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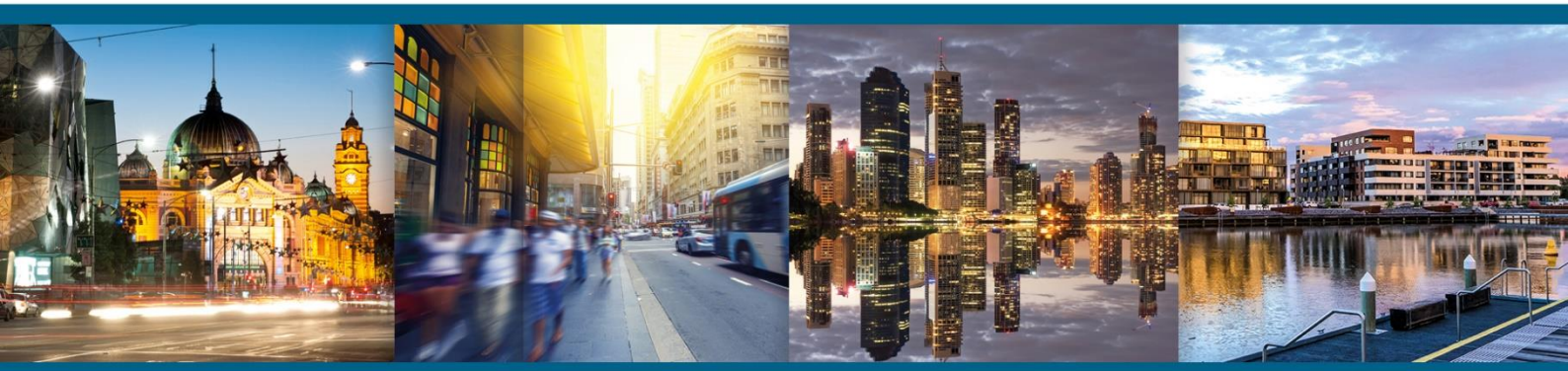
UNSW Health Translation Hub, Randwick Hospital Campus

Preliminary BCA and Certification Assessment



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Disclaimer:

This report is based on a desktop audit of preliminary documentation only.
Details contained in the report address issues of significance to broad BCA compliance relevant to this stage of design resolution.

This report is based on a review of the design documentation only. It represents a compliance report for "documentation to this point in time" and will be subject to amendment and expansion as project documentation develops

Introduction

This report supports a State Significant Development Application (SSDA) for the proposed UNSW Health Translation Hub (UNSW HTH) at the Randwick Hospitals Campus (RHC), which is submitted to the Department of Planning, Industry and Environment (DPIE) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (the Act). Health Infrastructure on behalf of Health Administration Corporation (HAC) is the applicant for the UNSW HTH, which will be delivered with the University of New South Wales (UNSW).

The UNSW HTH forms an extension of the existing and proposed hospital facilities at the RHC, providing a specialist health-related research and education facility on the Campus.

Background

A partnership agreement has been established between HAC and the UNSW to develop the UNSW HTH. This partnership will also allow UNSW to operate the building as well as manage its design and delivery.

The partnership will bring together educational and medical researchers, clinicians, educators and public health officials to drive excellence, and support the rapid translation of research, innovation and education into improved patient care. It will strengthen the symbiotic relationship between UNSW and the RHC and its research institutes and broader health partners which form part of the Randwick Health and Innovation Precinct (RHIP).

The UNSW HTH will build on the existing affiliation between UNSW and the Sydney Children's Hospital Network (SCHN); Health Infrastructure; and the South Eastern Sydney Local Health District, including Prince of Wales Hospital, The Royal Hospital for Women and Eastern Suburbs Mental Health Services.

Site Description and Location

The site is located approximately 6 kilometres (km) from the Sydney Central Business District (CBD), within the Randwick Local Government Area (LGA). It is located approximately 4km from Sydney Airport. Figure 1 provides a regional context map of the site showing its location in relation to the Sydney CBD and surrounding centres.

This block sits in between the existing Randwick Hospitals Campus and the UNSW Kensington Campus, and directly adjacent to the CBD and South East Light Rail service which runs along High Street (Figure 2). The site of the proposed UNSW HTH has an area of 8,897square metres (sqm).

