Prince of Wales Hospital State Significant Development
Environmental Impact Statement

Avoca and High Streets, Randwick

Stage 2 Development of the Nelune Comprehensive Cancer Centre and Australian Advanced Treatment Centre (NCCC & AATC)

Submitted to the Department of Planning and Infrastructure
On Behalf of Health Infrastructure

November 2013 ▪ 11422

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Date 23/05/13

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Date 01/11/13

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Statement of Validity

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Address	Level 7, 77 Berry Street, North Sydney
In respect of	State Significant Development Development Application for a Hospital Building
Applicant name	Health Infrastructure
Applicant address	Level 8, 77 Pacific Highway, North Sydney
Land to be developed	Avoca and High Streets, Randwick, Prince of Wales Hospital
Proposed development	Stage 2 Development of the Nelune Comprehensive Cancer Centre (NCCC) and Australian Advanced Treatment Centre (AATC)
Environmental Impact Statement	An Environmental Impact Statement (EIS) is attached.
Certificate	I certify that I have prepared the content of this EIS and to the best of my knowledge: ▪ It is in accordance with Part 4 of the *Environmental Planning and Assessment Act 1979* and Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*. ▪ It is true in all material particulars and does not, by its presentation or omission of information, materially mislead.
Signature	
Name	Oliver Klein
Date	01 November 2013

Executive Summary

Purpose of this Report

This Environmental Impact Statement (EIS) in relation to development at the Prince of Wales Hospital (POWH) at Randwick is submitted to the Minister for Planning and Infrastructure for a State Significant Development Development Application pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) *and State Environmental Planning Policy State and Regional Development 2011* (SEPP SRD). The proponent is Health Infrastructure.

The EIS relates to the development of an 11 level building named the Nelune Comprehensive Cancer Centre (NCCC) and Australian Advanced Treatment Centre (AATC) (previously called the Comprehensive Cancer Care and Blood Disorder Centre under the earlier Stage 1 SSD DA). The project has been separated into two stages, which include:

- Stage 1 – excavation and construction of new bunkers and an underground tunnel corridor connecting to the existing Radiotherapy and Oncology Building and an open fire stair at the north eastern corner of the site; and
- Stage 2 –demolition of the existing Radiation and Oncology Building and the construction of the remainder of the building.

The EIS for the Stage 1 development was submitted to the Minister for Planning and Infrastructure on 4 April 2012. The delegate of the Minister granted approval on 31 July 2012, subject to conditions.

It is now proposed to seek approval for an 11 level building, including two basement levels and a level of plant, for the NCCC and AATC under Stage 2. This EIS only relates the assessment of the Stage 2 proposal and should be read in conjunction with the Stage 1 consent, this EIS and associated appendices.

The Stage 2 works have a Capital Investment Value (CIV) of approximately $73 million and is therefore classified as State Significant Development pursuant to Schedule 1 of SEPP SRD. A summary CIV statement is provided at **Appendix A**.

A request for amended Director-General's Environmental Assessment Requirements (DGRs) for Stage 1 and Stage 2, was issued on 21 February 2012. Accordingly, the Director General's Requirements were provided to Health Infrastructure on the 23 February 2012 - see **Appendix B**.

Project Outline

The development involves the construction of the Nelune Comprehensive Cancer Centre (NCCC) and Australian Advanced Treatment Centre (AATC) incorporating 11 levels, with 9 levels above ground including the roof and plant level. The construction of the building has been divided into two stages to enable development, excavation works and decanting of the existing services before the construction of the main building commences.

This EIS addresses the requirements for the Stage 2 works, which includes the following:

- construction of the 11 level NCCC and AATC building;
- demolition of the existing Radiation and Oncology Building;
- modification to the existing staff car park, incorporating a vehicle drop off area; and
- courtyards and landscaping.

The Stage 2 building works will be located where the existing Radiation-Oncology building is sited, being to the east of Building 3 and to the west of the Superintendent's Cottage (refer to **Figure 1**).

Figure 1 – Development Location

Source: Rice Daubney

Once the Stage 1 works are completed and commissioned, the existing Radiation and Oncology Department will be decommissioned and demolished to allow the construction of the Stage 2 building works for the NCCC and AATC. Architectural Plans and Design Statement have been prepared by Rice Daubney, and are presented at **Appendix C**.

The Site

The POWH Campus is bounded by Avoca Street to the east, High Street to the north, Barker Street to the south and Hospital Road to the west. The Campus is located in the northern part of the Randwick Local Government Area (LGA).

The development site is located within the north-eastern quadrant of the Hospital Campus. The development site is bounded by Avoca and High Streets, located to the east and north of the development site, respectively.

The land is part of one large lot with an overall area of 14 hectares and is owned by NSW Department of Health. The site is legally described as Lot 1 in DP 870729.

Planning Context

Section 6.0 of this EIS considers all applicable legislation in detail. The proposal complies with all relevant current planning controls.

The site is zoned SP2 - Health Services Facility under the Randwick Local Environmental Plan 2012. The proposal is permitted with consent and meets the objectives of the subject zone.

Environmental Impacts

This EIS provides an assessment of the environmental impacts of the project in accordance with the Director-General's Environmental Assessment Requirements. It also sets out the undertakings made by Health Infrastructure to manage and minimise potential impacts arising from the development.

Conclusion

The proposal will provide a significant extension and upgrade of key hospital services for the POWH. The potential impacts of the development are able to be managed through proposed Mitigation Measures outlined in Section 9.0. Given the planning merits of the proposal, the proposed development warrants approval by the Minister for Planning and Infrastructure.

1.0 Introduction

1.1 Background

The Prince of Wales Hospital (POWH) Campus is a tertiary referral teaching hospital that receives a high percentage of complex patients requiring specialised services for cancer through a referral pattern endorsed by NSW Health state-wide planning. This is in addition to the cancer services that are required by patients drawn from within the Northern Hospitals Network (NHN) of the South East Sydney Local Health District (SESLHD), which represents the primary catchment. The SESLHD also provides selected services on a state-wide level including Cancer Genetic Services.

The existing cancer services on the Hospital site have been developed in a fragmented manner over time. Services are currently located in more than eight separate locations across the Hospital Campus in buildings constructed between the 1950s and 1970s.

To sustain the level of demand, and the contemporary requirements for the treatment of cancer patients and blood disorders, the POWH needs to expand, restructure and reorganise its services into the proposed Nelune Comprehensive Cancer Centre (NCCC) and Australian Advanced Treatment Centre (AATC).

1.2 Stage 1

The Stage 1 development of the project incorporated the excavation and construction of new bunkers and an underground tunnel corridor connecting to the existing Radiotherapy and Oncology Building. A SSD application was submitted to the Department of Planning and Infrastructure (DP&I) on the 4 April 2012. Approval was granted by the Minister for Planning and Infrastructure's delegate on the 31 July 2012, subject to conditions of consent. Works have commenced on site.

Details on the relationship between Stage 1 and Stage 2 are further discussed at Section 3.9 of this report.

1.3 Overview of the Proposal

The proposed development involves the Stage 2 works connecting to the Stage 1 works for the NCCC and AATC. Plans of the proposed development have been prepared by Rice Daubney and are included at **Appendix C**. The proposed works include:

- Construction of the 11 level building, with 9 levels above ground including one level for roof / plant. Levels include the following:
  - Level 0 – NCCC Radiation Oncology;
  - Level 1 – NCCC Administration Offices;
  - Level 2 – NCCC Meet and Greet entrance and clinics;
  - Level 3 – NCCC Clinics;
  - Level 4 – NCCC Ambulatory Care;
  - Level 5 - AATC Outpatients unit;
  - Level 6 - AATC Inpatients unit;
  - Level 7 – Future clinical offices and consulting suites;
  - Level 8 – Future clinical offices and consulting suites;
  - Level 9 – Future clinical offices and consulting suites; and
  - Level 10 – Plant and Roof space.

- Demolition of the existing Radiation and Oncology Building.
- Modification to the existing staff car park, incorporating a vehicle drop off area.
- Courtyards and landscaping provided on Levels 0 and Level 2 and above the Stage 1 roof area.

The NCCC and AATC building is intended to provide the highest quality of cancer treatment care to address the increasing demands of the locality and region. It will support the evolving models of care including delivering additional services through ambulatory care and an increase in the proportion of in-home services.

The various services the new Centre will provide are as follows:

- Adolescent and Young Adult Services;
- Allied Health Services;
- Breast Cancer Care Services;
- Cancer Genetic Services (Statewide);
- Cancer Outreach Team;
- Clinical Trails;
- Diagnostic and interventional imaging provided by medical imaging and nuclear medicine services on site;
- Gynaecological and Medical Oncology Services;
- Haematology blood disorders;
- Inpatient services;
- Palliative Care Services;
- Pathology Services; and
- Radiation, surgical cancer and Thalassemia services.

1.4 Analysis of Alternative Sites

The location of the site and siting of the development was chosen for the following key reasons:

- physical site characteristics;
- its ability to meet the functional and operational requirements of existing and future cancer treatment facilities;
- proximity and potential impact on the heritage items and Heritage Conservation Areas, and opportunities as envisaged under the site's Conservation Management Plan;
- the site's capacity to accommodate the development without impeding the current services of the Hospital;
- the ability to take advantage of decanting and staging development to continue the function of the Radiotherapy and Oncology Department and the co-location of the uses; and
- the consideration of the Hospital Masterplan.

As mentioned above, the current services at POWH are significantly fragmented, which impedes delivery of the Hospital's cancer services to the public. In essence, the proposed building has been identified in this location as the existing Radiotherapy and Oncology Building will be able to continue operating whilst the new bunkers (approved as part of Stage 1) are being constructed. Both stages will be connected via an underground passageway to maintain services with minimal

interruption to the Hospital. Once the new bunkers are operating, the existing bunkers can be decommissioned and the new NCCC and AATC can be constructed (via this DA).

The POWH has a Campus-wide Masterplan which establishes a framework for optimising the location of hospital activities. The site is located within the Masterplan's Heritage Precinct, with several local heritage-listed items and buildings within the north-east Precinct. The Masterplan seeks to maintain the heritage significance of these items, whilst emphasising new public pedestrian connections and improving access to the Campus from Randwick Town Centre. The proposal responds to the principles of the Masterplan.

Accordingly, the location of the NCCC and AATC is considered appropriate for the following reasons:

- the development will increase and improve access to the Campus, providing appropriate treatment options and self-sufficiency for tertiary-level cancer services;
- the development has been appropriately staged, which will ensure minimal interruption to the operation of existing services;
- the development will consolidate services from multiple sites across the whole Campus to the one location;
- it will improve the use of existing resources on the Hospital site;
- it satisfies the preferences of the internal and external user groups of the POWH Campus;
- it safeguards and enhances the surrounding heritage buildings and items, as well as the Conservation Area; and
- the area and shape of the site allows for the provision of a new hospital building which meets the design requirements of a cancer treatment centre, whilst not resulting in any significant adverse impacts on surrounding buildings or the surrounding heritage items.

1.5 Objectives of the Proposal

The overarching objective of the proposal is to deliver a high quality state-of-the-art facility that will meet the needs of a modern day cancer service. The new building will sustain the level of demand and the contemporary requirements of patients with cancer. The project will facilitate the expansion of the Hospital and the need to restructure and reorganise the cancer services into a single location on the Hospital site. In addition, the project is driven by the following principles:

- to provide excellence in clinical care;
- to provide excellence in patient focussed service;
- the provision of equity of access; and
- to provide leadership in cancer research for the State.

The development is considered to have State significance and will contribute significant health and social benefit to the locality, region and the State. It is anticipated to provide significant benefits to the local community through:

- increased range and level of Cancer Care health services in the locality;
- improved access to healthcare services;
- improved healthcare and quality of life outcomes; and
- increased employment, education and training opportunities.

1.6 Approval Process

Under *State Environmental Planning Policy State and Regional Development 2011* (SEPP SRD), a project is a State Significant Development (SSD) if it falls into one of the classes of development listed in Schedule 1 of SEPP SRD. 'Hospitals, medical centres and health research facilities' with a capital investment value (CIV) of $30 million or more are identified as SSD under SEPP SRD, and are considered to be development of State significance.

The Stage 2 works have a Capital Investment Value (CIV) of approximately $73 million and are therefore classified as State Significant Development pursuant to Schedule 1 of SEPP SRD. A summary CIV statement is provided at **Appendix A.**

The SSD application will be assessed against the relevant provisions under Part 4 of the EP&A Act. However, in accordance with SEPP SRD the requirements of Development Control Plans (DCPs) will not apply.

A copy of the Director-General's Environmental Assessment requirements is included in **Appendix B**.

2.0 Site Analysis

2.1 Site Location and Context

The POWH Campus is located in Randwick, south-east of Sydney's Central Business District (CBD) and within Randwick Local Government Area (LGA). The Campus includes the Royal Hospital for Women, the Sydney Children's Hospital and the Prince of Wales Private Hospital. The Hospital Campus is approximately 14 hectares in area and is bounded by High Street to the north, Avoca Street to the east, Barker Street to the south and Hospital Road to the west (refer to **Figure 2**).

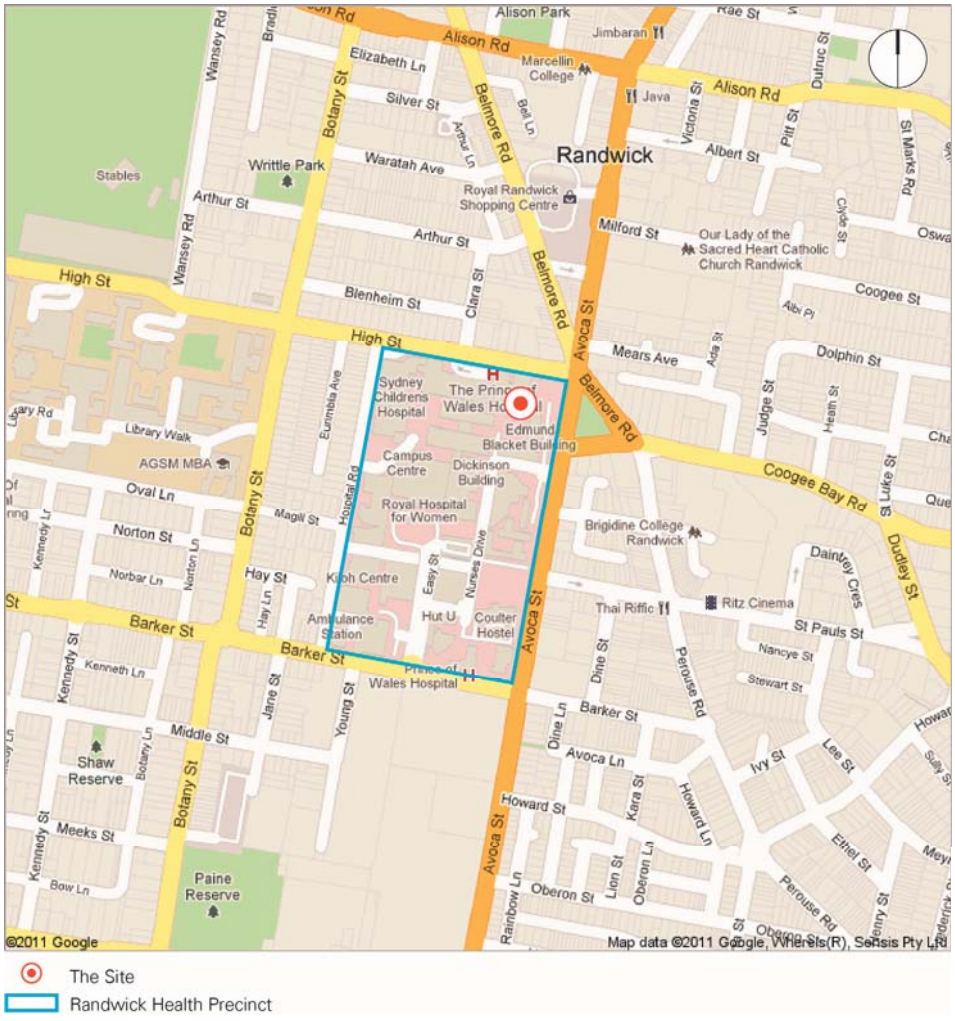


Figure 2 – Location plan

2.2 Site Description

The works will be located in the north-eastern quadrant of the POWH Campus near the junction of High and Avoca Streets. The proposed building will be located on the site of the existing Radiation and Oncology Building (known as Building 3) and to its east between the Superintendent's Cottage and the Edmund Blacket Building (refer to **Figures 3 to 6**). The Superintendent's Cottage and the Edmund Blacket Building are both listed heritage items under Randwick LEP 2012 and are also within the High Cross Heritage Conservation Area, also as identified by Randwick LEP 2012. The development site nominated for the Stage 2 works is shown in **Figure 7**.

Figure 3 – Existing Radiation- Oncology building in the foreground, Building 3 in the background and the edge of the Edmund Blacket Building to the left.

Figure 4 – Existing staff car park and location of the Stage 1 works, Edmund Blacket building the left and Superintendent's Cottage in the background.

Figure 5 – Edmund Blacket building

Figure 6 – Superintendent's Cottage

Figure 7 – Site location of Stage 2 works

Source: Rice Daubney

Existing Development

The co-related Stage 1 approval works have commenced on the site with excavation and construction of the radiation bunkers. The existing Radiotherapy and Oncology Building and the Superintendent's Cottage and the Edmund Blacket Building remain.

Topography

The site sits at a natural high point within the Campus and has a gentle fall of 2–3 metres away from High and Avoca Streets (the north-east) towards the south-west.

Vegetation

The site has minimal vegetation cover and is a largely modified environment with tree plantings. Tree removal across the Stage 1 and Stage 2 site was considered and approved as part of Stage 1.

European Heritage

The development site is located within the High Cross Heritage Conservation Area and is located in what is known as the 'Heritage Precinct' in the Hospital Masterplan.

The development site is in proximity to four heritage listed items identified under Randwick Local Environmental Plan 2012. These items include:

- Edmund Blacket Building;
- Superintendent's Residence (or Cottage);
- Catherine Hayes Hospital; and

- Prince of Wales Hospital Gate and Fence.

