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Lendlease
Level 14, Tower Three, International Towers Sydney
Exchange Place, 300 Barangaroo Avenue
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Attention: Kevin Maclennan

Dear Kevin,

Re: Integrated Acute Services Building (IASB Addition) – Preliminary BCA Compliance

Introduction
This letter has been prepared to provide preliminary advice for the proposed IASB Addition. The proposed works have been assessed against the current provisions of the BCA2016 Amendment 1.

In terms of the newly released NCC2019, the IASB Addition is an extension to a building already under construction that is designed and approved under NCC2016.

The Project was tendered before May 2019 prior to the NCC2019 coming into effect (1 May 2019)

This report is an addendum to McKenzie Group BCA Report previously submitted under SSD 9113 Prince of Wales Extension Stage 1. The content of this report relates only to the additional core scope elements of the IASB Addition.

Description of works / building
The core scope elements of the IASB Addition are:

- UNSW Eastern Extension (Base Building Only)
- Associated modifications within the ASB
- Lowering of Hospital Road
- Landscaping

The IASB Addition is a 10 storey addition comprising of:

- Level 00: Clinical Innovation and Research Space
- Level 01: Clinical Translational Lab Space
- Level 02: Clinical Translational Lab Space
- Level 03: Biomedical Engineering Innovation Space
- Level 04: Biomedical Engineering Innovation Space
- Level 05: Education and Research Space
- Level 06: Education and Research Space
- Level 07: Education and Research Space
- Level 08: Education and Research Space
- Level 09: Plant

The IASB Addition comprises a GFA of approximately 5,000sqm, which equates to an approximate increase of 10% to the approved ASB.

Part of Project	ASB	IASB Addition
Classification	5, 6, 9a & 9b	8 (lab), 9b (assembly)
Number of Storeys	13	10
Rise In Storeys	13	10
Type of Construction	A	A
Effective Height (m)	55m	55m (based on ASB)

Note – the IASB Addition rise in storeys and number of storeys is shown as 10 however for the purposes of BCA assessment the ASB rise in storeys and number of storeys has been applied as they are considered the same building.

Design documentation

Drawing No.	Title	Issue	Date	Drawn by
11B-0000003	General Arrangement Plan – East Integration Level 00	C	05.06.19	BVN
11B-0100003	General Arrangement Plan – East Integration Level 01	C	05.06.19	BVN
11B-0200003	General Arrangement Plan – East Integration Level 02	C	05.06.19	BVN
11B-0300003	General Arrangement Plan – East Integration Level 03	C	05.06.19	BVN
11B-0400003	General Arrangement Plan – East Integration Level 04	C	05.06.19	BVN
11B-0500003	General Arrangement Plan – East Integration Level 05	C	05.06.19	BVN
11B-0600003	General Arrangement Plan – East Integration Level 06	C	05.06.19	BVN
11B-0700003	General Arrangement Plan – East Integration Level 07	C	05.06.19	BVN
11B-0800003	General Arrangement Plan – East Integration Level 08	C	05.06.19	BVN
11B-0900003	General Arrangement Plan – East Integration Level 09	C	05.06.19	BVN
11B-B100003	General Arrangement Plan – East Integration Level -01	C	05.06.19	BVN

Assessment

We have reviewed the design documentation against the provisions of the Building Code of Australia 2016 Amendment 1. We confirm that, based on the above design documentation, the project is capable of complying with the Building Code of Australia 2016 Amendment 1 subject to the following areas which will require additional information or Performance Solutions at the Construction Certificate stage.

Item	Area	Description of works required
1.	Reduction in FRL (C1.1, Spec C1.1)	The extension is proposed to be fire separated from the remainder of the building by 2-hour fire rated construction. Reduction in FRL from 240min (Class 8 lab) down to 120min (Class 9b assembly) is proposed to be addressed by **Performance Solution.**
2.	Fire Separation and Compartment (C2.2, Spec C1.1)	Separation between façade, fire rated slab and fire rated walls are to be addressed by **Performance Solution**.