The site has been subject to some site preparation and early works associated with the broader development of the block. Adjacent to the site, along the High Street and Botany Road frontages, runs a 6-metre (m) wide stormwater and sewage easement.

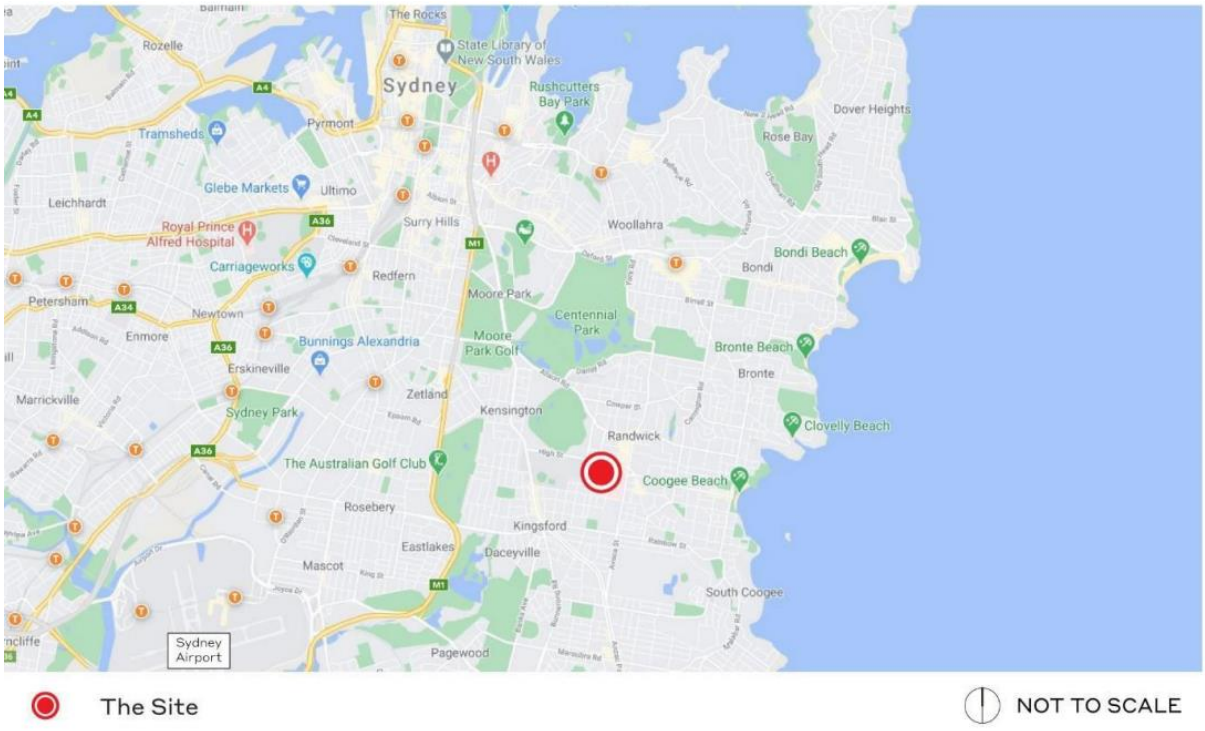

Figure 1 – Site context

Source: Google maps and Ethos Urban

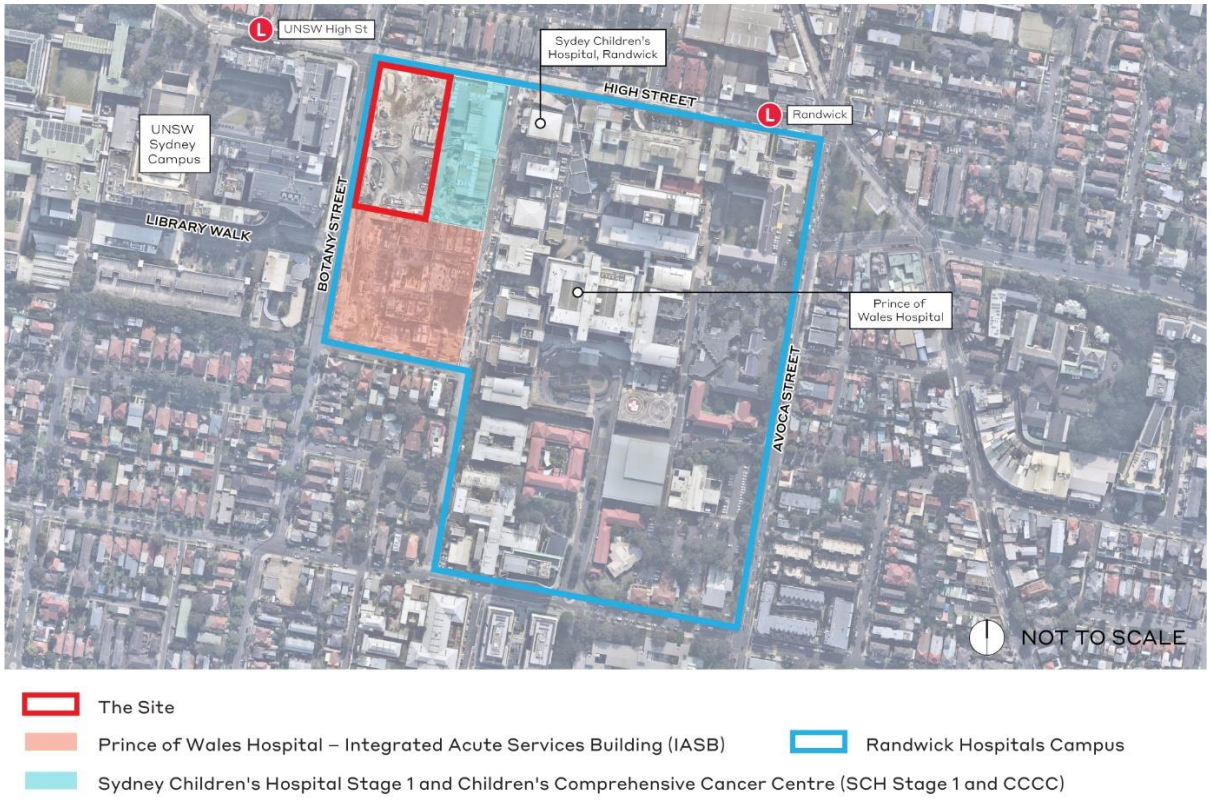

Figure 2 – Site aerial

Source: Nearmaps and Ethos Urban

Overview of the Proposed Development

The proposal involves the expansion of the existing and proposed hospital facilities at the RHC to provide ancillary health research and education uses. This will be in the form of a single building which will be physically connected (at podium level) to the neighbouring Sydney Children's Hospital Stage 1 and Children's Comprehensive Cancer Centre (SCH Stage 1 and the CCCC) redevelopment.

Specifically, the SSDA seeks approval for:

- Relevant site preparation, excavation and enabling works.
- Construction and use of a new, 15-storey building accommodating research and health education uses, comprising:
    - One basement level; and
    - A total GFA of approximately 35,600sqm, including health-related research, education and administrative floor space.
- Pedestrian link bridges connecting the UNSW Kensington Campus to the RHC, via the Wallace Wurth Building to the UNSW HTH and through to the SCH Stage 1 and the CCCC.
- Landscaping and public domain works, including the creation of over 2,500 sqm of new publicly accessible open space within the eastern portion of the site, sitting between the UNSW HTH and the SCH Stage 1 and the CCCC redevelopment.
- Building signage.
- Stratum subdivision.
- Services and utilities augmentation as required.

Operation and Function of the UNSW HTH

The UNSW HTH will be an expansion of the RHC to accommodate new health related education, research, and administrative facilities. It will include:

- Purpose-built spaces for health educators and researchers to work alongside clinicians.
- Floor plates for health translation research focused work with physical connections to the SCH Stage1 and the CCCC and wider Randwick Hospitals Campus.
- Dedicated facilities for the CCCC directly linking the UNSW HTH with the SCH Stage 1 and the CCCC.
- An education hub, including education and training rooms allowing hospital staff to educate and train UNSW medical students.
- Facilities for education, training, research, seminars and industry events.
- Clinical schools for the Women's and Children's Health, Psychiatry and Prince of Wales Hospital.
- Ambulatory care clinics including in neurosciences, public and population health.
- Supporting facilities including retail premises.

