Your ref
Our ref 278548-EL-RPT-0001
File ref

ARUP

Level 5
151 Clarence Street
Sydney NSW 2000
Australia

t +61 2 9320 9320
d +61 2 9320 9478
f +61 2 9320 9321

ryan.fisher@arup.com
www.arup.com

Shane McLoughlin
Development
Estate Management

UNSW
Sydney
NSW
2052

01 March 2021

Dear Shane,

UNSW HTH SSDA External Lighting Strategy rev 05

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.

Summary

The external lighting strategy across the UNSW HTH will be provided to meet Australian Standards and UNSW Design and Construction Requirements Section E 3.2 Lighting. The external lighting strategy will provide a safe and secure environment whilst providing an elegant and interesting environment for all users of the building which is simple to maintain.

Project Overview

This report supports a SSDA for the proposed UNSW Health Translation Hub (UNSW HTH) at the Randwick Hospitals Campus (RHC) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (the Act). Health Infrastructure NSW (HI) is the applicant for the proposed UNSW HTH SSDA submission. The UNSW HTH will be delivered and operated by the UNSW.

The UNSW HTH project will bring together educational and medical researchers, clinicians, educators, industry partners and public health officials to drive excellence, and

support the rapid translation of research, innovation, and education into improved patient care.

Description of Proposed Development

The SSDA seeks approval for:

- Relevant site preparation, excavation and enabling works.
- Construction and use of a new, 15-storey (RL 124.80) building and link bridge accommodating research and education uses, comprising:
  - One basement level; and
  - A total GFA of 35,600sqm, including health-related research, education and administrative floor space.
  - Pedestrian link bridges connecting the UNSW Kensington campus to the Randwick Hospitals Campus, via the Wallace Wurth building to the UNSW HTH and through to the Sydney Children's Hospital Stage 1 and Children's Comprehensive Cancer Centre (SCH Stage 1 and CCCC)
- Landscaping and public domain works, including the creation of over 2,500m² of new publicly accessible open space within the eastern portion of the site, sitting between the UNSW HTH and the SCH Stage 1 and CCCC.
- 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.

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 – Site context 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 – Site aerial). The site of the proposed UNSW HTH has an area of 8,897square metres (sqm).

The UNSW HTH site has been cleared and is devoid of any development or vegetation. It 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.