The location of these items relative to the development site is shown at **Figure 8.**

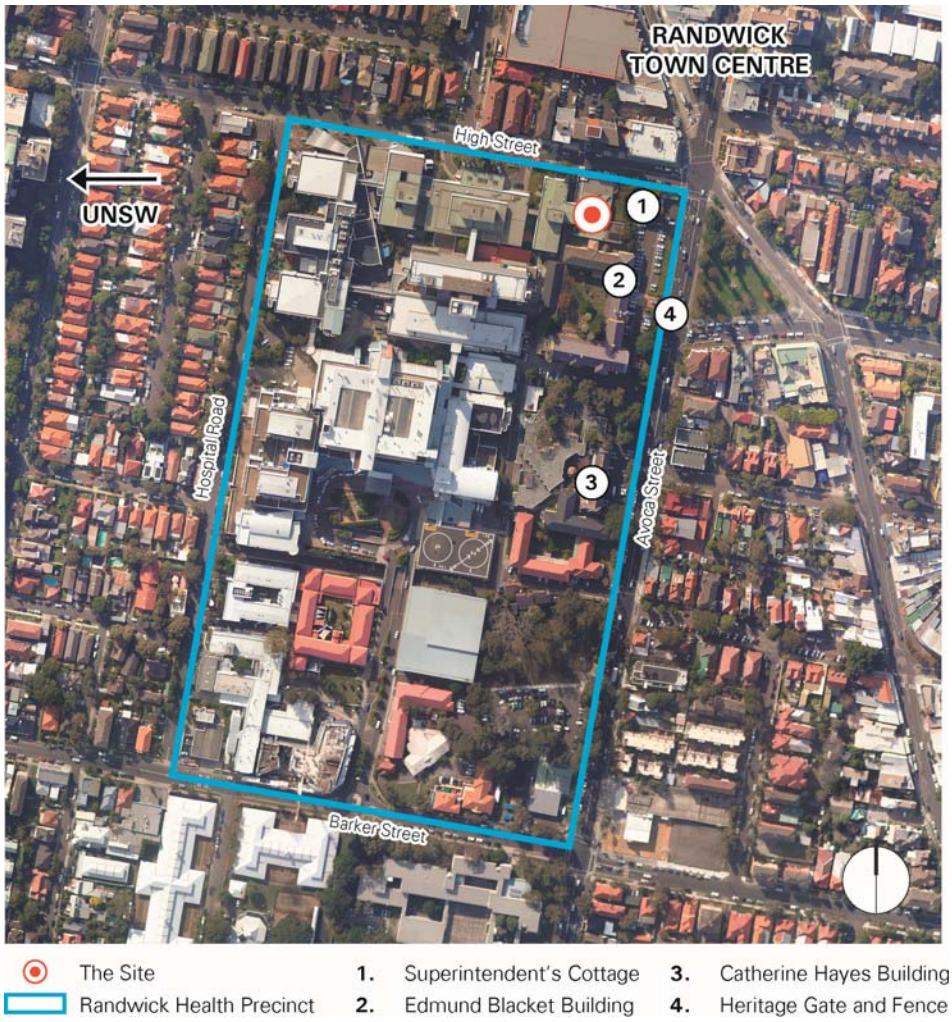


Figure 8 – Heritage Items in proximity to the site

The Superintendent's Cottage and Edmund Blacket Building are both listed on the Department of Health's s170 register. The listing on the register requires NSW Health to manage the heritage significance of these items into the future.

Aboriginal Heritage

The POWH Campus falls within the boundaries of the La Perouse Local Aboriginal Land Council area, and has traditional and historical associations with the Dharawal people and the wider La Perouse community. The site is situated within a broader sand dune system that extends over much of eastern Sydney.

Vehicular and Pedestrian Access

The following access arrangements are provided via Avoca Street:

- Vehicular and pedestrian access at Gate No 6 – this gate provides access for staff and the vehicles operated by the POWH. A concrete median on Avoca Street restricts movements to left in / left out only at this Gate. The car park was demolished under Stage 1 and accommodated 59 spaces. Alternative parking arrangements during the Stage 1 works are being resolved as part of the conditions of consent for Stage 1.

- Pedestrian access – a total of 7 pedestrian access points are provided along Avoca Street including a pedestrian access (Heritage Gate access) which is located north of the Cuthill Road intersection with Avoca Street.

The following access arrangements are provided via High Street:

- Vehicular and pedestrian access at Gate No 5 – This Gate provides access for emergency vehicles and other vehicles.
- Vehicular access at Gate No 4.

Soil and Geotechnical Conditions

The site is underlain by Hawkesbury Sandstone of Triassic age. The formation of the sandstone is typically comprised of medium to coarse grained quartz sandstone with minor shale bands or lenses.

The site is not affected by Acid Sulphate Soils (AAS), and no known ASS occurrences occur on the site based on the NSW Acid Sulphate Soils (ASS) risk mapping (sourced from the Department of Environment, Climate Change and Water ASS mapping, 1994 – 1998), as well as the Acid Sulphate Soils map under Randwick LEP 2012.

Utilities and Infrastructure

The site is currently serviced with water, sewer, telecommunications infrastructure, gas and electrical services.

2.3 Land Ownership and Zoning

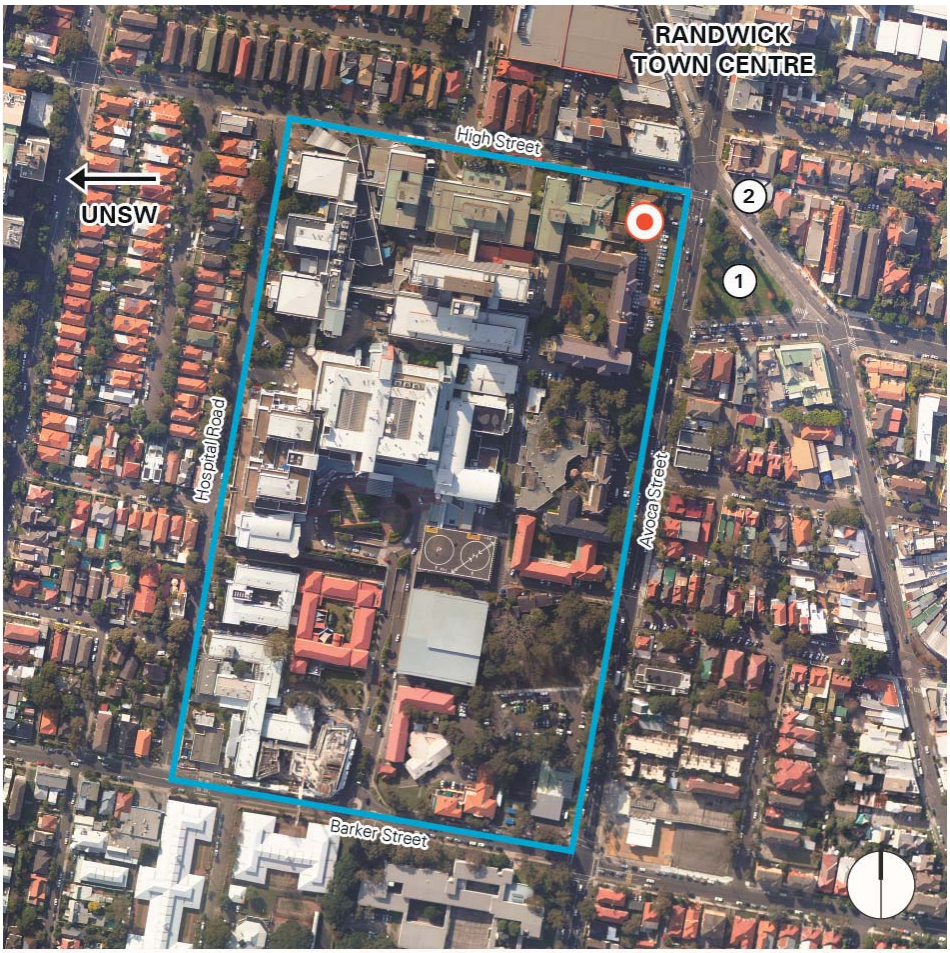
The site for the proposed development is shown in the site survey plan at **Appendix D**. The land is owned by NSW Department of Health and is legally described as Lot 1 in DP 870729.

The site is zoned SP2 Health Services Facility under the Randwick Local Environmental Plan 2012. Hospital development is permissible with consent in this zone.

2.4 Surrounding Development

The immediate environs are largely occupied by medical and educational institutions and associated uses to the north, west and south. The area is known as the 'Randwick Health Hub' or 'Randwick Health Precinct'.

Within the wider locality to the north of the POWH Campus (on the northern side of High Street) is the Randwick Town Centre, which includes the Royal Randwick Shopping Centre (refer to **Figures 9 and 10**). Directly to the north of the site on the northern side of High Street is a two-storey commercial building with ground floor retail uses and an adjoining eight-storey office building (refer to **Figures 11** and **12**). To the east of the development site (on the other side of Avoca Street) is the heritage-listed High Cross Park and single and small multi-unit dwellings (refer to **Figure 13**). Randwick Lodge (a State-listed heritage item) is located diagonally across from the development site, at the junction of Avoca Street and Belmore Road (refer to **Figure 9**). Dwelling houses and the University of New South Wales are located west of the Campus along Hospital Road.



The Site
Randwick Health Precinct

1. High Cross Park
2. Randwick Lodge

Figure 9 – Surrounding development

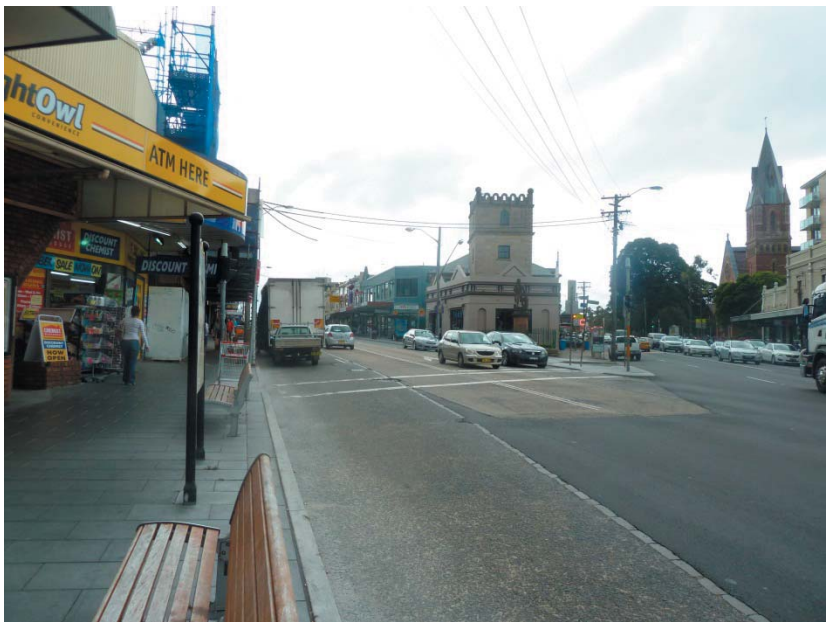


Figure 10 – Randwick Town Centre looking north

Figure 11 – Shops and medical facilities on the northern side of High Street

Figure 12 – Three-storey commercial building with ground floor retail uses on High Street

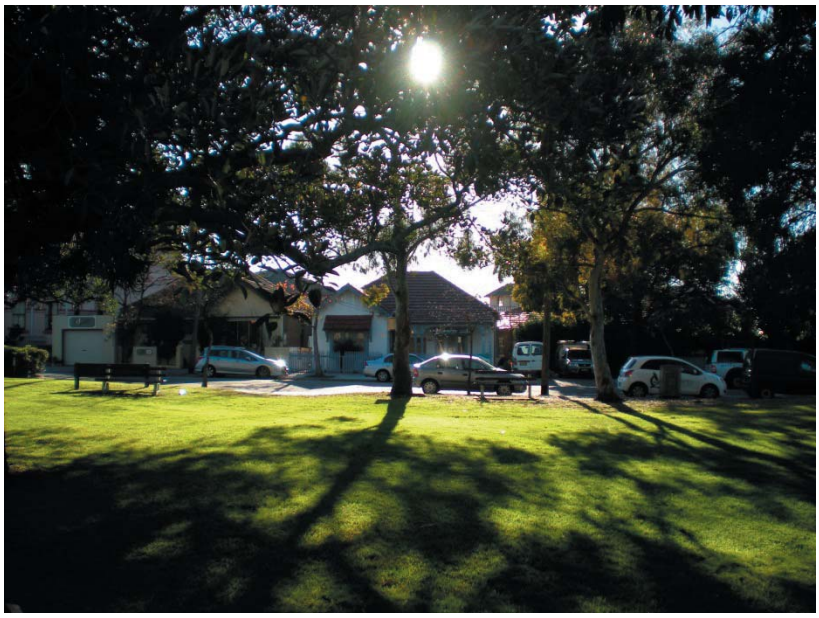


Figure 13 – High Cross Park and residential development on the eastern side of Avoca Road

3.0 Proposed Development

This chapter of the report provides a detailed description of the proposed development. Architectural Plans prepared by Rice Daubney are included at **Appendix C**.

This EIS seeks approval for the Stage 2 works of the NCCC and AATC. The building will be located in the north-eastern quadrant of the POWH Campus. Specifically, the works involve the following:

- Construction of the 11 level building, with 9 levels above ground including one level for roof / plant. Levels include the following:
  - Level 0 – NCCC Radiation Oncology;
  - Level 1 – NCCC Administration Offices;
  - Level 2 – NCCC Meet and Greet entrance and clinics;
  - Level 3 – NCCC Clinics;
  - Level 4 – NCCC Ambulatory Care;
  - Level 5 - AATC Outpatients unit;
  - Level 6 - AATC Inpatients unit;
  - Level 7 – Future clinical offices and consulting suites;
  - Level 8 – Future clinical offices and consulting suites;
  - Level 9 – Future clinical offices and consulting suites; and
  - Level 10 – Plant and Roof space.
- Demolition of the existing Radiation and Oncology Building.
- Modification to the existing staff car park, incorporating a vehicle drop off area.
- Courtyards and landscaping provided on Levels 0 and Level 2 and above the Stage 1 roof area.

Figure 14 provides an indicative view of the proposed development in context to the existing site.

Figure 14 – Indicative view of the Stage 2 development

Source: Rice Daubney

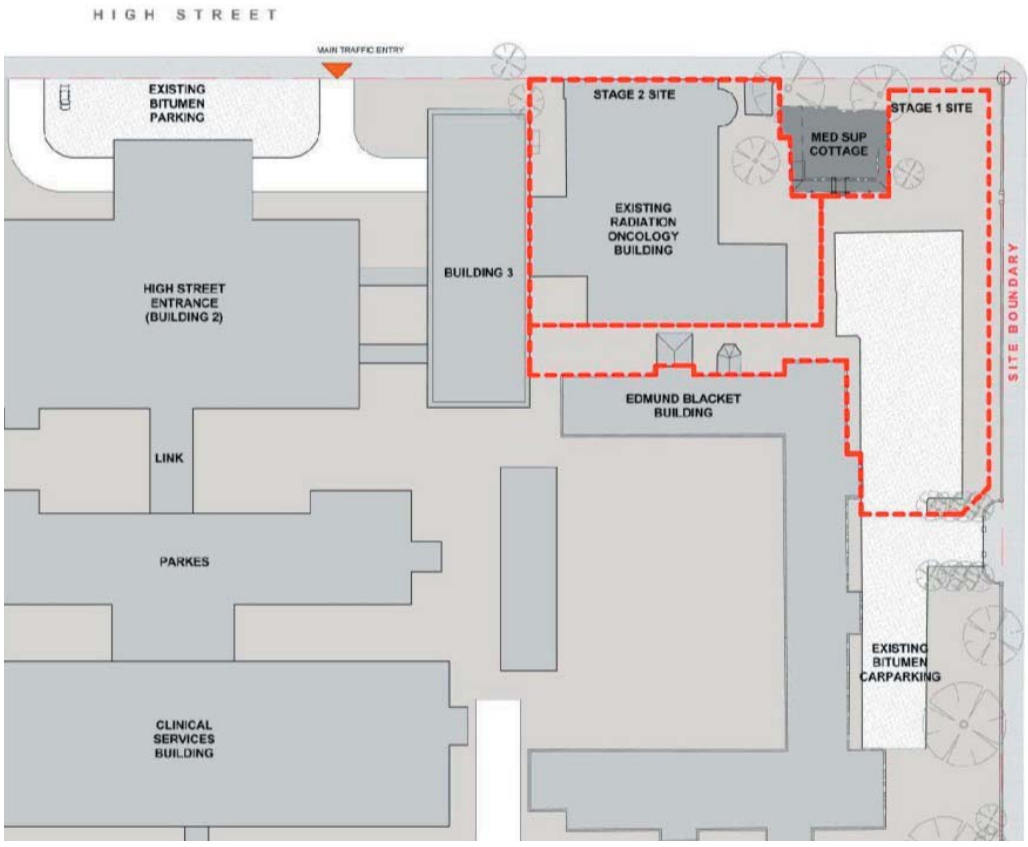


Figure 15 – Stage 2 works in relation to Stage 1

3.1 Building Functionality and Operation

The approved Stage 1 development consists of underground bunkers with a tunnel connection that will connect to Level 0 of the Stage 2 development. Prior to Stage 2 work commencing, the tunnel access will facilitate access into the existing Radiation Oncology building before it is decommissioned and demolished as a part of the Stage 2 development.

The Stage 2 NCCC and AATC, together with the Stage 1 underground Radiation bunkers, will accommodate the following cancer-care operations:

- Radiotherapy planning;
- Radiation therapy;
- Brachytherapy;
- Medical physics;
- Minor procedures requiring anaesthetic support; and
- Radiation research training, including demonstration facility in the research bunker.

The planning and the treatment modalities in the radiation oncology will comprise:

- Initially three, (with the capacity for four) linear accelerators;
- A research bunker;
- Control areas;
- Superficial X-Ray;
- Orthovoltage unit;
- Brachytherapy / procedure room;
- Two Chemotherapy / simulation rooms; and
- Support spaces - unisex and accessible toilets, Nurses Unit Manager office, and patient change booths.

The 11 level building, with 9 levels above ground including one level of plant, will have a main entrance at the proposed eastern elevation, fronting the landscaped courtyard area and the vehicle drop off area. As shown in **Figure 16**, the building will accommodate the following uses per level:

- Level 0 – NCCC Radiation Oncology;
- Level 1 – NCCC Administration Offices;
- Level 2 – NCCC Meet and Greet entrance and clinics;
- Level 3 – NCCC Clinics;
- Level 4 – NCCC Ambulatory Care;
- Level 5 - AATC Outpatients unit;
- Level 6 - AATC Inpatients unit;
- Level 7 – Future clinical offices and consulting suites;
- Level 8 – Future clinical offices and consulting suites;
- Level 9 – Future clinical offices and consulting suites; and
- Level 10 – Plant and Roof space.

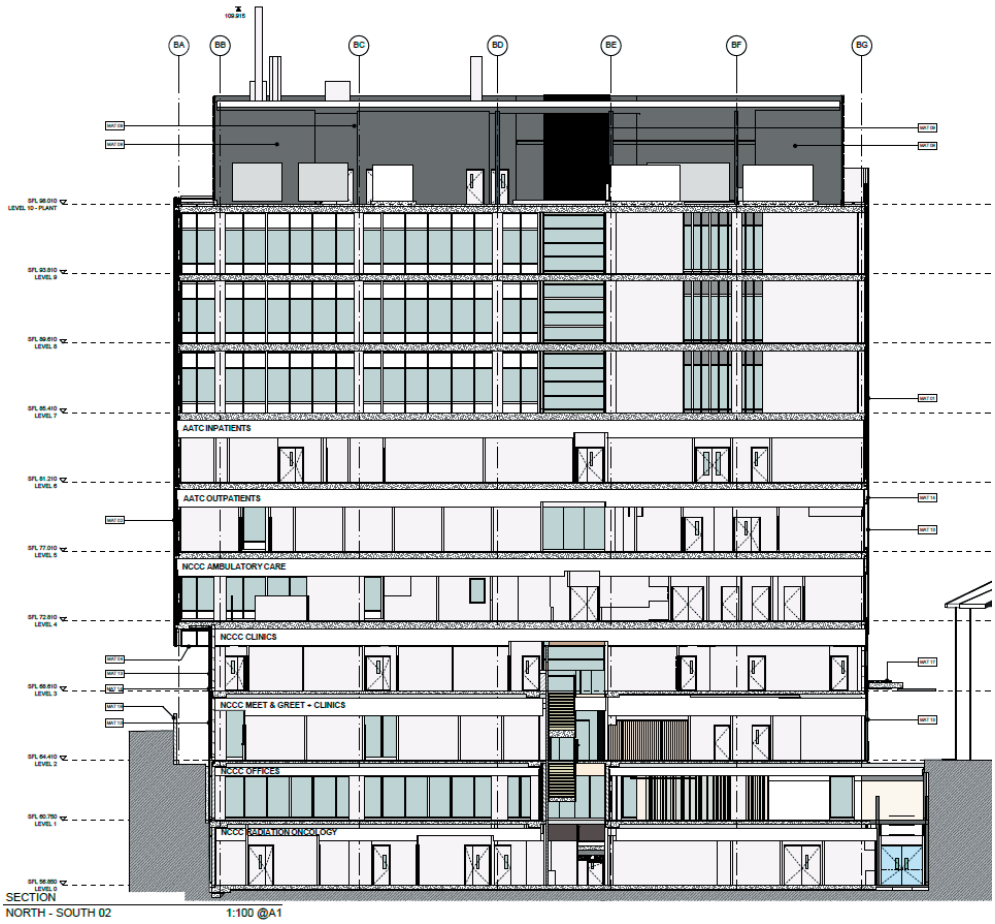


Figure 16 – Proposed north-south section

Source: Rice Daubney

New landscaping will be installed above the Stage 1 works, between the heritage buildings and Avoca Street. In addition to the landscape setting, a vehicular drop off and pick up area will be provided at the entrance of the building in accordance with the cancer guidelines as well as the reinstatement of 20 car parking spaces for patient parking and drop off in proximity to the front entrance of the building.

