1.5; and

(ii) a Class 4 part of a building located on the top storey in C1.3(b); and

(iii) open spectator stands and indoor sports stadiums in C1.7.

Note: Type A construction is the most fire-resistant and Type C the least fire-resistant of the types of construction.

Climatic Zone

Is an area defined in BCA Figure A1.1 and in Table A1.1 for specific locations, having energy efficiency provisions based on a range of similar climatic characteristics.

Deemed to Satisfy Provisions (DtS)
Provisions which are deemed to satisfy the Performance Requirements.

Effective Height

The height to the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units) from the floor of the lowest storey providing direct egress to a road or open space.

Fire Resistance Level (FRL)

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 which adjoins 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.

National Construction Code Series (NCC)

The NCC was introduced 01 May 2011 by the Council of Australian Governments. The BCA Volume One (Class 2 to 9 Buildings) is now referenced as the National Construction Code Series Volume One — BCA.

Open Space

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 DtS 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 DtS Provisions; or

(c) a combination of (a) and (b).

SUMMARY OF KEY ASSESSMENT ISSUES

Open Deck Carpark provisions

The proposed free-standing carpark will be open deck compliant and hence will not require sprinkler protection or mechanical ventilation in accordance with AS1668.1 or 2 (based on current design and effective height less than 25m).

In this regard the BCA defines an *open deck carpark* to include all parts of the parking storey being cross-ventilated by permanent unobstructed openings in not fewer than 2 opposite sides, and:-

(a) achieve ventilation not less than 1/6 of the area of any other side; and

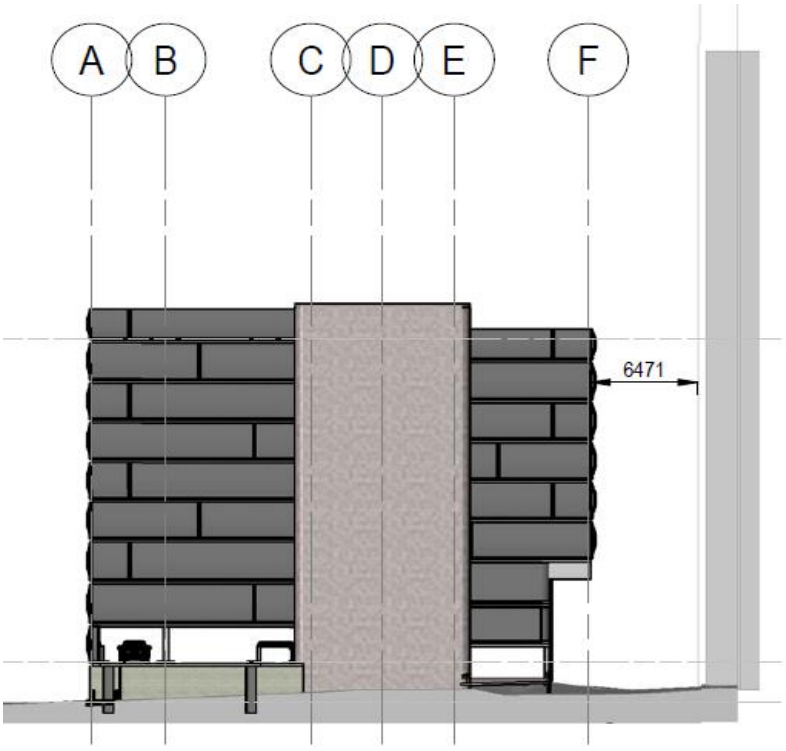
(b) the open sides are to achieve not less than ½ free-air of the wall area of the side concerned.

Compliance is readily achievable in relation to the above definition.

Fire Resistance & Compartmentation:-

The free-standing open deck staff carpark is assessed as Class 7a and is required to comply with Type A Construction.

The staff carpark has three (3) road frontages and will be setback not less than 6m to the southern side boundary. Hence there is zero exposure to adjoining fire source features.