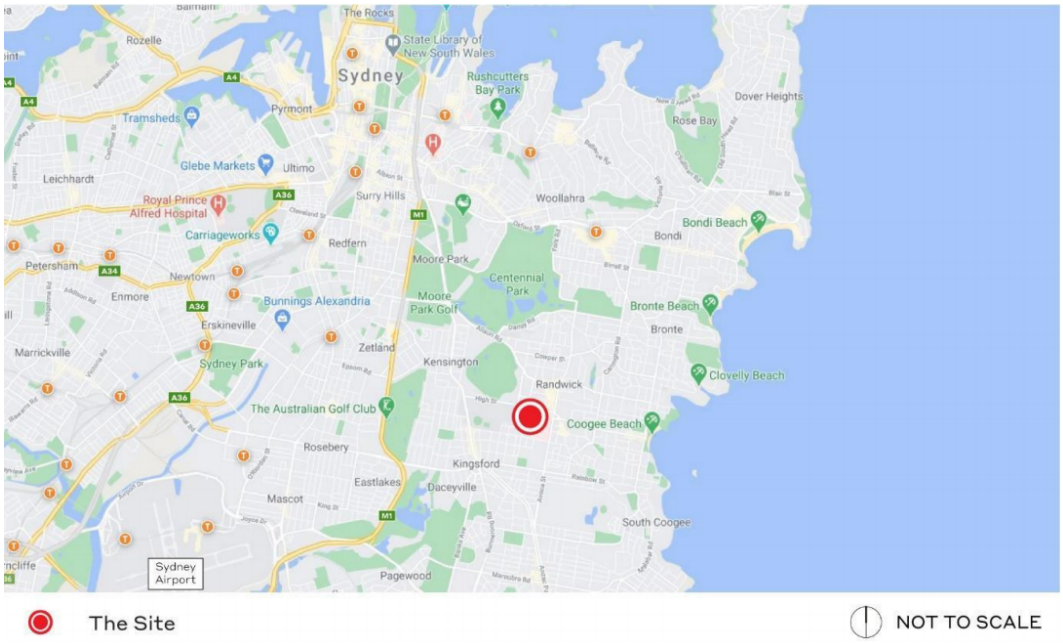

Figure 1 – Site context

Source: Google maps and Ethos Urban

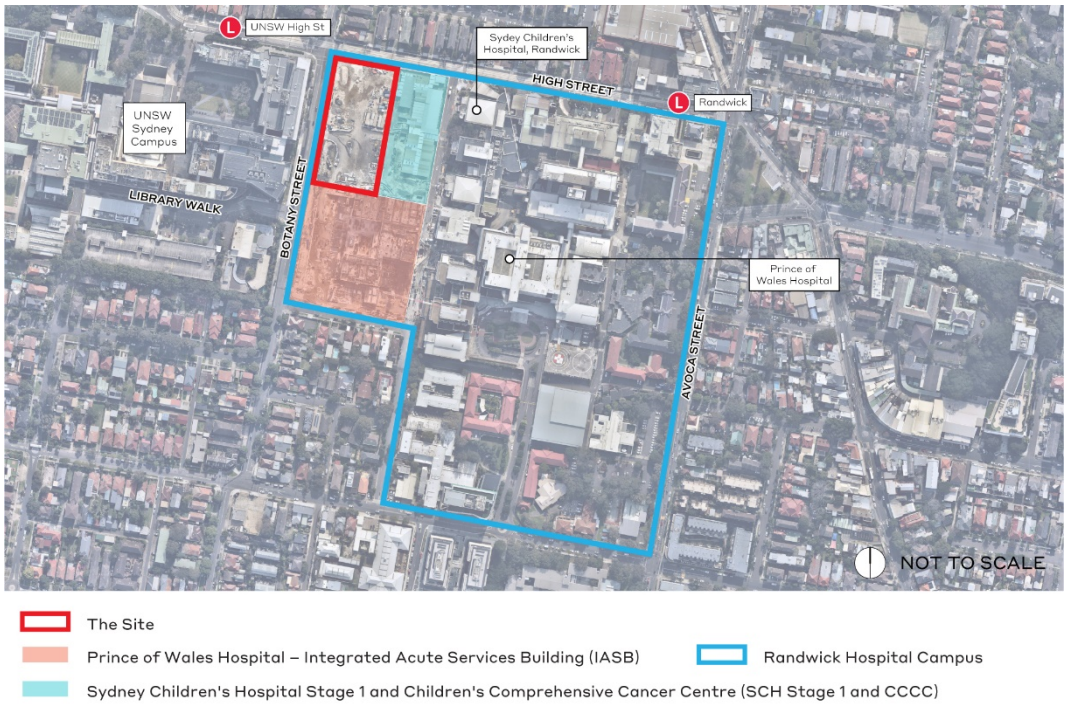

Figure 2 – Site aerial

Source: Nearmaps and Ethos Urban

Secretary's Environmental Assessment Requirements

Department of Planning, Industry and Environment (DPIE) has issued Secretary's Environmental Assessment Requirements (SEARs) for the proposed development. This report has been prepared having regard to the relevant SEARs as follows:

SEAR	Comment / Reference
SSD-10822510 HTH – Issued SEARs 4. Environmental Amenity	Provide: • an analysis of proposed lighting that identifies measures to reduce spill into the surrounding sensitive receivers

Summary of Mitigation Measures

Based on the findings and recommendations of this report, the following measures are suggested to mitigate the identified impacts of the development:

Mitigation Measure
All external and landscape lighting will be cognisant of glare through obtrusive lighting and designed to AS4282 "Control of the obtrusive effect of outdoor lighting". Compliance will be achieved through a number of means including directional luminaire selection with appropriate cut off angles and additional glare shields to reduce the upward light component, and lighting control measures to optimise usage. Refer to the following sections for more information.

Lighting Strategy

Building Perimeter

External lighting will be provided around the perimeter of the UNSW HTH in accordance with AS/NZ 1158. Entrances to the building will be illuminated through coordinated internal and external lighting schemes. Lighting provisions will be coordinated with access control provisions required at building entry points.

