Environmental Assessment Report
Concept Plan and Project Application

Neuroscience Research Project

Barker Street, Randwick

Submitted to
Department of Planning
On Behalf of Prince of Wales Medical Research Institute

May 2009 ■ 07542

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Statement of Validity

This Environmental Assessment has been prepared and submitted under Part 3A of the *Environmental Planning and Assessment Act* 1979 (as amended) by:

Environmental Assessment prepared by	
Name	Amanda Harvey
Qualifications	B App Sc Dip Env Studies
Address	Level 7, 77 Berry Street, North Sydney NSW 2060
In respect of	Redevelopment of the Prince of Wales Medical Research Institute, Barker Street, Randwick
Proposal	
Applicant name	POWMRI Ltd – Prince of Wales Medical Research Institute
Applicant address	PO Box 82, St Pauls NSW 2031
Land to be developed	Land at Prince of Wales Hospital, Barker Street, Randwick Part Lot 1 in DP 870720.
Proposed Concept Plan	▪ Redevelopment of the existing Prince of Wales Medical Research Institute site, Barker Street, Randwick to provide up to 61,000m^2 GFA for a new Neuroscience Research Precinct, associated car parking, utilities and landscaping works.
Proposed Project Application	▪ Preservation of previously approved Development Application (DA/468/2007) for "proposed additions to Prince of Wales Medical Research Institute comprising additional open office spaces located to the northeast and southwest corners of the building envelope, additional stairs and rooftop plant room located above the north-eastern addition", by inclusion as part of the Project Application and by agreeing that no further environmental assessment is required pursuant to Section 75P(1)(c) of the Act for works associated with that development consent; ▪ Demolition of existing buildings (Ambulance Station, Villas 1 and 2 and other minor structures); ▪ Construction of the first part of the Neuroscience Research precinct buildings (25,470m^2), known as Stage 2 of the development); ▪ Construction of associated car parking, loading facilities and landscaping; and ▪ Construction of associated physical infrastructure.
Environmental Assessment	An Environmental Assessment (EA) is attached
Certificate	I certify that I have prepared the content of this Environmental Assessment and to the best of my knowledge: ▪ It is in accordance with the Environmental Planning and Assessment Act and Regulation. ▪ It is true in all material particulars and does not, by its presentation or omission of information, materially mislead.
Signature	
Name	Amanda Harvey
Date	21 May 2009

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Executive Summary

This submission to the Department of Planning comprises an Environmental Assessment for a joint Concept Plan and Project Application under Part 3A of the Environmental Planning and Assessment Act (EP& A Act). It relates to the redevelopment of the Prince of Wales Medical Research Institute (POWMRI), Randwick.

This submission is in accordance with the Department's guidelines for a Concept Plan and a Project Application lodged under Part 3A, and addresses the issues raised in the Director General's Requirements.

Purpose of this Report

Approval is sought for:

- Concept Plan approval for the development of the existing POWMRI site at Barker Street, Randwick for consolidation and expansion of existing clinical and laboratory neuroscience research space over multiple stages to a maximum overall building height of RL 89.00 (approximately 44.5m above ground level) and maximum GFA of about 61,000m^2 for the creation of a new Neuroscience Research Precinct at the Prince of Wales Hospital;
- Concurrent Project Application approval for Stage 2 (being Stages 2A to 2D) of the Concept Plan proposal (being 25,470m^2 and associated car parking and landscaping and ancillary uses), and including associated infrastructure works; and
- Preservation of Stage 1 of the development (as already approved by Randwick Council (DA/468/2007) for "proposed additions to Prince of Wales Medical Research Institute, comprising additional open office spaces located to the northeast and southwest corners of the building envelope, additional stairs and rooftop plant room located above the north-eastern addition", by inclusion as part of the Project Application and by agreeing that no further environmental assessment is required pursuant to Section 75P(1)(c) of the Act for works associated with that development consent.

The estimated capital investment value of the overall project is $264.9 million.

The Proponent

The proponent of the development is POWMRI Ltd – Prince of Wales Medical Research Institute. The site is owned by the South Eastern Sydney and Illawarra Area Health Service.

The Site

The site is bounded by Barker Street, Hospital Road, Francis Martin Drive and Easy Street, but excludes the site of the Kiloh Centre.

The site is located in the south western corner the Prince of Wales Hospital (POWH) Precinct and abuts adjacent POWH uses, to the east and north. The Concept Plan site is identified as a Research Precinct within the POWH Precinct. To the south of the site are stables, a public high school, and shops. Development to the west of the site, across Hospital Road, is typified by low rise residential development.

Existing Use and Development

The existing development within the Concept Plan site comprises a group of permanent and temporary buildings being the Ambulance Station, Black Dog Institute building (referred to as Villa 3), and two existing interconnected POWMRI buildings (referred to as Villas 1 and 2). These buildings are generally single to 2-storeys in height and provide are range of research, diagnostic and treatment functions related to neurological and mental illnesses.

The Proposal

The Concept Plan sets out the vision and future development framework for the site.

The Project Application seeks approval for the development of Stage 2 of the development. This stage comprises 25,470m^2 GFA to provide laboratories, offices and other facilities to support the POWMRI research and development. This work is to facilitate the first major phase of the development as proposed by the Concept Plan.

In addition, works approved by Randwick Council under DA/468/2007, are sought to be preserved as part of the Project Application approval. This stage of works is referred to as Stage 1.

Further detailed applications for development of the site will be submitted for approval as part of a staged planning and development process.

Planning Context

In the main the overall project seeks to provide additional research space for the POWMRI and Black Dog Institute, which in turn will strengthen existing research ties with the University of NSW (UNSW) and assist POWMRI in becoming leading researchers in the field of neurological research. The aims of the project directly accord with the Department of Planning's nomination of the site within the Randwick Education and Health Centre as a Specialised Centre under both the current Metropolitan Strategy and the draft East Subregional Strategy. The subject site falls within the Global Economic Corridor for Sydney Metropolitan Area, which is recognised as having a growing concentration of national and global-level jobs and activities, establishing itself as the powerhouse region in Sydney and in Australia's economy.

Economy and Employment Actions from the draft East Subregional Strategy include strengthening industry clusters; establishment of a framework to support innovation across Sydney; and support for magnet infrastructure, including at the Randwick Education and Health Specialised Centre. The proposal seeks to foster the growth of an industry cluster focused on neurological research, innovation (particularly through ties and links with academia) and MRI infrastructure.

The subject proposal is itself also recognised and nominated within the draft Subregional Strategy. The growth of the precinct is anticipated (for up to 75,000m^2 of floor space) in strengthening the relationship between the UNSW and the Prince of Wales Hospital Precinct.

The site is currently zoned '5 – Special Uses' under Randwick LEP 1998. The proposal is permissible with consent. Relevant to the site and the proposed development there are no height, FSR or parking controls within the LEP, although the relevant DCP does include parking rates applicable to hospitals.

Environmental Impacts

In terms of site planning and potential environmental impacts, the key issues are:

- site suitability;
- consistency with planning controls;
- site planning, urban design, and internal layouts;
- transport and access;
- stormwater management;
- infrastructure and servicing;
- built form and amenity, shadowing, and visual impacts;

- geotechnical impacts and contamination;
- social and economic benefits;
- demolition and construction management;
- waste management;
- mobility and access;
- energy efficiency;
- acoustic impacts;
- heritage and archaeology issues;
- public interest; and
- BCA compliance.

The assessment of both Concept Plan and Project Application concludes that these issues are able to be managed during the planning and development of the development site.

Statements of Commitments have been prepared for the Concept Plan and the Project Application, which outline a series of mitigating and management measures, strategies and guidelines that will be undertaken to inform the detailed design planning for the development of the proposal and manage the environmental and construction impacts arising from the proposed development.

Conclusion

POWMRI is seeking approval for a Concept Plan for the site to provide long term certainty and to allow for co-ordinated development to occur by way of a staged planning and development process. The concurrent Project Application seeks to implement Stage 2 of the POWMRI proposal, whilst the preserving the earlier Council approval for the Stage 1 works.

This Environmental Assessment and its supporting Appendices in tandem with the draft Statements of Commitments, provides an exciting opportunity to consolidate and reinforce activities at the POWMRI site in the Randwick Education and Health Specialised Centre. In doing so, it will implement key objectives and outcomes of the Metropolitan Strategy and the draft East Subregional Strategy associated with fostering a strong health, educational and research hub for innovation and excellence at Randwick.

1.0 Introduction

This Environmental Assessment Report (EA) is submitted to the Minister for Planning, pursuant to Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act), to fulfil the Environmental Assessment Requirements issued by the Director General for the Concept Plan and Project Application approval of the Neuroscience Research Precinct project.

This EA relates to part Lot 1 in DP 870720 at Barker Street in Randwick, herein referred to as 'the site'.

Approval is sought for:

- Concept Plan for consolidation and expansion of existing clinical and laboratory neuroscience research space over multiple stages to a building height of RL 89.00 (approximately 44.5m above ground level) and to a maximum GFA of about 61,000m^2 for the creation of a new Neuroscience Research Precinct;
- Concurrent Project Application approval for Stage 2 (being Stages 2A to 2D) of the Concept Plan proposal (being a total of 25,470m^2 of floorspace and associated car parking, landscaping and ancillary uses); and
- Preservation of development approval for Stage 1 of the development (DA/468/2007) approved by Randwick Council for "proposed additions to Prince of Wales Medical Research Institute comprising additional open office spaces located to the northeast and southwest corners of the building envelope, additional stairs and rooftop plant room located above the north-eastern addition", by inclusion as part of the Project Application and by agreeing that no further environmental assessment is required pursuant to Section 75P(1)(c) of the Act for works associated with that development consent.

This EA Report has been prepared by JBA Urban Planning Consultants Pty Ltd on behalf of Prince of Wales Medical Research Institute Ltd (POWMRI). It is based on urban design and architectural information provided by Cox Richardson (**Appendix A**), landscaping plans provided by Tract Consultants (**Appendix B**) and supporting technical documents provided by the expert consultant team.

The estimated Capital Investment Values of the overall project (Concept Plan) and Project Application are $264.9 million and $117.9 million, respectively (**Appendix C**).

This EA Report describes the site, its environs and the proposed development, and addresses the Director-General's Environmental Assessment Requirements issued under Part 3A of the EP&A Act for the Concept Plan and the Project Application. It should be read in conjunction with the information contained within and appended to this EA Report.

This EA:

- Details the background to the current proposal in the context of the Metropolitan Strategy and the draft East Subregional Strategy;
- Outlines the vision for the Neuroscience Research Precinct;
- Presents a Concept Plan to guide the future development of the site;
- Provides an assessment of the environmental impacts of the proposed Concept Plan and Project Application for Stage 2 works against the Director General's Requirements issued for the proposal; and
- Sets out the further studies, investigations and management measures proposed to inform the detailed design planning for the development of each development stage and manage the environmental and construction impacts arising from the proposed development.

1.1 Background

Planning History

On 28 April 2008, a request to the Minister for Planning that the proposal be considered as a Part 3A Major Project and that a Concept Plan be authorised for the project was made.

In a letter dated 22 July 2008, the Department of Planning advised that the Minister had (on 10 July 2008) agreed to consider the proposal as a Major Project and also agreed to authorise and concurrently consider a Concept Plan for the proposal (**Appendix D)**. On 13 August 2008 and 11 September 2008, the Director General issued final Environment Assessment Requirements for the Concept Plan and the Project Application, respectively.

This EA Report has been prepared in accordance with those requirements, a copy of which is attached at **Appendix D.** A summary of where these requirements are addressed in this EA Report is at **Appendix E**.

Project Background

The POWMRI is a leader in neuroscience research and treatments within New South Wales. It has expertise in the areas of ageing and neurodegenerative diseases, human movement, sensation, falls and balance, mental health, neurological injury, brain mapping and imaging. The Institute has formed strong ties and partnerships with the Spinal Injuries Unit, and Departments of Neurology and Psychiatry at the Prince of Wales Hospital. Further strong and related partnerships exist with the University of NSW, especially the Faculty of Medicine and with the Black Dog Institute.

The current POWMRI operation has outgrown the existing premises. There has been a continuing sharp trend in growth of the facility since its inception in 1993 and in order to maintain current levels of clinical service, research and employment growth, expansion of their facilities is necessary.

1.2 Project Team

An expert project team has been formed to deliver the project and includes:

Proponent	POWMRI Ltd
Project/Development Manager	Winton Associates
Architecture/ Urban Design	Cox Richardson
Landscaping	Tract Consultants
Urban Planning	JBA Urban Planning Consultants
Quantity Surveyors	WT Partnership
Traffic	Parsons Brinkerhoff
European Heritage	Graham Brooks & Associates
Aboriginal Archaeology	Mary Dallas Consulting Archaeologists
European Archaeology	Cultural Resources Management
Contamination	Environmental Investigation Services
Geotechnical	Jeffery and Katauskas
Hydraulic Services	Whipps Wood Consulting
Civil and Stormwater Infrastructure	Taylor Thomson Whitting
Accessibility	Access Associates Sydney
Acoustic	PHA Acoustic Consulting
Wind	Windtech
Reflectivity	Windtech
ESD/ Sustainability	Cundall
Mechanical/ Electrical Services	Shelmerdines Consulting Engineers
BCA	Davis Langdon

2.0 The Site

2.1 Location and Context

The site is situated within the northern part of Randwick City Council Local Government Area (LGA) and is located in the south western portion of the Prince of Wales Hospital Precinct. It is bounded by Barker Street to the south, Easy Street to the east and Hospital Road to the west. Francis Martin Drive, the Memorial Garden and Kiloh Centre form the northern boundary. The site's location and context is shown in **Figures 1** and **2**.

Figure 1 – Site location plan

Figure 2 – Site context plan

2.2 Land Ownership and Legal Description

The site is legally described as Part Lot 1 in DP 870720 and is owned by South Eastern Sydney and Illawarra Area Health Service. It is L- shaped and covers an area of 14,020m^2. Site survey plans are included at **Appendix B**.

2.3 Existing Use and Development

The site comprises two interconnected medical research buildings, known as Villas 1 and 2, an Ambulance Station, the Black Dog Institute (Villa 3) and various demountable buildings. Overall these buildings comprise a total of approximately 8,396m^2 of floor space. The location of these buildings is illustrated in **Figures 2** and **3**.

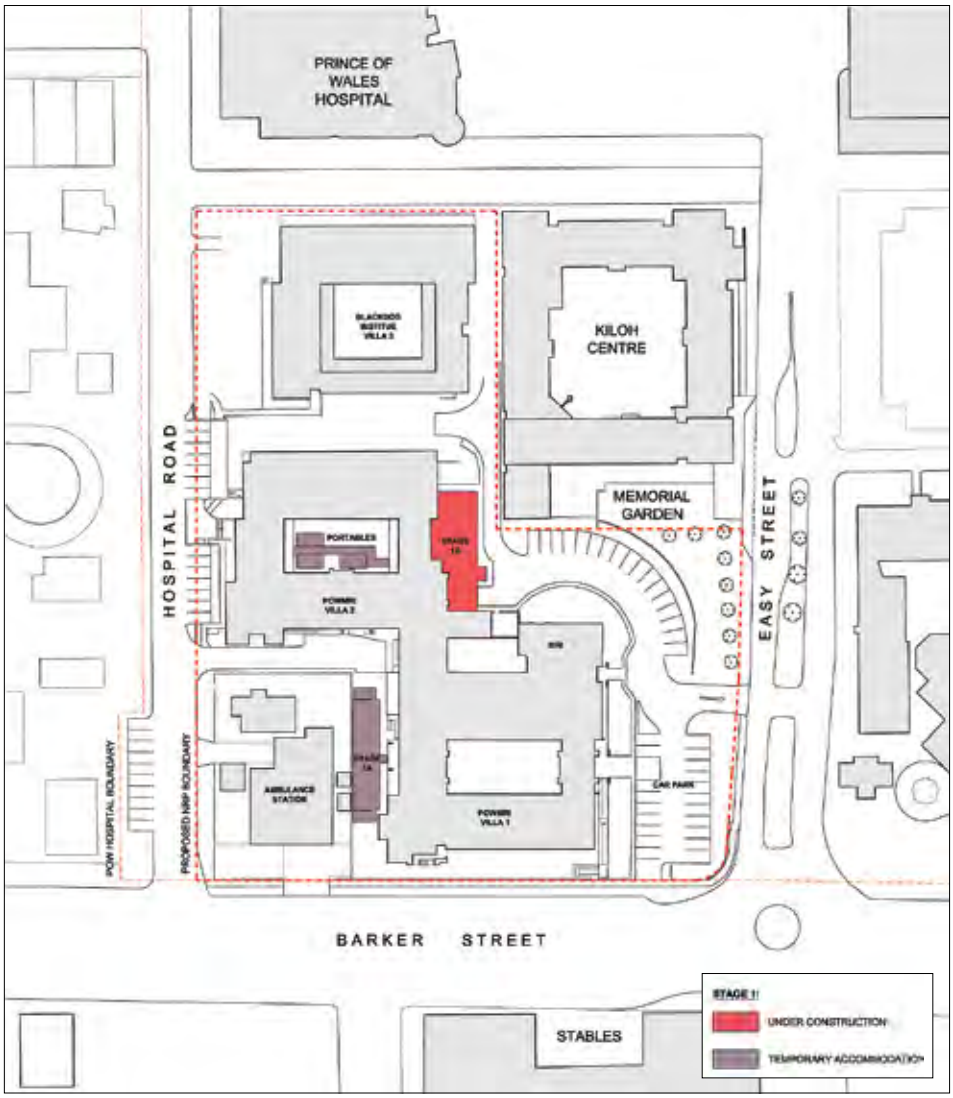

Figure 3 – Existing development

Villas 1 and 2, occupied by the POWMRI comprise of single and two storey brick/ masonry buildings. The main access into Villa 1 leads directly from the main car park off Easy Street. A secondary access to the site into Villa 2 is from Hospital Road. Demountable buildings connect to the west of Villa 1 and also within the courtyard of Villa 2, providing additional temporary floor space. In addition, part of the development works as approved under DA/468/2007 are currently under construction (see Stage 1B shaded in red in **Figure 3** above). This work is discussed further in Section 2.5.