Fire Resistance Levels

The following FRLs will apply:-

Building element				FRL (not less than) *Structural adequacy/Integrity/Insulation*
				ESA/M (not greater than)
Wall				
(a)	*external wall*			
	(i)	less than 3 m from a *fire-source feature* to which it is exposed:		
			Loadbearing	60/60/60
			Non- *loadbearing*	–/60/60
	(ii)	3 m or more from a *fire-source feature* to which it is exposed		–/–/–
(b)	*internal wall*			
	(i)	*loadbearing*, other than one supporting only the roof (not used for carparking)		60/–/–
	(ii)	supporting only the roof (not used for carparking)		–/–/–
	(iii)	non- *loadbearing*		–/–/–
(c)	*fire wall*			
	(i)	from the direction used as a *carpark*		60/60/60
	(ii)	from the direction not used as a *carpark*		as *required* by Table 3
Column				
(a)	supporting only the roof (not used for carparking) and 3 m or more from a *fire-source feature* to which it is exposed			–/–/–
(b)	steel column, other than one covered by (a) and one that does not support a part of a building that is not used as a *carpark*			60/–/– or 26 m^2/tonne
(c)	any other column not covered by (a) or (b)			60/–/–
Beam				
(a)	steel floor beam in continuous contact with a concrete floor slab			60/–/– or 30 m^2/tonne
(b)	any other beam			60/–/–
Fire-resisting lift and stair shaft (within the *staff carpark* only)				60/60/60
Floor slab and vehicle ramp				60/60/60
Roof (not used for carparking)				–/–/–
Notes:				
1.	ESA/M means the ratio of exposed surface area to mass per unit length.			
2.	Refer to Specification E1.5 for special requirements for a sprinkler system in a *carpark* complying with Table 3.9 and located within a multi-classified building.			

Access and Egress:-

The BCA imposes maximum DTS travel distances in relation to a Class 7a building as follows:

- No point on the floor must be more than 20m to an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40m.

Travel distances within the staff carpark exceed the DTS provisions and will be the subject of a fire engineered strategy at DD stage.

Part of the FER strategy will include requirement for enhancement of natural permanent free-air cross flow ventilation to all four (4) sides of the open deck staff carpark from minimum 50% (as required in accordance with BCA DTS), to achieve not less than 60% free-air ventilation. The enhanced natural cross flow ventilation, noting this will be achieved on all four sides (as opposed to minimum of two sides as per BCA DTS provisions), will be provided qualitative justification for the extended travel distances under the FER assessment.

The enhanced natural cross flow ventilation will be the justification *not* to include additional fire safety systems to off-set the extended travel distances.

Balustrade details for the free-standing open deck staff carpark are to be provided and reviewed for BCA compliance post-SSD and at DD stage.

ACCESS FOR PEOPLE WITH A DISABILITY

The staff carpark will be provided with required accessible parking spaces at level 0 and level 2.

Access to and within level 0 and 2 will be compliant with BCA and Access to premises Standard 2010.

High-level review of the current design documentation suggests that compliance is readily achievable in relation to access and facilities for people with.

Essential Fire Safety Measures:-

The following fire safety measures are required for the proposed new-build ***free-standing open deck staff carpark***:

Essential Fire and Other Safety Measures	Standard of Performance
Emergency Lighting	BCA Clause E4.4 & AS 2293.1 - 2005
Emergency Evacuation Plan	AS 3745 - 2002
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8 and AS 2293.1 – 2005
Fire Doors	BCA Clause C2.12, C2.13, C3.2, C3.4, C3.5, C3.7, C3.8, 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
Paths of Travel	EP & A Regulation Clause 186
Portable Fire Extinguishers	BCA Clause E1.6 & AS 2444 – 2001
Warning & Operational signs	Section 183 of the EP & A Regulations 2000, AS 1905.1 - 2005, BCA Clause C3.6, D2.23, E3.3

Notes:

The measures included and the standards of performances nominated above will vary as a result of the proposed fire engineered alternative solution report.

The above fire safety measures will generally comply with the DTS provisions of the BCA, however the location of the booster assembly is to be reviewed in further detail. If the booster is unable to satisfy DTS compliance, it can be addressed in the FER.

Fire Engineering

The open deck staff carpark building will be subject to fire engineered strategy to address compliance issues as outlined below.

Alternative Solution	BCA DTS Provisions	Variations to BCA DTS Provisions	BCA Performance Requirements
1	**Clause D1.4** Exit travel distances **Clause D1.5** Distance between alternative exits	To have a travel distance from within the car park to the nearest exit of up to approximately 50m, in lieu of 40m. To have a distance between alternative exits, when measured back through the point of choice of up to approximately 80m, in lieu of 60m.	**DP4, EP2.2**
	Summary of Fire Safety Strategy	The fire safety strategy is based on: ▪ The characteristics and use of the car park. ▪ The car park being designed as an open deck car park, where the provisions for natural and cross flow ventilation will exceed the minimum DTS provisions of the BCA. That is the façade panels will incorporate free area openings that exceed 50% (being up to 60-70%). ▪ The provision of alternative paths of travel to reach an exit, without the need to travel back through the point of choice.	
	BCA Compliance and Assessment Method	**A0.5(b)(ii)** and **A0.9(c)**, Comparative Assessment, Qualitative Analysis.	
	Acceptance Criteria	Ensuring occupants are allowed to evacuate from the car park safely and in conditions that are comparable to a design that complies with the minimum DTS provisions of the BCA.	
2	**Clause E1.3** Fire hydrants	To have the fire hydrant booster assembly located external to the building and within 10m of an external wall of the building.	**EP1.3**
	Summary of Fire Safety Strategy	The fire safety strategy is based on: ▪ The characteristics and use of the car park. ▪ Ensuring the fire hydrant booster assembly is provided with sufficient radiant heat protection from a fire within the building.	
	BCA Compliance and Assessment Method	**A0.5(b)(i)** and **A0.9(b)(ii)**, Absolute Assessment, Quantitative and Qualitative Analysis.	
	Acceptance Criteria	Ensuring the attending fire brigades are capable of safely accessing the fire hydrant booster assembly in the event of fire within the building.	