The landscaping and drop-off and pick up areas will create a new setting which will unify the new building, the Stage 1 works and the heritage buildings.

3.2 Site Preparation, Bulk Earthworks and Remediation

The works will involve the decommissioning and demolition of part of the existing Radio-Oncology Department. This process will commence once the Stage 1 development is built and functioning.

Bulk earthworks to excavate the site between RL 64.410 and RL 56.850 (or 7.5m) will be required for the NCCC and AATC basement levels, to connect with Level 0 of Stage 1.

Remediation works related to Stage 1 have occurred as part of that portion of the project's works. The Stage 2 remediation (if and as required) will commence only once Stage 1 is completed and decanting has occurred prior to demolition of the existing building. Approval is not sought for remediation under Stage 2 of the project.

Tree removal required to facilitate the development was approved under the Stage 1 development. A total of twelve (12) trees on the Stage 1 and 2 development sites will be removed. These trees are identified for removal within the Arborist Report prepared by Moore Tree Consulting included at **Appendix E.** This is included again for reference.

3.3 Landscaping and Public Domain

Oculus has prepared Landscape Plans and a Landscape Statement that outlines the key landscape design elements of the proposal (refer to **Appendix F**). The landscape design has been developed to complement a contemporary, high-tech medical facility, whilst simultaneously providing an appropriate curtilage to the adjacent heritage buildings. The landscape scheme is based on the concept of the various spaces being interconnected, whilst ensuring that each space still has its own character depending upon its location, context and use. The interface and integration with both existing and new buildings has also been carefully considered.

The landscape design for the NCCC and AATC incorporates a series of landscape elements and spaces, including:

- the heritage curtilage around the Superintendent's Cottage to the east, and the Edmund Blackett Building to the south;
- the Avoca Street frontage to the east, including the existing heritage fence and gates;
- the High Street frontage to the north;
- the forecourt space between the new building and Avoca Street;
- the main axis and pedestrian spine connecting through the centre of the building to the pedestrian entry on Avoca Street to the east and to Building 3 and the rest of the Hospital campus to the west;
- the pedestrian spine and patient / staff spaces between the NCCC and Edmund Blacket Buildings;
- the entry / garden space at the corner of Avoca and High Streets; and
- the sunken gardens located on the east, west and north sides of the NCCC and in the centre of the forecourt space.

The materials have been selected to be simple and robust, in order to complement both the existing heritage buildings and the new building, and include:

- stone paving and flagstones;
- wide precast concrete walls, edges and blocks as major east-west directional elements;
- narrow steel edges, steel bollards, concrete kerbs and glass balustrades; and
- precast concrete, timber and steel seating elements.

Similarly, plant species have been selected based on their appropriateness for the locality and site, their suitability for the local climate and the level of maintenance required. Planting design will include:

- formal tree planting in rows to define street edges;
- informal feature tree planting within the Sunken Gardens;
- linear hedging and ground cover planting to street edges, garden spine and public garden; and
- simple turf lawns to the curtilage of heritage buildings.

3.4 Access and Parking

Vehicular Access

During the construction of Stage 2, construction vehicles will not be permitted to use Gate 6. All construction vehicles will park in the work zone along High Street, with construction materials to be lifted from vehicles using a crane. As a result, all on-street parking between Avoca Street and a portion of High Street will need to be temporarily removed to accommodate the proposed 'works zone'.

During operation of the new building, vehicle access for patients will be via Gate 6 (off Avoca Street) or via High Street. All service vehicles will access the current loading dock off Hospital Road for delivery.

Pedestrian Access

Pedestrian access to the NCCC and AATC building will be provided via Gate 6 and via the Heritage Gate. During construction, pedestrians will be diverted to walk on the northern footpath of High Street to avoid conflicts with the works zone.

Parking

During construction of the Stage 2 works, 35 car spaces will be lost from the existing 59 space staff car park. During the operation of the facility, 20 spaces will be re-instated to the north of Gate 6, including 2 disabled spaces for cancer patients pick up and drop off parking. This will result in a net loss of 15 spaces. The 15 spaces will be relocated to a nearby site and the staff parking will also be absorbed within the newly constructed staff car park in front of the new Mental Health Care Unit. This car park consists of 60 spaces and was constructed as Exempt Development under *State Environmental Planning Policy Infrastructure (2007).*

3.5 Water Cycle Management

The site is currently occupied by the existing Radiotherapy and Oncology Building, footpaths and partly impervious landscaping. The existing drainage systems located in the vicinity of the development site include:

- a drainage system discharging to the north into the High Street drainage system;
- a drainage system discharging to the south through the existing car park located to the east of the Edmund Blacket Building; and
- a drainage system discharging to the south-west of the Edmund Blacket Building.

The new drainage system was approved as part of the Stage 1 works, and has the capacity to serve the Stage 2 development. The drainage system is to be located immediately adjacent to the boundary of the Avoca Street road reserve. The drain will run from north to south along the Stage 1 boundary and will collect flow from the Stage 1 paved areas. The drain will discharge to the existing hospital system at the southern end of the car park that will be constructed after the works are completed.

A second drainage run will be provided between the Edmund Blacket Building and the Stage 1 underground bunkers. This drainage run will connect into the proposed drainage system that runs within the eastern site boundary and will in turn connect into the Council drainage system. No augmentation is required to Council's stormwater system.

The site is not subject to flooding or overland flow impacts.

3.6 Environmentally Sustainable Development

The Stage 2 building has incorporated Environmental Sustainable Development (ESD) strategies and principles as defined in clause 7(4) of Schedule 2 of the EP&A Regulations.

The environmental performance of the development will be assessed by using the NSW Health's Engineering Services and Sustainable Development Guidelines (TS11) and Section J - Energy Efficiency of the Building Code of Australia 2010.

In particular, the proposal will achieve ESD principles on an integrated design process with the intention of delivering:

- lower operating costs for energy, water, waste and maintenance;
- improved indoor environmental quality;
- extended life through inherent flexibility and 'future-proofing'; and
- electrical services with efficient lighting, lighting control and energy metering.

The ESD initiatives and principles will be further developed during the construction and the operation of Stage 2 building works.

3.7 Infrastructure and Services

Natural Gas

NDY has prepared a statement at **Appendix G** that addresses the requirements for natural gas augmentation. The Stage 2 NCCC and AATC building will require a separate gas supply connection. The connection to the site will be from the relevant gas infrastructure adjacent the corner of High and Avoca Streets. The infrastructure will accommodate the gas demand for the Stage 1 and Stage 2 developments, with a total preliminary natural gas load estimate of 12,600Mj, or 340m^3/hr. A new gas metre will be located within an internal Gas Meter Room, provided by Jemena.

Power, Electricity and Telecommunications

Two new 100kVA kiosk substations located near Gate 6 will be installed during the Stage 1 works. The location for the kiosk substation is under preliminary review by Ausgrid.

In order to maintain supplies to critical and essential services to the proposed NCCC and AATC building in the event of an electrical outage caused by substation shutdowns and failures, new diesel generators are proposed to be installed in the roof plant space of the Stage 2 building.

Water and Sewer

Water and sewer services were augmented as part of an early works package under a Review of Environmental Factors authorisation. These works involved:

- diverting the existing sanitary drainage lines from the Radiation and Oncology Building to maintain drainage services to the building throughout future development works;
- capping off water and sanitary drainage to the Superintendent's Cottage which will be disused during the Stage 1 NCCC and AATC works and reconnected during Stage 2 works;
- disconnecting and capping of water and sanitary drainage services to the toilets on the northern elevation of the Edmund Blacket Building that are subject of separate earlier approval for demolition; and
- New water and sanitary drainage services to be extended from the existing Hospital infrastructure and connection to all fixtures and fittings within the new toilets in the Edmund Blacket Building.

Sydney Water Corporation water mains are located within Avoca Street and High Street. The 300mm diameter water main located within Avoca Street has adequate capacity to service the works.

SPP Group has provided a Hydraulic Services Statement at **Appendix H** which outlines the consultation to-date with Sydney Water and the works to be carried out to support the Stage 2 development. Further discussion is provided at Section 6.17 of this report.

Stormwater

There are two existing stormwater drainage systems within the extent of the whole NCCC and AATC site boundary, and both of these systems will cater for the Stage 1 and Stage 2 sites.

A new drainage system was provided to serve the Stage 1 works that has also been designed to integrate with the Stage 2 development. SKM has confirmed (see **Appendix I**) that no stormwater capacity upgrades are proposed for the Stage 2 development. However, existing on site stormwater drainage will be impacted during site works and a series of diversions will be required prior the commencement of excavation works.

3.8 Waste Management

3.8.1 Operational Waste

General waste produced by the development will be disposed of in accordance with NSW Health and Infection Control Universal Precautions and held in bins awaiting collection by the POWH staff.

3.8.2 Clinical Waste and Hazardous Materials

The clinical waste will be bagged and sharps will be contained in clearly identifiable yellow colour coding, in accordance with the POWH Waste Management Plan.

The cytotoxic waste will be bagged and the sharps will be contained in a mobile waste bin within a secure area clearly identified by purple colour coding in accordance with Workcover guidelines. The waste will be transported via purple mobile waste bins and held in a secure area awaiting collection by the POWH staff for off-site disposal.

It is estimated that the clinical waste storage provided within Stage 2 may exceed 0.5 tonnes, with an estimated rate of up to 20 vehicle movements of clinical waste per annum. An assessment of these hazardous materials and the

compliance with the relevant Australian Standards and Guidelines is provided at Section 6.16 of this report.

3.8.3 Radioactive Waste

No radioactive waste will be generated by the development through the linear accelerators or the orthovoltage unit. These units generate x-rays by accelerating electrons into a target material, rather than by containing a radioisotopes source. An existing delivery and exchange scheme accredited by the relevant authorities will continue.

3.8.4 Construction Waste

The management of the site during the construction will be undertaken by the head contractor and is yet to be determined. HI will be requiring the preparation of a Waste Management Plan consistent with its typical contractual requirements.

A construction timeframe of approximately 90 weeks is anticipated for the Stage 2 works. The works will generate approximately two x 10m^3 bins of construction waste per week.

3.9 Staging

As described previously, the development of the NCCC and AATC is separated into 2 stages, which will include:

- Stage 1 works – bulk excavation, construction of a new radiation bunkers and underground tunnel connecting to the existing Building 3 (Radiation and Oncology Building). The works will allow concurrent and ongoing use of Building 3; and
- Stage 2 works – the decommissioning of Building 3 and operation of Stage 1 works and the construction of the remainder NCCC and AATC building.

The new Stage 2 building will connect to Stage 1 at Level 0 providing direct access to the existing Stage 1 facility. New landscaping will be installed as part of the Stage 2 works above the Stage 1 site. **Figure 17** below illustrates the relationship of Stage 1 and Stage 2.

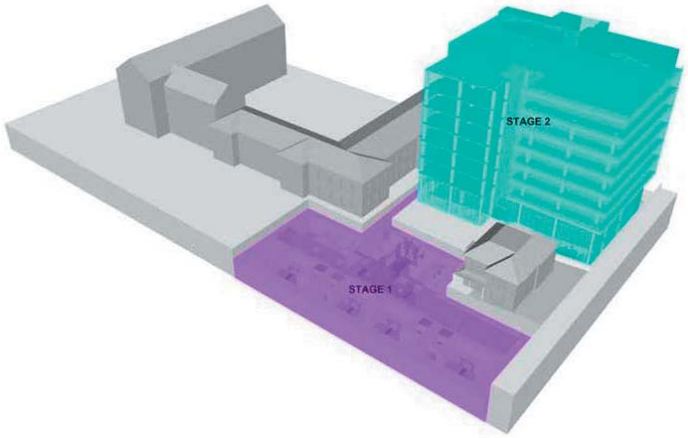


Figure 17 – Stage 1 and Stage 2 Relationships

Source: Rice Daubney

3.10 Relationship of Stage 2 to Stage 1 envelope

At Stage 1, the indicative envelope proposed was for an 8 level form above ground to about RL 103.010 with an indicative or approximate height of 38.6m. The current proposal is generally consistent with that indicative form and is for 9 levels above ground and to RL 105.3, or 40.89m in height. This is a very minor increase of 2.29 metres. This in itself does not equate to another full level having been added, but is the result of further detailed planning around function and servicing of the spaces.

The primary reason for the height difference arises from the need to provide HI's standard 4.2m floor-to-floor heights and to accommodate the proposed rooftop plant design. During the evolution of the design from Stage 1 to Stage 2, detailed planning around the location, configuration and type of critical plant and machinery requirements resulted in a marginally taller building than originally envisaged, noting the Stage 1 envelope was indicative based on understanding of the potential design at that time.

As is discussed elsewhere in the EIS, the impact of the additional 2.29 metres is negligible.

4.0 Consultation

During the course of the design of the building, a series of internal and external consultations have been undertaken with stakeholders. The user groups include:

- Allied Health;
- Standard Rooms;
- Chemotherapy Infusions;
- Patient Services / Welcome / Interaction;
- Radiation Oncology; and
- Whole facility.

These meetings outlined the design of the proposal and discussed the user groups' needs and concerns, which have been incorporated into the design of the project.

Relevant public authorities were notified and consulted during the design process (such as Sydney Water), to confirm existing services capacities. In addition, the project team has consulted with Randwick City Council, Transport for NSW, Roads and Maritime Services and the Heritage Council regarding the details of the proposal.

A summary of the consultation undertaken to-date with Council and Agencies is provided below, and combined meeting minutes are provided at **Appendix J**.

4.1.1 Randwick City Council Consultation

A meeting was held with Council officers on 14 September 2012. The Council's comments were:

- Generally not concerned about size of the building
- Comments related to relationship with the masterplan and the need to consider it in the application.
- Relationship to buildings across the road and shadow impacts.
- Agreed with improved landscaped comments from Heritage Office.
- Need to consider the light rail potential along high street.

4.1.2 Transport for NSW and Roads and Maritime Services

Health Infrastructure met with Transport for NSW (TNSW) on the 9 April 2013. The main objective of the meeting was to discuss the implications of the light rail network provisionally proposed to run along High Street that is intended to commence construction in 2014.

Health Infrastructure will continue to liaise with TNSW to gain further understanding to and on the implications of the light rail proposed along High Street.

4.1.3 Roads and Maritime Services

Aurecon has also liaised with the Road and Maritime Services (RMS) during the preparation of the Traffic Impact Assessment, and a copy of this assessment has been provided to the RMS for their information. Further, a meeting was held with the RMS on 26 September 2012.

As outlined in the minutes, the RMS queried the loss of parking and the management of this parking. It was explained that this parking loss will be located in identified sites at the Hospital Campus. This is further addressed in Section 6.5.3 of this report. The RMS noted that certain licences and plans will need to be submitted and approved by the RMS prior to the commencement of works. This forms part of the Mitigation Measures at Section 9.0.

4.1.4 Office of Environment and Heritage

The Office of Environment and Heritage (OEH) were consulted as per below:

Heritage Office / Heritage Council

A number of meetings and presentations were held with the Heritage Branch and the Heritage Council to guide the formulation of the design of the proposed Stage 2 building. These meetings included:

- Meeting on the 1 May 2012 with officers of the NSW Heritage Branch;
- Meeting, site inspection and presentation on 4 September 2012 with the Chairman of the NSW Heritage Council and Officers of the NSW Heritage Branch;
- Meeting on the 11 March 2013 with Senior Officers of the NSW Heritage Branch; and
- Presentation on the 1 May 2013 to the NSW Heritage Council and Officers of the NSW Heritage Branch.

As outlined in the meeting minutes at **Appendix J**, and within the Architectural Design Statement prepared by Rice Daubney at **Appendix C**, the Heritage Office was generally supportive of the proposed design, including the envelope, bulk and scale of the building, but advised that the new building's potential dominance over heritage elements in the precinct would need be considered.

The members of Heritage Council also raised some concerns, including:

- Removing parking from the front of the Edmund Blacket Forecourt;
- Continuing the Heritage paving for the full extent of the Edmund Blacket Building;
- Enhancing the entrance zones onto the site;
- Rationalising the planting scheme;
- Possible provision of the porte cochere;
- The base of the building should be more grounded with adjoining building, including the base, verandah and eaves;
- The articulation of the east façade requires further rationalisation; and
- The material selection should not replicate or mimic the heritage buildings rather they should complement them.

The above considerations have been adopted where possible, however the nature of the proposed development has had regard to the function of the hospital building as a provider of services for severely ill patients. As such, the issues in relation to the car parking and porte cochere have not been able to be accommodated in the design. These and further design considerations are addressed within the Architectural Design Statement at **Appendix C**.

5.0 Director-General's Environmental Assessment Requirements

On 23 February 2012, the Director-General of the Department of Planning and Infrastructure issued the requirements for the preparation of the Stage 1 and Stage 2 Environmental Impact Statements. A copy of the DGRs is included at **Appendix A**.

Table 1 provides a detailed summary of the individual matters listed in the Stage 2 DGRs and identifies where each of these requirements has been addressed in this report and the accompanying technical studies.