The Black Dog Institute, a two storey brick/ masonry building, is accessed from Hospital Road. This is an educational, research, clinical and community-oriented facility offering specialist expertise in depression and Bipolar Disorders.

The Ambulance Station comprises a single storey brick building fronting Barker Street and a smaller separate two storey brick building fronting Hospital Road. Photographs of the existing buildings are included at **Figure 4**.

View of Villa 1 from Barker Street (looking west)

View of Villa 2 from Hospital Road (looking south)

View of Ambulance Station from Barker Street

Entrance to Black Dog Institute from Hospital Road

View of the car park from the Memorial Garden area (looking south)

View of the grassed area and Ficus trees from the car park (looking north)

Figure 4 – Photographs of the site

2.4 Site Analysis

Site analysis plans are included at **Figures 5** and **6**. These plans illustrate the site's existing access and egress points and the site's arrival and view opportunities. A description of the key elements of the site is set out below.

2.4.1 Topography

The natural topography of the site rises generally from the south (Barker Street) to the north (the Prince of Wales Hospital Precinct) with an overall gradient of around 3°. The ground levels over the site however have been modified to accommodate the existing buildings. Overall, the site is lower than the reminder of the hospital precinct. Site levels are shown on the site survey drawings at **Appendix F**.

2.4.2 Geology

The site is underlain by Hawkesbury Sandstone. The subsurface profile of the site comprises:

- asphaltic concrete pavement (between 50mm and 100mm thick);
- road base (100mm to 150mm thick);
- fill (encountered between 0.3m and 1.5m);
- natural sandy soils (encountered generally beneath the fill); and
- sandstone bedrock (encountered generally between 3.5m and 6.8m).

Geotechnical investigations undertaken by Jeffery and Katauskas and included at **Appendix G**, revealed that groundwater was measured at depths ranging between 2.8m and 5.2m. However, groundwater seepage was not encountered in any of the boreholes during or on completion of the augering.

2.4.3 Drainage

The site currently drains to a 1200mm Council Stormwater Truck system along Barker Street and adjacent to the site. There is also an overland flow path that drains from the site to Young Street, south of Barker Street.

TTW has prepared a Flood Assessment, which is appended to their Civil Design Statement included at **Appendix H**. This assessment revealed that the site forms part of a larger 73.0ha catchment and a 37.0ha sub-catchment. The extent of these catchment areas is shown the diagrams appended to the Flood Assessment.

2.4.4 Vegetation

The site contains informal planting comprising trees and shrubs in and around the existing buildings over the site and within the internal courtyard of Villa 2.

In the north eastern section of the site is a formal landscaped area that includes 7 well established and maintained Ficus trees, which are planted along and perpendicular to Easy Street. Existing trees and landscaped areas within and adjoining the site are shown in **Figure 2**, above.

2.4.5 Access and Car Parking

The site has two main vehicular entrances. The principal access / egress to the site is from Easy Street into an at grade level car park comprising 37 spaces. The second access / egress is from Hospital Road into a small laneway which surrounds the Ambulance Station buildings. The Ambulance Station has direct access / egress to Hospital and Barker Streets. These are illustrated in **Figure 5**.

In addition to the parking provided on site, there are 29 designated on street parking spaces allocated to the site. These are located on either side of Hospital Road adjacent to the site.

Pedestrian access into the site is via Hospital Road to the Black Dog Institute building and Villa 2, and from Easy Street across the car park into Villa 1. Pedestrians are also able to traverse the site from the car park, between Villa 2 and the Black Dog Institute building towards Hospital Road. The access points for vehicles and pedestrians are annotated in **Figure 2**, above.

2.4.6 Public Transport

The site is well served by numerous and frequent bus services provided by Sydney Buses. A bus stop is located on Barker Street adjacent to the site. Within the vicinity of the site there are additional bus stops located on High Street, Belmore Road, and Perouse Road.

2.4.7 Heritage

Various heritage assessments have been undertaken with regard to Aboriginal and European heritage. These include:

- European Heritage Impact Statement by Graham Brooks and Associates (see **Appendix I**);
- Aboriginal Archaeology – Preliminary Assessment by Mary Dallas Consulting Archaeologists (see **Appendix J**);
- Preliminary Assessment of European Archaeology report by Cultural Resources Management (see **Appendix K**).

The site is not included as part of the heritage listed Prince of Wales Hospital group, which is identified under Schedule 3 of the Randwick Local Environmental Plan 1998 (LEP 1998), nor it is separately listed as including an item of heritage significance. The site is however, in the vicinity of:

- the Struggletown Heritage Conservation Area (see **Figure 2**), which is listed under LEP 1998; and
- the Randwick Stables Complex, at the corner of Young and Baker Street, which is a listed heritage under LEP 1998.

There are no items of State heritage significance located within or in the vicinity of the site. The site has associations with various previous land uses since 1852, which include:

- 1852-1915 – The Randwick Destitute Children's Asylum
- 1915-1924 – The 104 Australian General Military Hospital
- 1924-1939 – The Repatriation Hospital
- 1939-1954 – Renewed Active Service
- 1954-1959 - Sydney Hospital Annexe: The Hospital Commission
- 1959-1972 – A Teaching Hospital
- 1972-current – Amalgamation

Relevant to the Randwick Destitute Children's Asylum, the adjoining Kiloh Centre site underwent archaeological investigations before the construction of the current building in 1996.

These investigations revealed a cemetery for the asylum, in which the remains of some of the children that died while at the asylum were buried. 163 burials were recorded and the remains of 65 burials were removed and reburied within the Memorial Garden for the asylum, which now serves to a remember to this period of Randwick's history and to identify this significant social historic phase of the Kiloh Centre site. The Memorial Garden is located to the immediate north of the proposed development site within the Kiloh Centre site (see European Heritage Impact Statement at **Appendix I**.

A detailed Conservation Management Plan for the whole of the Prince of Wales Hospital Precinct was undertaken in 1997. This revealed the extent of buildings and other structures associated with the above phases of the site's history. An assessment of the site's European heritage significance is detailed in the European Heritage Impact Statement at **Appendix I**.

Mary Dallas Consulting Archaeologists and Cultural Resources Management consultants have undertaken preliminary assessments of the site with respect to archaeological remains and artefacts that may be found within the site (see **Appendix J** and **K** respectively). The details of these assessments are outlined and discussed in Section 6.5 of this report.

2.4.8 Utilities

Sewer

The site is served by a Sydney Water sewer main which runs from Hay Street, southwards along Hospital Road to Barker Street. No part of the sewer main traverses the site. As part of this sewer main is an existing sewer vent, which extends from the manhole to the footpath at the corner of Barker and Easy Streets.

Water

An existing 1500mm water main along Barker Street serves the site.

Gas

An existing gas main is located in Avoca Street.

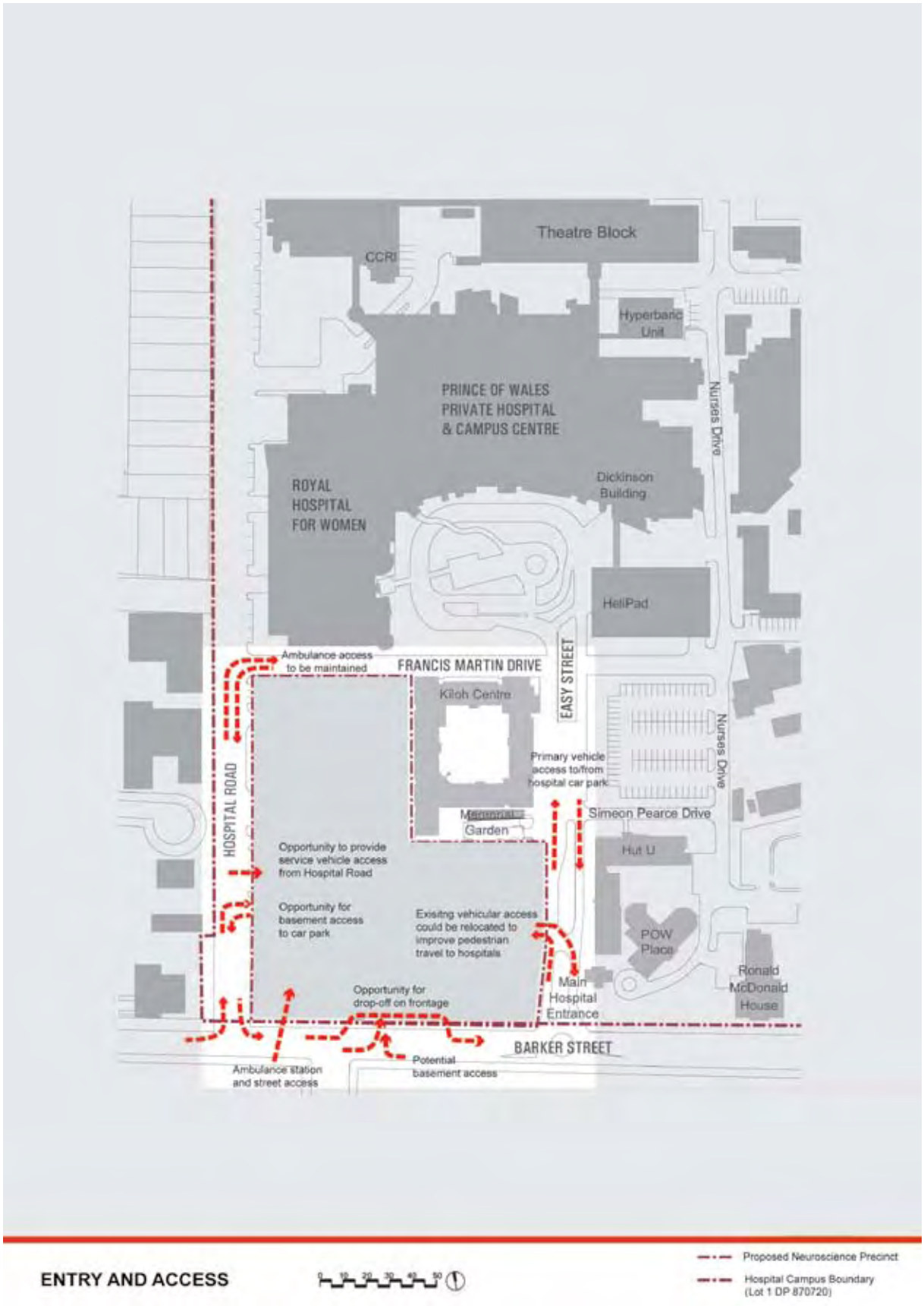

Figure 5 – Existing access and egress points

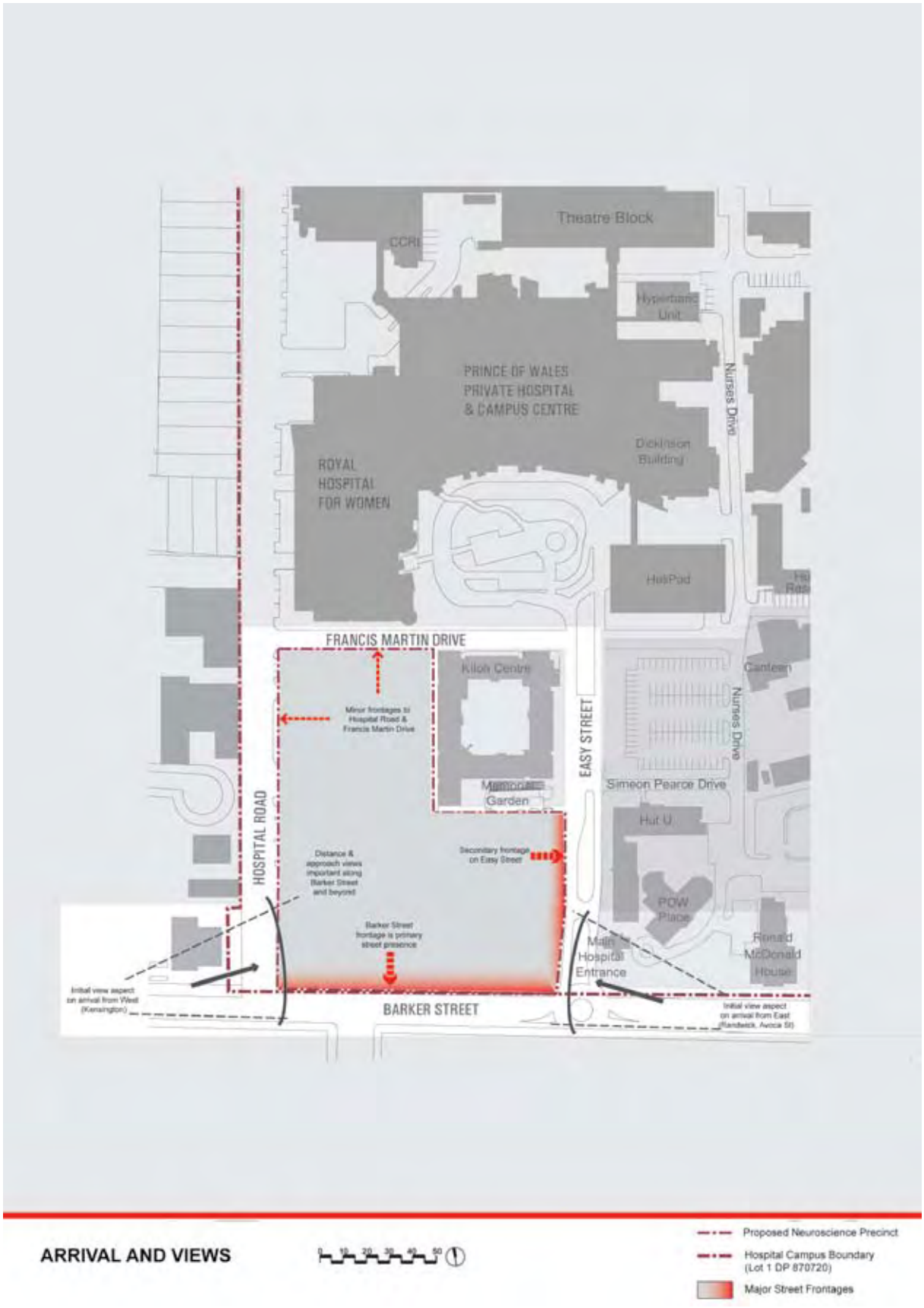

Figure 6 – The site's arrival and view opportunities

2.5 Existing Development Consents

Development Approval (DA/468/2007) was granted by Randwick Council on 25 September 2007 for:

> *" additions to the Prince of Wales Medical Research Institute, comprising additional open office spaces located to the northeast and southwest corners of the building envelope, additional stairs and rooftop plant room located above the north-eastern addition".*

Prior to determination, the extent of the office space to the east of Villa 2 was amended in order to preserve an existing gum tree. A copy of the Development Approval and stamped plans are included at **Appendix L**.

Figure 7 illustrates the elements of this scheme which are currently under construction and those which are still to be constructed.