Purpose

The purpose of this report is to identify issues and omissions in the audited documentation that are required to be addressed to permit the lodgement and approval of an application for a Construction Certificate under Part 6 of the EP&A Act.

Scope

The scope of this assessment is limited to the design documentation referenced in Appendix A of this report.

Certification Work

This report is provided as part of SWP's contracted scope for this project, which is "Certification Work", as defined in the Building and Development Certifiers Regulation 2020. Due to the strict requirements and limits in terms of conflicts of interest imposed under that regulation, SWP cannot undertake any services other than Certification Services on this project.

Hence, the contents of this report, and any associated correspondence, are provided in the context of a preliminary certification assessment of plans, and is intended to identify any BCA or regulatory issues required to be addressed in the design. It may not be construed to constitute involvement in building design, the preparation of plans and specifications, the provision of advice on how to amend a plan or specification to ensure that the aspect will comply with legislative or code requirements, or to breach any other restriction or limitation imposed under the conflict of interest provisions of that or any other legislation.

Statutory Framework

The following table summarises the key statutory issues relating to fire safety and the BCA in relation to the certification of new building works.

Issue	Legislative reference	Comment
New Work	EPAR 145	All new works must comply
Development by the Crown	Section 6.28 of the Act	Certification at the time of tender that the design complies with the State's building laws.

New Work

Clause 145 of the EPAR requires that all new work comply with the current requirements of the BCA.

This means that all works proposed in the plans are required to comply but that existing features of an existing building need not comply with the BCA unless required to under other clauses of the legislation.

Development by the crown

Development by the Crown is regulated by Part 4 Division 4.6 and Part 6 Division 6.8 of the EP&A Act. Section 6.28 of the Act requires that any demolition or building work cannot be commenced unless the works are certified as complying with the State's building laws at the date of calling for tenders. The above regulatory requirements generally still apply.

One means of ensuring compliance with the certification requirement is to obtain a construction certificate in relation to the works.

Assessment

The following is a summary of an assessment of the proposed design against the relevant Deemed-to-Satisfy provision of the BCA.

Section A: General Provisions

The building is proposed to be used as a research and education building.

Class of Occupancy	Class 5, 7b, 8 and 9b
Type of Construction Required	Type A
Rise Storeys:	16
Number of Storeys:	16
Effective Height:	67.79m (Basement RL50.21 - Level 14 RL 118.00)

Section B: Structure

The structural engineer will need to design and certify the building complies with the structural provisions of Part B1 of the BCA and all relevant Australian Standards.

Section C: Fire Resistance

Type A fire resisting construction is required. The basement is classified as Class 7b and parts of level 7 and classified as Class 8. Generally, 4 hour fire rated construction is required under Type A construction for these classification. A Performance Solution may be investigated to reduce the FRL's.

The floor area and volume of the atrium compartment exceeds the maximum limitations outlined by Table C2.2. The area is approximately 10,905m^2 and the volume is approximately 49,000m^3. A Performance Solution is proposed to address the compartment size and atrium.

The proposed bridge links to the SCH and Wallace Wurth over Botany Rd cross over property boundaries. The external walls of the bridge link will be within 3m of the side boundary or 6m of the far boundary of the road. Separation between buildings and the protection of external walls and openings will need to be addressed.

Section D: Access and Egress

Exit travel distances will exceed the maximum permitted under Clauses D1.4 and D1.5 of the BCA. The Fire Safety Engineer is proposing to address extended travel distances throughout.

The proposed scissors stairs merge into a single passageway which is proposed to be only 1.5m. This reduces the width of 2 x 1m stairs to 1.5m total aggregate egress width. Effectively providing 3m of egress from each floor. Level 4 and 5 have insufficient egress width based on the calculated population which requires 3.5m. The Fire Safety Engineer is proposing to address the issue on a Performance Basis.

In accordance with Clause D1.6 of the BCA, the available exits provided are capable of accommodating the population from floor.