Table 1 – Director General's Requirements

Requirement	Location in Environmental Assessment	
General		
The EIS must meet the minimum requirements in Schedule 2 of the Environmental Planning and Assessment Regulation 2000, specifically: ▪ Specification in clause 6; and ▪ Specifications in parts (1) and (4) of clause 7.	Pages i, ii, iii	
Statement of Validity	Page i1	
Quantity Surveyor's Certificate	Appendix A	
Site Analysis	Section 2.0	
Description of the Proposed Development	Section 3.0	
Assessment of the Key Issues	Section 6.0	
Conclusion and Justification	Section 8.0	
Mitigation Measures	Section 9.0	
Key Issues	Report	Technical Study
1) Relevant Environmental Planning Instruments (EPIs); and 2) Policies, Guidelines and Planning Agreements	Section 6.0	-
3) Built Form and Urban Design ▪ Address the height, bulk and scale of the proposed development within the context of the locality including existing hospital buildings on site and adjoining residential and commercial developments. ▪ Design quality, with specific consideration of the overall site layout, setbacks, axis, vistas and connectivity, open spaces and edges, primary elements, gateways, façade, rooftop, mechanical plant, massing, setbacks, building articulation, materials, choice of colours, landscaping, safety by design, public domain and compatibility with surrounding development. ▪ Details demonstrating the relationship with Stage 1 development.	Section 6.1	Appendix C
4) Ecologically Sustainable Development (ESD) ▪ ESD principles within Schedule 2 of the Environmental Planning and Assessment Regulation 2000 incorporated in the design, construction and ongoing operation phases; ▪ In accordance with *NSW Health's Engineering Services*	Section 6.3	-

Requirement	Location in Environmental Assessment	
and Sustainable Development Guidelines (TS11)		
5) Noise and Vibration ▪ Acoustic investigation ▪ Noise generated at all stages of construction and during operation including the new radiotherapy bunker and cumulative impact of all plant equipment operating simultaneously. ▪ Identify residential effects properties. ▪ Relevant Policies and Guidelines	Section 6.4	Appendix L
6) Transport and Accessibility (Construction and Operation) ▪ Address the implications of the development on non-car travel modes; ▪ Access and parking ▪ Provide accurate details of daily vehicle movements including emergency vehicles. ▪ Service vehicle movements. ▪ Address any impacts on the operation of Avoca Street, other local roads in the vicinity of the access point and vehicle within the Hospital. ▪ Provide a draft Construction Traffic Management Plan	Section 6.5	Appendix M
7) Heritage ▪ Impact of the proposed on the heritage significance of any heritage items and or conservation areas heritage significance on any heritage items / conservation areas in accordance with the guidelines in NSW Heritage Manual and relevant Council LEPS and DCPS. ▪ Consideration of the new building to adjacent heritage items ▪ Consideration of archaeological potential of the area and potential impact of the proposal.	Sections 6.6, 6.7 and 6.8	Appendices K, U and V
8) Landscaping ▪ Addressing potential impact on adjacent / nearby trees in Significant Tree Register ▪ Provide Tree Survey	Section 3.3	Appendix F
9) Operational Management ▪ Noise from plant and equipment ▪ Radiation, chemical and biological hazards ▪ Emergency evacuation procedures ▪ Ongoing operation of hospital services throughout the construction period and how it will be amalgamated with Stage 1 development.	Sections 6.4, 6.11 and 6.16	Appendices L, N and P
10) Waste	Section 6.15	-
11) Infrastructure and Utilities	Section 6.17	Appendices G, H ,O

Requirement	Location in Environmental Assessment	
▪ Consult relevant authorities ▪ Provide an Integrated Water Management Plan		
12) Hazards ▪ SEPP 33 Assessment	Section 6.16	Appendix O
13) Sediment, Erosion and Dust controls (Construction and Excavation)	Section 6.18	Appendix I
14) Stormwater Drainage ▪ Drainage concept plan	Section 6.18	Appendix I
Plans and Documents ▪ Transport and Traffic Impact Assessment; ▪ Heritage Impact Assessment & Statement of Heritage Impact; ▪ Construction and Operational Waste Management Plan; ▪ Hazards Impact Assessment; ▪ Noise Impact Assessment; ▪ Shadow Diagrams; ▪ Landscape Plan; ▪ Stormwater Concept Plan; and ▪ Survey Plan to AHD.	-	Appendices C, D, F, I, K, L, M, and O.
Consultation - Randwick City Council ; - Transport for NSW; - Roads and Maritime Services; - Office and Environmental Heritage; - Heritage Council of NSW; - Sydney Water; and - The local community.	Section 4	Appendix J

6.0 Environmental Assessment

This section of the report assesses and responds to the environmental impacts of the proposed development. It addresses the matters for consideration set out in the DGRs (see Section 5.0).

The Mitigation Measures at Section 9.0 complement and support the findings of this section.

The DGRs require the following legislation, strategies and planning instruments, which are relevant to the proposed development to be addressed:

- EP&A Act;
- NSW State Plan (NSW 2021);
- Metropolitan Plan for Sydney 2036 (note: There is a current Draft Metropolitan Strategy for Sydney to 2031 that was released March 2013 and is on public exhibition until 31 May 2013);
- Draft East Subregional Strategy;
- State Environmental Planning Policy Infrastructure 2007 (SEPP Infrastructure) ;
- State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33);
- State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55);
- Randwick Local Environmental Plan 1998 (note now repealed and replaced with Randwick Local Environmental Plan 2012);
- Randwick Health Campus Masterplan Principles Review (2008);
- Randwick Education and Health Specialised Centre Discussion Paper and Precinct Plan;
- Council's Section 94A contributions plan;
- NSW Groundwater Policy Framework Document – General; and
- NSW Groundwater Quality Protection Policy.

The proposal's consistency with these provisions is summarised in **Table 2**.

Table 2 – Planning Instrument and Policies

Instrument/Strategy	Comments
Strategic Plans	
NSW State Plan (NSW 2021)	NSW 2021 is a 10 year plan to rebuild the economy, return quality services, renovate infrastructure, strengthen our local environment and communities and restore accountability to Government. A section of the Plan is devoted to the delivery of Health, and a key component of this is to restore confidence in the public health system by rebuilding hospitals and health infrastructure. This will help reduce hospital waiting times and help to establish a healthier community. The proposed development is evidently consistent with the goal of the State Plan. The Plan identifies a number of targets to encourage the higher use of public transport. The proposed development will not have an impact on the existing number of staff or patients to the site, therefore the existing public transport facilities will still operate at a good level of service and the Hospital will continue to encourage the higher use of public transport for staff and visitors.
Metropolitan Plan for Sydney 2036	In December 2010, the NSW Government released its Metropolitan Plan for Sydney 2036. The Metropolitan Plan provides commentary and direction for the next 25-30 years at a regional level on issues such as land use, economic development, jobs, transport, innovation, centres and corridors, and residential

<table>
<tr><th>Instrument/Strategy</th><th>Comments</th></tr>
<tr><td></td><td>areas within Sydney.
The Metropolitan Plan sets the planning context for the provision of suitable health facilities in Sydney. Major health facilities are to be clustered around existing health precincts.
The DA is consistent with the Plan in that it will:
▪ contribute to important social infrastructure within the region;
▪ address the current needs and future projected demand; and
▪ ensure that the development of the new NCCC and AATC is provided with the chance for a well-designed, functional and attractive building in the context of the Hospital site.</td></tr>
<tr><td>Draft Metropolitan Strategy for Sydney to 2031</td><td>The Draft Metropolitan Strategy for Sydney to 2031 was released in March 2013 for public comment. The Strategy seeks to deliver key infrastructure for Sydney to balance and sustain growth with both renewal in established suburbs and greenfield development. Like the Metropolitan Plan 2036, the draft Strategy specifies criteria for specialised precincts including hospitals.

The DA is consistent with the Draft Strategy in that it will:
▪ contribute to the Randwick Health and Education Specialised Precincts;
▪ provide the need for high quality public places (in social needs and requirements) for the local community ; and
▪ provides a key destination for the workforce and the number of specialised jobs within the precinct.</td></tr>
<tr><td>Draft East Subregional Strategy</td><td>The draft East Subregional Strategy was released in July 2007. The Subregional Strategy is intended to guide land-use planning until 2031 in the Randwick, Botany Bay, Waverley and Woollahra local government areas.
The proposed development is consistent with a key relevant direction of the Draft Subregional Strategy, being to consolidate and strengthen the Randwick specialised health centre.</td></tr>
<tr><td colspan="2">State Legislation</td></tr>
<tr><td>EP & A Act</td><td>The proposed development is consistent with the objects of the EP&A Act, particularly for the following reasons:
▪ it promotes the social welfare of the community;
▪ it allows for the orderly and economic development of land;
▪ it is development for public purposes and will facilitate the delivery of community services; and
▪ opportunities for public involvement and participation have, and will continue to be provided.
The proposed development is consistent with Division 4.1 of the EP&A Act, particularly for the following reasons:
▪ the development promotes significance through medical services and stimulates social welfare of the community; and
▪ the development has been evaluated and assessed against the relevant heads of consideration under section 79C.</td></tr>
<tr><td>EP&A Regulations</td><td>The EIS has addressed the specific criteria within clause 6 and clause 7 of Schedule 2 within the EIS.
Similarly, the EIS has addressed the principles of ecologically sustainable development through the precautionary principle (and other considerations), which assesses the threats of any serious or irreversible environmental damage.

Clause 7(1)(d)(v) of Schedule 2 is addressed below.
<table>
<tr><th colspan="2"></th></tr>
<tr><td colspan="2">Legislation that does not apply to State Significant Development</td></tr>
<tr><td>Coastal Protection Act 1979</td><td>N/A</td></tr>
<tr><td>Fisheries Management Act 1994</td><td>N/A</td></tr>
<tr><td>Heritage Act 1977</td><td>N/A</td></tr>
<tr><td>National Parks and Wildlife Act 1974</td><td>N/A</td></tr>
<tr><td>Native Vegetation Act 2003</td><td>N/A</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Instrument/Strategy</th><th colspan="2">Comments</th></tr>
<tr><td></td><td colspan="2"><table>
<tr><td>Rural Fires Act 1997</td><td>N/A</td></tr>
<tr><td>Water Management Act 2000</td><td>N/A</td></tr>
<tr><td colspan="2">Legislation that must be applied consistently</td></tr>
<tr><td>Fisheries Management Act 1994</td><td>No</td></tr>
<tr><td>Mine Subsidence Compensation Act 1961</td><td>No</td></tr>
<tr><td>Mining Act 1992</td><td>No</td></tr>
<tr><td>Petroleum (Onshore) Act 1991</td><td>No</td></tr>
<tr><td>Protection of the Environment Operations Act 1997</td><td>No</td></tr>
<tr><td>Roads Act 1993</td><td>No</td></tr>
<tr><td>Pipelines Act 1967</td><td>No</td></tr>
</table></td></tr>
<tr><td>SEPP 33</td><td colspan="2">A SEPP 33 Preliminary Assessment Report has been prepared by SKM and is included at Appendix O.
The report concludes the development will trigger the threshold for a Preliminary Hazard Assessment (PHA) due to the quantity of clinical waste stored within the Stage 2 development.
The PHA concludes that only a low level of risk is anticipated. Further detail is provided at Section 6.16 of this report.</td></tr>
<tr><td>SEPP 55</td><td colspan="2">A letter prepared by Douglas Partners provides a status update of the contamination assessment works across the Stage 1 and Stage 2 sites (see Appendix P). The letter concludes that as a result of previous contamination assessments, a sampling density of in excess of 80% of the NSW EPA's minimum recommended sampling density has been achieved at the overall NCCC & AATC site, including the site footprint of the Stage 2 works. The analytical results of the assessments has concluded the site to be a relatively low risk site from a contamination perspective and results indicate that the site is generally low risk of soil or groundwater contamination and therefore satisfies the requirements of SEPP 55. The Stage 2 application is not seeking approval for remediation as the Stage 1 approval provides for a whole of site clean-up if and as required.</td></tr>
<tr><td>SEPP (Infrastructure)</td><td colspan="2">The aim of this Policy is to facilitate the effective delivery of infrastructure across the State, including providing for consultation with relevant public authorities about certain development during the assessment process. The proposed development does not trigger the need to consult with the Roads and Maritime Services (RMS) under the provisions of Schedule 3 of the SEPP as the proposed Stage 2 development will not generate more beds or patients across the hospital site.</td></tr>
<tr><td colspan="3">Local Planning Instruments and Controls</td></tr>
<tr><td rowspan="2">Randwick Local Environmental Plan 2012
(note: Randwick Local Environmental Plan 2012 came into effect on 1 February 2013 repealing Randwick Local Environmental Plan 1998).</td><td>Clause 2.1 Land use zones
SP2 Infrastructure (Health Service Facility)</td><td>Development for the purposes of Hospitals is permissible with development consent.
The proposed development is considered consistent with the objectives of the zoning in that it will allow for a range of community uses to serve the needs of residents, workers and visitors.
There are no development standards in relation to FSR on the site, however the LEP sets a height limit around the perimeter of the Hospital site. Further detail is provided below.</td></tr>
<tr><td>Clause 4.3 Height of Buildings</td><td>Proposed development is not to exceed the maximum height shown for the land on the Height of Buildings Map.
The site is restricted to a height control of 24m for a depth of 30m from High Street and a height of 18m for a depth of 30m from Avoca Street.
The proposed development exceeds the height limit along High Street only by about 17.5m. The development does not affect the Avoca Street height limit. A</td></tr>
</table>

Instrument/Strategy	Comments	
		Variation to the Development Standard is therefore sought under Clause 4.6 of the LEP and is provided at Section 7.0 of this report.
	Clause 5.10 – Heritage Conservation	Clause 5.10 requires any heritage item listed and described in Schedule 5 of the LEP to consider the objective of the clause and the requirement for consent. A detailed Heritage Impact Assessment (HIA) has been prepared by Worley Parsons and is included at Appendix K. The HIA assesses any likely impacts of the proposal to the Edmund Blacket buildings and other surrounding heritage items. Further discussion is provided at Section 6.6 of this report.
	Clause 6.2 - Earthworks	The Stage 2 works will involve bulk excavation works to connect with the underground levels of Stage 1. Clause 6.2 requires consideration to ensure the drainage and soil stability issues of the proposal on existing surrounding development and any future development. The proposal is supported with a Structural Engineering Report which outlines the stability of the ground and proposes mitigation measures to support the future development and the existing development.
	Clause 6.11 Design Excellence	This clause requires the consent authority to be satisfied that a proposed development deliver's the highest standard of architectural and urban design if a new building involves a site that has an area of 10,000m^2 or greater, on land for which a development control plan is required to be prepared under clause 6.12 or that is or will be at least 15m in height. As the proposed NCCC will be more than 15m in height, this clause applies. It is considered that the high level and standard of detailed design has resulted in a practical and acceptable resolution when considered in relation to heritage conservation, architectural and landscape design matters. The proposed development has been sensitively designed to provide a building and landscape that is a form and scale appropriate within its heritage context and setting, does not detrimentally impact on view corridors and landmarks to surrounding development and maintains resource efficiency and sustainable measures for the longevity of the building and the lessened impact on the environment.

Instrument/Strategy	Comments	
	Clause 6.12 - Development requiring the preparation of a development control plan	It is considered that this clause does not apply to the proposed development as the development site: - is less than 10,000m^2 in development site area (as opposed to the Hospital site area); and - the site is not identified as "DCP required" on the Key Sites Map of the LEP. Therefore it is not considered a DCP is required to be prepared.
Randwick Education and Health Specialised Centre Discussion Paper and Precinct Plan	This discussion paper was prepared to inform Randwick City Council's preparation of a comprehensive LEP and DCP, which are now adopted documents. The Randwick Health Campus will strengthen its role as a centre of excellence in health services. The Campus will need to plan for an additional 21% growth in floor space requirements for health services to 2031. The proposed Stage 2 development is consistent with the criteria defined in the discussion paper as follows: ▪ it is consistent with the core role of the Campus as a health service facility; ▪ its use satisfies the Heritage Precinct principles; ▪ the development encourages the specific provisions for redevelopment of the Campus at the ground and first floors for health, medical and related uses adjacent the Randwick Junction; and ▪ the development seeks to improve the access and connection to the Campus from the Randwick Town Centre and provide clear pedestrian links within the Campus.	
Randwick Health Campus Masterplan Principles Review (2008)	The Randwick Health Campus Masterplan was prepared by Cite Urban Strategies in consultation with Randwick Council and NSW Health to highlight the importance of the Masterplan principles. It is noted that the site is located within the Heritage Precinct in the Masterplan document. The document highlights the key focus to provide strong and logical legibility for the zoning of the site, such as locating all mental health functions in one sector and all research facilities in a separate sector. The proposal seeks to amalgamate the Cancer and research facility which is consistent with the Masterplan.	
Council's Section 94 Contribution Plan	The relevant contributions plan for the site is the Randwick City Section 94A Development Contributions Plan, effective since July 2012. The plan allows for a waiver from contributions to be considered for a variety of uses, including public hospitals (clause 13.2). The proposed development will clearly provide a public benefit by facilitating an important public future service, being the NCCC and AATC for POWH. Therefore an exemption to the developer contributions is appropriate, under the Section 94A Plan and consistent with the Department's Circular D6 which applies to Crown Developments. Numerous other recent projects on the POWH site have been fully exempted from payment of contributions.	
NSW Groundwater Policy Framework Document – General; and NSW Groundwater Quality Protection Policy	The NSW Groundwater Policy Framework Document and NSW Groundwater Quality Protection Policy are general documents that deal with the risk assessment and management of groundwater to reduce potential sources of contamination to the water table. The excavation works will be subject to these policies to mitigate and respond to the requirements of the Groundwater Policies.	

6.1 Built Form

The Stage 2 building form has been carefully considered to respond to the context of the heritage precinct, as well as providing for the functional requirements of a hospital facility.

The building has been designed to respect the form and proportions of the nearby heritage buildings, namely Edmund Blacket Building and the Superintendent's Cottage. The scale of the building has also been designed to facilitate the needs of the community through the provision of a consolidated cancer care and clinical service within the existing spatial constraints of the campus as well as providing for future expansion via the shell space for the co-location of affiliated services and functions. To that end, it is serving and catering for its catchment demand and need, whilst relating to the neighbouring buildings along High Street and the Hospital Campus.

In this regard, the proposed building sets an important relationship with the 10 storey Parkes Building (RL 102.85) to the south-west of the NCCC and AATC and the 7 storey office building at No. 66 High Street (RL 98.65) to the north of the proposed building. This relationship with the surrounding buildings creates a 'bookend' setting, with the proposed building stepping down towards the north (see **Figure 18**).

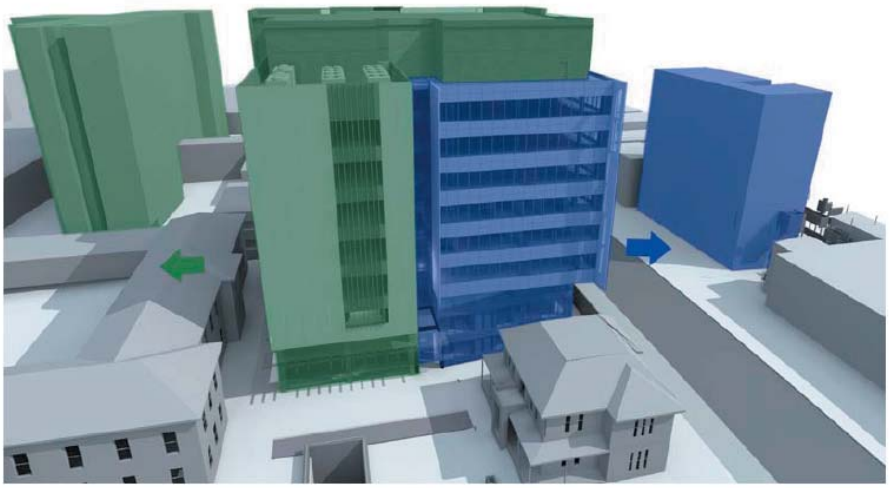


Figure 18 – Proposed NCCC and AATC building in context of surrounding tall buildings.

Source: Rice Daubney

The setback design of the NCCC and AATC building provides a ground plane space between the new building and surrounding heritage buildings, allowing courtyard space and circulation around the buildings, as well as providing natural light into the Level 0 underground bunker (constructed as part of Stage 1). The base of the building will be transparent and reflective, with a cantilevered element that extends to the eave lines of the Edmund Blacket Building.

As shown in **Figure 19**, the proposed built form restores key view cones to and from the site's heritage items. The cantilevered level creates an important view cone from High Street towards the Edmund Blackett Building, designed to take advantage of views through the precinct from High Street to the Edmund Blacket Building and to allow the Edmund Blacket Building and the Superintendent's Cottage to be viewed as a complementary set of buildings in their heritage context with a sympathetic curtilage.

i. The view from High Street towards Edmund Blacket Building will also allow pedestrian movement from the Entrance of the cancer centre through to High Street
ii. The view from High street towards the glazed base will reflect the local context
iii. The restoration of the view cone from the porch of the Medical Superintendent's Cottage towards the entrance of the Edmund Blacket Building.
iv. The view from High Street towards the glazed base will reflect the heritage context.