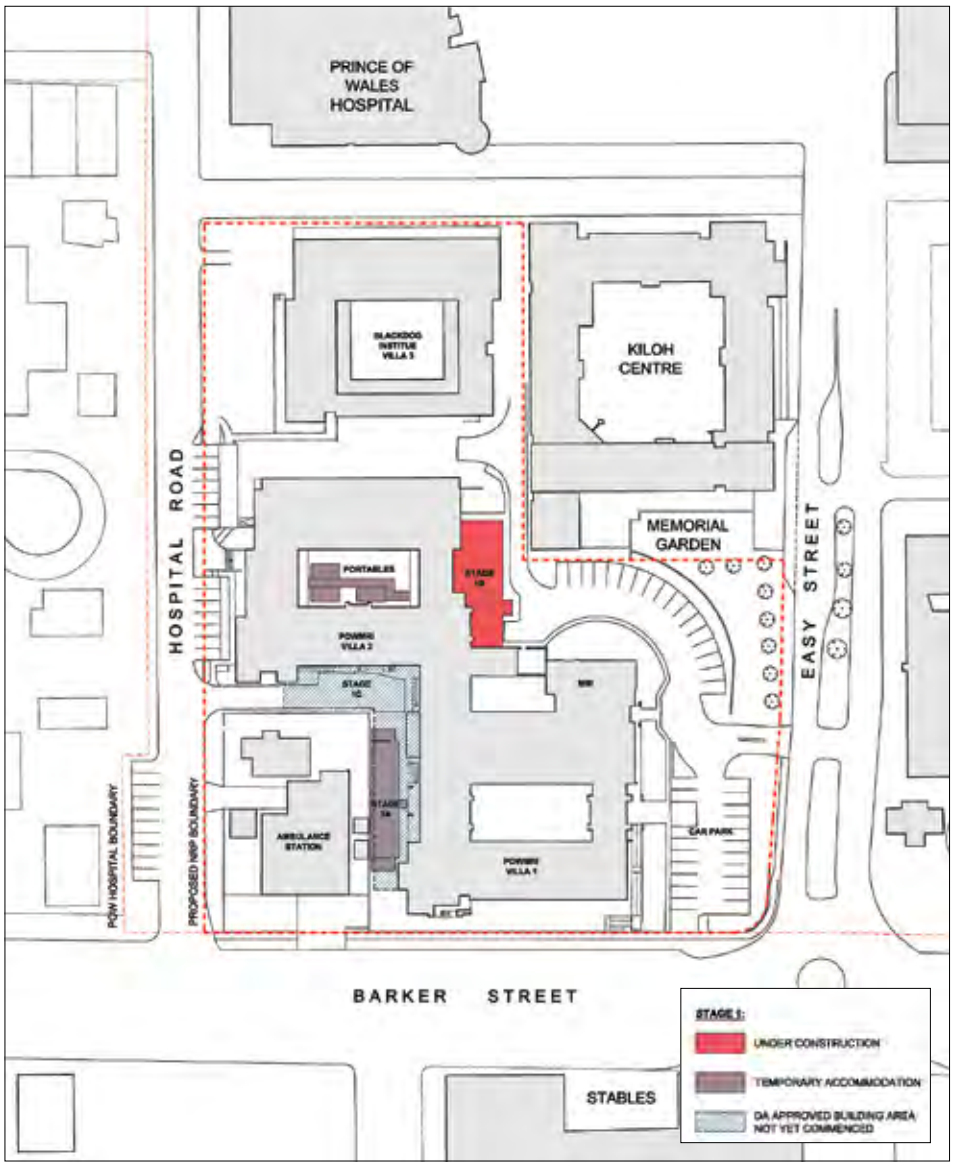

Figure 7 – Approved development works

2.6 Surrounding Development and Land Uses

As discussed above, the site is part of the Prince of Wales Hospital Precinct but is separated from the main hospital buildings by Francis Martin Drive and Easy Street. The Kiloh Centre, a two- storey brick building used as a mental health general unit of the hospital and the Memorial Garden are located immediately north of the site within the bounds of the two access roads.

The other hospital buildings located to the north and east of the site comprise the Prince of Wales Private Hospital, the Royal Hospital for Women and Sydney Children's Hospital. The buildings comprise a mix of styles and heights, the tallest being the Prince of Wales Hospital main building. The location of these buildings is illustrated on **Figures 5** and **6**, above.

Low scale residential properties lie to the west of Hospital Road. Further beyond this residential area is the University of New South Wales. The Randwick Equine Centre is situated to the south of Barker Street with the Stuggletown Veterinary Practice situated to the south west and Randwick Girls High School to the south east.

Photographs of the surrounding area are included at **Figure 8**.

View of Hospital Buildings to the north and west of the site from Barker Street/ East Street intersection

View of the Kiloh Centre from Easy Street (looking north)

View north along Hospital Road with residential buildings to the west

View of Randwick Equine Centre from the Barker Street/ Easy Street intersection

Figure 8 – Photographs of surrounding development and uses

2.7 Site Constraints and Opportunities

Based on the above analysis the following summarises the main constraints and opportunities associated with redeveloping the site.

Constraints

- The site bounds the Kiloh Centre site to the west and south.
- The Kiloh Centre has recently been redeveloped and operates separately from existing POWMRI operations.
- The site adjoins various heritage items and a listed heritage conservation area, most significantly is the Memorial Garden that commemorates the remains found to be associated with the Randwick Destitute Children's Asylum cemetery.
- Limited at grade car parking is provided on site.
- The site is affected by the Ambulance Service NSW Aeromedical Services helicopter to the Hospital at a height of 60.5 metres AHD.
- Vehicle access to the site is primarily via Easy Street, which provides the main entry to the Prince of Wales Hospital buildings to the north.
- The existing buildings are dated, partially dilapidated and are not configured to efficiently utilise the site or provide further opportunities for further alterations or additions.
- The ambulance station is housed within the site and is required to continue operations during the site's redevelopment.

Opportunities

- The site is bounded by three roads, providing good access to the local road network.
- The site is well served by public transport, particularly during peak periods.
- The scale of existing development within the northern portion of the Hospital Precinct is relatively significant and clearly identifies the precinct and its associations with health services.
- With exception of the western side of the site, across Hospital Road, the site does not interface with residential development.

3.0 Planning Framework and Context

3.1 Strategic Context

3.1.1 Metropolitan Strategy

The Metropolitan Strategy seeks to plan for Sydney's growth to 2031. Part of this strategy is to create a strong global economic corridor, fostering job growth in centres, providing fair access to jobs, housing and services, and improved connection of centres. The corridor is an arc of land extending from Sydney Airport and Port Botany through the CBD and North Sydney, St Leonards and Chatswood to Macquarie Park in the north. This corridor is recognised as having a growing concentration of national and global-level jobs and activities, establishing itself as the powerhouse region in Sydney and in Australia's economy. This economic corridor is shown in **Figure 9** below. The site is located within this corridor.

The Metropolitan Strategy also identifies six sub-regions across the Sydney Metropolitan area and sets housing and employment targets for each subregion. The site is situated within the East Subregion. The strategy sets the following overall dwelling and employment targets for the subregion by the year 2031:

- 20,000 new homes;
- 17,500 new jobs.

The Metropolitan Strategy classifies an area known as Randwick Education and Health as a Specialised Centre. This area includes the Prince of Wales Hospital and the site.

- The Metropolitan Strategy's Innovation Strategy identifies the importance of capitalising on knowledge and innovation concentration at the Randwick Hospital Precinct. Specifically it seeks:
- the enhancement of formal linkages between the health precinct and UNSW;
- the creation of new networks between different sectors; and
- the nurturing of research and business networks.

Furthermore, the Metropolitan Strategy identifies a 22.6% increase in employment on the Randwick Hospital's Precinct from 2001 to 2031, from 9,790 jobs in 2001 to 12,000 in 2031.

Figure 9 – Metropolitan Strategy Map

3.1.2 East Subregion Draft Subregional Strategy

The East Subregion Draft Subregional Strategy was released by the Department of Planning in July 2007. The draft Subregional Strategy comprises a key part of the State government's implementation of the 2005 Metropolitan Strategy. It seeks to translate the Metropolitan Strategy at a local level and provides the framework to guide local councils in the preparation of new LGA wide Principal LEPs.

The draft Subregional Strategy identifies the site within the Randwick Education and Health Specialised Centre (see **Figure 10**).

A key direction of the draft Subregional Strategy is to consolidate and strengthen the Randwick Education and Health Specialised Centre. The aim for the centre is to realise a number of key actions namely, to concentrate businesses and knowledge-based activities in Strategic Centres, and more specifically, the Department of Health, Department of State and Regional Development and the Department of Planning to promote the Randwick Specialised Centre as a centre of biomedical and bioengineering research and development.

The proposed consolidation and expansion of existing neuroscience research facilities will assist in providing additional employment opportunities to support the broad objectives of the Metropolitan Strategy. Specific to the Subregional Strategy, the proposed development will reinforce the Hospital Precinct as a centre for specialised biomedical research.

Figure 10 – Randwick Education and Health Specialised Centre

3.2 Commonwealth Legislation

3.2.1 Airports Act 1996 and Airports (Protection of Airspace) Regulation 1996

The *Airports Act 1996* and *Airports (Protection of Airspace) Regulation 1996* seek to protect airspace in the interests of safety, efficiency, and regularity of existing or future air transport operations into or out of an airport.

The *Airports Act 1996* classifies activities such as the construction of a building which intrudes prescribed airspace as a controlled activity. In turn the *Airports (Protection of Airspace) Regulation 1996* defines prescribed airspace as airspace above any part of either an Obstacle Limitation Surface (OLS) or a PANS-OPS surface for the airport or as declared under Section 5 of the Regulation. The OLS and PANS-OPS surfaces are a series of surfaces that set the height limits of objects around an airport. In order to carry out a controlled activity, approval must be obtained under the Act.

The site sits beneath the OLS and PANS-OPS surface for the airport.

Specially, the height of the prescribed airspace varies over the site, between 86m and 93mAHD. The proposed maximum envelope heights of RL89m are located below the prescribed airspace. This is illustrated on the drawings at **Appendix A**.

Should any structure, including construction cranes, extend to a height greater than that permitted by the prescribed airspace, an application for approval to perform that controlled activity would be submitted by POWMRI to the Sydney Airport Corporation for assessment by both the Civil Aviation Safety Authority and Air Services Australia. The application would then be submitted to the Department of Transport and Regional Services for consideration. This is confirmed through the draft Statement of Commitments for the Concept Plan.

3.3 Relevant Planning Legislation and Instruments

The planning legislation, instruments and planning policy documents relevant to the site and the proposed development include:

- Environmental Planning and Assessment Act 1979;
- State Environmental Planning Policy (Major Projects) 2005;
- State Environmental Planning Policy (Infrastructure) 2007;
- State Environmental Planning Policy No.55 - Remediation of Land; and
- Randwick Local Environmental Plan 1998.

3.4 Statutory Framework

3.4.1 Environmental Planning and Assessment Act, 1979

Part 3A of the EP&A Act outlines the process for considering major project applications. In particular it outlines:

- what development constitutes a major project;
- the matters which the Minister must take into account when assessing a major project application;
- information which must be submitted with a major project application;
- the environmental assessment requirements for approval;
- public exhibition of major project applications;
- assessment report procedures; and
- appeals under Part 3A.

This report and appended materials constitute the Environmental Assessment Report for the purpose of assessing the proposed Concept Plan and Project Application in accordance with relevant provisions of Part 3A of the EP&A Act.

3.4.2 State Environmental Planning Policy (Major Projects) 2005

The Major Projects SEPP identifies development to which Part 3A of the EP&A Act applies, and for which the Minister is the approval authority.

Clause 6 of the Major Projects SEPP states that development, which in the opinion of the Minister is development of a kind referred to in Schedule 1, Schedule 2 or Schedule 3 of the SEPP, is declared to be a project to which Part 3A applies.

Group 7 'Health and public service facilities', Clause 19 'Medical Research and development facility' of Schedule 1 of the Major Projects SEPP states a Major Project is:

> *Development for the purpose of health, medical or related research (which may also be associated with the facilities or research activities of a NSW Government Area Health Service, a University or an independent medical research institute) and that:*
>
> *(a) has a capital investment value of more than $15 million, or*
>
> *(b) employs 100 or more people.*

On 10 July 2008, the Minister formed the opinion that the Neuroscience Research Precinct proposal is a medical research and development facility as defined with an anticipated capital investment value of more than $15 million or employs 100 or more people (**Appendix D**).

Sections 6 and 9 of this EA provide the necessary environmental assessment of the proposed Concept Plan and Project Application development in accordance with Part 3A of the EP&A Act.

3.4.3 State Environmental Planning Policy (Infrastructure) 2007

This SEPP requires developments, which exceed specific development thresholds, to be referred to the Roads and Traffic Authority for consideration prior to determination. Under the provisions of this SEPP, the Neuroscience Research Precinct proposal will be referred to the RTA for comment based on the size of the development and quantum of parking proposed.

The traffic impacts of the proposed development have been considered and are detailed in Sections 6.5 and 9.4 and **Appendix M** of this EA Report.

3.4.4 State Environmental Planning Policy No. 55 – Remediation of Land

SEPP 55 aims to promote the remediation of contaminated land for the purpose of reducing risk of harm to human health or any other part of the environment. The policy specifies considerations that are relevant to consent and approval authorities in the rezoning of land and in determining development applications.

In accordance with this Policy the Minister, when determining an application for development, must be satisfied that the land is suitable for its proposed use or can be made suitable for the proposed development through appropriate remediation prior to the development and use of the land.

A Stage 1 Preliminary Environmental Assessment prepared by Environmental Investigation Services and is included at **Appendix N**. This assessment has been undertaken to address SEPP 55 requirements and is discussed in further detail in Sections 6.7 and 9.6 of this EA.

3.4.5 Randwick Local Environmental Plan 1998

The Randwick LEP is the principle planning instrument for the site. The site is zoned 5 Special Uses under LEP 1998.

There are few applicable planning controls contained within LEP 1998 pertaining to the development. Specifically, the LEP does not include specify any height or FSR controls for the site.

Table 1 below provides an overview of the key clauses within the LEP 1998 which do apply to the site and its proposed development. The table also provides an assessment of the proposed development against these relevant provisions. Overall, the proposed development complies with these controls.

Table 1 – Table of compliance with key planning provisions under Randwick LEP 1998

Clause	Requirement	Comment
17	Objectives of the zone are: (a) to accommodate development by public authorities on publicly owned land, and (b) to accommodate development for educational, religious, public transport or similar purposes on both publicly and privately owned land, and (c) to allow appropriate community uses, and (d) to enable associated and ancillary development, and (e) to identify and protect land intended to be acquired for special uses, and (f) to allow for the redevelopment of land no longer required for a special use. Development for the purpose of a Hospital[1] is permissible.	The proposed development meets these objectives and is permissible within the zone.
22	Council must be satisfied that adequate facilities for the supply of water and for the removal or disposal of sewage and drainage are available to the land.	The site will be adequately serviced by sewer and water. Refer to Sections 6.10.3 and 9.8.7.
37A	Proposed development within a Special Uses Zone must be compatible with the character of the locality and should not adversely affect the amenity of nearby and adjoining development.	The proposed development is compatible with the surrounding uses. Furthermore, it is considered that the development will not adversely impact upon the amenity of nearby or adjoining development. Refer to Sections 6.4.2 and 9.3.
40A	A Master Plan is required for a sites >4,000m^2. The Master Plan is to address a range of matters such as design principles, phasing of development, distribution of land uses, building envelopes and built form control etc, as required by Council. Development is to be consistent with the provisions of the Master Plan.	The proposed Concept Plan seeks to provide the necessary controls to guide future development on the site (including the proposed Project Application) in the same manner as that required by Clause 40A.
42B	Council must be satisfied that any contaminated land will, after being remediated be suitable for the future land uses.	A Preliminary Environmental Assessment has been undertaken (see Appendix N). This concludes that the site can be made suitable for the proposed development – also see Section 6.7 and 9.6.5.

1 Hospital as defined under LEP 1998 includes *"facilities situated in the building or at the place and used for educational or research purposes, whether or not they are used only by hospital staff or health care workers, and whether or not any such use is a commercial use"*

3.5 Randwick Campus Development Plan

The Randwick Campus Development Plan (RCDP), dated March 2006 is a preliminary development plan, intended as a precursor to the preparation of a comprehensive precinct masterplan. The RCDP, prepared by Cité Urban Strategies states that the comprehensive masterplan was scheduled to commence in March 2006, however it has never proceeded.

The site is specifically identified within the RCDP as the medical research precinct.

Following the completion of previous work by Landcom in 2004 and Cox Richardson in 2005 a number of principles were incorporated into the RCDP to shape the future direction of the precinct masterplan and define the redevelopment opportunities for the site. The following principles are of particular relevance to the site:

- create a strong connection to the University of New South Wales and the establishment of a unified and integrated research hub;
- provide a 'front door' for the various sectors within the precinct (i.e. research, private hospital, public hospital, women's and children's hospitals etc).

The specific recommendations for the redevelopment of the site identified by Cox Richardson in May 2005 include:

- accommodation of up to 75,000m^2 of developable gross floor area by the year 2016;
- development of the site in stages with the last being the demolition and rebuilding of the Kiloh Centre; and
- realignment of the site to the south of the Kiloh Centre and the Memorial Garden and include the Ambulance Station which could be relocated closer to the emergency department.

In addition, the RCDP specifies that:

- the development of the (neuroscience) research precinct could proceed without any impediment to future development potential of the overall Randwick precinct;
- the research precinct footprint should take into account the significant investment in mental health through the Kiloh Centre development; and
- the research precinct footprint should consider confining the research precinct to the south and west of the Kiloh Centre with an entrance off Barker Street;

Whilst the RCDP is not a statutory document, the proposed redevelopment has been designed to accord with relevant principles of the RCDP for the following reasons:

- the site footprint comprises the land to the south and west of the Kiloh Centre and Memorial Garden; and
- the Concept Plan proposes the consolidation and expansion of existing clinical and laboratory neuroscience research space over multiple stages to a maximum overall height of 12 storeys and maximum GFA of 61,000m^2 for the creation of a new Neuroscience Research Precinct.

4.0 Consultation

In accordance with the requirements of the Environmental Assessment Requirements issued by the Director General for this proposal, consultation was held with the following Authorities:

- South Eastern Sydney and Illawarra Area Health Service
- Randwick City Council
- NSW Roads and Traffic Authority
- NSW Ministry of Transport
- NSW Department of Conservation and Climate Change
- All relevant utility providers

Consultations were held with these authorities in November 2008. **Table 2** below summarises the key issues from the consultation. Minutes from the consultation exercises undertaken with the Authorities are included at **Appendix O**.