The fire safety engineer has prepared a high level compliance report in relation to the proposed FER issues.

A copy of the Fire Engineers advice and comments is provided under Appendix 1.

CONCLUSION:

This report contains an assessment of the referenced SD architectural documentation for the proposed new open deck staff carpark redevelopment at the Royal Prince Alfred Hospital, Camperdown against the requirements of the Building Code of Australia 2016 (BCA) and Access to Premises Standards.

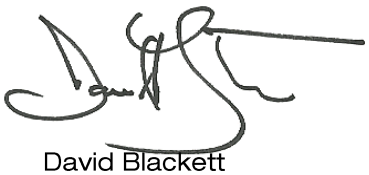
Arising from our assessment we are satisfied that the project design is capable of satisfying the requirements of the BCA2016 and Access Standards subject to the above.

Further and more detailed assessment is required for the DD stage including further advancement of the proposed FER strategies.

In the meantime it is considered that all compliance matters identified with the current design can be appropriately be addressed in the preparation of the Detailed design documentation without giving rise to any inconsistencies with the SSD consent.

Should you require further assistance or clarification please do not hesitate to contact the undersigned on 02 9211 7777 or david@bmplusg.com.au.

Regards,



David Blackett
Director
Accredited Certifier (A1 Unrestricted)
Blackett Maguire + Goldsmith

APPENDIX 1 – FIRE ENGINEERING INPUT

innova services
Fire Safety Engineering
Building Services Engineering

1 June 2016
Our Ref: 16049-L01

Health Infrastructure
c/- APP Corporation Pty Limited
Level 7, 116 Miller Street
North Sydney NSW 2060

ROYAL PRINCE ALFRED HOSPITAL – PROPOSED MULTISTORY CAR PARK PROVISION FOR FIRE ENGINEERING (FOR DA SUBMISSION)

We refer to the proposed construction of a new multistory car park for Royal Prince Alfred Hospital, to be located at 106-112 Church Street, Camperdown, and provide the following in regards to the proposed use of Alternative Solutions to address identified variations to the Deemed to Satisfy (DTS) provisions of the Building Code of Australia 2016 (BCA).

The purpose of this document is to assist in the design development process, and to assist the Consent Authority in the determination of the Development Application.

PROJECT DESCRIPTION

The proposed works include the demolition of existing structures, and the construction of a new 8 storey car park, plus uncovered roof top car parking. The site is bounded by Lucas Street to the north, Brodie Street to the south, an internal Hospital Road to the east, and Church Street to the west. Vehicle access into the car park is from Church Street.

Egress from the car park is via 3 separate fire-isolated exits, which discharge directly to an open space on ground floor. Each level of the car park will comprise of split floors, with interconnecting stairways between these levels.

The car park will be designed as being open deck, and is therefore not required to be provided with fire sprinklers.

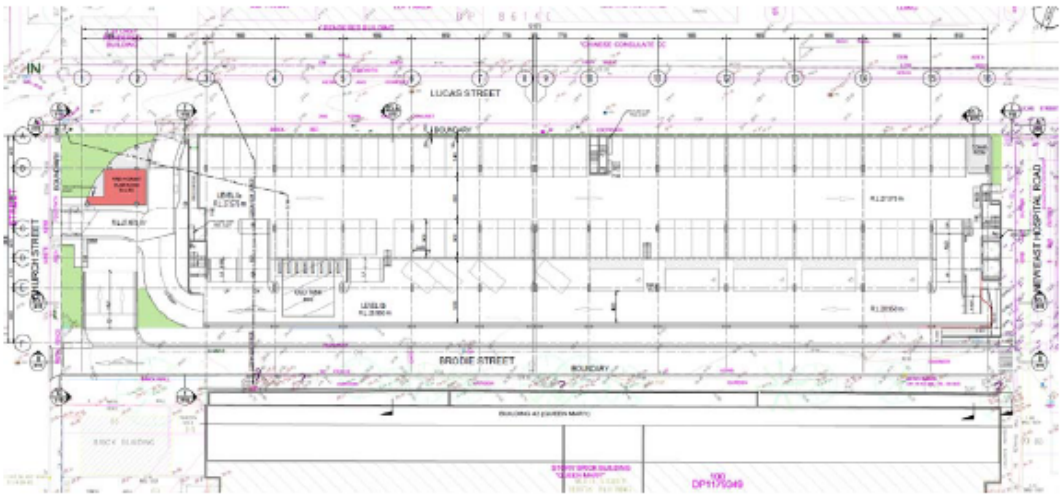


Figure 1: Level 0 Plan (Ground Floor)