Building entry points are classified as the start of Formal Walkways and will exceed the requirements of a P1 lighting subcategory.

Connecting elements across the building perimeter largely include ramps and stairs, such as the North West corner of the development, and entering the End of Trip facilities, and are therefore classified as a P9 lighting subcategory.

Building Perimeter lighting will be interfaced and controlled by the UNSW Randwick Campus Centralised Lighting Control System. This system controls all lighting fittings across the campus which provide lighting for pedestrians. A combination of photocells and timeclock will provide inputs with manual override functionality.

Roadway luminaires installed adjacent to the development will be considered to optimise the quantity of luminaires and resulting levels of illumination across the area.

Plaza

External walkways across the plaza will be illuminated to meet the requirements of AS/NZ 1158 as a minimum, depending on the appropriate categories, through a combination of lighting techniques using pole, wall and bollard luminaires.

Key walkways surrounding the perimeter of the UNSW HTH building will be classified as Formal Walkways and will exceed the requirements of a P1 lighting subcategory, with minor Informal Walkways meeting the requirements of a P2 lighting subcategory through the plaza. No pedestrian area will be lit to a standard less than P3.

External walkways across the plaza will be coordinated with the SCH Stage 1 and CCCC adjacent property to optimise the quantity of luminaires across the area and provide seamless transitions between lot boundaries.

Pole mounted luminaires will be considered as being combined with other services such as CCTV mounting locations and will be rationalised as far as possible. The luminaires will be vandal and corrosion resistant, weatherproof and UV stable. The maintenance strategy and location of luminaires will be coordinated with the UNSW Estate Management team to ensure easy access for maintenance and within the limits of the WHS requirements of UNSW.

The scheme across the Plaza will complement the landscaping to create interest and an atmosphere which encourages people to spend time there following sundown. The lighting scheme will be understanding of the planter and vegetation growth. Landscaped areas not occupied by people will not target a specific illuminance level.

A food and beverage area will be located within the building facing onto the Plaza which will have a localised lighting level of P1 subcategory.

Illumination levels shall also be coordinated with the development's CCTV surveillance strategy, where the minimum horizontal and vertical lux level will be coordinated with the CCTV camera specification.

The Plaza lighting will be interfaced and controlled by the UNSW Randwick Campus Centralised Lighting Control System. This system controls all lighting fittings across the campus which provide lighting for pedestrians. A combination of photocells and timeclock will provide inputs with manual override functionality.

Loading Dock Entrance

The loading dock entrance will be illuminated to meeting AS1680.2.1 "Interior and workplace lighting". Illumination levels adjacent to the external space will consider adaptation between the internal and external environments.

Loading dock lighting will be provided by high level luminaires mounted up to the entry point.

The loading dock lighting will be controlled via time clock, photocell and manual override.

The external ramping and vehicular roads outside of the UNSW HTH Loading Dock entrance is being constructed under a separate project and subject to a discreet planning application.

Accent Lighting

Decorative accent and feature lighting will be utilised to enhance the pedestrian experience, provide visual cues to assist in people's orientation, and to highlight architectural significance; however, these strategies will be used sparingly to ensure compliance with NCC and to achieve targeted ESD credits. Accent lighting will be provided through a combination of up and down lighters.

Accent Lighting will be interfaced and controlled by the UNSW Randwick Campus Centralised Lighting Control System; however these circuits will be separately controlled from functional lighting. A combination of photocells and timeclock will provide inputs with manual override functionality.

Efficient LED light sources will be used throughout the development.

All external and landscape lighting will be cognisant of glare through obtrusive lighting and designed to AS4282 "Control of the obtrusive effect of outdoor lighting". Compliance will be achieved through a number of means including directional luminaire selection with appropriate cut off angles and additional glare shields to reduce the upward light component, and lighting control measures to optimise usage.

Please let me know if further information with respect to the external lighting strategy across UNSW HTH is required.

Yours sincerely

Ryan Fisher
Senior Engineer

cc Mairead Hogan (Arup)
Shane McLoughlin (UNSW)
Remus Tutor (UNSW)
David Morgan (UNSW)
Claude Pelosi (UNSW)