Table 2 – Summary of key issues raised via consultation with authorities

Issues / Discussion	Comment / Response
South Eastern Sydney and Illawarra Area Health Service	
Provision of parking and the effects on traffic and public transport	This is discussed within the Traffic Study at Appendix M and at Section 6.5 and 9.4 of this report.
The extent of disruption to existing parking during and after construction	This is discussed within the Traffic Study at Appendix M and at Section 6.5 and 9.8 of this report.
Impact of the NRP on precinct neighbours and adjacent owners	This is discussed at Sections 6.4.2 and 9.3
Requirements of the NRP for increased utilities and the impact on existing utilities and services to the POW Hospital Precinct, the Kiloh Centre and the Black Dog Institute	This is discussed at Sections 6.7.2 and 9.8.7.
Contamination, Heritage and Aboriginal and European archaeology	This is discussed at Section 6.6, 6.7, 9.5 and 9.6.5
Randwick City Council	
Would like to see a well developed staging plan for the proposal. RCC note the stages 2 A-D are intended to be 'self-contained' so that they can be carried out in any order, depending on funding.	Staging is discussed at Section 5.5 and 8.2.6 Staging plans for Stage 2 A-D are included at Appendix A.
Consideration should be given to the site requirements for a larger 'hub' ambulance station in-line with the ambulance services' planning.	The design of the Ambulance facilities has be developed in consultation with ASNSW.
The design will require an appropriate contextual relationship and setback to Easy Street and the heritage listed memorial gardens. The heritage study should also explore potential impacts on the Struggletown Heritage Conservation Area. The architectural design should also be mindful of impacts on the neighbouring residential areas.	The design of the buildings for Stage 2 are illustrated on the Architectural Plans at Appendix A and discussed at Sections 8.2 and 9.3. A European Heritage Impact Statement assesses the potential impact on the Stuggletown Heritage Conservation Area (Refer to Section 6.5) and the potential impact on the neighbouring residential area is discussed throughout Sections 6 and 9.
RCC are concerned with the cohesiveness of the whole of the POW Precinct. The proposed major project and concept plan should take into account the future hierarchy of buildings and movement corridors on the whole of the site. In particular, the Barker Street entry should have a legible arrival sequence.	The proposed development will integrate with the remainder of the POWH precinct whilst providing a creative and innovative building design to reflect the nature of the Institute. The development incorporates a porte cochere driveway off Baker Street to serve as a drop off and pick up point.

Issues / Discussion	Comment / Response
The Council does not support the introduction of parking meters and it is now working on another residential parking scheme.	Parking meters are not proposed as part of this development. Parking is discussed at Sections 6.5 and 9.4.
The traffic assessment will need to consider the increase in employment. It was noted that employment levels were expected to be more than double existing levels.	The traffic implications of the increased number of employees is considered in Sections 6.5 and 9.4..
There are opportunities for POWMRI to respond to key directions coming from Council's current planning project for the Randwick Health-Education specialised centre, particularly at stage 3. For example, the POWMRI masterplan allows for connection from Hospital Road and Francis Martin Drive up to East Street and the POW main entry.	Further discussions with RCC will be held in regard to Stage 3, once the Council's document is published for public consultation.
RTA	
The EA Report should demonstrate how users of the POWMRI proposed Neuroscience Research Project Stage 2 will be able to make travel choices that support the achievement of relevant State Plan targets.	These details are included within the Traffic Study at Appendix M and at Section 9.4 of this report.
Intersection modelling should be done using SCATES coordinated intersection analysis software for the following key intersections: - Avoca Street and High Street/ Belmore Road - Avoca Street and Cuthill Street; - Avoca Street and St Pauls Street; - Avoca Street and Barker Street.	The intersection performance details are included within the Traffic Study at Appendix M and at Section 6.5 and 9.4 of this report.
Details of the proposed accesses and the parking provisions associated with the proposed development including compliance with the requirements of the relevant Australian Standards should be provided.	These details are included within the Traffic Study at Appendix M and the BCA statement at Appendix Y.
The proposed number of car parking spaces and compliance with the appropriate parking codes should be provided.	These details are included within the Traffic Study at Appendix M and at Section 6.5 and 9.4 of this report.
Details of service vehicle movements should be provided.	These details are included within the Traffic Study at Appendix M.
The EA report should assess the implications of the proposed development for non-car travel modes, the potential for implementing a location-specific sustainable travel plan and the provision of facilities to increase the non-car mode share for travel to and from the site. Including an assessment of the site by public transport.	This is discussed within the Traffic Study at Appendix M and within at Section 9.4.
Provide a TMAP to ascertain the cumulative regional traffic impacts associated with the development.	A TMAP is included within the Traffic Study at Appendix M.
Provide a traffic management plan for all demolition / construction activities, detailing vehicle routes, number of trucks, hours of operation, access arrangements and traffic control measures.	This is detailed within Section 9.8.1.
Ministry of Transport	
The Ministry of Transport did not considerer that consultation was required for this project. However, referred the project team to consult with the State Transit Authority.	Consultation with the State Transit Authority was undertaken – see below.

Issues / Discussion	Comment / Response
DECC	
Should the development have radiation equipment and/ or radio active sources present, those operations will need to comply with the Radiation Control Act and Regulation.	Radiology and MRI equipment will be installed and operated to comply with the relevant standards and requirements. The building has been designed to accommodate these facilities such that noise and radiation is contained, and persons and the environment are protected from exposure to harmful ionising and non-ionising radiation to the maximum extent that is reasonably practicable.
A full report on the excavation and results of the assessment of Aboriginal heritage values as outlined by Mary Dallas will need to be provided to the AHIMS register at DECC to comply with S91 of the NPW Act.	This requirement is included within the Statement of Commitments for the Project Application, refer to Section 10.
State Transit Authority	
Future plans for the bus service near the development.	State Transit commented that there are plans being considered to replace route 359 with 357 on the section of Barker Street between Avoca Street and Botany Street. The service frequency would then be every 30 minutes and higher during the am and pm peak.
The potential impacts to existing services from proposed changes to the bus stop location on the northern side of Barker Street.	It was agreed with the STA that the existing bus stop will be retained in approximately the same location between the entry and exit ramps of the porte-cochere, however during construction a temporary bus stop located to the east of Easy Street will be provided to allow for a construction work zone for the unloading and loading of building materials.
The design of the porte-cochere.	The comments from the State Transit department have been used to inform the design of the porte-cochere.
Plan of management for the Porte-Cochere	This is included within the Traffic Study at Appendix M.
Ambulance Service NSW	
Review of the ASNSWs current operational needs and its possible inclusion within Stage 2B of the NRP.	The requirements of ASNSW have been included within the Stage 2B design.
Ambulance Service NSW Aeromedical Services	
The proposed Stage 2 buildings would be of a maximum 78AHD and the Helicopter Landing Surface (HLS) at the Prince of Wales Hospital is 60.5AHD, therefore the approach and departure procedures for the helicopter operations would need to be revised.	Helipads Partners, a Care Flight Pilots' organisation prepare and maintain the Helicopter Landing Surfaces (HLS) for the Prince of Wales Hospital with regard to operations for approaches and departures for the HLS. ASNSW Aeromedical Services will inform Helipad Partners of the appropriate revisions to approach and departures procedures to take account of the proposed development.

5.0 Concept Plan

The Concept Plan establishes the vision and planning and development framework which will be used by the consent authority to assess future development proposals within the site, being the Neurological Research Precinct (NRP). It articulates what POWMRI is seeking to achieve for future development and sets the broad parameters for the development of the site.

Broadly the Concept Plan seeks approval for the development of the site for consolidation and expansion of existing clinical and laboratory neuroscience research facilities over multiple stages to a maximum overall height of 12 storeys and maximum GFA of about 61,000m^2 for the creation of a new Neuroscience Research Precinct (NRP).

This section establishes the key development objectives and outcomes that underpin the development of the NRP and recommends strategies to achieve these outcomes. These strategies result in actions which are detailed in the Statement of Commitments.

The Concept Plan vision for the site and Architectural Drawings (**Appendix A**) has been prepared by Cox Richardson Architects and is supported by technical studies which are appended to this report.

5.1 Concept Vision

The vision for the Concept Plan addresses the environmental setting and constraints of the site, while providing new and expanded research facilities in a way that the resulting development of the NRP will:

- be compatible and in context with the identity of the Prince of Wales Precinct as a overarching spatial area associated with health services and supporting research;
- strengthen the research links between the NRP and the UNSW;
- provide high quality facilities that accommodate current and future the needs of researchers; and
- be a well recognised facility associated with innovative and leading research in the field of Neuroscience.

5.2 Design Principles

The principles underpinning the design for the NRP are:

- Image Aware
  - create a contemporary and innovative design reflecting the 'leading edge' research in the field of neurological science;
  - ensure that design quality endures to serve to identify NRP through its lifetime;
  - embodiment of symbolism in the building fabric or associated artwork and landscape design should be explored;
- Generic
  - adopt a common planning configuration for general laboratory and work areas wherever possible to ensure efficient and flexible planning;
- Adaptable
  - ensure that the building design adapts to changes during its lifetime;
- Interactive
  - encourage planned and unplanned interaction between different occupants to encourage learning and exchange;

- Safe and Human Centred
  - encourage safe work practices and provide a reassuring and secure environment;
- Risk-Aware
  - recognise risks in the workplace and seek to mitigate them, including intellectual property protection, sample protection, and protection of the building and equipment;
- Environmentally Aware
  - recognise the environmental impact and seek to minimise this impact whilst offering the best possible work environment; and
  - encompass energy use and waste minimisation techniques, operating cost reduction and whole-of-life costs.

5.3 Description of the Concept Plan

Concept Approval is being sought for consolidation and expansion of existing clinical and laboratory neuroscience research space at the site. Specific approval is sought for the following:

- use of the land for medical research and ancillary purposes;
- a maximum total of 61,000m^2 gross floor area (GFA)[2];
- maximum height of RL 89m (approximately 44.5m above ground level);
- maximum building footprints and envelopes;
- a maximum of 365 car parking spaces; and
- vehicular and pedestrian access routes.

5.4 Built Form

To realise the vision of developing the Neuroscience Research Precinct the Concept Plan seeks approval for the maximum building envelopes, height, footprints and floor space that will be provide the framework within which ongoing development of the site will be achieved.

Building Height and Massing

The proposed overall massing for the development is shown in **Figure 11**. This illustrates that the proposed maximum building height over the site will be:

- approximately 31.7m above ground level (FRL 76.20) for development along Barker Street; and
- approximately 44.5m above ground level (FRL 89.00) within the north western corner of the site (the current location of the Villa 3 building - Black Dog Institute).

2 Gross floor area as defined in LEP 1998 as *"the sum of the areas of each level of a building where the area of each level is taken to be the area within the inner face of the external enclosing walls and the area of any attic measured at 2.1m above the floor level of the attic excluding:*

(a) columns, fin walls, shading devices, awnings, balconies and any other elements, projections or works outside the general lines of the outer face of the external wall, and

(b) lift towers, cooling towers, machinery and plant rooms, and air-conditioning ducts, and

(c) associated car parking and any internal vehicular or pedestrian access to that parking (to ground level), and

(d) space for the loading and unloading of goods.

The proposed bulk and scale of the development has been designed to step down in alignment with the existing hospital development to the north and the topography of the POWH Precinct.

The maximum site coverage for the Concept Plan scheme extends to the site's boundaries with exception of existing landscaped area at the north eastern portion of the site, adjacent to the Memorial Garden and the Kiloh Centre building.

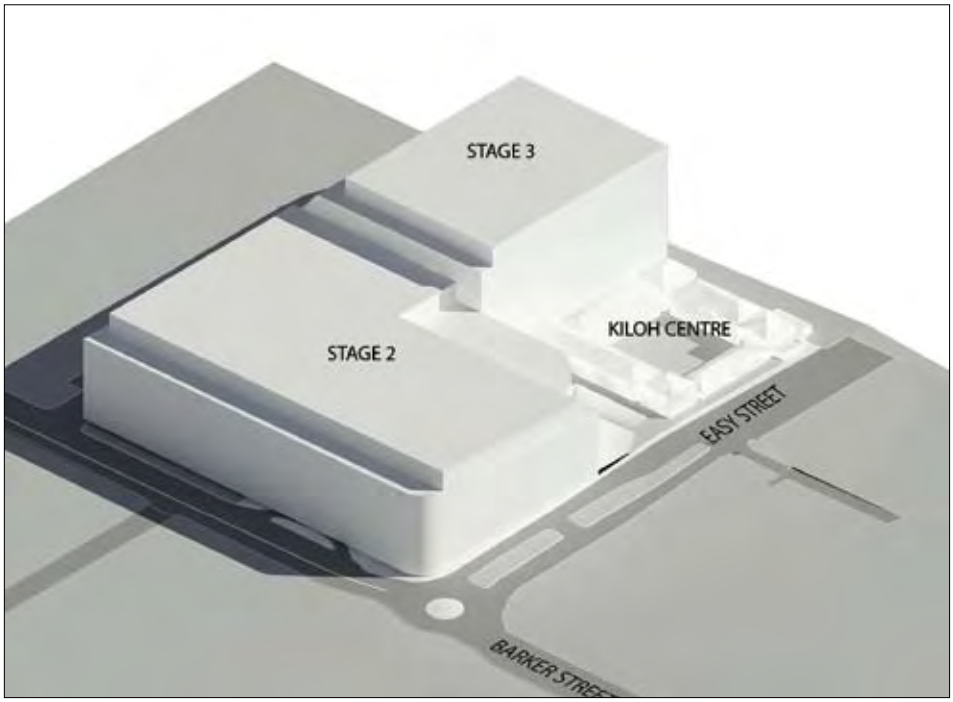

Figure 11 – Concept Plan massing

5.5 Indicative Staging

The site has been divided into 3 distinct phases of development. Stage 1 (already approved by Randwick Council) addresses the need to provide immediate and short-term additional accommodation for POWMRI attached to Villas 1 and 2. Stage 2 (broken into 4 sub-phases) provides for the new integrated development and the staged demolition of Villas 1 and 2 for up to 25,470m^2 of GFA. Stage 3 involves the demolition of Villa 3 (the Black Dog Institute building) and the future development of this site consistent with the Concept Plan. An overall staging plan for the Concept Plan is included at **Appendix A** and **Figure 12**.

This Environmental Assessment seeks Concept Plan approval for the distribution of uses across all 3 stages of development for ongoing research purposes within a maximum GFA of 61,000m2 and maximum overall building height[3] of RL 89.00(Approximately 44.5m above ground level) across the precinct. A concurrent Project Application has also been submitted to facilitate the Stage 2 development of the site and reinstate approval for the Stage 1 works – see Section 8.1 for more detail.

Subsequent project applications will be lodged for the remaining portions of the site and will provide a greater level of design detail, as demonstrated in the Stage 2 Project Application.

3 Building height as defined in the Standard Instrument – Principal Local Environmental Plan means *"the vertical distance between ground level at any point to the highest point of the building, including plant and lift overruns, but excluding communication devices, antennae, satellite dishes, mats, flagpoles, chimneys, flues and the like".*

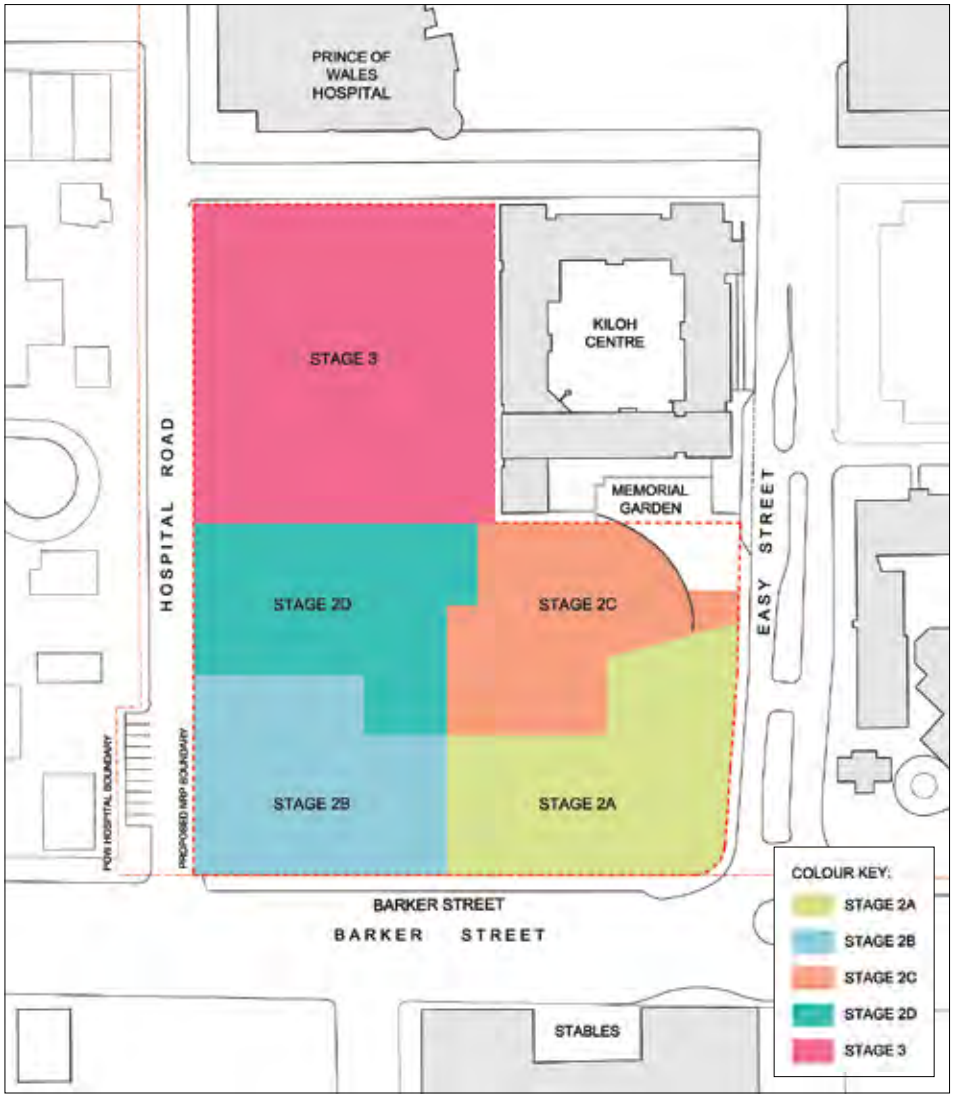

Figure 12 – Indicative staging plan for the Concept Plan development

5.6 Land Use

The site will primarily accommodate the POWMRI for research and clinical purposes. Additional facilities for the UNSW, Black Dog Institute, Prince of Wales Hospital CampusPrecinct and other research partners will be incorporated in to the development. The existing ambulance station facilities are to be either retained on site, or for these facilities to be relocated to an alternative site; if agreed to by the NSW Ambulance Service. At this stage, the proposed Project Application seeks to re-house the Ambulance Station with the Stage 2 development.