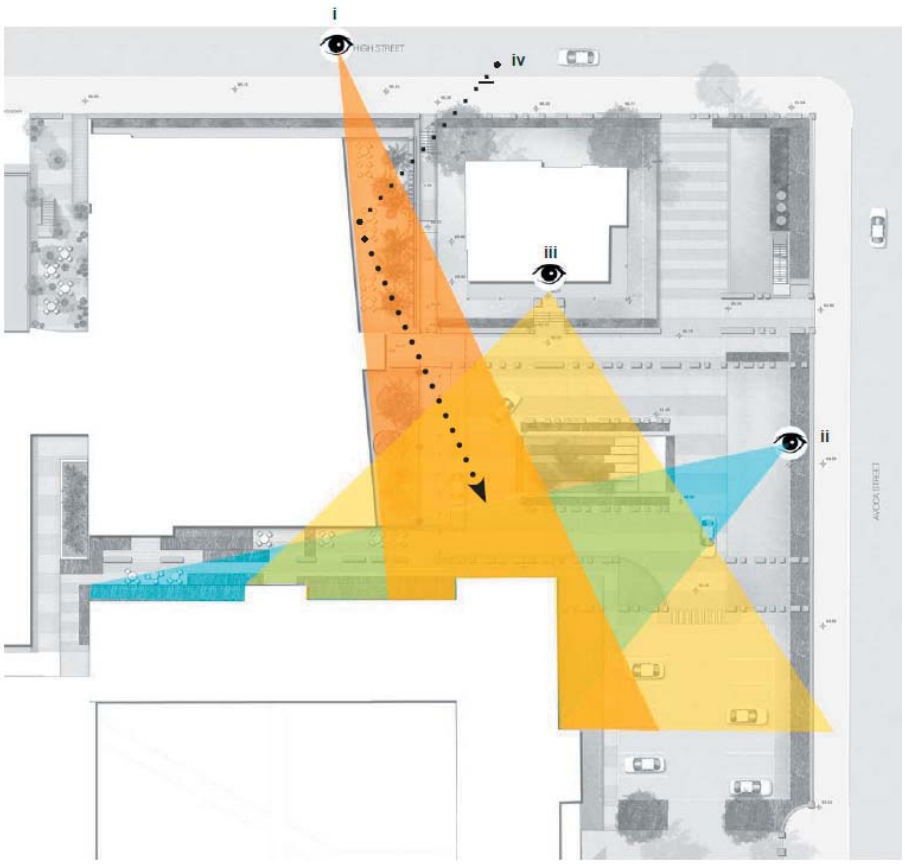


Figure 19 – Restoration of view cones

Source: Rice Daubney

As well as enabling the restoration of important view cones, the perception of bulk and scale has been ameliorated by breaking down the building's form and mass into three elements. As outlined in the Architectural Design Statement at **Appendix C**:

> *"While taller than the surrounding Heritage buildings, it seeks to respond to human scale. The base reflects and responds to the local lines of the adjacent heritage building, with particular reference to the eaves and canopy. The solidity proposed on the precinct block respects the form and proportions outlined by the Heritage building. Both Edmund Blacket and the Medical Superintendents cottage are powerful architectural statements. The design of the new building will be respectful of its neighbours. "*

In addition to the building's form and mass responding to the heritage buildings and elements, the selection of building materials will also play an important role in complementing the Edmund Blacket Building and the Superintendent's Cottage. The building has been designed to incorporate three key materials namely, precast concrete, glazed curtain walls and full height glazed curtain wall which will provide the base of the building reflecting the local context and allowing a visual connection and openness to exist between the external plaza and the internal environment. In addition, large corner windows will be installed to break-up the

apparent mass of the building and for patients and visitors to view the elevations of the Edmund Blacket Building and beyond.

It is considered that the building responds appropriately to its setting and is consistent with existing building heights within the immediate area. The design of the building in terms of its massing and form, as well as the selection of simple and modern materials, will ensure that the building is consistent with its setting, whilst ensuring that the heritage value is maintained, and interpretation is facilitated through the restoration of view cones.

At Stage 1, the indicative envelope proposed was for an 8 level form above ground to about RL 103.010 with an indicative or approximate height of 38.6m. The current proposal is generally consistent with that indicative form and is for 9 levels above ground and to RL 105.3, or 40.89m in height. This is a very minor increase of 2.29 metres. This in itself does not equate to another full level having been added, but is the result of further detailed planning around function and servicing of the spaces.

The primary reason for the height difference arises from the need to provide HI's standard 4.2m floor-to-floor heights and to accommodate the proposed rooftop plant design. During the evolution of the design from Stage 1 to Stage 2, detailed planning around the location, configuration and type of critical plant and machinery requirements resulted in a marginally taller building than originally envisaged, noting the Stage 1 envelope was indicative based on understanding of the potential design at that time.

As is discussed elsewhere in the EIS, the impact of the additional 2.29 metres is negligible.

6.2 Solar Access and Overshadowing

Shadow diagrams prepared by Rice Daubney at **Appendix C** illustrate the shadow impacts of the Stage 2 building. Generally, the proposed development will have minimal shadow impacts to surrounding land uses.

The diagrams indicate that the building will not result in any overshadowing impact to surrounding land uses or heritage buildings at the Summer solstice. However, part of Avoca Street, the south-western corner of High Cross Park, and the northern wing and part eastern wing of the Edmund Blacket Building will be overshadowed at 3pm in mid-winter. **Figure 20** illustrates the proposed overshadowing effects in mid-winter.

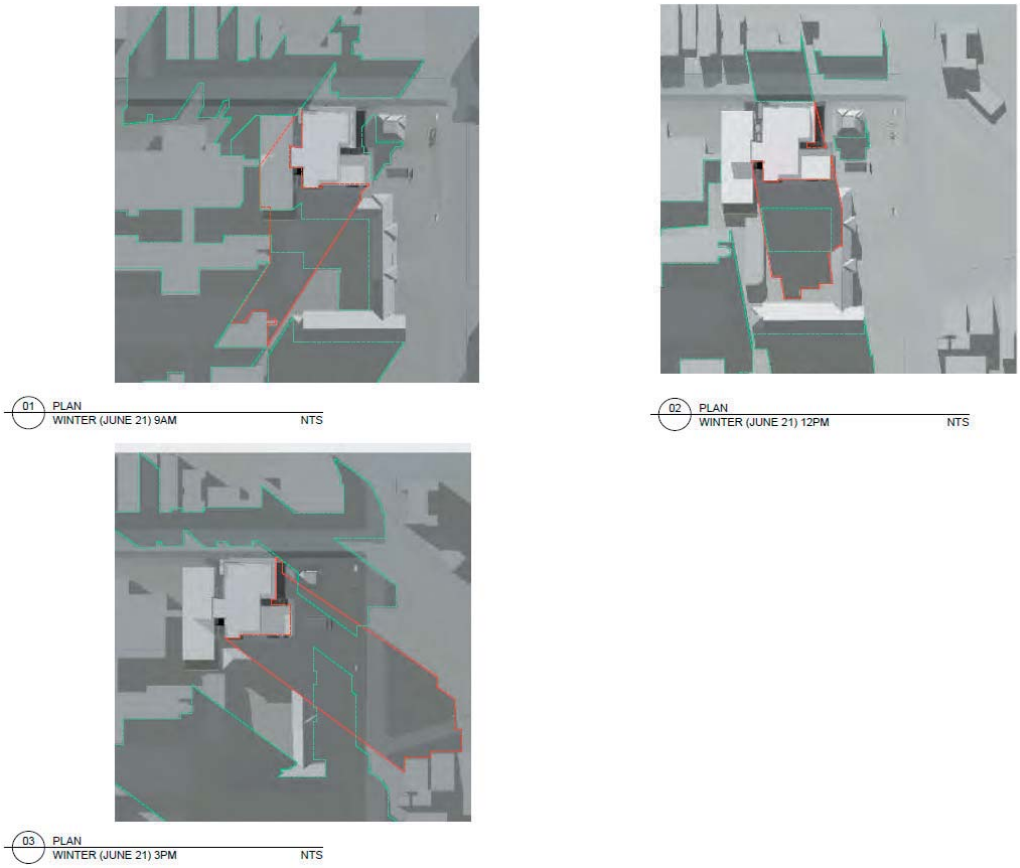


Figure 20 – Winter Solstice likely Overshadowing

Source: Rice Daubney

The primary overshadowing impact is upon the heritage-listed High Cross Park. Given that the overshadowing occurs at the end of the afternoon, the proposed development will still allow a minimum of three (3) hours of daylight to the High Cross Park, all morning and into part of the afternoon.

The proposed building responds to the height and spatial context of surrounding buildings, and will not result in any loss of solar access for nearby private residential properties. The overshadowing caused by the proposal on the surrounding area will not result in an adverse impact on High Cross Park as it is a portion of a cleared open space area and the proposed building envelope has had regard to the minimising of overshadowing impacts across the whole park, as it still allows the minimum of 3 hours of sunlight across the day in mid-winter.

6.3 Ecologically Sustainable Development

The environmental performance of the development has been assessed by using NSW Health requirements (TS-11), Clause 7(4) of Schedule 2 of the EP&A Regulations, Environmental Performance Guide for buildings and Section J of the Building Code of Australia 2011. The initiatives and targets relate to the following aspects of the proposed development:

- energy efficient electrical services;
- mechanical services;
- hydraulic services;
- improved indoor environmental quality;

- extended life through inherent flexibility and 'future-proofing' ;
- electrical services with efficient lighting, lighting control and energy metering.
- structural design; and
- initiatives during construction and operation.

The fundamental ESD features considered in the proposed design include:

- energy – conservation and on-site generation;
- materials – reuse, recycle and possess low embodied energy;
- indoor environmental quality – adequate ventilation, natural day lighting and reduction of volatile organic compounds;
- water – rainwater harvesting and reuse; and
- waste minimisation – during construction and operation, waste management strategies will be implemented to reduce the amount of waste going to landfill.

Furthermore, the proposed development is consistent with the five accepted principles of ESD as described below.

Precautionary Principle

If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

The proposal is supported by environmental studies and technical reports which conclude that there are no environmental constraints that preclude the development of the site in accordance with the proposal, subject to appropriate management in future planning, design, construction and operational stages. It is considered that through adherence to the Mitigation Measures outlined in Section 9.0 the proposal will not result in serious environmental impacts.

Integration Principle

The integration principle holds that decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations. The design of the building has been developed to integrate the short and long term effects of economic, environmental and social considerations for the acute health services to the Hospital.

Intergenerational Equity

The principle of inter-generational equity holds that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations. The proposal has been developed to directly benefit current and future generations in that it contributes to the acute health services of the community without causing significant impact to the environment.

Biological Diversity

Under the biodiversity principle, the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.

The development site does not contain any threatened or vulnerable species, populations, communities or significant habitats. Construction and ongoing operations of the facility will be managed in accordance with the Mitigation Measures, ensuring no significant indirect impacts on the surrounding environment.

Valuation and Pricing of Environmental Resources

Under this principle, improved valuation, pricing and incentive mechanisms and environmental factors should be included in the valuation of assets and services. The cost of infrastructure and measures to ensure an appropriate level of environmental performance on the site has been incorporated into the cost of development. In addition, the level of waste will be appropriately managed during the construction and the operation of the development. These measures have been incorporated into the cost of development.

6.4 Construction and Operation Noise and Vibration

A Noise and Vibration Impact Assessment Report has been prepared by Acoustic Logic and is included at **Appendix L**. The report considers the impact of noise and vibration on surrounding receivers during the construction and ongoing operation of the development.

6.4.1 Construction Noise

The report uses the Australian Standard AS2436:1981 *"Guide to noise control on construction, maintenance and demolition sites"* for guidance of noise levels and criterion controls. The following construction activities that may be sources of construction noise have been identified:

- partial demolition of existing buildings;
- removal of infill material;
- excavation of soft sand and stone; and
- construction of the proposed NCCC and AATC for Stage 2.

Based on the location of the Stage 2 works, the potentially affected receivers during construction activities include the adjacent areas within the POWH Campus and surrounding residential areas.

The report recommends the following measures to ensure the impact of construction noise is minimised:

- the drafting of a noise management plan outlining all reasonable and feasible mitigation methods for the reduction of noise impacts;
- the assessment of high impact equipment such as rock-hammers and piling equipment for lower noise producing methods of construction and excavation;
- the implementation of a complaints handling register and community consultation system;
- education of workers (builders and contractors) in effective noise reduction techniques and site etiquette; and
- operation of machinery in a quiet and efficient manner (i.e. turn off equipment when not in use).

The recommended construction noise goals to be used in an effort to minimise noise from construction related activities are set out in Table 1 of the Acoustic Logic report. The noise criteria for the resultant noise from construction activities are aimed at maintaining comfort levels within surrounding residential dwellings.

6.4.2 Vibration

The excavation and demolition activities will be the primary source of vibration. The vibration criteria associated with the Stage 2 works should not exceed the standards set out below in order to ensure no architectural or structural damage to surrounding buildings, and that human comfort is maintained at the potentially

affected receivers. The standards that have been used to measure vibration levels are:

- German Standard DIN 4150-3 (1999-02): "*Structural Vibration – Effects of Vibration on Structures*"; and
- British Standard BS 6472:1992 "Guide to Evaluation of Human Exposure to Vibration Buildings (1Hz to 80Hz).

The above standards are widely used in association with construction activities within Australia. Tables 2 and 3 of the Acoustic Logic report identify the recommended criteria for vibration impacts under the above Standards. The report concludes that vibration levels at the identified residential and commercial receivers are unlikely to exceed the recommended criteria. However, as part of the construction program, vibration monitoring will be used to ascertain specific levels from individual plant items impacting receivers within the POWH Campus. Further, rock excavation will be undertaken using rock saws as opposed to pneumatic hammers, and if piling is required, augured vibro or auger piling should be used rather than impact piling.

The above recommendations have been incorporated within the Mitigation Measures outlined in Section 9.0 of this report.

6.4.3 Operational Noise

The Stage 2 works of the NCCC and AATC will be designed to ensure that all operation noise generated during operation of the completed project will comply with the relevant EPA and Council noise level criteria.

Detailed plant selections have not been made at this stage, and so a mechanical noise assessment will be conducted once plant selections and service drawings are finalised as part of the Crown Construction Certificate. Based on similar developments, acoustic treatments are both possible and practical using measures such as lining of ductwork, acoustic silences, variable speed controllers, time switches and acoustic screens.

6.5 Transport and Accessibility (Construction and Operation)

A Traffic Assessment Report has been prepared by Aurecon and is included at **Appendix M**. The report assesses the traffic impacts of the proposed development on the surrounding road networks, as well as the proposed traffic volumes, traffic generation and parking.

6.5.1 Traffic Generation

A survey of the peak hour traffic volumes was undertaken on the following intersections:

- Avoca Street / High Street / Belmore Road; and
- Avoca Street / Cuthill Street.

The existing level of service for these intersections was generally assessed as being acceptable during the morning and afternoon peak hour periods. The proposed NCCC and AATC construction and operation works will increase the traffic movements at these intersections, however Aurecon has estimated that increases in traffic volumes caused by the development will be less than 10 vehicle movements per hour during operation, and 5 vehicles per hour during construction. These marginal increases will not result in any adverse impact on the surrounding intersections and the existing good level of service on these intersection is expected to remain. Therefore no additional upgrading or road improvements are required.

6.5.2 Access

Service and Emergency Vehicle Access

The existing service vehicle arrangements (via Hospital Road) will be maintained during the construction and operation of the Stage 2 development. Similarly, all existing loading docks will be used for the new facility. There will be no increase in service vehicle movements as part of the Stage 2 development.

No changes are proposed to the emergency vehicle access during the construction of the Stage 2 development, with the existing emergency vehicle access off High Street being maintained. During the operation of Stage 2, emergency vehicles will also use the Gate 6 entrance. The awning of the forecourt area has been designed to accommodate emergency vehicles.

In addition, a swept path analysis has been undertaken to check vehicle movements at critical locations during construction and operation. Based on the results of the analysis, heavy vehicles would only pass a parked heavy vehicle on the proposed works zone, if the heavy vehicle was parked more than 30m from Avoca Street on the southern side of High Street. Similarly, during operation, the turnaround area near the pick-up zone would not be able to accommodate vehicles longer than 6.4m.

Construction Vehicle Access

As stated in Section 3.4, construction vehicles will not enter the POWH site. Rather a works zone will be created along a section of High Street and materials will be lifted onto the site with a crane. The report recommends the following traffic management measures, to ensure the safety of staff, road users and visitors:

- a RMS-certified Traffic Controller is to be present to manage traffic when trucks are reversing within the proposed works zone and when entering or exiting the works zone on High Street; and
- a sign posting plan needs to be development to ensure pedestrians, construction vehicles, hospital traffic and other traffic is kept away from the works zone and to avoid unnecessary reversing manoeuvres into traffic and pedestrian areas.

6.5.3 Parking

As outlined at Section 3.4, during construction of the Stage 2 works, 35 staff car spaces will be lost out of the existing 59 space car park. During the operation phase, 20 spaces will be re-instated to the north of Gate 6 for the cancer patients pick up and drop off, in accordance with the cancer guidelines. This result in a net loss of 15 spaces.

However, it should be noted that HI has recently completed construction of a new car park located in front of the new Mental Health Intensive Care Unit (MHICU) which provides a total of 60 spaces. This car park was constructed as Exempt Development under the provision of *State Environmental Planning Policy Infrastructure (2007).* The car park is not designated for any particular hospital use, and can be utilised for Campus wide staff parking. The 15 loss car spaces are to be accommodated near the MHICU site, which is more than adequately catered for by these new 60 staff car parking spaces.

Given the loss of staff parking accommodated elsewhere on the Campus site, and within proximity to the NCCC & AATC site, and the loss of parking is staff related only there will be no impact on patients and visitors to the Hospital. Nevertheless, the report makes recommendations to reduce the impact of staff parking on the Campus site, which include:

- Allow staff to park Hospital-owned cars at their home during night; and
- Undertake a detailed car parking study to assess the car park utilisation and to identify the locations where the removed parking spaces due to the construction and operation of the facility could be replaced.

Further, it should be noted that the Randwick precinct will undergo an increase in public transport facilities (i.e. the future intended light rail network) which will reduce the need for parking.

6.5.4 Public Transport, Pedestrians and Cyclists

As the increase in traffic movements are predicted to be marginal during the construction and operation of the Stage 2 development, the proposed construction and operation activities would not impact the bus movements in the vicinity of the POWH. In addition, the proposed works zone on High Street will not block the bus movements along High Street.

The pedestrian access at Gate 6 on Avoca Street will be closed during the construction phase, and will be reinstated for access during the operation of the development. During construction, pedestrians will be redirected to other access points on Avoca Street and High Street. Pedestrian access will still be provided via the Heritage Gate opposite the Edmund Blacket Building for the duration of construction works and during operation. These arrangements will still facilitate pedestrian and cycle access to the site and would not cause extensive delays and queuing along Avoca Street and High Street.

6.5.5 Light Rail

The NSW State government released "Sydney's Light Rail Future" in December 2012, which provided an outline for the implementation and expansion of the light rail network in Sydney. This plan detailed the provision of a new light rail network through the Sydney CBD, Circular Quay to Central and extending to the south east to the University of NSW and Randwick. This has most recently been updated in August 2013 with information and other material around the preparation of the EIS for the project. Subject to planning approvals, the Government anticipates the work on the light rail to commence in 2014.