BCA ASSESSMENT DATA

The relevant BCA Assessment Data for the proposed development is summarised in Table 1 below.

Table 1: Relevant BCA Assessment Data

BCA Reference	BCA Assessment
Building Classification and Use	Class 7a (car parking)
Rise in Storeys	8 (excludes roof top car parking)
Number of Levels Contained	8
Minimum Type of Construction Required	Type A
Effective Height	Less than 25m

ACHIEVING COMPLIANCE WITH THE BCA

A Building Solution will comply with the BCA if it satisfies the Performance Requirements of the BCA. Clause A0.5 of the BCA states that 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).

Clause A0.9 of the BCA states that the following Assessment Methods, or any combination of them, can be used to determine that a Building Solution complies with the Performance Requirements:

(a) Evidence to support that the use of a material, form of construction or design meets a Performance Requirement or a Deemed to Satisfy Provision as described in A2.2.

(b) Verification methods such as -

(i) the Verification Methods in the BCA; or

(ii) such other Verification Methods as the appropriate authority accepts for determining compliance with the Performance Requirements.

(c) Comparison with the Deemed to Satisfy provisions.

(d) Expert judgment

SUMMARY OF PROPOSED ALTERNATIVE SOLUTIONS

Table 2 below summarises the identified Variations to the BCA DTS Provisions, the relevant BCA Performance Requirements, the Assessment Methods, the Methods of Analysis, and the Acceptance Criteria that are proposed to be used in the Fire Engineering Analysis.

NOTE: At this stage of the design, the identified variations to the DTS provisions of the BCA are not exhaustive, and other variations resulting in the development of additional Alternative Solutions may arise through the design and development process.

Table 2: Summary of Proposed Alternative Solutions

Alternative Solution	BCA DTS Provisions	Variations to BCA DTS Provisions	BCA Performance Requirements
1	**Clause D1.4** Exit travel distances **Clause D1.5** Distance between alternative exits	To have a travel distance from within the car park to the nearest exit of up to approximately 50m, in lieu of 40m. To have a distance between alternative exits, when measured back through the point of choice of up to approximately 80m, in lieu of 60m.	**DP4, EP2.2**
	Summary of Fire Safety Strategy	The fire safety strategy is based on: ▪ The characteristics and use of the car park. ▪ The car park being designed as an open deck car park, where the provisions for natural and cross flow ventilation will exceed the minimum DTS provisions of the BCA. That is the façade panels will incorporate free area openings that exceed 50% (being up to 60-70%). ▪ The provision of alternative paths of travel to reach an exit, without the need to travel back through the point of choice.	
	BCA Compliance and Assessment Method	**A0.5(b)(ii)** and **A0.9(c)**, Comparative Assessment, Qualitative Analysis.	
	Acceptance Criteria	Ensuring occupants are allowed to evacuate from the car park safely and in conditions that are comparable to a design that complies with the minimum DTS provisions of the BCA.	
2	**Clause E1.3** Fire hydrants	To have the fire hydrant booster assembly located external to the building and within 10m of an external wall of the building.	**EP1.3**
	Summary of Fire Safety Strategy	The fire safety strategy is based on: ▪ The characteristics and use of the car park. ▪ Ensuring the fire hydrant booster assembly is provided with sufficient radiant heat protection from a fire within the building.	
	BCA Compliance and Assessment Method	**A0.5(b)(i)** and **A0.9(b)(ii)**, Absolute Assessment, Quantitative and Qualitative Analysis.	
	Acceptance Criteria	Ensuring the attending fire brigades are capable of safely accessing the fire hydrant booster assembly in the event of fire within the building.	

CONCLUSION

In consideration of the above, it is concluded that Alternative Solutions can be developed to the DTS provisions of the BCA to ensure the proposed development can achieve compliance with the relevant Performance Requirements of the BCA.

Yours Faithfully

Innova Services Pty Ltd

Jason Powell
Director
C10 Accredited Fire Engineer (BPB0801)
MIEAust, CPEng