Specific to the POWMRI, the development will incorporate the following facilities:

- Specialised research and scientific support facilities
- Clinical, wet and dry labs, and special facilities for research into:
  - Ageing and Neurodegeneration
  - Falls and Balance
  - Mental Health
  - Injury
  - Brain mapping and imaging
  - Human movement

- Reception, Administration and Executive Offices
- Research Project Groups
- Clinical Research Imaging Centre
- Auditorium

The Black Dog Institute will be re-housed within the development and incorporate:

- Depression Clinic
- Consultancy services to health professionals
- Research activities, including University of NSW School of Psychiatry
- Medical student education

5.7 Access and Parking

The development will provide a total of 365 car parking spaces within the site. This excludes the 13 designated car parking spaces to be retained along Hospital Road.

Much of the proposed parking will be located within basement levels and will be incrementally provided and proportionate to each stage of the development's delivery.

Delivery, Servicing and Loading Arrangements

A loading dock and other delivery van/tradesperson spaces will be provided to service the development. The detailed design, location and number of these facilities will be detailed in subsequent Project Applications for the development, including the proposed Stage 2 Project Application (see Section 8).

5.8 Operation

The overall development will accommodate up to 1,500 employees and students. At any one time the development is expected to accommodate up to 70% of this overall number given that many of the students attend the development on a part time basis.

Hours of Operation

The development will generlly operate between 8am and 6pm. The auditorium will be utilised by staff and students on the site during normal working hours and may be used for associated lectures, fund raising functions, and the like, after these hours.

6.0 Concept Plan Environmental Assessment

6.1 Director General's Environmental Assessment Requirements

Appendix E provides a detailed summary of the individual matters listed in the Director General's Environmental Assessment Requirements (DGRs) and / or identifies where each of these requirements has been addressed in this report and the accompanying technical studies.

6.2 Alternatives to the Concept Plan

The proposed Concept Plan seeks to set the development parameters for the establishment the Neuroscience Research Precinct. POWMRI Ltd has outlined the need to expand and consolidate the existing facilities on the site to maintain current and expected levels of clinical service, research and employment growth, and to reinforce existing ties with the Prince of Wales Hospital Precinct and UNSW, and to ensure that they continue to be the leading neuroscience research facility within Australia and compete at an international level.

The alternatives to the redevelopment of the site to meet this purpose are to:

- Remain on-site and not expand;
- Relocate the research facilities on to an alternative site; or
- Remain on-site and further expand existing buildings.

Remain On-site

The possibility of remaining on site and not expanding is not considered to be a plausible option for the following reasons:

- the existing facilities do not meet the demand for research and laboratory space on the site, without expansion, the current levels of clinical service and research will not be able to be retained; and
- the proposed development already has Government funding towards the expansion and consolidation of facilities on the site, without expansion on this site, the funding for these needed facilities are likely to be lost.

Relocate

The site has been identified within the Randwick Campus Development Plan as a medical research precinct, it has therefore been considered – prior to the submission of this Concept Plan to be a suitable location for a development of the kind proposed. In addition, no other sites in the Prince of Wales Hospital Precinct are considered to be viable or available for the proposed development and a temporary or permanent relocation of the business would not maintain the 'critical mass' of researchers in a common facility supporting good research.

The relocation of facilities to a site outside of the Randwick Education and Health Strategic Centre would also be inconsistent with the metro and draft Subregional Strategies. The potential relocation of the medical research facility is therefore not a viable alternative to the proposal.

Expansion of Existing Buildings

The configuration and condition of the existing buildings limit the opportunities to accommodate significant additional development. Works approved as part of the Stage 1 works seek to provide temporary additional development, but these only accommodate a small amount additional space. Whereas the proposed development will not only provide additional space for the POWMRI, but will also provide development that will be configured to better suit the needs of the Institute.

6.3 Site Suitability

The site is considered suitable for the proposed development given that:

- the site is of a size suitable to accommodate the proposed development;
- the proposed use is permissible under the LEP 1998;
- the site is well service by public transport services; and
- the site is suitably located within the Prince of Wales Hospital Precinct and within close proximity to UNSW thus enabling increased opportunities for partnership and inter-working.

Conversely, the development is suitable for the site given that it:

- will provide a new identity for the POWMRI and the Black Dog Institute, so as to improve the profile of the POWH Precinct and its association with high quality research and health care;
- denotes the perimeter and the southern entry to the POWH Precinct;
- achieves the objectives sets out for the Randwick Education and Health Specialised Centre under the East Subregion Draft Subregional Strategy; and
- further supports the use and viability of local public transport infrastructure through the provision of additional patronage.

6.4 Built Environment

6.4.1 Built Form

The intent of the proposed building envelopes in the Concept Plan is to provide an indication of the maximum scale, bulk and massing of the overall development for the NRP. This quantum of development has been derived from careful consideration of the needs of the various end users within the development, particularly with regard to the amount of floor space required to support specialised laboratory and research work. The proposed building envelope has also been designed to respond to the site's constraints and opportunities, and its context to the scale of surrounding development.

The edges of the proposed building envelope are relative to the site's boundaries and the areas which are to be later developed as part of further applications. This overall form provides legibility to adjoining street layouts and allows the development to redefine street edges and adjoining public domain areas.

The proposed massing for the development fills in this building footprint to provide a volume of development that steps down in alignment with the site's topography. In this way, the proposed building envelope continues to respect the natural landform of the area. Furthermore, by locating the bulk of the building envelopes to the street edges this helps to clearly denote the part of the Hospital Precinct's southern boundary.

6.4.2 Impacts to Adjoining Development

It is notable that existing development to the east, south and west of the site is of relatively lower scale, being single to two storey development, to the scale of the development proposed by the Concept Plan. The impact of the differences in scale of existing development to surrounding development is considered below.

Overshadowing

The shadow diagrams included with the Architectural Plans at **Appendix A**, illustrate that during the winter solstice (21 June) the proposed Concept Plan development will generally cast shadows towards the southern side of Barker Street. More specifically during the winter solstice the development will overshadow:

- the residential development to the west of the site between the hours of 9am and 10am;
- the Struggletown Veterinary Clinic at the intersection of Hospital Road and Barker Street over the hours of 9 and 12pm;
- the Randwick Equine Centre along its northern frontage along Barker Street for much of the day;
- the north western portion of the Randwick Girls High School at 3pm; and
- the Prince of Wales Hospital Place Child Care Centre and Hut U to east at 3pm.

The extent and impact of the overshadowing to surrounding development is considered acceptable on the basis that:

- the residential area to the west of the site is only affected for 1 hour in the morning, thereby providing at least 5 hours of solar access to these residences during the winter between the hours of 9am and 3pm;
- the veterinary clinic will still capture at least 3hours of solar access during the winter solstice and is not considered to be land use that is sensitive to reduced solar access;
- given the equine centre is understood to stable horses on a temporary basis, either for their sale or in conjunction with operation of the onsite veterinary for horses, the amenity of the development will not be greatly affected by overshadowing;
- the proposed development will not overshadow the equine centre at other times of the year;
- the Randwick Girls High School is only partially impacted by overshadowing late in the afternoon - the time at which is the end of day for the school's general operating hours; and
- the child care centre and Hut U building are only impacted by overshadowing late in the afternoon, such that development will provide at least 3 hours of solar access to these facilities.

Visual Impact

In terms of relative scale to the surrounding development, Easy Street, Barker Street and Hospital Road, enable the development to be clearly separated from these adjoining land uses. This separation to the east, south and west helps to moderate the scale of the development when compared to the adjoining development.

The scale of the proposed building envelope is proportionate to the existing scale and massing of development within the remaining part of the Hospital Precinct, particularly with respect to the development to the north of the site.

The reduced scale of the proposed development, relative to the scale of development within the remaining Hospital Precinct, serves to denote the NRP's ancillary function of the POWH Precinct, being for special research purposes.

The proposed building envelope is appropriately setback from at the site's northern eastern boundary so as to clearly identify the Kiloh Centre as a separate element of the POWH Precinct, especially when viewed from Easy Street. Further, this setback at the northern portion the proposed building envelope serves to provide adequate curtilage from the Memorial Garden to the north of the site.

At distance, the proposed massing for the development is not clearly distinguishable when viewed from the south at Paine Reserve, at the corner of Rainbow and Botany Streets – see **Figure 13**.

On this basis, the development is of a scale appropriate to its relationship and function as part of the POWH Precinct and is adequately separated from other adjoining development by virtue of the adjoining streetscapes.

Figure 13 – Photomontage of proposed Concept Plan building envelope from Paine Reserve

6.5 Transport Issues

A detailed Traffic Study and TMAP have been prepared by Parsons Brinkerhoff to assess the potential traffic, parking, access and transport issues associated with the Concept Plan – see **Appendix M**.

6.5.1 Traffic Generation

Detailed traffic surveys were undertaken to assess what impacts the proposed development would have on the future capacity of local and regional road networks.

Initial surveys of current traffic conditions indicated that with exception of the intersection of High Street and Botany Road, street intersections in the vicinity of the site operated at a Level of Service (LoS) of between A and D during peak AM and PM periods.

To determine the potential impact of the development on traffic volumes in the area Parsons Brinkerhoff assumed that:

- the proportion of staff travelling during the AM peak to be 70%;
- the proportion of staff travelling during the PM peak to be 60%;
- the split of inbound and outbound traffic during AM peak to be 95% and 5% respectively; and
- the split of inbound and outbound traffic during PM peak to be 5% and 95% respectively.

Based on these assumptions, it is expected that Hospital Road will be most impacted by the development. Barker Street will experience increases in traffic of around 20% in either peak period and at certain sections Avoca Street will experience increases of between 8% and 10%. All other roads will only experience increases of between 0-5%.

With the addition of the development, the intersections in the local area will generally continue to operate at current LoS ratings with exception of:

- the intersection of Avoca and Barker Streets – which will drop from a LoS of D to E during the morning peak, with delays only rising by 8 seconds per vehicle; and
- the intersection of Barker and Botany Street – which drops from a LoS of B to D.

The Barker and Botany Street intersection will become further congested due to the large number of eastbound vehicles turning right from Barker Street into Botany Street.

The average delays for traffic movements through the High Street and Botany Road intersection only increases by a maximum of 3.5 seconds beyond that expected to be experienced under the 2018 base rate scenario. This increase is considered to be a marginal impact to the operation of this intersection beyond that expected to be experienced in 2018.

It is noted that at the intersection of Avoca and Barker Streets, the length of the current southbound right-turn vehicle queue on Avoca Street extends north to the area where the on street parking begins, resulting in both southbound lanes being blocked. This intersection currently operates with average delays of 49 seconds during the AM peak.

This is expected to increase to 56.7 seconds under the 2018 base scenario and 64.3 seconds with addition of the development. This impact lowers the LoS rating for this intersection from D to E.

To reduce the impacts of the development on local traffic conditions the following measures are proposed to be implemented:

- Signalised traffic control is to be provided at the intersection of Barker and Botany Street. This will reduce the average delay times to 25.8 seconds, which is half the time it currently takes to move through this intersection; and
- On street parking on the eastern side of Avoca Street between St Pauls Road and Barker Street be restricted to 'No Parking' between the hours of 7.00 and 9.00am. This will improve the operation of the Avoca and Barker Street intersection during the AM peak, such it would operate with average delays that are less than are currently experienced at this intersection.

Overall these measures will improve traffic flows through the local area beyond that currently experienced.

6.5.2 Parking

Table 3 below provides a comparison of car parking utilised by existing staff and students for the POWMRI and Black Dog Institute and that proposed to be provided and utilised by the Concept Plan.

Table 3 – Comparison of current and Concept Plan parking provisions

Car Parking Locations	Current Parking Utilisation	Concept Plan Parking Allocation
On site – existing	37	0
New basement car park	0	365
Reserved on Hospital Rd - POWMRI	3	13
Reserved on Hospital Rd – Unused	4	
Reserved on Hospital Rd – Black Dog Institute	12	
Reserved on Hospital Rd – Recently acquired	10	
On street publicly available parking – utilised by POWMRI	44	55
On street publicly available parking – utilised by Black Dog Institute	15	
UNSW	7	7
Prince of Wales Hospital (POWH) car park	5	0
TOTAL	137	440

The reconfiguration of parking is based on the following assumptions for the Concept Plan:

- none of the staff or students would utilise the POWH car park;
- the number of current students utilising car parking spaces within the UNSW remains unchanged;
- there will be a loss of 4 on-street car parking spaces with the provision of the porte coche and no nett parking increase to on-street parking in the area; and
- the 10 reserved on-street spaces on the western side of Hospital Road would be retained and 10 reserved on-street spaces removed from the 13 spaces along the eastern side of Hospital Road.

Based on surveys of current rates of staff utilising various parking locations either on site, the POWH public car park, on street and at the UNSW, Parsons Brinckerhoff has determined that the anticipated 1,500 staff will increase parking demand to approximately 502 spaces. Conversely these surveys indicated that 52% of staff and students currently utilise other means of transport to the site, including public transport, cycling, walking, motorbike and car passengers.

To reduce demand on the overall provision of parking for the Concept Plan, various transport initiatives are proposed to be implemented. These include:

- implementation of a TravelSmart Travel Plan, which will encourage staff and students to utilise alternative means of transport to driving to work;
- the provision of bicycle parking and amenities for the development; and
- the potential to use other measures under the TravelSmart scheme, such as the distribution of pre-paid bus tickets to staff and students or payroll deductions for annual travel passes.

The implementation of these measures is expected to reduce parking demand by 12% overall, thereby reducing the required quantum of parking for the development to 440 spaces. This is equal to the number of spaces expected to be provided and utilised by the development, as outlined in **Table 3** above.

Auditorium

Given that the auditorium will be utilised by existing staff and students during normal operating hours, the auditorium is not expected to give rise to increased parking demands during these hours. On this basis no additional parking is required to service the auditorium during normal hours beyond that currently provided.

The 350m^2 GFA auditorium will, however, be utilised during out of hours for low key functions and seminars. Based on Randwick Council's required parking rates for such a facility, being one space per 6m^2 GFA, the auditorium alone is expected to generate a parking demand of some 67 parking spaces.

This demand for parking does not coincide with the peak period during for the proposed Concept Plan, which is during normal working hours. In this regard, the vacated parking spaces in and around the site will serve to satisfy this demand. In fact, the required 67 spaces only equates to proportionately 15% of the overall parking provided by the Concept Plan. This is considered an acceptable outcome.

Ambulance Station

The level of parking facilities provided by the Concept Plan development will be the same as that provided currently. Given that staff numbers and ambulance vehicles numbers are not to increase, the reallocation of parking facilities for the Ambulance station is considered to be adequate. The NSW Ambulance Service has also endorsed the layout and provision of parking within their section of the Concept Plan development.

On this basis, the Concept Plan development is considered to provide adequate car parking to service the future needs of staff, students, visitors and Ambulance personnel.

6.5.3 Impacts on Public Transport

The site is considered to be well serviced with frequent bus services. The capacity for these services to serve increased demand generated by the Concept Plan development has been evaluated by Parsons Brinckerhoff (see Traffic Study and TMAP report at **Appendix M**).

Based on the implementation of TravelSmart initiatives, the Concept Plan is expected to increase number of passengers using local bus services from 47 to 254 persons. Given that there are 140 bus services that operate and serve the site between the hours of 7.00am and 9.00am, this increased patronage is expected to equate to 1.5 additional persons on each of these 140 services.

Despite these increases, Parsons Brinckerhoff has determined that there is adequate capacity for these services to serve additional patrons for not only locals in the future, but also that generated by the Concept Plan.

In evaluating the impacts on bus services as a result of the Concept Plan development, Parsons Brinckerhoff consulted with the State Transit Authority (STA). The STA did not have issue with the increased demand to the bus services and confirmed that there was adequate capacity within future to service the demands generated by the Concept Plan development.

6.6 Heritage Issues

The following provides a heritage assessment of the site with regard to its associations with previous Aboriginal and European occupation of the site and assesses what impacts that the proposed Concept Plan development may have with respect to Aboriginal and European heritage.

6.6.1 Heritage Impact

Graham Brooks & Associates has prepared a European Heritage Impact Statement, which is included at **Appendix I**. This statement outlines the past uses of the site since European occupation and provides a statement of heritage significance based on an assessment of these past uses and the remaining built fabric.