This program includes a potential link along High Street from Alison Road as it is presently understood, with the light rail interchange / terminus proposed at High Cross Park. The program may affect the Stage 2 development by way of removing parking along High Street and conflicting the Stage 2 proposed 'work zone' (discussed further at Section 6.5.7).

Aurecon has concluded that the impact of the construction of the light rail during the construction phase of the NCCC & AATC cannot be assessed at this stage as the construction program for the light rail has not been finalised with dates at this stage. Liaison between Transport for NSW and Health Infrastructure will continue to ensure the project can be delivered with minimal disruptions to the project timeframe and surrounding road network.

6.5.6 Sustainable Travel Plan

Currently, there are no sustainable travel plans available for the POWH Campus. It is noted that the proposal will not result in an increase in the number of staff at the Hospital Campus, and patients visiting the NCCC and AATC are unlikely to use public transport options due to the nature of their clinical need and the treatment provided.

Notwithstanding this, the development of a sustainable travel plan would help some of the existing staff change their mode of travel. Aurecon notes that since all necessary sustainable transport infrastructure is in place surrounding the site,

the POWH needs to develop a sustainable travel plan (following consultation with staff and the public) to identify ways and means of encouraging them to use sustainable transport options. Possible measures include:

- provision of financial incentives by providing MyMulti, MyBus, and MyTrain annual passes through salary sacrifice scheme;
- provision of better public transport timetabling arrangements to suit staff travel patterns by consulting with Sydney Buses and TNSW;
- provision of bicycle parking facilities and associated infrastructures on-site;
- provision of additional bicycle routes and footpath by consulting with Randwick City Council; and
- encouraging carpooling by providing reserved parking on-site for the staff participating in the carpooling scheme.

6.5.7 Draft Construction Traffic Management Plan

The Traffic Report includes a Draft Construction Traffic Management Plan (TMP). The Draft TMP has been prepared to meet the requirements of the *Road Act 1993*, *Occupational Health and Safety Act 2000* and the Australian Standard 1742-2009: Manual of uniform traffic control devices – Part 3, Traffic control for works on roads, Standards Australia.

The Draft TMP seeks to manage construction vehicle movements entering and exiting the site through the course of the day. The following measures will be put in place for the duration of the Stage 2 construction:

- A 'Construction Zone' restriction will take approximately 14 months from May 2014;
- The car park area located north of Heritage Gate and Gate 6 will be used for construction activities. During the construction period, this car park will be closed to hospital vehicle parking;
- Proposed construction hours are Monday to Friday 6.30am to 6pm and Saturday 7am to 4pm. Generally, no work will be undertaken on Sundays and Public Holidays;
- Approximately 5 deliveries of plant and material will occur during the morning peak period and 5 deliveries during the afternoon peak period;
- Some plant and / or material deliveries to the site will take approximately 30 minutes whereas others may require longer periods. Delivery vehicles will predominately consist of medium rigid and concrete trucks;
- It is recommended that construction staff use public transport to access the site since parking availability is limited within and immediately adjacent to the POWH. There will be no construction staff parking provided on-site.
- All delivery vehicles are to travel to and from the construction site by State and regional roads where possible. This includes Anzac Parade – Rainbow Street – Avoca Street – High Street as inbound and High Street to Anzac Parade as outbound.

In addition, a traffic management plan is to be prepared for the proposed works zone along High Street, with the following requirements:

- A 'works zone' restriction is to be implemented on the southern side of High Street immediately west of Avoca Street. The works zone needs to be setup from 30m west of Avoca Street to the existing disabled parking space. A 'No Stopping' area will be provided for a 30m distance from Avoca Street on the southern side of High Street. This will be subject to Randwick City Council approval;

- The access to the garage located within the proposed works zone is not required, as this garage will be removed during the Stage 2 construction period; and
- Pedestrians walking on the southern side of High Street will be diverted to the northern side of the street.

The measures provided above will be included into the Mitigation Measures at Section 9.0 of this report.

6.6 European Heritage

A Heritage Impact Assessment (HIA) has been prepared by Worley Parsons and is included at **Appendix K**. The HIA assesses the impact of the development on the surrounding heritage items and conservation areas.

The HIA was prepared with reference to the DGRs, as well as the relevant legislative and statutory conservation planning controls including the relevant provisions of Randwick LEP 2012 and the requirements of the NSW Heritage Manual's '*Statement of Heritage Impact Guidelines'*.

As described in Section 2.2 of this EIS the development site is located within the High Cross Heritage Conservation Area, in what is known as the 'Heritage Precinct' under the Hospital Masterplan. The site is also located within proximity to four heritage listed items identified within Randwick LEP 2012. These items include:

- Edmund Blacket Building;
- Catherine Hayes Hospital;
- Superintendent's Residence (Cottage); and
- Prince of Wales Hospital Gate and Fence.

The report assesses the impact of the Stage 2 works in relation to the visual impacts on the High Cross Heritage Conservation Area, as well as the setting of the Edmund Blacket Building, the Superintendent's Cottage and the sandstone and wrought iron fence constructed along the Avoca Street frontage of the Edmund Blacket Building.

The HIA concludes that the Stage 2 works will have no adverse impact on either the Edmund Blacket Building or the Superintendent's Residence in relation to their existing setting and spatial relationships, the heritage fence or on the heritage items or heritage conservation area in the vicinity of the site. The proposed NCCC and AATC building does not involve any modification to the fabric of the heritage items, rather, it has been sensitively designed to provide a building and landscape with a form and scale appropriate within its context and setting.

Worley Parsons considers that the level of detailed design has resulted in a practical and acceptable resolution of heritage conservation, architectural and landscape design matters. The proposed building takes into account the spatial relationships of the proposal with the Edmund Blacket Building, especially the northern elevation of that building with its finely articulated rhythm and form, the Superintendent's Residence and the open space setting which is framed by the heritage fence and gates. The proposal also has regard to the relationship with the heritage conservation area in the vicinity of the site.

The following design measures have been adopted to ensure that the proposed development has no impact on the surrounding heritage items, or the heritage conservation area. The proposed building:

- Will result in the restoration of key view cones through the site, including:

  - the view from High Street through towards the Edmund Blacket Building to the south;
  - the view from High Street towards the glazed base to reflect local context; and
  - the historical view cone relationship from the porch of the Superintendent's Residence to the northern entrance to the Edmund Blacket Building.
- Has an articulated, but flat roof form that is consistent with adjoining contemporary buildings within the Hospital campus, as well as the nearby Parkes Wing to the west, and 66 High Street to the north.
- The form and proportion of the windows has utilised a rhythm that relates to both that of the Edmund Blacket Building and the Superintendent's Residence. Windows to the eastern façade are grouped in blocks and accented by vertical sun shading fins, whilst the southern elevation presents a random pattern window appearance. Corner windows are also proposed to break-up the mass of the solid building.
- Has a limited materials palette, with three key materials (pre-cast concrete panels, glazed curtain wall with horizontal fritting and full-height glazed curtain wall) that will complement the heritage significance of the Edmund Blacket Building and Superintendent's Residence, and provide a simple backdrop to the Superintendent's Residence. It will also provide a transparent base which will assist to restore the view cone between the northern entrance to the Edmund Blacket Building and the Superintendent's Residence, as well as an interesting and articulated façade to the southern elevation of the new building.

Ongoing interpretation of the history of this section of the Prince of Wales Hospital site is proposed to be achieved through the development of an Interpretation Strategy. Proposed interpretive measures in the Strategy set out in the HIA include:

- restoration of historical view cones through the site and between the Superintendent's Residence and Edmund Blacket Building;
- naming of places after the prominent architects (John Horbury Hunt and Edmund Blacket) who designed the Superintendent's Residence and Edmund Blacket Building, respectively; and
- installation of information plaques in specific open space locations that describe the design and almost 160 years of history and evolving institutional functions and uses of the Edmund Blacket Building and the Superintendents Residence.

These recommendations have been included within the Mitigation Measures at Section 9.0.

With respect to the significance of landscaping, the HIA notes that the existing landscape has little, if any, heritage significance. None of the six (6) trees that were removed under the Stage 1 development, incorporated into the Stage 2 site are listed in Council's Significant Tree Register. The new landscape treatment complements the setting, spatial and visual relationships of the Hospital's heritage precinct.

The landscape scheme will also complement the definition of new places and spaces and provide an opportunity for interpretation of the history of the site for the proposed development.

6.7 European Archaeology

Casey and Lowe has provided an assessment of the European Archaeological potential of the development site. The report is included at **Appendix U.**

Eight test trenches were dug within the vicinity of the development site, with no European Archaeological structures, cuts, or deposits found in any of the trenches. Some ceramics were identified that were possibly originally associated with the mid-late nineteenth-century or early twentieth-century occupation of the site, however these were found in mixed fills and did not have secure contexts.

Based on the results, and no key findings within the development site, Casey and Lowe make the following recommendations:

- no further European Archaeological work is required for the Stage 2 development;
- should any possible archaeological relics be uncovered during the bulk excavation for the development, they should be assessed by a qualified archaeologist.

The above measures are further addressed within the Mitigation Measures in Section 9.0.

6.8 Indigenous Heritage

Mary Dallas Consulting Archaeologists has undertaken Aboriginal Archaeological investigations on the subject site. The report and the conclusive test results are provided at **Appendix V**.

Twelve (12) trenches were excavated during the investigations. The trenches revealed recent historical fill of variable types and depths across the site, including asphalt, pipe trenches and introduced materials in mixed sands and other rubble. Importantly, the trenches did not reveal any identified Aboriginal Archaeological remains within the entire NCCC and AATC site area.

Mary Dallas concludes that, as a result of the archaeological test excavation, it is not considered likely that any Aboriginal Archaeological remains have survived in the area, if they once existed. Consequently, no further Aboriginal Archaeological investigations are warranted in relation to the proposed NCCC and AATC development.

6.9 Wind Impacts

A Wind Assessment Report was prepared by Cermak Peterka Peterson (CPP) and is included at **Appendix W.** The report assesses the proposal and the potential impact on the pedestrian level local wind environment in and around the proposed development site.

The key findings of the Report include:

- The proposed building is relatively exposed to prevailing winds. Topography surrounding the site is undulating and slopes downhill to the east and south-west towards the coastline, approximately 2km from the site.
- Winds from the north-east will stagnate against the east façade creating downwash that will accelerate through the undercroft area to the south-east.
- The presence of the Edmund Blacket Building and the sunken courtyard will offer protection to pedestrians and the wind conditions through this area are expected to be acceptable for pedestrian walking.

- The proposed main entrance of the building within the undercroft area will be subject to a windy environment. Porous screens are recommended or high density planting are recommenced in the vicinity of the main entry to mitigate the impact of stronger north-east and southerly winds to ensure suitable wind amenity.
- Wind channelling will occur between the proposed building and the Edmund Blacket Building to the south, this area is considered suitable for a pedestrian accessway, however any alfresco dining planned for the courtyard between the building would require amelioration, such as screening.

The report concludes that the wind conditions around the site are expected to be generally suitable for use as a public accessway. Any amelioration measures recommended in the vicinity of the main entry to improve the local wind amenity can be addressed during detailed design stage. The recommendations of the Report are included within the Mitigation Measures within Section 9.0.

6.10 Tree Removal

Tree removal was assessed and approved as part of the Stage 1 development. An Arborist Report was prepared by Moore Trees arboricultural services and is included at **Appendix E.**

The report identifies 20 trees in the location of the NCCC and AATC development site. It is noted that the report only takes into account the trees that fall under the Randwick Council Tree Preservation Order (TPO) 2005. No tree or shrub under the height of six (6) metres has been considered in accordance with the TPO. On August 2007, Council adopted a Significant Tree Register which identifies and recognises the importance of significant trees in the Randwick landscape, and guides their management to ensure their protection for future generations. The only trees on this Register near the site are located to the south of the site's boundary, and will not be impacted by the proposed works.

Of those 20 trees identified, 12 trees required to be removed to facilitate the development (refer to **Figure 21**). The report confirms that the trees are not significant and that removal is warranted. The loss of these trees will be compensated by the significant new plantings identified in the Landscape Plans at **Appendix F**.

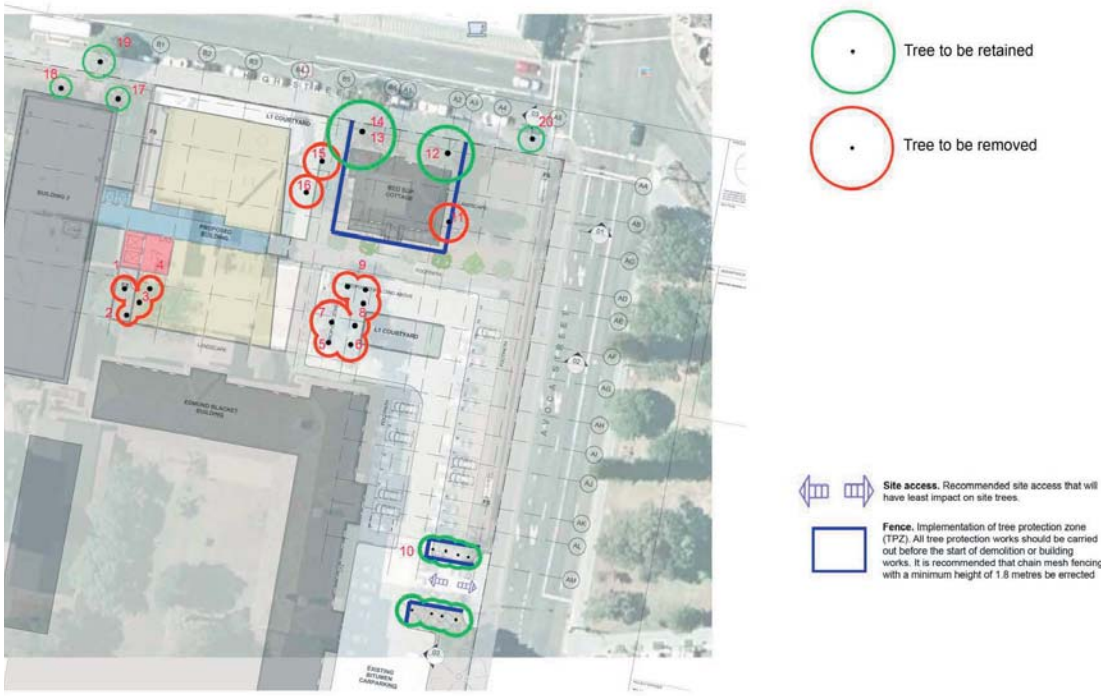


Figure 21 – trees proposed for retention and removal

Eight trees are required to be retained. A group of mature Bangalow Palms create a formal entry to the staff car park and will require protective fencing during the works (trees marked as 10 within the report). Further, the report recommends the three trees (marked 12, 13 and 14 within the report) located between the stone building and the boundary fence will also require tree protection fencing during works, as specified within the report.

Protective fencing for the retained trees has been incorporated within the Mitigation Measures in Section 9.0 of this report.

6.11 Operational Management

DGR No. 9 requires the details of the operational management of the Stage 2 works in relation to noise from plant and equipment, radiation, chemical and biological hazards, emergency and evacuation procedures and the lighting and signage associated with the development. Noise assessment has been considered and an assessment is provided at Section 6.4 of this report. The other matters are considered below.

In addition, the DGR requires the ongoing operation of the Hospital services on the site to be appropriately maintained or relocated during construction of the development.

6.11.1 Radiation, Chemical and Biological Hazards

Radiation

Radiation Services Group has provided an assessment report on the Radiation Shielding and design goals for the HDR / Brachytherapy Room and CT / Simulator Suite. The report is included at **Appendix N**.

It is noted that storage of radioactive materials will only occur in the Hot Lab and adjacent hot storage area which was assessed and approved as part of the Stage 1 works. For the Stage 2 works, the areas which will require assessment in relation to radiation shielding include:

- HDR / Brachytherapy Room; and
- CT / Simulator Suite

The Office of Environment and Heritage (NSW EPA) dose-rate limitations have been applied which set a dose limitation for members of the public of 1mSv per year (/yr). Typically, a person within Australia is subject to doses of approximately 1 to 2 mSv/yr from naturally occurring 'background' radiation.

The requirements of the Office of Environment and Heritage will be met by radiation shielding design for the Stage 2 project. The shielding of barriers to uncontrolled areas within Stage 2 has been designed to achieve a goal of 0.5mSv/yr. which is half the allowable dose-rate for members of the public. The shielding design for barriers to controlled areas is based on a design goal of 2mSv/yr, and assumes full occupancy. This goal allows for construction tolerances, but also allows for dose to be received from other sources.

The method of shielding for the proposed HDR / Brachytherapy Room and CT / Simulator Suite is outlined in **Table 3** below, this will ensure that all areas are adequately shielded for their intended uses.

Table 3 – Shielding requirements

Location	Shielding Required
HDR / Brachytherapy Room	Shielding will consist of solid concrete walls (400-500mm thickness) with a ~50mm lead (or equivalent in alternative materials door)
CT / Simulator Suite	Small gauges (1-2.2mm lead) to a height of 2,400mm above floor level.

With respect to future development on the site, Radiation Services Group recommends that:

- As the surrounding earth is used to provide most of the shielding requirement of the ceiling of the Stage 2 brachytherapy room, development below ground within the site boundaries may require supplementary shielding, particularly if the development is directly above the brachytherapy room.
- At the public boundary of the site (footpath and road), the dose-rates received will be sufficiently low that full occupancy by a member of the public would be acceptable. Therefore the radiation from the facility will not limit any future development of these areas.

These have been included in the Mitigation Measures at Section 9.0.

Further detail on the chemical and biological hazards in association with the development is further discussed in Section 6.16 of this report.

6.11.2 Lighting and Signage

NDY has provided a statement (refer to **Appendix Q**) that details the lighting requirements for the proposed development. The statement confirms the design of all new outdoor and emergency lighting for the NCCC and AATC will comply with the relevant Australian Standards for pedestrian area lighting and the control of the obtrusive effects of outdoor lighting.

Building identification signage is proposed. The location (and proposed scale) of the signage on the eastern and western elevations is shown in the architectural drawings set at **Appendix C**. The location of the signage towards the Avoca Street frontage and the High and Avoca Streets corner is appropriate in signifying the location of the building and presenting it with identity and as a marker for the gateway to the hospitals campus at its northern extremity. The proposed signage is generally consistent with the objects and Schedule 1 of SEPP 64. The signage location and scale is in keeping with character and desired future character of the

locality. The signage will not affect views and vista or affect safety. The proportions and orientation of the signage zone are consistent with the proportions of the building at those elevations.

Further, way-finding signage will be installed with the proposed development and will be designed to meet the following objectives:

- provide efficient and effective guidance around the Hospital and its site with improved amenity for patients, visitors and staff;
- will be fully integrated with each development stage in planning, design and construction phases;
- give a clear identity and character to the Hospital and be sympathetic to architectural and interior design;
- comply with all relevant requirements in legislation and government policies;
- provide a clear identity for all users of the facility, including persons with disabilities;
- comprise durable, vandal resistant and minimal maintenance materials and elements;
- include temporary signage during the construction period; and
- be equal to and consistent with the coordinated way-finding and signage existing on the Campus site.

6.11.3 Emergency and Evacuation Procedures

In accordance with the POWH Operational Policies, in the event of an emergency or security situation, staff will be trained to call 777. The security response to the 777 call will be in accordance with:

- the SESIH PD067 Security - people and property;
- the NSW Health PD2005_339 Protecting People and Property;
- NSW Health Policy and Guidelines for Security Risk Management in Health Facilities; and
- the Randwick Hospitals Campus – Critical Operations Standing Operating Procedures.