3.	Protection of openings (C3.3)	Rationalise the protection of openings 90º between the Patient link bridge compartments as they are considered as separate fire compartments. This non-compliance is proposed to be addressed by **Performance Solution.**
4.	Separation of equipment (C2.12)	All switchrooms are required to be contained in 2 hour fire rated construction.
5.	Extended travel distances (Clause D1.4, D1.5)	The below extended travel distances are to be addressed by **Performance Solution**: • 30m to Point of Choice (Level 2, 3, 5, 6, 7, 8) The below travel distances required design amendment: • Additional exit door is required from: o Level 00 o Level 04
6.	Number of persons accommodated (D1.13) and sanitary facilities (Part F2)	The proposed population breakdown is to be provided for assessment: • Lab Employees • General Employees • Student
7.	Door thresholds (D2.15)	A step at the threshold of the doorway leading into the plant room (level 09) is not permitted. Design amendment will be required prior to CC.
8.	Operation of latch (NSW D2.21)	All doors serving a portion of the assembly building serving over 100 persons are required to be provided with the below door hardware: • Openable without a key from the side that faces a person seeking egress; and • By a single hand pushing action on a single device such as a panic bar located between 900mm and 1.2m from the floor; and • Where a two leaf door is fitted, the provisions of above need only apply to one door leaf.
9.	Fire Hydrants (E1.3)	Fire hydrant locations serving the extension are to be shown on the services drawings in accordance with AS2419.1-2005.
10.	Fire Hose Reels (E1.4)	Fire hose reel locations serving the extension are required to be shown on the services drawings in accordance with AS2441-2005. Note that fire hose reels cannot pass through fire doors.
11.	Weatherproofing (FP1.4)	Weatherproofing of the proposed extension is required to address Performance Requirement FP1.4 as a **Performance Solution**.
12.	Lighting and Ventilation (Part F4)	Artificial lighting is required is required to be provided in accordance with AS1680.0-2009. Mechanical ventilation is required to be provided in accordance with AS1668.2-2012.

Required Engineers and documentation

	Documentation required
Structural Engineer	▪ Structural engineer to provide detailed design at CC stage. ▪ Structural services drawings
Mechanical Engineer	▪ Mechanical engineer to provide detailed design for zone smoke control in accordance with AS1668.1-2015 and mechanical ventilation in accordance with AS1668.2-2012. ▪ Mechanical services drawings ▪ Services and duct work penetrations are required to be specified in the design in accordance with AS1668.1-2015 and AS1668.2-2012
Electrical Engineer	▪ Electrical engineer to provide detailed design for the emergency lighting/exit signs, Emergency Warning and Intercom System and Smoke Detection System in accordance with AS2293.1-2005, AS1670.4-2005 and AS1670.1-2015 ▪ Electrical services design drawings

Hydraulic Engineer	▪ Hydraulic engineer to provide detailed design for the fire hose reel and fire hydrant system in accordance with AS2441-2005 and AS2419.1-2005 ▪ Hydraulic services design drawings
Fire Services Engineer	▪ Wet and Dry fire services engineer to provide detailed design at CC stage by a Competent Fire Safety Practitioner ▪ Wet and Dry fire services design drawings endorsed by a Competent Fire Safety Practitioner
Energy Efficiency Consultant	▪ Section J Report/Certification is to be provided by a qualified ESD Consultant prior to CC
Access Consultant	▪ Access report is to be provided prior by a qualified Access Consultant prior to CC

Conclusion

This statement has been provided as part of a preliminary assessment of the proposed IASB Addition. The development adequately satisfies the intent of being able to comply with the requirements of the BCA.

Yours faithfully

Paul Curjak
Senior Building Surveyor
McKenzie Group Consulting (NSW) Pty Ltd
ACN 093 211 995

APPENDIX A

Fire safety schedule

Below is a list of the fire safety measures proposed for the building.