As noted in Section 2.4.7 above, the site has been utilised for various uses since 1852. Graham Brooks & Associates has reviewed the heritage significance of the site, which was established under the Conservation Management Plan for the Prince of Wales Hospital site as a whole. This statement identifies the Memorial Garden for the Cemetery of the Destitute Children's Asylum as an element of exception heritage significance on the basis that this has significant social associations. The existing buildings on the site were deemed to only have low heritage significance.

Based on the above statement of heritage significance for the POWH site, Graham Brooks & Associates has assessed what impact the proposed Concept Plan development may have with respect to heritage significance of the site and in the vicinity of the site in accordance with:

- Part 4 of Randwick Council's LEP 1998;
- Guidelines of the Heritage Branch of the NSW Department of Planning; and
- The Prince of Wales Hospital Campus, Randwick Conservation Management Plan 1997 (CMP).

In summary, this assessment determined that the proposed Concept Plan:

- is consistent with the heritage intent of the CMP;
- will have an acceptable impact upon the heritage significance, visual curtilage and setting of adjacent heritage items;
- will be suitably separated from both the Struggletown Heritage Conservation Area (SHCA)and the Newmarket Stables Complex, such that it will retain these distinct heritage elements;
- will maintain and protect the curtilage of the known area of the Memorial Garden for the Destitute Children's Asylum;
- will not obstruct views to both the SHCA, the Newmarket Stables Complex or the Memorial Garden;
- is located within the areas identified by the CMP to have lower heritage significance or sensitivity; and
- will continue to contribute to the ongoing use of the greater Prince of Wales Precinct for health services and associated research.

Based on this assessment the proposed Concept Plan development is considered to have no detrimental impacts on the significance of surrounding heritage items and conservation areas.

6.6.2 Aboriginal Archaeology

Mary Dallas Consulting Archaeologists has prepared a preliminary assessment to identify whether there is potential for the site to contain buried Aboriginal sites and to determine which areas of the site retain no Aboriginal archaeological potential – see **Appendix J**.

This assessment reviews the known geology of the site and the Aboriginal archaeological findings associated with the excavation of the Destitute Children's Asylum cemetery, within the area currently occupied by the Kiloh Centre, to determine the potential for buried Aboriginal sites within the Concept Plan development site.

This assessment reveals that with exception of the areas for the existing Villa buildings (excluding the courtyard areas) much of the remaining portion the site is identified to retain the potential to contain Aboriginal archaeology within the surviving A2 Horizon sands.

It is expected that any remains to be found within these areas are to expected to be restricted to stone artefacts, with little likelihood of surviving and relatively recent, contact or post-contact archaeological evidence. As a precautionary approach, Mary Dallas Consulting recommends that archaeological testing be undertaken over the areas of the site determined to have potential for archaeological evidence.

This work will determine what Aboriginal archaeological evidence may be present within the site and will include ongoing consultation with local Aboriginal communities. This strategy is outlined in the Statement of Commitments for the Concept Plan in Section 7 of this report.

6.6.3 European Archaeology

Cultural Resources Management (CRM) has prepared a preliminary assessment of the potential for European Archaeological evidence within the site – see **Appendix K**.

Based on the various previous uses associated with the site and the excavation findings within the area of the Randwick Destitute Children's Asylum cemetery, the CRM report determines that there is some potential to uncover features and relics associated with these previous uses over the site.

CRM has identified that although extensive investigations were untaken in association with the excavations for the Kiloh Centre, there is some potential (albeit remote likelihood) for additional burials associated with the cemetery to be found with the Concept Plan site.

As a precautionary approach, CRM recommend a further archaeological assessment be undertaken to define the extent of European archaeological evidence across the site and to determine appropriate methods for retrieval and storage of found items. This work should be undertaken in conjunction with excavation investigations for Aboriginal archaeological assessment. The detailed recommendations for how this investigative work should be undertaken are outlined in the Statement of Commitments at Section 7.

6.7 Environmental Issues

6.7.1 Contamination Issues

Contamination

Environmental Investigation Services (EIS) has undertaken a Stage 1 Preliminary Environmental Site Assessment (**Appendix N)** to assess the likelihood of contamination of the subsurface soils and groundwater and the site's suitability for the proposed Concept Plan development. This investigation work involved:

- a review of the historical site use;
- a review of the regional geology and groundwater conditions;
- a search of WorkCover records and licences to store Dangerous Goods and investigation/ remediation orders issued by the NSW DECC; and
- the design and implementation of a field sampling program.

EIS's review determined that there are no DECC (EPA) notices for the site under Section 58 of the Contamination Land Management Act.

Based on review of past land uses and importation of land fill over the site, the site's surface and subsurface soils may be contaminated. Samples taken from 4 locations over the site indicated that the results of the soil sampling found:

- heavy metals such as nickel and zinc exceeded the provisional phyto-toxity investigation levels (PPILs) in one sample each, however the remaining samples were below the site assessment criteria (SAC);
- concentrations of TPH and BTEX compounds were below the SAC;
- concentrations of PAHs including Benzo(a)pyrene were found to be less than the SAC;
- concentrations of OCPs and PCBs were below the SAC; and
- Asbestos fibres were not encountered and no respirable fibres were detected.

Overall, EIS consider that all results were found to be within appropriate Health Investigation Levels.

The fill soils are classified as 'General Solid Waste (non-putrescible) in accordance with the criteria outlined in the *NSW EPA (now DECC) Waste Classification Guidelines, Part 1: Classifying Waste, 2008*. All other natural soils and sandstone at the site can be considered to be virgin excavated natural material (VNEM) and would be suitable for onsite re-use.

Although no groundwater seepage was encountered standing groundwater was recorded. This will need to be a consideration in undertaken the works to construct any basements for the development. This did not, however, warrant additional assessment beyond this preliminary assessment.

In order to better understand the extent of contamination across the site, EIS recommend that the following be undertaken:

- Inspection by experienced environmental personnel during demolition and excavation works at the site;
- Additional investigation at a minimum of 19 sampling locations to meet the minimum sampling density outlined in the *NSW EPA (Contaminated Sites Sampling Design Guidelines 1995*.

The recommendations set out above are included within the draft Statement of Commitments at Section 7.

In addition, EIS consider that the elevations of nickel and zinc found, whilst not deemed to be a risk to health, they could potentially impact upon plant growth in established and proposed areas of landscaping, therefore consideration should be given to this in transferring soils across the site.

Based upon the above recommendations, EIS determined that the site can be made suitable for the proposed development.

Hazardous Materials

An Asbestos Materials Survey report (**Appendix P**) has been undertaken by Pickford and Rhyder. Their investigations were conducted for Villas 1 and 2, but did not include the Ambulance Station or the Black Dog Institute.

Asbestos containing materials (ACM), in the form of fibro cement cladding were found in the following places:

- eaves of the internal courtyard in Villas 1 and 2 and externally on the building;
- wall cladding in Tank Room 2; and
- two pipe packers and in minor scattered fragments in the basement areas.

In addition, Pickford and Rhyder found hot water pipes and redundant pipes within the basement of Villas 1 and 2 were insulated with synthetic mineral fibre (SMF). The asbestos found within the buildings, were found to be bonded in a satisfactory condition.

The disturbance of the ACM can potentially cause adverse impacts upon the amenity of the neighbouring residents and the hospital.

In considering the future development of the site, Pickford and Rhyder recommend the following:

- all ACM found on the site, should be removed by NSW WorkCover Authority licensed asbestos contractors prior to, or as part of any refurbishment/ demolition works; and
- all demolition and refurbishment trades persons are observant for any other suspicious ACM that may be found during building works. If any such materials are found, a sample should be taken and sent for asbestos identification analysis by a NATA accredited laboratory.

In addition, within their Stage 1 Preliminary Environmental Assessment (**Appendix N**), which assessed the potential for contamination on the site (as discussed below), EIS have considered Pickford and Rhyder's findings and recommend that the following be undertaken:

- Hazardous materials assessment of the Ambulance station buildings and the Black Dog Institute building be undertaken prior to any works commencing on the site; and
- Production of clearance certificates following removal of all asbestos containing materials at the site.

The recommendations as set out above are included in the Statement of Commitments for the Concept Plan, included at Section 7.

6.7.2 Geotechnical Issues

A Geotechnical Report has been prepared by Jeffery and Katauskas Pty Ltd (**Appendix G**) which presents the results of a geotechnical investigation into the subsurface conditions at 11 nominated locations across the site.

The report presents the key geotechnical implications pertaining to the specific building works for the Stage 2 development and provides recommendations for the mitigation of any possible impacts upon the site or surrounding uses. These implications and recommendations are set out at Section 9.6.

Geotechnical reports outlining the implications of the specific development works will accompany all future development applications relating to the site to ensure the proposed works will not adversely impact upon the site or the surrounding uses.

6.8 Social and Economic Issues

The site is a key part of the Prince of Wales Hospital Precinct, which is specifically dedicated to research into the brain and nervous system.

The redevelopment of the site provides an opportunity to establish a clearly identifiable and distinctive Neuroscience Research Precinct (NRP) with consolidated and improved research facilities.

POWMRI's mission is to improve and maintain human health through medical research. They place a high priority on research that will make a real difference to clinical practice thereby establishing substantial contributions to the well being of the Australian and international community. The proposed development will therefore have a number of significant positive social and economic benefits including:

- the proposed development will increase the supply of high quality research, clinical and teaching facilities, within Sydney's Global Economic Corridor and the Randwick Education and Health Specialised Centre, in accordance with the Metropolitan Strategy and East Subregion Draft Subregional Strategy;
- a medical research facility of 61,000m^2 GFA has the potential to provide employment and study opportunities for up to 1,500 staff and students;
- the redevelopment of the site involves an investment of approximately $264.9 million into increasing the facilities available on the site. This investment cost plus the multiplier effect (i.e. the redevelopment of a site has flow on effects requiring output from other parts of the economy, e.g. construction) will capture significant benefits for the economy as a whole;
- the provision of a high quality research precinct will potentially attract leading consultants in the neuroscience field to establish new research programs, to the benefit of local patients and society as a whole; and
- the proposed development will provide more shared accommodation for joint initiatives with the University of New South Wales (UNSW). POWMRI already has extremely close links with UNSW teaching and research activities and with the School of Psychiatry and doctoral postgraduates from schools of Medicine Science and Engineering. The proposed development will in turn enable the links with UNSW to grow, particularly as brain science has emerged as a centre of excellence and point of difference for UNSW within the Federal Government Research Quality Framework.

6.9 Public Benefits

The proposed development will achieve:

- the positioning of Sydney as a leading neuroscience research centre through the strengthening of this key educational and medical facility;
- cross precinct research activity;
- the preservation of the Memorial Gardens adjacent to the site;
- the provision of an auditorium for functions and seminars on the site;
- improvements to local street intersection operations through the provision of intersection improvements; and
- accessible buildings, landscaped areas and facilities for the community.

6.10 Design and Operational Issues

6.10.1 Flooding and Stormwater

Taylor Thomson Whitting Pty Ltd (TTW) has prepared a Civil Design Statement and Flooding Assessment (**Appendix H**). These reports provide an assessment of likely flooding issues for the proposed development, which in turn forms the basis for the Civil & Stormwater infrastructure plan.

Flooding

The flood assessment report was prepared in order to calculate the flood levels in Barker Street fronting the site and to recommend finished floor levels for development on the site.

The flood assessment determined that the site was subject to localised ponding of stormwater, which occurs for flows in excess of Randwick Council's existing stormwater pipe network capacities within a sag pit, located on the northern side of Barker Street opposite the Young Street intersection.

Overflow from the sag pit ponds from the sag pit level to the crown level of Barker Street, whereby the crown of Barker Street acts as an overflow weir.

In instances where the stormwater rises above the crown level of Barker Street, water traverses in a southerly direction to Young Street, which serves as an overland flowpath.

The hydrological analysis results found that a peak overland flow rate of 17.3m^3/s during the 100-year ARI storm event is expected at the sag pit which equates to a ponding depth of 138mm above the sag pit level (43.98m AHD).

Given these results, TTW consider that the proposed development does not have any adverse hydraulic effect on adjacent, downstream or immediate upstream areas surrounding the development for storms up to and including the 100-year ARI storm event, however they recommend:

- The flood planning level (FPL) for any habitable floor at stret level should be 44.48m AHD (500mm above the calculated 100-year flood level); and
- The FPL for any car park/ loading dock entrances/ exit at street level should be 44.28m AHD. This is 300mm above the calculated 100-year flood level.

Stormwater

TTW has prepared a Civil and Stormwater Infrastructure Strategy Plan to identify the requirements of the proposed redevelopment at the site. Within this report, they include the Stormwater Concept Plan and an Erosion & Sediment Control Plan for each of the proposed stages (Stages 2A-D and Stage 3). These Plans are also included at **Appendix H** and have been designed to allow the provision of:

- stormwater reuse storage for toilet flushing and laundry use;
- oil and silt capture prior to discharge to Randwick Council's stormwater system;
- no net increase in runoff flowrate quantity or reduction in water quality; and
- application of water sensitive urban design principles.

The Stormwater Concept Plan has been designed to enable roof drainage to be collected into rainwater tanks for re-use, and all overflows from the rainwater tanks diverted into on-site detention tanks, which are connected to Randwick Council's existing street drainage system by gravity feed through gross pollutant traps.

Both the Stormwater Concept Plan and Erosion & Sediment Control Plans have been taken into consideration in the Stage 2 development. An assessment of the specific infrastructure required for the Stage 2 development is included in Section 9.8. Furthermore, these plans will also be used to inform the further development stages of the Concept Plan.

6.10.2 Safety and Security

The development of the Neuroscience Research Precinct will incorporate passive and active safety measures to improve safety of visitors and occupants.

Design measures to be provided at Stages 2 and 3 will include:

Illumination

- Provision of consistent public domain lighting within the Neuroscience Research Precinct, to achieve suitably-illuminated areas.
- Durable, robust luminaire selections;
- Regular maintenance programmes for fittings under the Precinct's control;
- Glare control from bright sources managed to ensure pedestrian safety.

Way finding

- A simple direct approach to the highly visible main entry on Barker Street;
- Ease of access to main public areas;
- Clarity and separation of vehicle entry locations;
- Use of large open spaces and bold colour at the entry, and within public internal spaces;
- Direct secure internal access from basement car parking, via a lift to the common entry space at Barker Street level.

Planting and Landscape

- Clarity of public domain with clear delineation of the Precinct courtyard from the Easy Street landscape via landscape and level changes;
- Security closures (doors and shutters) to all entries including carparks and service areas;

- Visibility through the soft landscaping, with low ground covers, grasses and hard paving with taller tree canopies; to avoid concealed locations in the public domain.
- Enhancement of the Easy Street footpath with new planting, to reinforce the public approach to the Hospitals.
- Delineation between the bus stop waiting area on the Barker Street footpath and the porte cochere shared entry.

Deterrence

- Security of ground–level enclosed spaces;
- Maintenance of all areas to demonstrate active occupant presence;
- Encouragement of pedestrian traffic flow around the perimeter of the site, particularly Barker and Easy Streets;
- Visual reinforcement of the street boundary in the landscape design, through paving and planting details;
- Building security achieved via locked entries, a clear principal entry route, and electronic monitoring;
- Visibility of the Precinct courtyard and Barker Street frontage with extensive glazed openings to provide passive surveillance.
- Extensive glazing of upper floors overlooking each street and public space.

These are to be incorporated into the design of the buildings, Section 9.8.6 sets out which are included under the Project Application and which are to be provided at a further stage.

6.10.3 Utilities

The proposed development will connect to existing utilities infrastructure currently servicing the site; these include electrical, sewerage, drainage, water and telecommunications.

Consultation will be undertaken with the relevant utilities authorities in regard to the need to upgrade the existing infrastructure to adequately service the site, where necessary.

Sewer and Water

Whipps Wood Consulting have prepared a Hydraulic Services Report (**Appendix Q**), which highlights that the main potential development constraint on the site is the existing sewer vent located at the south-east corner of the site. The vent is considered to be a constraint for aesthetic purposes only. Sydney Water has indicated that it is possible to relocate the sewer vent and Whips Wood has suggested three potential relocation options.

In addition, Sydney Water, within their feasibility letter (included at **Appendix Q**) indicates that the development will require a suitable DN225 size sewer extension for the purposes of connecting the site to the sewer main in Barker Street. In addition, connection to the water main in Barker Street will require a connection larger than the domestic 20mm size.

The potential relocation of the sewer vent and whether the development requires an upgrade of the Sydney Water infrastructure is to be agreed with Sydney Water following an application for a Section 73 certificate once consent for the proposed development has been achieved.

The potential requirement to upgrade the Sydney Water infrastructure and relocate the sewer vent does not preclude development of the site.

Electrical Services

The proposed development will connect with the existing electrical supply system currently servicing the site. Consultation with Energy Australia will be undertaken to ascertain the need for relocation and/ adjustment of services affected by the development.

Telecommunications

The site will connect in the existing telecommunications infrastructure. Consultation with the relevant service provider will be undertaken on development consent has been approved for each Stage 2 and Stage 3 respectively.

Gas

The proposed development is to connect with the existing gas supply to the site. Consultation with the relevant provider will be undertaken to ascertain the existing capacity and potential need for upgrade.

Commitment to liaise with all the necessary service providers in regards to the provision of utility services on the site is included within the draft Statement of Commitments (Section 7).

6.10.4 Accessibility

Access Associates Sydney has prepared a strategy report (**Appendix R**). This sets out the requirements which need to be incorporated into the design of the future buildings to ensure that they will comply with the objectives of the Disability Discrimination Act 1992 (DDA), the requirements of the BCA and relevant Australian Standards (AS).