All emergency exits will be clearly identified, and exit doors and stairs will be appropriately alarmed. The building will have a duress alarm for the permanent nurses' station within the building.

6.11.4 Operation of Stages 1 and 2

The NCCC and AATC works involve the decommissioning and demolition of the existing Radiation Oncology Building, excavation of basement levels and the construction of the remainder of the NCCC and AATC building, once Stage 1 is built and operating.

Essentially, the project has been staged appropriately to enable the continued operation of the current hospital services with minimal interruption. This has been achieved through continuing the operation of the existing Radiotherapy Department (Building 3) and providing an underground passage to connect the existing Building to the new bunkers.

The NCCC and AATC Stage 1 works involve the establishment of a new Radiotherapy / Oncology department on Level 0. The new building will connect at Level 0 through a tunnel connection providing direct access to the Stage 1 bunkers.

The Stage 2 works will incorporate landscaping treatment above the Stage 1 bunkers as well as providing a vehicle drop off and pick up area in front of the proposed building. Additionally, the courtyard space area for Stage 1 will be planted and finished to provide light, and a pleasant outlook for the staff and patients at Level 0.

6.12 Building Code of Australia

A Preliminary Building Code of Australia (BCA) Report for the Stage 2 development has been prepared by McKenzie Group Consulting and is included at **Appendix R**. The report is based on the architectural plans and assesses the compliance of building against the requirements of the BCA 2012. McKenzie Group confirms that the proposed development is classified as Class 9a (Hospital) and Class 5 (Office), and will be capable of meeting the relevant deemed-to-satisfy criteria, subject to resolution of some minor non-compliances which will require further detailing from a suitably accredited fire engineer and NSW Fire Brigade as part of the Crown Certificate process however they will not change the form of the building or the existing impacts. In addition, the recommendations of the BCA report have been incorporated within the Mitigation Measures outlined in Section 9.0 of this report.

6.13 Aeronautical Impacts

6.13.1 Helicopter Landing Site

The POWH Hospital site contains two helipads collocated near the centre of the hospital campus and to the north of the Metro Car Park. The proposed development is well removed from the helipads, and it is not anticipated that it will have any substantial impact on their use.

Notwithstanding this, Health Infrastructure will engage a specialist aerospace risk management consultant to undertake an assessment of the proposed development, and its relationship with and impacts upon the existing helipads with respect to existing or future anticipated flight paths.

This action has been incorporated into the Mitigation Measures at Section 9.0.

6.13.2 Airports Obstacle Limitation Surface

The proposed buildings flues at 110.6m AHD have been identified to constitute a permanent penetration of the Sydney International Airport (SIA) Obstacle Limitation Surface (OLS) and will penetrate the limit of 105.3m AHD. A formal application for this permanent penetration of the OLS will be submitted to the Sydney Airport Corporation Limited (SACL) and the Civil Aviation Safety Authority (CASA) for assessment.

Additionally, construction tower cranes (non luffing) associated with the proposed building will also penetrate the OLS. Although the OLS penetrations associated with construction cranes has been consider throughout the planning phases, a formal application for a temporary penetration of the OLS will be completed by the successful Building Contractor.

6.13.3PANS – OPS

The proposed building flues at 110.6m AHD will not penetrate the Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS) limit of 135.3m AHD.

Similarly, construction tower cranes (non luffing) associated with the proposed building will also not penetrate the PANS-OPS limit.

6.14 Fire Engineering

A Fire Engineering Brief has been prepared by NDY for the Stage 2 development, which incorporated relevant liaison and correspondence with the Fire and Rescue New South Wales (FRNSW).

NDY has provided a Statement on Fire Engineering (at **Appendix S**) outlining the consultation and fire engineering that is currently in progress, and will incorporate deemed to satisfy or alternative solutions as required. It is noted that the FRNSW are aware of the Stage 2 development, and have provided comments on the preliminary design.

6.15 Waste

The following section outlines the procedures to be implemented to manage waste through the construction and operational phases of the development. A detailed Waste Management Plan will be prepared as part of Construction Management Plan prior to the commencement of works (as reflected in the Mitigation Measures at Section 9.0). It should be noted that that construction waste will be handled according to industry best practice and operational waste management will be incorporated into the POWH's existing systems.

6.15.1 Operational Waste

The existing Hospital generates a number of streams of general waste. All general waste will be bagged in accordance with Infection Control Universal Precautions and held in bins in disposal rooms awaiting collection by POWH staff. Clinical waste will be bagged and sharps contained, clearly identified by yellow colour coding in accordance with Universal Precautions, and held in a secure area until collected by POWH staff.

Cytotoxic waste will be bagged and sharps contained in a mobile waste bins within a secure area clearly identified by purple colour coding in accordance with Workcover guidelines for the management of cytotoxic substances.

Patients receiving cytotoxic drugs whilst in the radiation oncology treatment area and/or building 3 will be escorted with a cytotoxic spill kit and related waste will be managed in accordance with:

- POWH Cytotoxic Medication Administration and Handling Business Rule;
- Workcover NSW, Cytotoxic Drugs and related waste risk management guide 2008; and
- Randwick Hospitals Campus - Critical Operations Standing Operating Procedures (COSOPs).

The frequency of waste collection by POWH Cleaning Services may need to be reviewed during the operation of Stage 2, and increased to two collections per day if required.

6.15.2 Construction Waste

The development works will involve the demolition of the existing Radiotherapy and Oncology Building. A Hazardous Material Inspection Report was undertaken by Noel Arnold & Associates and is included at **Appendix T.**

An inspection of the Radiotherapy Oncology Building was conducted, with the following hazardous materials being identified:

- Asbestos-containing Materials (ACMs) in various locations;
- Synthetic Mineral Fibre (SMF) materials;

- Polychlorinated Biphenyl (PCB) containing capacitors; and
- Lead-containing paint.

The report makes a series of recommendations for the removal and management of these materials (refer to **Table 4**).

Table 4 – Recommendations for the removal and management of material

Material	Recommendation/s
Asbestos	▪ Engage an AS-1 licensed contractor to remove damaged asbestos containing pipe logging and associated debris as soon as practical. ▪ Restrict the area. ▪ Conduct asbestos fibre air monitoring and clearance inspections during removal. ▪ Maintain asbestos material in good condition. ▪ Remove material under controlled conditions by an appropriately licensed asbestos contractor ▪ Schedule periodic reassessment of the asbestos remaining on-site to monitor aging/deterioration. ▪ Prior to demolition undertake a Destructive Hazardous Material Survey.
Synthetic Mineral Fibre	▪ Material should be maintained in good condition and removed under controlled conditions.
Polychlorinated Biphenyls	▪ Confirm status of capacities within florescent light fitting prior to refurbishment or demolition in the presence of a licensed electrician.
Lead Paint	▪ Stabilise the deteriorating lead based paint system by over painting with a non-lead based paint system. ▪ Incorporate dust suppression techniques.

Waste will be minimised during construction and waste that is generated will be separated to maximise recycling. The highest waste production period will be during the construction of the building. This will be approximately 90 weeks and will generate approximately two x 10m^3 bins per week.

The above recommendations are included within the Mitigation Measures at Section 9.0.

6.16 Hazardous Waste

SKM has provided a Preliminary Hazard Analysis Assessment in accordance with *State Environmental Planning Policy No. 33 – Hazardous and Offensive Development* (SEPP 33) (see **Appendix O**). SEPP 33 requires an assessment of hazardous materials undertaken as a Preliminary Hazard Analysis (PHA) that involves a screening method based on the quantities of dangerous goods on a site, the storage and transportation of the waste or dangerous goods to assist in determining if a development is likely to be a potentially hazardous industry.

The assessment identified the classes and quantities of all dangerous goods and waste to be transported, used, stored or produced by the Stage 2 proposal. Table 1 within the report lists the quantities of dangerous goods associated with the Stage 2 development once operational.

The report indicates that there may be in excess of 0.5 tonnes of clinical waste produced, stored and transported to and from the site per year. When comparing these types, quantities and storage of dangerous goods and waste against the General Screening Threshold Quantities provided in Tables 2 and 3 of the report, the Stage 2 development falls within Class 6.2 (the quantity of Clinical Waste) and Class 7 (any quantity of Radioactive waste) of the threshold.

Accordingly, Clause 12 of SEPP 33 triggers the need for a Preliminary Hazard Analysis (PHA) to demonstrate the proposed waste generation, storage and transportation complies with the Australian codes and Health requirements.

The report concludes that given the existing POWH procedures in place, the inherent risk of dangerous goods and waste to the community is regarded as low. However, the SEPP 33 guidelines prepared by the DoPI requires the proponent contact the DoPI for advice on the frequency of transport movements, and the quantity of wastes stored as a result of the Stage 2 works. This EIS serves this consultation purpose.

6.17 Infrastructure and Utilities

Electrical and Telecommunications

As stated in Section 3.7, NDY has provided a statement (refer to **Appendix G**) which notes that two new 100kVA kiosk substations will be installed as part of Stage 1 works. Stage 2 NCCC and AATC building will utilise these substations for power, and diesel generators are proposed to be installed in the roof plant space of Stage 2 building.

The final location of the kiosk substations is to be reviewed and accepted by Ausgrid and Health Infrastructure.

Natural Gas

The Stage 2 building will require separate gas augmentation. Natural gas to the NCCC and AATC development will be installed during Stage 1 works. A new gas metre will be located within an internal Gas Metre Room provided by Jemena and will accommodate the following load estimates:

- Stage 2 plant requirements – 6,600Mj or 180m^3/hr; and
- Typical domestic hot water and air conditioning (heating) plant requirements for a future 10 storey 10,000m^2 building development locally to the NCCC and AATC – 6,000Mj or 160m^3/hr.

Water

SPP Group has prepared a statement, included at **Appendix H**, which confirms consultation with Sydney Water Corporation. Sydney Water has confirmed that once the early works sewer main works are carried out that the authority main will be adequately sized to take all drainage discharge from the Stage 2 development. Sydney Water has also advised that if the building is to exceed 25 metres in height (which is the case) the water main amplification will need to be undertaken along High Street. SPP group will continue to liaise with Sydney Water during the detail design and construction phase.

6.18 Water Cycle Management

6.18.1 Drainage

The Structural Engineering Report prepared by SMK (refer to **Appendix I**) addresses the water management and stormwater drainage for the Stage 2

development site. As described in Section 3.7, a new drainage system was approved as part of the Stage 1 works which will service the capacity of the Stage 2 works. This system is described within the Stage 1 EIS dated April 2012.

The proposed Stage 2 development will result in a decrease of impermeable area and flows discharging to the existing hospital drainage system, located west of the Edmund Blacket building. Therefore there is no requirement for on-site detention.

6.18.2 Flooding

As previously described, the site is not identified as being flood prone land. Accordingly, further flood investigations are not required to be undertaken. It should be noted that the Stage 2 habitable buildings that are located underground and all habitable areas will be located at a minimum of 300mm above the 100 year ARI overland flood level.

6.18.3 Sediment, Erosion and Dust Controls

The SKM report details the measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles and provides a concept erosion and sediment control plan (refer to **Appendix I**). The plan incorporates catch drains and barrier fencing, as well as the location of the sedimentation tank. Further to the SKM report, the preliminary Construction Management Plan will address the guidelines and policies for *Managing Urban Stormwater – Soils & Construction Volume 1 2004 (Landcom).*

The nature of the excavation in the sandstone will require dust control, likely through the use of sprinklers. During construction, SKM propose to provide perimeter drainage channels to drain the ground water and rainwater entering the excavation to a temporary sump. The flows entering the sump will be pumped to a sedimentation tank at ground level, before the water is discharged to the council system.

6.19 Structural Design

The Structural Engineering Report prepared by SKM (**Appendix I**) assesses the Stage 2 structural design.

The proposed structure comprises two levels of basement below ground which will house clinical areas linked together with the Stage 1 access tunnel.

The following structural materials are proposed:

- braced post tensioned concrete structure;
- ground bearing reinforced concrete base slab; and
- localised pad and strip footings bearing onto rock.

The design of the structure incorporates drained cavities to the perimeter of the building to assist in the waterproofing of the structure. Where the building layout and site constraints allow, this cavity is to be a minimum of 800mm wide to allow for access and maintenance. This 800mm width will also allow for access for the erection of formwork for the construction of the concrete walls. Where the 800mm is not achievable, a 300mm wide drained cavity is proposed with access panels in the adjacent walls to allow maintenance.

In addition, the proposed excavation of the rock around the boundaries of heritage buildings will be sawcut to allow the excavation perimeter around the heritage buildings to be taken very close to the walls, provided the footings of the buildings are bearing on adequate material.

6.20 Contamination

A letter has been prepared by Douglas Partners that provides an update to the contamination assessment on the site; as a result of the Stage 1 works and the assessment under the location of the Stage 2 site (see **Appendix P**). The letter discusses the findings of potential contamination of the Stage 1 site based on the Phase 1 Contamination Assessment Report and the Detailed Contamination Assessment (both dated September 2011).

The previous reports concluded that the overall NCCC ant AATC site was a low risk site and the site was considered to be environmentally suitable for the continued use of the hospital.

The Stage 2 site is constrained by existing buildings and detailed bore hole testing could not be achieved at this stage. However as a result of the previous investigations, a sampling density of in excess of 80% of the NSW EPA's minimum recommended sampling density has been achieved at the overall NCCC and AATC site, including the Stage 2 site. Furthermore, during the detailed investigation, two sampling locations were placed within the Stage 2 site which indicate that contaminant concentrations in soil and groundwater are consistently low and within the adopted threshold criteria for hospital land use.

Given the detailed assessment has already been undertaken on the site, Douglas Partners has concluded that the Stage 2 site is a low risk from a contamination perspective. However, Douglas Partners recommend an inspection of the ground surface should be carried out by a qualified environmental consultant to assess the potential for contamination and the need for any further intrusive sampling, if required. If signs of contamination are observed after demolition, then further assessment may be warranted.

The above recommendation is incorporated as Mitigation Measures with Section 9.0 of this report and will be undertaken on site where relevant.

6.21 Construction Management Plan

A Construction Management Plan (CMP) will be provided by the managing contractor on the development site. The CMP will provide measures to control and mitigate potential impacts by outlining the following:

- operations of site management in accordance with legislative requirements, hours of construction works and appropriate fencing;
- mitigation measure to minimise amenity and environmental impacts through noise, dust management, odour control, vibration management and soil and erosion control;
- appropriate waste management procedures;
- traffic management for construction vehicle movements accessing and exiting the site; and
- the implementation of NSW Groundwater Policy Framework and Groundwater Quality Protection Policies.

The details of the hours of construction and the recommendations of the draft Traffic Management Plan and Sediment and Erosion Plan will be included in the Mitigation Measures at Section 9.0 of this report.

6.22 Social and Economic Impacts

The Stage 2 NCCC and AATC project will have a positive impact to the social and economic benefits for the region, including:

- Improving the quality of cancer and blood disorder treatment service facilities available to the public within the Metropolitan region;
- increase in equitable and affordable access to radiotherapy treatment services;
- Improved healthcare and quality of life outcomes;
- Increased employment during construction; and
- Increased education and training opportunities.

7.0 Request to vary the Height of Buildings Development Standard

Clause 4.6 of LEP 2012 allows an authority to grant consent for development even though the development contravenes a development standard imposed by the LEP. The clause aims to provide an appropriate degree of flexibility in applying certain development standards to achieve better outcomes for and from development.

7.1 Development Standard to be Varied

Clause 4.3(2) states that 'the height of a building on any land is not to exceed the maximum height shown for the land on the Height of Buildings Map'. The maximum height shown on the Height of Buildings Map for the subject site is 24m along the perimeter of the Hospital site from the boundary of High Street to a 30m depth within the Hospital site and 18m along the perimeter of the Hospital site from the boundary of Avoca Street to a depth of 30m. **Figure 22** is an extract of the LEP Height of Building Map that shows the portion of the Prince of Wales Hospital Site affected by the height controls, while **Figure 23** illustrates the height controls on the DA's site plan.

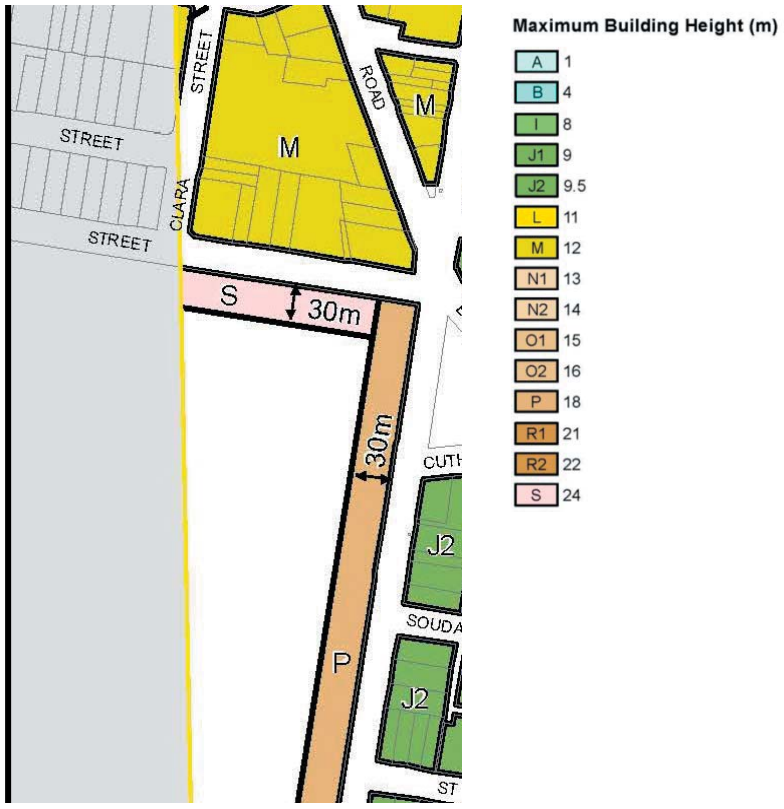


Figure 22 – Extract of Height of Building Map showing perimeter height controls along High Street and Avoca Street.