No.	Measure	Particulars of Measure *(including where the requirement for the measure is set out or described i.e. in building plans or in a performance solution report)*
1.	Access Panels, Doors and Hoppers	BCA 2016 (1) Clause C3.13
2.	Automatic Fail Safe Devices	BCA 2016 (1) Clause D2.19 & D2.21
3.	Automatic Fire Detection and Alarm System	BCA 2016 (1) Spec. E2.2a & AS 1670.1 – 2015, AS/NZS 1668.1 - 2015
4.	Automatic Fire Suppression System (sprinklers)	BCA 2016 (1) Spec. E1.5 & AS 2118.1 – 2017
5.	Emergency Lifts	BCA 2016 (1) Clause E3.4 & AS 1735.2 – 2001
6.	Emergency Lighting	BCA 2016 (1) Clause E4.2, E4.4 & AS/NZS 2293.1 – 2005
7.	EWIS (Sound Systems and Intercom Systems for Emergency Purpose)	BCA 2016 (1) Clause E4.9 & AS 1670.4 - 2015 & AS 4428.4-2004
8.	Exit Signs	BCA 2016 (1) Clauses E4.5, NSW E4.6 & E4.8 and AS/NZS 2293.1 – 2005
9.	Fire Control Room	BCA 2016 (1) Spec. E1.8
10.	Fire Dampers	BCA 2016 (1) Clause C3.15, AS/NZS 1668.1 – 2015 & AS 1682.1&2 - 1990
11.	Fire Doors	BCA 2016 (1) Clause C3.2, C3.4, C3.5, C3.6, C3.7 & C3.8, Spec C3.4 and AS 1905.1 – 2015
12.	Fire Hose Reel Systems	BCA 2016 (1) Clause E1.4 & AS 2441 – 2005 Amdt 1
13.	Fire Hydrant Systems	BCA 2016 (1) Clause E1.3 & AS 2419.1 – 2005 Amdt 1
14.	Fire Seals protecting fire resisting components of the building	BCA 2016 (1) Clause C3.12, C3.15, C3.16 & AS 1530.4 – 2014
15.	Lightweight Construction	BCA 2016 (1) Clause C1.8, C3.17 & AS 1530.3 – 1999
16.	Mechanical Air Handling System (zone smoke control system)	BCA 2016 (1) Clause E2.2, AS/NZS 1668.1 – 2015
17.	Mechanical Air Handling System (automatic smoke exhaust system) – Level -01 and 00	BCA 2016 (1) Clause E2.2, AS/NZS 1668.1 – 2015
18.	Mechanical Air Handling System (automatic stair pressurisation system)	BCA 2016 (1) Clause E2.2, AS/NZS 1668.1 – 2015
19.	Portable Fire Extinguishers	BCA 2016 (1) Clause E1.6 & AS 2444 – 2001
20.	Smoke Doors	BCA 2016 (1) Spec. C3.4
21.	Solid Core Doors	BCA 2016 (1) Clause C3.11
22.	Wall-Wetting Sprinkler and Drencher Systems	BCA 2016 (1) Clause C3.4 & AS 2118.2 – 2010
23.	Warning and Operational Signs	EP&A Reg 2000 Clause 183, BCA Clause C3.6, D2.23 & E3.3
24.	Building Occupant Warning System	BCA 2016 (1) Spec. E1.5, BCA Spec. E2.2a & AS 1670.1 – 2015 – Clause 3.22
25.	Emergency Evacuation Plan	Fire Engineering Report prepared by ARUP and AS 3745 – 2002
26.	Fire Collars protecting fire resisting components of the building	BCA 2016 (1) Clause C3.12, C3.15, C3.16, AS 1530.4 – 2014 and AS 4072.1-2005
27.	Paths of Travel	EP&A Reg 2000 Clause 183, 184, 184 & 186

28.	Required Exit Doors (power operated)	BCA 2016 (1) Clause D2.19
29.	Fire Engineered Performance Solution Report	Fire Engineered Performance Solution Report prepared by ARUP

Note: the above fire safety schedule is an amalgamation of ASB and IASB as it will be considered the same building as required by the BCA.

APPENDIX B – Fire Resistance Levels

The table below represents the Fire resistance levels required in accordance with BCA 2016 (1):

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 within it) 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*—				
For *loadbearing* columns—	90/–/–	120/–/–	180/–/–	240/–/–
For non-*loadbearing* columns—	–/–/–	–/–/–	–/–/–	–/–/–
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
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