The strategies included within the report consider the following:

- Management Strategies;
- Parking;
- Passenger set down and pick up provision at the main entry;
- Paths of travel and circulation spaces within the buildings;
- Landscaping and external paths of travel on the eastern side of the site;
- Way-finding and signage;
- Vertical Access;
- Toilets;
- Joinery detailing;
- Finishes and floor surfaces;
- Additional provisions for people with low vision and hearing impairment; and
- Emergency evacuation.

The proposed buildings will incorporate the recommendations which have been set out by Access Associates within their detailed design. The draft Statement of Commitments at Section 7 set out the requirements which will be adhered to within all future Project Applications.

6.11 Developer Contributions

It is not proposed to enter into any voluntary planning agreement or separate development contributions framework as part of either the Concept Plan or Project Application.

It is intended that Council's current 94A Plan apply to the development, noting that the proposal is considered to be exempt from payment of contributions under Clause 11.2 of the plan (being both part of a public hospital development and a charitable organisation reliant on grants, funding and donations) and is not listed under Clause 21 as a use / development that would be ordinarily be expected to contribute to social or physical infrastructure within the locality.

The expected demands on local infrastructure normally associated with commercial development, being for public domain and town centre improvements, is not considered applicable to the proposed development on the basis that it will seek to provide its own public domain enhancements within the development and for the POWH Precinct. Furthermore, the development is a medical research facility that not only has wide community health benefits, but has the potential to generate findings from its research that could have health benefits worldwide.

It is anticipated that the relevant contributions plan will not be applied to its typical extent as for any regular or for-profit development. This is consistent with the Department's (and Randwick Council's) recent approach to the assessment and determination of the UNSW Cancer Research Building at High Street, Randwick where this development was not required to pay any developer contributions as part of that Part 3A project application.

Further, consistent with the Department of Planning's Circular D6 for Crown Development and the general approach applied to projects providing improved health services facilities for the wider community, the drainage and site entrance works will be delivered as part of the project.

Therefore, consistent with the Circular, no contributions are proposed or deemed necessary for open space, community facilities, parking, local roads, or any other local physical or social infrastructure or service or any regional infrastructure.

7.0 Concept Plan Draft Statement of Commitments

POWMRI Ltd, the proponent of this Concept Plan application commits to the following:

Subject	Commitments	Timing
Sydney Airport OLS surfaces	Submission of an application to the Department of Transport and regional Services for approval to perform a controlled activity should any structure, including construction cranes extend into prescribed airspace.	If required.
Built Form	Provision of a development, which accords with the following controls: - Use of the land for medical research and ancillary purposes; - Maximum of 61,000m^2 GFA; - Maximum height of RL 89m (approximately 44.5m above ground level) - Maximum building envelope (as show in Architectural Drawing PA101-06); - Maximum of 365 car parking spaces.	Within Stages 2 and 3
Traffic & Parking	Provision of signalised traffic controls at the Barker Street/ Botany Street intersection.	
	Restrict the on-street parking on the eastern side of Avoca Street between St Pauls Road and Barker Street to 'no parking' between the hours of 7.00am and 9.00am.	
	Implementation of a TravelSmart Travel Plan to encourage staff and students to utilise alternative means of transport to driving.	
	Include provision for bicycle parking and amenities within the detailed design of the development	Within the Project Application for Stage 2
Heritage	Archaeological testing to be undertaken over the areas of the site determined to have potential for aboriginal archaeological evidence in accordance with recommendations set out within Mary Dallas Consulting's preliminary assessment report.	Prior to construction of Stage 2A and in conjunction with the European archaeological assessment.
	Further archaeological assessment in accordance with CRMs European Archaeological Assessment to be undertaken to define the extent of European archaeological evidence across the site and to determine appropriate methods for retrieval and storage of found items.	Prior to construction of Stage 2A and in conjunction with the Aboriginal archaeological assessment and excavation investigations.

Subject	Commitments	Timing
Hazardous materials	All ACM found on the site is to be removed by NSW WorkCover Authority licensed asbestos contractors prior to any works starting on site.	Prior to construction certificate issue for the demolition of the buildings
	If potential ACM are found during the construction works a sample will be taken and sent for asbestos identification analysis by a NATA accredited laboratory.	During construction works
	Prior to the demolition of the Ambulance Station or Black Dog Institute a Hazardous Materials Survey is to be undertaken of these building to ascertain the likelihood of hazardous materials on the site and the appropriate method of removal.	Prior to construction certificate issue for the demolition of the Ambulance Station and Black Dog Institute.
	Clearance certificates are to be produced following removal of all asbestos containing materials at the site.	Prior to construction certificate issue for the demolition of the buildings
Contamination	The site is to be inspected by experienced environmental personnel during demolition and excavation works at the site.	During demolition and excavation works on the site
	Additional subsurface investigations comprising a minimum of 19 sampling locations are to be undertaken once the existing buildings have been demolished to meet the minimum sampling density outlined in the NSW EPA (Contaminated Sites Sampling Design Guidelines 1995.	Prior to the construction certificate for the Stage 2 development
Sewer and Water	Application of a Section 73 certificate from Sydney Water	Following issue of Concept Plan approval
	Negotiation and agreement with Sydney Water in regard to the need to upgrade the sewer vent on the site	Following issue of Concept Plan approval
Utilities	Liaise with all necessary service providers in regards to the provision of utility services (i.e. Gas, Electric and Telecommunications etc) to the site	Prior to Construction Certificate stage
Accessibility	Incorporation of the accessibility strategies within the detailed design of buildings, as outlined by Access Associates	Within the Stage 2 and Stage 3 project Applications

8.0 Project Application

The Project Application relates to the first two stages of the proposed development, as outlined in the Concept Plan at Section 5 of this report. Specifically Project Application seeks approval for:

- construction of buildings, as previously approved by Randwick Council under DA/468/2007, (known as Stage 1);
- demolition of existing buildings (Villas 1 and 2, the Ambulance Station building) and other minor associated structures;
- construction of the first part of the POWMRI building over various stages (known as Stage 2 of the development);
- staged construction of associated car parking, loading facilities and landscaping; and
- construction of associated physical infrastructure (both on and off site) including stormwater measures and water supply and sewerage.

A copy of the Stage 1 DA consent and stamped plans are included at **Appendix L**.

This section of the report provides a detailed description of the proposed Project Application development.

Relevant Architectural Plans for the proposed Stage 2 development are included at **Appendix A**. The Landscape Plan for the Stage 2 development is included at **Appendix B**.

8.1 Stage 1 Development

In October 2007, the POWMRI obtained development consent from Randwick Council for the erection of two minor extensions to Villas 1 and 2 (DA/468/2007). A copy of this consent and the Council stamped plans are included at **Appendix L**.

These extensions are for the purposes of providing additional office space for the institute. Parts of these works have been commenced in accordance with the development consent.

Further approval for these works under the Project Application is sought under Section 75ZA which states that if a consent issued under Part 4 of the Act that has not been finalised in accordance with the consent (such as DA/468/2007), then this consent ceases to have effect upon approval under Part 3A of the Act.

On this basis it is considered that Council has undertaken an adequate assessment of this component of the project, and further assessment of the Stage 1 development is not considered to be needed. The Stage 1 works will be carried out in accordance with the same conditions of consent issued by Council for DA/468/2007. This commitment is included in the Statement of Commitments at Section 10.

8.2 Stage 2 Development

Stage 2 of the proposed development comprises the main component of works sought under the Project Application. It establishes the first part of the POWMRI buildings within the NRP and will set the standard for development for further stages of development under the Concept Plan. In total the Stage 2 development seeks approval for 25,470m² of GFA[4].

8.2.1 Numeric Overview

Table 4 sets out the provision of GFA on site, by level and within each stage.

Table 4 – Provision of GFA by level within each stage

Level	Stage 2A	Stage 2B	Stage 2C	Stage 2D
Level 1	1,160	1,740	2,930	4,125
Level 2	1,000	2,110	2,095	3,975
Level 3	800	2,035	2,035	3,440
Level 4	1,270	2,515	2,515	3,890
Level 5	1,265	2,510	2,510	3,855
Level 6	1,110	2,245	2,245	3,610
Level B1	330	390	1,170	625
Level B2	1,240	1,335	2,815	1,950
COMPOSITE TOTAL GFA on site per stage	12,240	18,325	21,025	25,470
Additional floorspace developed per stage	12,240	+6,085	+2,700	+4,445

Table 5 provides an indication of the proposed allocation of GFA to the key uses within the building at each stage[5].

Table 5 – Allocation of GFA per use per stage

Use	Stage 2A	Stage 2B	Stage 2C	Stage 2D
Reception/ Admin areas	1,140	1,140	1,140	1,140
Clinical	230	230	230	490
MRI	555	555	1,130	1,130
Auditorium	0	0	840	840
Back of House	1,050	1,230	1,920	1,685
Ambulance Station	0	190	190	190
Animal House	0	770	770	770
Cafeteria	220	220	220	265
Laboratory	3,040	7,315	7,315	12,460

4 Gross floor area as defined in LEP 1998 as *"the sum of the areas of each level of a building where the area of each level is taken to be the area within the inner face of the external enclosing walls and the area of any attic measured at 2.1m above the floor level of the attic excluding:*

(a) columns, fin walls, shading devices, awnings, balconies and any other elements, projections or works outside the general lines of the outer face of the external wall, and

(b) lift towers, cooling towers, machinery and plant rooms, and air-conditioning ducts, and

(c) associated car parking and any internal vehicular or pedestrian access to that parking (to ground level), and

(d) space for the loading and unloading of goods.

5 The allocation of GFA per use per stage does not include stair cores or general amenities. The Ambulance Station areas does not include vehicular circulation and parking areas.

8.2.2 Design and Built Form

The extent of the proposed Stage 2 development is shown in the Architectural Plans prepared by Cox Richardson Architects and included at **Appendix A**. **Figure 14** shows the extent of the massing of the building and **Figures 15** and **16** provide perspectives of the development as viewed from Barker Street and Easy Street.

The proposed design for the development has been the result of lengthy consultation with POWMRI and SESIAHS as landowner. Through this process Cox Richardson has designed the development to accommodate the spatial needs of current and future research undertakings by POWMRI. This has included tailoring the internal layouts to suit the specialised nature of the research undertaken by the Institute.

The external design of the building is innovative and creative so as to reflect the nature of the research undertaken by the Institute, while maintaining the identity of the Institute and its associations with the hospital and UNSW. The Stage 2 building has been designed to provide

> *"... an expressive veil from form which dramatically sweeps around the corner site, at once revealing the research activities within and engaging passers-by with a canopy form at street level." (from the Design Report by Cox Richardson Architects)*

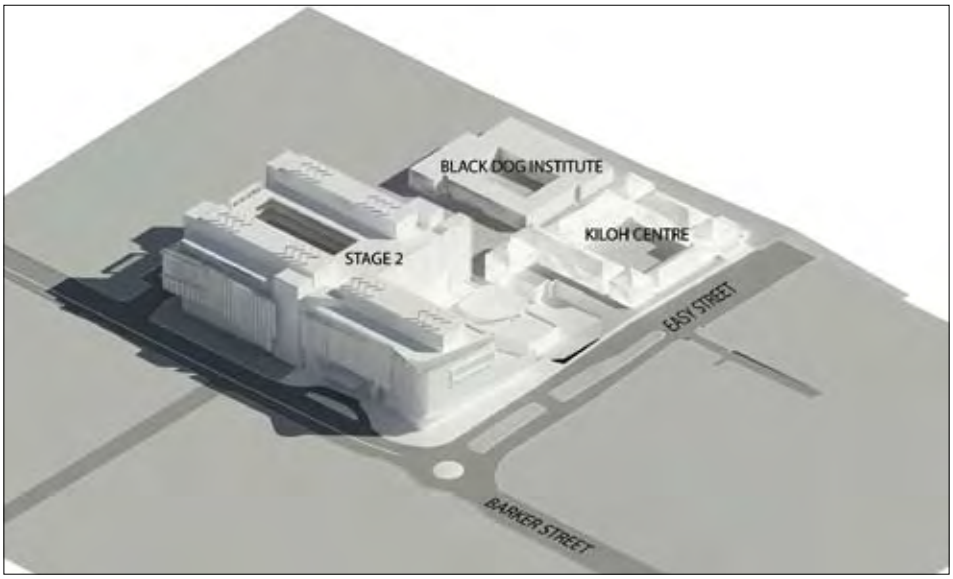

Figure 14 – Overall massing of the Stage 2 development

Figure 15 – View of the Stage 2 development from the corner of Easy Street and Barker Street

Figure 16 – View of the Stage 2 development from Easy Street

Building Height and Massing

The Stage 2 building is to be built to the boundaries of Hospital Road, Easy and Barker Streets, with exception of a porte coche that provides a clear entry point to the building off Barker Street.

The building has a maximum of RL76.2 AHD (approximately 31.7m above ground level) and includes 6 levels plus plant. It comprises a unique fanned roof element that fringes the perimeter of the building along Barker and Easy Streets.

The building opens up onto an outdoor courtyard area that has views of the garden on Easy Street. The courtyard area is overlooked by the building along its western, southern and eastern edges. The courtyard is shown in **Figure 17**.

The majority of the building's floor space is located to the western side of the site. This part of the building comprises two built wings separated by an internal courtyard gallery. The adjoining office and laboratory spaces will be able to obtain views into this courtyard and receive natural light through the courtyard space.

The auditorium extends from the northern part of the building and adjoins the outdoor courtyard space. In height it extends to RL51 AHD and is of a low scale, relative to the remaining parts of the Stage 2 development.

The Stage 2 building includes two basement levels, which will house car parking and associated storage areas.

Figure 17 – Courtyard view looking to Easy Street

Materials and Finishes

A materials and finishes board is included at **Appendix A**. This shows the proposed glazing, paint finishes, pre-cast finishes, sun shade panels, metal louvers, metal cladding, timber and landscape treatments.

All glazing will also be in accordance with the specular reflectivity recommendations as set out by Windtech within their report (**Appendix S)**.

Internal Layout

The Architectural Plans at **Appendix A** outline the layout of each of the levels within the development. The fundamental elements associated with Stage 2 include:

- Construction of a 7 storey building (including plant) that incorporates a total of 25,470m^2 GFA and extends along and addresses Barker Street. This building will include:
  - 2 basement levels
  - research and office space, including laboratories
  - a staff cafeteria
  - an auditorium
  - MRI and associated clinical areas;
- Construction of 176 car parking spaces and associated loading facilities; and
- Construction of the Ambulance Station within the building, including:
  - 4 staff parking spaces
  - wash bay
  - 9 ambulance parking spaces
  - associated staff and office spaces

Table 6 below outlines the uses and facilities to be incorporated on each level of the development.

Table 6 – Uses and facilities for each level of the development

Level	Facilities
Level B2	- 92 car parking spaces (including 3 disabled parking spaces) - bicycle parking and amenities - scientific facilities and equipment storage - Research Imaging Centre (MRI facilities)
Level B1	- 84 car parking spaces (including 3 disabled parking spaces) - bicycle parking and amenities
Level 1	- pedestrian foyer entry off Barker Street, served by porte cochere - Reception areas to POWMRI and MRI facilities - MRI clinical rooms - Staff cafeteria - Ambulance station - Loading dock area - Workshops and associated storage areas - Auditorium
Level 2	- Animal house - Staff eatery - Seminar room - Laboratories - Offices
Levels 3	- Board room with terrace overlooking courtyard - Offices - Laboratories
Levels 4-6	- Offices - Laboratories
Level 7	- Plant areas

Circulation

The main entry to the building will be from Barker Street and will include a porte coche and a through driveway/drop off and pick up area.

The building will be serviced with four lifts that will provide access to Levels 1 to 6. A separate lift will be provided that will access between basement levels and Level 1. A goods lift is also included, which will service all levels including Level 7.

8.2.3 Ambulance Station

The Ambulance Station is proposed to be rehoused within the Stage 2 building in the same location as the current ambulance building.

The station will comprise of 4 staff parking spaces, a wash bay, 9 ambulance vehicle parking spaces and staff/office spaces. Vehicular will continue to be made from Hospital Road into the station with through access to Barker Street.

A temporary station will be provided on site or off site to the satisfaction the NSW Ambulance services during the construction of this part of the building, so ensure no loss of service to the community.

8.2.4 Access and Parking

Car Parking

A total of 176 car parking spaces are to be provided within the basement levels of the Stage 2 development. This quantum of parking includes 8 disabled parking spaces, 4 spaces on each level.

Access to the basement car parking areas is from a driveway entry from Hospital Road into the building. An internal access ramp in the same location as the driveway entry is to be provided to connect and service both basement levels.

An at grade car parking area is to be provided between the existing Black Dog Institute building and the northern section of the Stage 2 building. This car park will provide a further 47 car parking spaces. Separate staff and ambulance parking is provided for the Ambulance Station – see Section 8.2.3.

Vehicle Access

In addition to the entry to the basement car park, the development incorporates a porte cochere driveway egress. This is located off Barker Street and will serve to provide a designated drop off and pick up point for the development.

Delivery, Loading and Servicing

Access to the loading dock will be provided via a driveway off Hospital Road, which will be located to the north of the Stage 2 building and the existing Black Dog Institute building. This loading dock area will service up to two vehicles at any one time. A further 4 courier/van delivery spaces are provided adjacent to the loading dock. Smaller deliveries to the site may also utilise the porte coche.