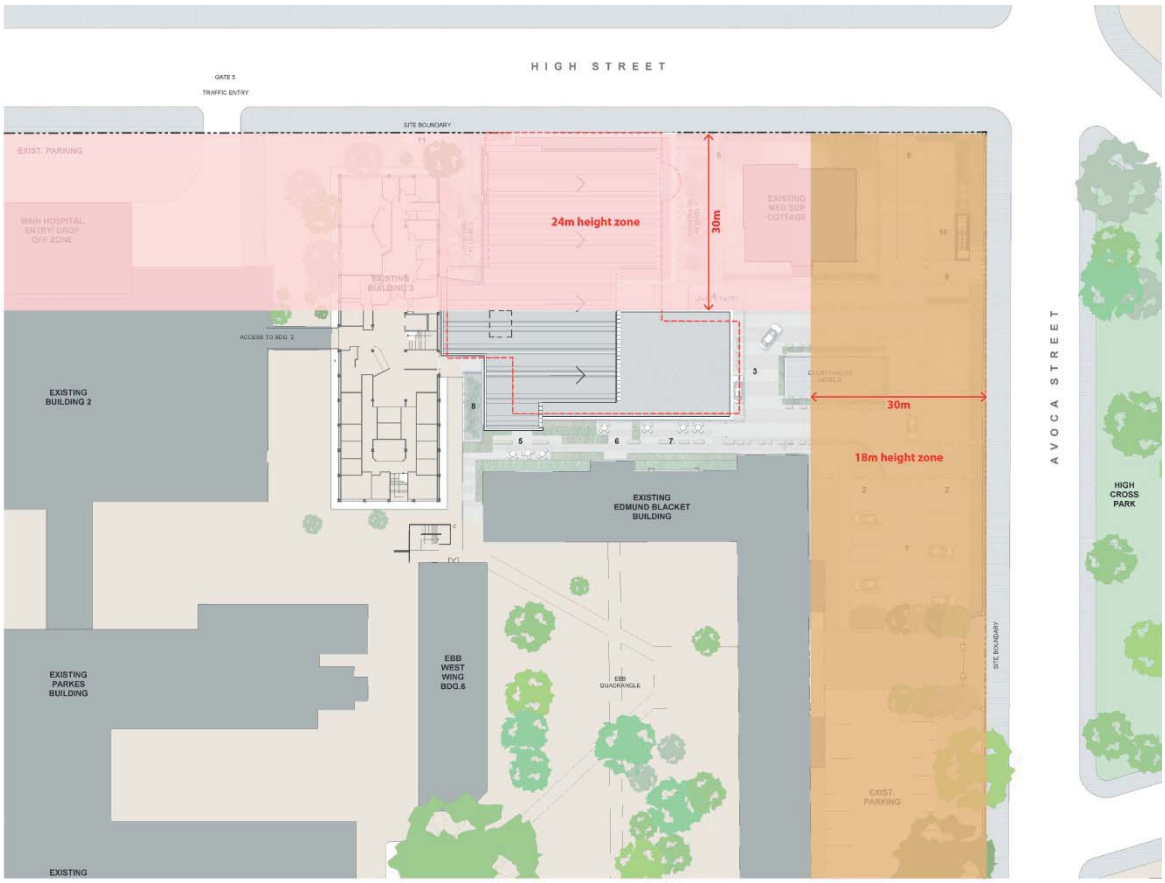


Figure 23 – Proposed development with the perimeter height controls superimposed (indicative)

The maximum height of the building, including the parapet is in the order of 40.89m (RL 105.3). This takes into account the plant level however does not include the likely location of localised flues or antennae, which are not included in the within the building height in accordance with the definition. Therefore a proportion of the proposed development exceeds the maximum building height limit in LEP 2012 by 16.89m for a depth of 30m from the boundary of High Street. The proposed building is not located near the 18m height control from Avoca Street and accordingly only the High Street control applies. An elevation showing the proposed development is shown at **Figure 24**, showing indicatively only the portion of the building that exceeds the 24m height limit for a depth of 30m from High Street.

We note recent consultations and presentations by the Department of Planning & Infrastructure to Randwick Council's councillors with respect to the Randwick Urban Activation Precinct have indicated an intended reversing of these fringe height controls and reverting back to no height controls over SP2 zoned land, such as the hospital. Whilst this carries no weight and has not yet been exhibited for public comment, it demonstrates the Department's current desired position on this matter.

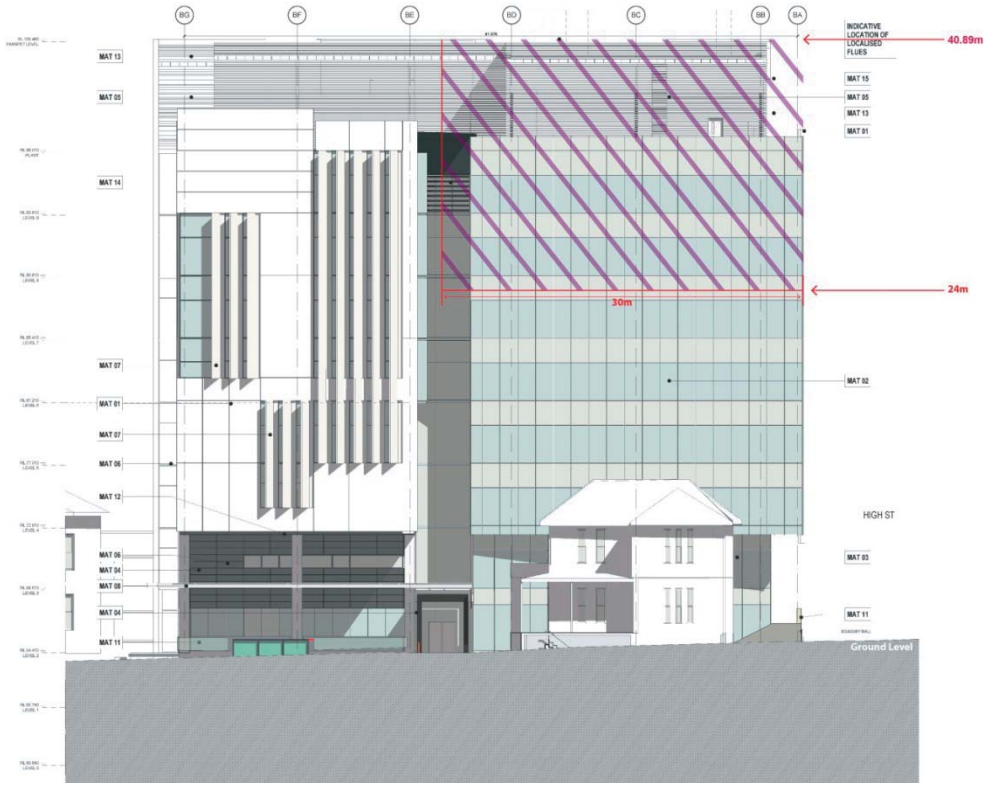


Figure 24 – Proposed eastern elevation of NCCC & AATC showing maximum height of building and the portion of non-compliance (indicative only).

7.2 Justification for Contravention of the Development Standard

7.2.1 Compliance with the development standard is unreasonable or unnecessary in the circumstances of the case

Clause 4.6(3) requires the consent authority to consider a written request from the applicant that seeks to justify the contravention of the development standard by demonstrating that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case and that there are sufficient environmental planning grounds to justify contravening the development standard. Further, Clause 4.6(4) requires the consent authority to be satisfied the written requests satisfies the matters under Clause 4.6(3) and that the proposed development will be in the public interest because it is consistent with the objectives of the particular standard and the objectives of the zone.

The objectives of the development standard are:

(a) to ensure that the size and scale of development is compatible with the desired future character of the locality,

(b) to ensure that development is compatible with the scale and character of contributory buildings in a conservation area or near a heritage item,

(c) to ensure that development does not adversely impact on the amenity of adjoining and neighbouring land in terms of visual bulk, loss of privacy, overshadowing and views.

Table 5 demonstrates that the proposed variation to the height control will still result in a development that achieves the objectives of the maximum building height development standard.

Table 5 – Assessment against relevant LEP objectives of the standard

Objective of the Standard	Proposal
(a) to ensure that the size and scale of development is compatible with the desired future character of the locality.	As shown in **Figure 24**, the maximum height of the building is in the order of 41.5m, including the plant level and top of the parapet. The highest point of which exceeds the height control by 17.5m. As noted within the Architectural Design Statement at **Appendix C**, the building form and scale has taken into consideration the direct relationship to the Parkes Building to the immediate south west in the Hospital site and No. 66 High Street located directly opposite the site. This has allowed the proposed building to create a 'bookend' design to the two other tall buildings and completes the form and the scale of the existing setting. Furthermore, the building envelope also responds to the spatial relationships with the Edmund Blacket Building and the Superintendent's Cottage within the site's vicinity. In light of the above, the building, in terms of its height, bulk and scale is consistent with the heritage character of the locality, and the relationship to the other tall buildings in the close vicinity and is considered to be compatible with the desired future character of the locality. The Urban Activation Precinct process underway to facilitate the Randwick Specialist Precinct will confirm the future character of the area as a higher density precinct with increased employment opportunities close to services, public transport and housing, the development supports growth in specialised employment and reinforcing the role of the POWH Campus as a key magnet and anchor for health-care, research, employment and support for the Randwick Town Centre. The development in its proposed form is consistent with meeting all strategic and statutory planning objectives – see further below.
(b) to ensure that development is compatible with the scale and character of contributory buildings in a conservation area or near a heritage item,	As discussed in Section 6.6 of this report, and assessed within the Heritage Impact Assessment prepared by Worley Parsons at **Appendix K**, the proposed building has been formulated having regard to the Design Principles which have been informed by the Conservation Polices of the Conservation Management Plan and the principles of the Burra Charter. The proposed building has been designed to enable the restoration of the key view cones through the site including the view from High Street through towards the Edmund Blacket Building to the south, the view from Avoca Street to the Edmund Blacket Building and the view cone relationship from the porch of the Superintendent's Residence to the northern entrance of the Edmund Blacket Building. These spatial relationships have regard to the appropriate setting and function of the hospital within the Heritage Conservation Area and within the close vicinity of the heritage items. Further, the Heritage Impact Assessment notes that proposed building form and height is consistent with adjoining contemporary buildings within the hospital campus taking into account the building envelope from the nearby Parkes Wing to the west, and 66 High Street to the north. Thus the proposed height and roof form is considered appropriate to the heritage precinct context. It is therefore considered that the partial height departure will not adversely affect the scale and the character of the heritage listed buildings and Heritage Conservation Area.
(c) to ensure that development does not adversely impact on the amenity of adjoining and neighbouring land in terms of	The variation to the height control will not result in the disruption of any views, loss of privacy or visual impact. The only additional shadow from the building that occurs outside the site is within the winter solstice at 3pm where

Objective of the Standard	Proposal
visual bulk, loss of privacy, overshadowing and views.	the additional shadow falls onto the High Cross Heritage Park. Like the other shadows which occur on the winter solstice, the shadow impact partially impacts the Park and still allows for a continuous 3 hours sunlight in the morning period. As such it is considered not to have an adverse solar access impact to the Park and surrounding streets.

The underlying purpose of the development standard is to control the height of buildings in order to minimise adverse environmental effects, and ensure compatibility with the existing and desired future character of the area. **Table 5** above demonstrates that despite the non-compliance, the variation will not have any adverse environmental effects and will result in a development that is consistent with the desired future character for the area, particularly in the context of growth envisaged by the State Plan, draft Metropolitan Strategy, draft sub-regional strategy and more recently the UAP nomination of the Randwick Specialised Precinct and its emerging controls, noting a current intent to remove these fringe height controls.

As the objectives of the standard are broadly achieved, notwithstanding the partial non-compliance with the standard, strict compliance with the development standard is both unreasonable and unnecessary in the circumstances of the case.

Further, Clause 4.6(4ii) requires the applicant to address the objectives of the development within the zone. Accordingly, the objectives of the SP2 Zoning are outlined in **Table 6** below. As outlined within the table, the proposed development is consistent with the zone objectives.

Table 6 – Objectives of the Zoning

Objective of the Zone	Proposal
To provide for infrastructure and related uses.	The proposed development provides an upgraded Cancer Care Centre that will consolidate a range of existing uses on the Prince of Wales Hospital Campus into a new purpose built facility.
To prevent development that is not compatible with or that may detract from the provision of infrastructure.	The proposed building seeks to ensure that it is compatible with the surrounding built form of the area whilst also taking into account the spatial relationship of the heritage-listed buildings on site, being the Edmund Blacket Building and the Superintendent's Cottage. The proposal will enhance the setting and the nature of the hospital and the heritage listed buildings whilst importantly providing a functional hospital service / infrastructure that will complement existing hospital services.
To facilitate development that will not adversely affect the amenity of nearby and adjoining development.	The proposed development will not adversely affect the amenity of nearby or adjoining development, in particular residential development, which is located some distance from the building.
To protect and provide for land used for community purposes.	The proposed development will upgrade the hospital services therefore protecting and significantly enhancing and rejuvenate the land use for community purposes.

7.2.2 There are sufficient environmental planning grounds to justify contravening the development standard

As discussed in **Tables 5** and **6** above, there are no significant adverse environmental planning impacts as a result of the development. Specifically there will be no loss of views or privacy, and no adverse visual impacts or significant impact to solar access or increase in overshadowing off the campus.

The proposed building has been designed to provide the optimal functional adequacy, to existing services and the minimisation of disruption to ongoing hospital-related services. Further, the building is sited in this location to connect to and be contiguous with existing hospital services and the Stage 1 underground bunkers. The location and form / height of the building further reduces fragmented and ad hoc development of the hospital. The need for the maximum 41.5m height requires a building with its target Gross Floor Area to respond to the requirements of cancer care research and treatment, radiation labs, hospital administration services and future-proofing shell space for hospital support services at a future time. In addition, the building is also restricted to the Obstacle Limitation Surface (OSL) height limit to minimise impact to the operations of Sydney Airport.

The building has also been carefully designed to respond the urban character and setting of existing tall buildings surrounding the site. If the building was to comply with the 24m height limit for a depth of 30m from High Street, this would result in a less elegant built form and loss of floorspace. Alternatively, if the floorspace were placed atop the building where no height control exists, the building's form would exceed the OLS, produce an dysfunctional array of fragmented narrow floorplates that do not provide optimal clinically-efficient floorspace, and a clumsy stepped built-form out of character with its environs and its heritage context.

Accordingly, the building will provide a significant public benefit to the local and regional community. There are no environmental planning grounds to maintain the strict adherence to the standard and sufficient environmental planning grounds to justify deviating from the development standard in the circumstances of this case.

7.3 Director General's Concurrence

The following section provides a response to those matters set out in clause 4.6(5) which must be considered by the consent authority under its delegated authority:

Whether contravention of the development standard raises any matter of significance for State or regional environmental planning.
The proposed contravention to the height of building development standard does not raise any matter of significance for the state or regional environmental planning. To the contrary, to not deliver the building in its proposed form and still achieve the GFA requirements within a 24m height would result in a building that could have potential adverse impacts upon surrounding heritage items and would result in an oddly shaped building form that would exceed the OLS and would not function as an efficient hospital building.

The public benefit of maintaining the development standard.
There is no public benefit in maintaining the development standard. Moreover, the proposed NCCC and AATC building in its proposed form will provide the highest quality of cancer treatment care to address the increasing demands of the locality and the region, which will provide a significant public benefit to the community.

Any other matters required to be taken into consideration by the Director-General before granting concurrence.

The proposal represents a significant hospital development to occur at POWH under Randwick LEP 2012. It should be noted prior to LEP 2012 gazettal, LEP 1998 did not impose any height control limits that unreasonably constrained the flexibility of development outcomes for core social services with a non-commercial objective. Essentially, the hospital seeks to provide the best services that it can whilst constrained by existing buildings on the site and does not seek to increase floor space or height for commercial profitability.

Whilst the development does propose to partially vary the maximum height development standard, it will not result in any unacceptable precedents being formed, and will provide a high quality development in terms of its form, mass and design. Furthermore, as outlined above, strict compliance with the standard would result in a poor design to the building form and function and may impose adverse impacts to the surrounding heritage precinct.

7.4 Summary

This section demonstrates the consent authority can be satisfied that:

- that compliance with the development standard is both unreasonable and unnecessary in the circumstances of the case because the objectives of the standard can be are achieved notwithstanding non-compliance with the standard; and
- that there are sufficient environmental planning grounds to justify contravening the development standard as the variation does not result in any adverse environmental impacts and provides disabled access to the communal open space.

On balance, when considering the environmental impacts such as overshadowing, views, form, heritage and the functional needs and space for clinical purposes, the proposed built form provides to a better outcome than what would be achieved with strict height compliance control.

It is therefore requested that the Department of Planning and Infrastructure grant development consent for the proposed development even though it contravenes the height of building development standard in the Randwick LEP 2012.

8.0 Conclusion and Justification of the Proposal

This Environmental Impact Statement (EIS) has been prepared to consider the environmental, social and economic impacts of the proposed Stage 2 Comprehensive Cancer and Blood Disorder Centre (NCCC) and Australian Advanced Treatment Centre (AATC). The EIS has addressed the issues outlined in the Director-General's Requirements (**Appendix B**) and accords with Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* with regards to consideration of relevant environmental planning instruments, built form, social and environmental impacts including traffic, noise, construction impacts and stormwater.

It is considered that the project warrants approval for the following reasons:

- The proposal is consistent with the principles of ecological sustainable development as defined by Schedule 2(7)(4) of the *Environmental Planning and Assessment Regulation 2000*;
- The area and shape of the site allows for the provision of a new NCCC and AATC Hospital building that meets the design requirements for specialised cancer treatment and blood disorder care whilst not resulting in any significant adverse impacts on surrounding buildings and taking advantage of decanting existing services to the new building with minimised interruptions to the Hospital;
- The development will not have a significant impact on the traffic generation or the patient and visitor parking and provides a draft Traffic Management Plan to appropriately manage construction vehicle movements;
- The environmental investigations of the site and soil conditions demonstrate that the proposed use and design of the building is suitable for the site;
- The development will not generate any significant impact or increase the general waste and hazardous waste of the Hospital; and
- The provision of a new and modern hospital building will further support and strengthen the medical services for the area.

Given the planning merits described above, and significant public benefits proposed, it is requested that the Minister approve the application.

9.0 Mitigation Measures

The collective measures required to mitigate the impacts associated with the proposed works are detailed in **Table 7** below. These measures have been derived from the assessment in Section 6.0 and those detailed in appended consultants' reports.

Table 7 – Mitigation Measures

Mitigation Measures
Traffic and Access (Construction and Operation) ▪ Traffic, access servicing and layout arrangements are to be in accordance with the Traffic Report by Aurecon (May 2013). ▪ The draft Traffic Construction Management Plan is to be finalised and recommendations are to be implemented.
Geotechnical and Contamination ▪ After demolition of the existing buildings on the Stage 2 site, an inspection of the ground surface should be carried out by a qualified environmental consultant to assess the potential for contamination and the need for any further intrusive sampling, if required. If signs of contamination are observed, further assessment is required. ▪ Detailed excavation design is to incorporate the recommendations of the Structural Engineering Report (prepared by SKM April 2013).
Operational Management ▪ Detail design must incorporate the noise attenuation measures outlined in the Acoustic Report prepared by Acoustic Logic. ▪ Detail design must incorporate the measures for radiation mitigation outlined in the Radiation Report prepared by Radiation Services Group undated.
Heritage ▪ Works must incorporate the recommendation of the Heritage Impact Statement prepared by Worley Parsons April 2013. ▪ Excavation works must incorporate the recommendations of the European Archaeological Assessment report prepared by Casey and Lowe March 2012, however it is noted that a s139 permit under *Heritage Act 1977* and a s140 application to the Heritage Branch will not be required for a SSD application. ▪ Excavation works must incorporate the recommendations of the Aboriginal Archaeological Assessment report prepared by Mary Dallas Archaeologist.
Building Code of Australia (BCA) / Fire Statements ▪ The recommendations of the BCA and Fire Compliance Statements are to be implemented before detailed design and the release of a Construction Certificate.
Construction Noise and Vibration ▪ The recommendations of the construction noise and vibration report prepared by Acoustic Logic dated April 2013 are to be implemented.
Stormwater ▪ The recommendations of the Structural Engineering Report prepared by SKM April 2013 are to be implemented for stormwater control.
Construction Management Plan ▪ A Construction Management Plan is to be prepared by the Managing Contractor prior to the works commencing on site. Measures to control sediment and erosion control, noise, odour tree protection and

Mitigation Measures
construction waste are to be implemented.
Ecologically Sustainable Development (ESD)
▪ The Stage 1 works and detail design must incorporate the Environmental Sustainable Design Principles.
Aviation Impacts
▪ Health Infrastructure will engage a specialist aerospace risk management consultant to undertake an assessment of the proposed development, and its relationship with and impacts upon the existing helipads with respect to existing or future anticipated flight paths.
Wind Impacts
▪ The recommendations of the Wind Assessment Report prepared by CPP dated February 2013 are to be implemented.