The construction of the new stairways including goings, risers and slip resistance classification is to comply with Clause D2.13 of the BCA. Landings at the top and bottom of the stairway is to comply with Clause D2.14 of the BCA.

Access for people with disabilities is to be provided in accordance with the provisions of Part D3 of the BCA and AS1428.1 – 2009

Section E: Services and Equipment

The buildings are required to be served by a fire hydrant system complying with Clause E1.3 of the BCA and AS 2419.1 – 2005. Consideration is to be given to the location of the fire brigade booster assembly. Where located remotely from the buildings the booster assembly is required to be:

- At the boundary of the site and be within sight of the main entrance to the building;
- Adjacent to the principal vehicular access to the site;
- Located not less than 10m from the external wall of any building served.

The buildings are required to be served by fire hose reels complying with Clause E1.4 of the BCA and AS 2441 – 2005. Class 5 commercial offices are not required to be served by fire hose reels. Portable Extinguishers are to be provided in accordance with Table E1.6 of BCA and AS2444.

As the building is over 50m in effective height a fire control room in accordance with Specification E1.8 must be provided.

The building is to be provided with sprinkler protection throughout in accordance with Specification E1.5 and AS2118.1-2017.

Emergency lifts of prescribed size, operation and fire isolation are required in buildings

The building will require emergency lighting and exit signage in accordance with Clauses E4.2 & E4.4 of the BCA and AS 2293.1 – 2005.

The building will require exit signage in accordance with Clauses E4.5, E4.6 & E4.8 of the BCA and AS 2293.1 – 2005.

An emergency warning and intercom system complying with AS 1670.4 must be installed throughout the building.

Section F: Health and Amenity

Weatherproofing of external wall systems must be in accordance with BCA Verification Method FV1.

Stormwater drainage must comply with AS/NZS 3500.3.

Sanitary facilities for occupants will need to be provided in accordance with the requirements under Part F2.

An accessible unisex sanitary compartment is required in accordance with Clause F2.4 of the BCA and AS 1428.1 – 2009. A male and female sanitary compartment suitable for a person with an ambulant disability is required in accordance with AS 1428.1 – 2009.

Compliant ceiling heights are to be provided.

Artificial lighting is required to all rooms that are frequently occupied, all accessible spaces, all corridors and circulation spaces and path of egress in accordance with AS/NZS 1680.0 – 2009.

Ventilation will be required to all rooms occupied by a person for any purpose by means of natural ventilation complying with Clause F4.6 of the BCA or mechanical ventilation/air-conditioning complying with AS 1668.2 –2012

Section G: Ancillary Provisions

The building contains an atrium void, which connects ground, levels 1 to 3. Part G3 Atrium Provisions apply to the building. The Fire Safety Engineer has proposed a Performance Solution in relation to some of the Atrium requirements.

Section J: Energy Efficiency

The buildings are to be designed to achieve compliance with the relevant provisions of Part J1 to J8 respectively. Where a JV3 assessment is undertaken it must satisfy Performance Requirement JP1 with the calculation method complying with ANSI/ASHRAE Standard 140 and Specification JVb.

Performance Solutions Proposed

Item	Non-compliance	DTS Clause	Description	Performance Requirement(s)
1.	Fire resisting construction	C1.1 and Spec C1.1	The basement is classified as Class 7b and parts of level 7 and classified as Class 8. Generally, 4 hour fire rated construction is required under Type A construction for these classification. A Performance Solution may be investigated to reduce the FRL's. The structure from level 8 and up is proposed to be lightweight and include Cross Laminated Timber, laminated veneer lengths and timber columns. The timber structure will be subject to further detailed design.	CP1 and CP2
2.	General floor area and volume limitations	C2.2.	The floor area and volume of the atrium compartment exceeds the maximum limitations outlined by Table C2.2. The area is approximately 10,905m^2 and the volume is approximately 49,000m^3.	CP1, CP2 and EP2.2
3.	Separation by fire walls	C2.7	The proposed bridge links to the SCH Stage 1 and CCCC and Wallace Wurth over Botany Rd cross over property boundaries. The separation is proposed to be addressed under a Fire Engineered Performance Solution	CP2
4.	Protection of openings in external walls	C3.2	The proposed bridge links to the SCH Stage 1 and CCCC and Wallace Wurth over Botany Rd cross over property boundaries. The protection of openings is proposed to be addressed under a Fire Engineered Performance Solution	CP2 and CP8
5.	Doorways in fire walls	C3.5	The proposed bridge links to the SCH Stage 1 and CCCC and Wallace Wurth over Botany Rd cross over property boundaries. The doorway openings separating the buildings are proposed to be addressed under a Fire Engineered Performance Solution.	CP2 and CP8
6.	Exit travel distances and distance between alternative exits	D1.4 and D1.5	Exit travel distances will exceed the maximum permitted under Clauses D1.4 and D1.5 of the BCA. The Fire Safety Engineer is proposing to address extended travel distances throughout.	DP4 and EP2.2

Item	Non-compliance	DTS Clause	Description	Performance Requirement(s)
7.	Dimensions of exits and paths of travel	D1.6	The proposed scissors stairs merge into a single passageway which is proposed to be only 1.5m. This reduces the width of 2 x 1m stairs to 1.5m total aggregate egress width. Effectively providing 3m of egress from each floor. Level 4 and 5 have insufficient egress width based on the calculated population which requires 3.5m	DP4 and EP2.2
8.	Travel via fire isolated exits	D1.7	The scissor stairs do not discharge via their own passageway. They merge into a single passageway.	DP5 and EP2.2
9.	Separation of rising and descending flights	D2.4	The fire stairs serving the basement and the upper levels are not separated.	DP5 and EP2.2
10.	Smoke hazard management	E2.2	The smoke exhaust system is proposed to be designed on a Performance Basis detailed by the fire safety engineer in the fire engineering report.	EP2.2
11.	Water proofing of external walls	F1.0	There is no DTS clause that addresses Performance Requirement FP1.4 in respect of external walls. Weatherproofing of external wall systems must be in accordance with BCA Verification Method FV1.	FP1.4
12.	Atrium Construction	Part G3	Several of the requirements for Atriums under Part G3 will not be satisfied. This includes bounding walls to the atrium and the fire services required to be installed.	CP2, EP1.4, EP2.2 and EP4.3

Conclusion

This report documents a preliminary audit of the proposed design against the BCA and the relevant legislative requirements. We confirm the proposed design, as shown on the drawings referenced in Appendix A, is capable of achieving compliance with the BCA subject to further detail and the proposed Performance Solutions being prepared satisfying the relevant Performance Requirements of the BCA.

Appendix A – Referenced Documentation

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

Drawing No.	Title	Issue	Date	Drawn By
DA0020	Site Plan	A	18/02/2021	Architectus
DA0030	Site Boundary & Building Setbacks	A	18/02/2021	Architectus
DA1000	Basement Level -01	A	18/02/2021	Architectus
DA1001	Ground 00	A	18/02/2021	Architectus
DA1002	Level 01	A	18/02/2021	Architectus
DA1003	Level 02	A	18/02/2021	Architectus
DA1004	Level 03	A	18/02/2021	Architectus
DA1005	Level 04	A	18/02/2021	Architectus
DA1006	Level 05	A	18/02/2021	Architectus
DA1007	Level 06	A	18/02/2021	Architectus
DA1008	Level 07	A	18/02/2021	Architectus
DA1009	Level 08	A	18/02/2021	Architectus
DA1010	Level 09	A	18/02/2021	Architectus
DA1011	Level 10	A	18/02/2021	Architectus
DA1012	Level 11	A	18/02/2021	Architectus
DA1013	Level 12	A	18/02/2021	Architectus
DA1014	Level 13	A	18/02/2021	Architectus
DA1015	Level 14 – Plant	A	18/02/2021	Architectus
DA1016	Level 15 – Roof	A	18/02/2021	Architectus
DA2001	North Elevation	A	18/02/2021	Architectus
DA2002	South Elevation	A	18/02/2021	Architectus
DA2003	East Elevation	A	18/02/2021	Architectus
DA2004	West Elevation	A	18/02/2021	Architectus
DA2101	Section A	A	18/02/2021	Architectus
DA2102	Section B	A	18/02/2021	Architectus
DA2103	Section C	A	18/02/2021	Architectus