Bicycle Facilities

A total of 52 bicycle parking spaces will be provided for staff and students. A further 15 bicycle spaces will be provided for visitors. Staff and student bicycle parking spaces and associated lockers and shower/changes facilities will be provided within basement levels B1 and B2.

8.2.5 Landscape Design

A plan of the proposed landscaping for the Stage 2 development is outlined in the Landscaping Plan and Report prepared by Tract Consultants Pty Ltd, included **Appendix B**.

The main landscaping element to be created as part of the development is the creation of an open courtyard, which is located to the north eastern section of the site. This area provides pedestrian links to the all stages of the development and provides an attractive and functional space for which staff, students and visitors can utilise.

It is envisaged that on entry to the development at the porte cochere, this courtyard will be visually prominent backdrop to the lobby and will invite visitors to this area.

Also proposed is:

- the retention of the existing landscaping area at the north eastern portion of the site; and
- the provision of street tree and associated planting along the western side of Easy Street and part of Barker Street, adjacent to ambulance station driveway exit.

A list of the proposed tree, shrub and groundcover species to be used within the courtyard landscaped area and along Barker and Easy Streets is provided on the Landscape Plan (at **Appendix B**).

8.2.6 Indicative Project Staging

The Stage 2 development is expected to be constructed over 4 stages, namely Stages 2A, 2B, 2C and 2D. The Architectural Drawings at **Appendix A**, illustrate the evolution of the Stage 2 development over these 4 stages and the phases of demolition of various existing buildings.

Stage 2A

The first stage of the development will include the construction of the first portion of the Stage 2 building at the corner of Easy and Barker Streets – see **Figure 18**.

Figure 18 – Stage 2A as viewed from Barker Street

This element will provide the key entry and address for the development, will be built to 7 storeys and will include partial demolition of Villa 1.

Amenities will be provided at each level and 3 lifts, including the goods lift will be provided.

This stage of the development will link into the remaining portion of the Villa 1 building, and provide through pedestrian egress between these buildings.

A total of 124 car parking spaces will continue to be available to service the development once Stage 2A is complete.

Stage 2B

This stage of the development extends upon the Stage 2A building to the west along Barker Street, providing and maintaining the height of the Stage 2A building. This stage will comprise of the relocation of the Ambulance Station within the Stage 2 development.

This stage of work will also include partial demolition of a further portion of Villa 1 and part of the Stage 1 development attached to Villa 1.

A further goods lift will be provided. Amenities will also be provided at all levels, with exception of Level 7.

A total of 223 car parking spaces will provided to service the development once Stage 2B is complete.

Stage 2C

This stage of the development incorporates the development of the Auditorium. It will extend from the existing Villa 2 and rise to a height of approximately RL 50 AHD. The construction of the auditorium will include the construction of associated amenities and a catering kitchen.

This stage of work will include demolition of much of the remaining portion of Villa 1. The basements (Levels B1 and B2) constructed as part of Stages 2B and 2A will extend over the area to be developed for the auditorium.

The auditorium will accommodate approximately 300 persons.

An open area to the south of the auditorium will be landscaped to provide a courtyard that will service the whole of the Stage 2 development.

Stage 2D

This stage of the development realises the full Stage 2 development as outlined in **Sections 8.2.1** to **8.2.3**. It will include the demolition of Villa 2 and the remaining portion of Villa 1. It will include further expansion of the basement levels to provide an additional 66 car parking spaces and the provision of an at grade car parking area to the south of the existing Black Dog Institute building, which will provide a further 47 car parking spaces.

9.0 Project Application Environmental Assessment

9.1 Director General's Environmental Assessment Requirements

Appendix E provides a detailed summary of the individual matters listed in the Director General's Environmental Assessment Requirements (DGRs) and / or identifies where each of these requirements has been addressed in this report and the accompanying technical studies.

9.2 Consistency with Concept Plan

The proposed Stage 2 development has been designed to accord with the scope of the proposed elements and Statement of Commitments for the Concept Plan. Specifically the proposed Stage 2 development:

- is to be built within the building envelope relative to Barker and Easy Streets;
- does not exceed the overall proportion of parking to provided for the Concept Plan;
- does not exceed the overall maximum floor space for the Concept Plan; and
- adopts the same design principles as those used for the Concept Plan development.

9.3 Built Environment

9.3.1 Design Quality

The external design of the proposed Stage 2 development has been developed by Cox Richardson Architects to achieve various outcomes. The reasoning behind the final design selection for the development is detailed in Cox Richardson's Design Report at **Appendix A** and summarised at Section 9.3.6.

In summary, the proposed design for Stage 2 is considered well resolved on the basis that it:

- is a landmark building that not only identifies the Neuroscience Research Precinct, but also provides a gateway to the remaining Hospital Precinct as viewed from the south;
- sets the design benchmark for future development stages of the Neuroscience Research Precinct;
- is of a contemporary design that conveys a sense of innovation and originality;
- has a design that reflects the uniqueness of the specialised research that will be conducted within its walls;
- provides a legible edge the corners of Easy/Barker Streets and Hospital Road/Barker Street;
- can be adapted as each sub-stage progresses to accommodate future development; and
- has been configured to best utilise the site area, while provides generous laboratory and research work spaces.

9.3.2 Landscaping and Public Domain

The proposed landscaping for the external courtyard and the streetscapes of Barker and Easy Streets are compatible with Stage 2 development and its surrounds in that it:

- retains and reinforces the importance of the heritage Memorial Garden;
- maintains much of the existing landscaping along Easy Street;
- integrates the proposed landscaping with the retained landscaping area along Easy Street;
- includes species that suited to the shading and wind conditions in and around the site;
- embellishes the open courtyard area to provide a functional and attractive open space to serve the needs of staff, students and visitors;
- provides an attractive outlook for occupants within the southern portion of the Kiloh Centre building; and
- revitalises the adjoining streetscapes to further define and activate the southern edge of the Hospital Precinct.

The main impact associated with the proposed development is the removal of two of the Ficus trees located within the existing landscaped are to the north eastern portion of the site

None of the existing vegetation on the site is naturally indigenous to the site and will be replaced with more appropriate plantings that will provide greater levels of amenity of the development's occupants and enhance the appearance of the proposed building.

On this basis, the proposed landscaping elements are appropriate for the Stage 2 development.

9.3.3 Visual Impact

Cox Richardson has produced photomontages of the Stage 2 development to illustrate the visual appearance of the proposed development from Barker Street and Easy Street (see **Appendix A**).

Based on these illustrations the visual impact of the Stage 2 development on surrounding land uses and public amenity are considered to be acceptable for the following reasons:

- It is of high quality architectural design, which will provide a distinctive and apparent entrance to the POWH Precinct from Barker Street.
- The design of development will denote its association with the field of medical research and innovation in the area of health.
- The development is adequately separated from surrounding uses along Easy Street, Barker Street and also the residential properties to the west of Hospital Road.
- The articulation of the building breaks up the bulk and form of the Concept Plan building envelope to create an attractive and interesting built form.
- The development provides significant setbacks to the Kiloh Centre and provides an attractive landscaped area for Kiloh Centre occupants to look out upon.
- The landscaped courtyard area will be contiguous and extend the existing landscaped area to the south of the Kiloh Centre building, including that of the Memorial Garden.

9.3.4 Overshadowing Impact

The Stage 2 development will not overshadow surrounding development beyond that expected as a result of the Concept Plan. In this regard and based on the assessment provided for the Concept Plan, the proposed Stage 2 development will give rise to acceptable overshadowing impacts to existing adjoining development.

9.3.5 Internal Amenity

The general layout of the Stage 2 development has been configured to accommodate the particular needs of the research and investigations to be undertaken by the POWMRI. The large floor plates are to provide sizable laboratory areas, while serving to provide associated office space with attractive outlooks onto the courtyard, the nearby streets and to the internal courtyard gallery.

The external courtyard area will not only provide an attractive focal point for the development, but will provide an area that will allow staff, students and visitors opportunities to enjoy the outdoors, particularly during lunch breaks.

The entry foyer to the building not only provides a clear entry to the building, but serves to separate uses within the building and denotes public and staff/ student areas.

Staff amenities are spread throughout the development to adequately serve the needs of staff, students and visitors.

The provision of shower and change room facilities for bicyclists will not only serve to encourage staff and students to bicycle to the development, but will likely serve the needs of those staff and students wishing to exercise during work hours.

9.3.6 Alternatives to the Proposal

Within the Architectural Design Report (**Appendix A**) Cox Richardson set out the two principle designs which were considered for the NRP, these were based on a study of examples of contemporary neuroscience research centres and other laboratory buildings both within Australia and internationally.

The two designs are set out in **Figures 19** and **20**. Following extensive research it was resolved that a spine-orientated scheme (shown in **Figure 19**) was the preferred option due to the following factors:

- the spine-orientated scheme allows circulation from Barker Street northward to the hospitals, with an entry point located centrally on Barker Street;
- the series of regular modules displayed in the spine orientated scheme is based on a preferred laboratory module;
- the preferred design was considered best able to meet best practice laboratory design procedures along with the requirements of BCA and relevant Australian Standards;
- the orientation of the long axis of each module enabled controlled north and south light to all work areas, thus avoiding glare and the close control of external light sources – critical to many work processes envisaged within the facility.

Figure 19 – Typical floor plan of central spine-orientated scheme

Figure 20 – Typical floor plan of a linear configuration scheme

9.4 Transport Issues

A detailed Traffic Study and TMAP have been prepared by Parsons Brinkerhoff to assess the potential traffic, parking, access and transport issues associated with the Stage 2 Project Application proposal – see **Appendix M**.

9.4.1 Traffic Generation

Parsons Brinckerhoff has undertaken a detailed assessment of the likely impacts to traffic in the locality as a result of the proposed Project Application. This assessment assumes that the Stage 2 development will be fully constructed by 2015 and factors in a traffic growth rate of 0.3% per annum.

Based on these assumptions and current traffic surveys, the Project Application is expected to result in a moderate increase in traffic flows in the local area. This moderate increase is not considered to warrant further mitigation measures.

Parsons Brinckerhoff has also reviewed the likely impacts of the Project Application on average waiting times at localised road intersections. With exception of the intersection at Botany and High Streets, this evaluation indicates that most intersections will continue to operate at acceptable levels of delay upon completion and occupation of the Project Application development. At a base rate for 2015 it is predicted that the intersection at Botany and High Streets will operate with average delays of 95.7 and 93.7 seconds during the AM and PM peak periods. With the addition of the traffic generated by the Project Application, this is only expected to increase delays through the intersection of Botany and High Streets by 15% and 16.6% during AM and PM peak periods beyond that expected for the 2015 base rate. This is considered to be an acceptable impact.

Overall, the moderate impacts to traffic flows in and around the site do not warrant additional traffic measures and are considered acceptable in the context of current and anticipated 2015 traffic flows.

9.4.2 Parking and Loading

Based on expected trip generation by the development and current staff and student travel patterns, the Project Application is expected to generate demand for 245 car parking spaces. With the implementation of the Transport Initiatives outlined as part of the parking assessment for the Concept Plan (see Section 6.5), this demand is expected to drop to 218 car parking spaces.

Table 7 provides a breakdown of existing parking and that proposed by the Project Application development. The same assumptions outlined in Section 6.5.2 apply to the car parking supply table below.

Table 7 – Comparison of Current and Concept Plan parking provisions

Car parking Locations	Current parking utilisation	Project Application parking allocation
On site - existing	37	0
New basement car park	0	173
Reserved on Hospital Rd - POWMRI	3	13
Reserved on Hospital Rd – Unused	4	
Reserved on Hospital Rd – Black Dog Institute	12	
Reserved on Hospital Rd – Recently acquired	10	
On street – POWMRI	44	55
On street – Black Dog Institute	15	
UNSW	7	7
Prince of Wales Hospital (POWH) car park	5	0
TOTAL	137	248

Based on the above, the Project Application will provide sufficient parking to adequately meet generated demand for parking. The proposed parking layout has been designed to comply with the relevant Australian Standards.

Auditorium and Ambulance Station

The detailed assessment provided in Section 6.5.2 above remains unchanged for this element of the Project Application. In this regard, the Project Application provides adequate parking for these components of the development.

Staged Development and Parking

The staged construction of the Project Application will result in a variable provision of parking. The Architectural Plans at Appendix A outline the extent and layout of this parking at each of the respective sub-stages of the Project Application development.

Table 8 below outlines not only the quantum of parking demand and supply at each stage of the Project Application development, but also the expected level of parking demand and supply during the construction of each stage.

Table 8 – Parking demand and supply

Stage	Parking Supply	Parking Demand	Excess/Deficit
Existing	137	112	25
1 Current Construction	132	111	21
2A Construction	106	111	-5
2A Operation	124	115	9
2B Construction	117	115	2
2B Operation	218	174	44
2C Construction	218	174	44
2C Operation	214	174	40
2D Construction	214	174	40
2D Operation	295	218	77

With exception of the construction phase for Stage 2A, the Project Application will have sufficient parking throughout each of the development's construction and operational phases. The deficiency in parking during the construction phase for Stage 2A is considered to be relatively small such that, this is not expected to give rise to detrimental impacts to parking supply in the local area, in particular the local streets. It is expected that adequate alternate parking can be obtained in the POWH car park during this temporary phase of the development.

The Traffic Study and TMAP at **Appendix M** illustrates the layout and location of available parking as each stage of the Project Application progresses.

9.4.3 Access and Loading

Vehicle egress from Easy Street will be removed and three access points from Hospital Road will serve the Stage 2development. Two of these egress points are to the at-grade parking adjacent to the Black Dog Institute and the other to the basement car parking areas. These egresses have been designed to accord with the relevant Australian Standards.

The remaining egress point will serve the loading dock facilities to the northern section of the Stage 2 building. The sweep paths diagrams for the loading dock illustrate that there is sufficient space to manoeuvre large rigid vehicles in and out of the loading dock and that vehicles can enter and exit in a forward direction.

Based on Parson Brinckerhoff's assessment the additional 4 contractor car parking adjacent to the loading dock will serve the needs of various delivery vans and couriers.

9.4.4 Alternative Transport

Based on current mode splits, the Stage 2 development will increase demand for bus services from 47 to 112 passengers. With implementation of the transport initiatives outlined in Section 6.5 of the Concept Plan, this will increase the patronage by a further 10 passengers. Given that there is adequate capacity to service the whole of the development as outlined in the Concept Plan (see Section 6.5); there is sufficient capacity to serve the needs of the Stage 2 development.

The provision of 52 bicycle parking spaces and a further 15 visitor bicycle parking spaces will provide a ratio of 1 bicycle parking space per 3.2 car parking spaces. This exceeds Randwick Council's requirements for 1 bicycle parking space for every 10 car parking spaces.

The provision of additional bicycle facilities such as lockers, showers and changing rooms will assist in encouraging more staff and students to utilise cycling as a regular means of transport to the Stage 2 development. The provision of these facilities meets the requirements of the NSW Government's *Planning Guidelines for Walking and Cycling* (2004).

9.5 Heritage

In addition to the heritage assessment undertaken for the Concept Plan, Graham Brooks & Associates has assessed the potential impacts the proposed Stage 2 development may have heritage items and the Struggletown Conservation Area in the vicinity of the development (see **Appendix I**).

This assessment determines that the proposed setbacks, facade treatments and scale of the development will have an acceptable level of impact on the heritage significance, visual curtilage and setting of these items and the Conservation Area. Furthermore, the proposed Stage 2 development will not affect the distinct legibility and significance of both the heritage Stables Complex or the Stuggletown Conservation Area, with regard to views to these elements from the road and from the sites of these elements.

The curtilage of the Memorial Garden and the garden itself will be maintained and protected as part of the proposed development. On this basis this approach will mitigate any possible negative impact on the garden and its heritage significance.

As identified in the heritage assessment for the proposed Concept Plan, Graham Brooks & Associates has recognized that the site for the Worker's Cottages on Barker Street could be interpreted to inform the public of the historical significance and association with the site. The provision of an interpretative element/ landscape treatment in accordance with this recommendation is included as a Statement of Commitment at Section 10.

9.5.1 Aboriginal Heritage

With respect to Aboriginal archaeological heritage the relevant assessments undertaken for the Concept Plan equally applies to the proposed Project Application. In this regard further assessment of the Project Application is not warranted.

The recommended strategies for undertaking further archaeological investigations are proposed to be undertaken in accordance with the Aboriginal Archaeology Report by Mary Dallas Consulting Archaeologists, included at **Appendix J.** These will be staged in alignment with the proposed sub-stages of the Stage 2 development and is confirmed as a Statement of Commitment at Section 10.

In addition, in accordance with the consultation response from DECC a full report on the excavation and results of the assessment on Aboriginal heritage values will bee provided to the AHIMS register at DECC. This is also a Statement of Commitment at Section 10.

9.5.2 European Archaeological Heritage

With respect to European archaeological heritage the relevant assessments undertaken for the Concept Plan equally applies to the proposed Project Application. In this regard further assessment of the Project Application is not warranted.

The recommended strategies for undertaking further archaeological investigations are proposed to be undertaken in accordance with the Preliminary Assessment of European Archaeology Report by CRM (at **Appendix K**), and the recommendations outlined in the Statement of Commitments for the Project Application. These will be staged in alignment with the proposed sub-stages of the Stage 2 development.

9.6 Environmental Issues

9.6.1 Noise

An Acoustic Report has been prepared by PKA Acoustic Consulting (PKA) (**Appendix T**). The report assesses the potential noise impact from the proposed construction activities and the operation of the development. Construction noise impact is discussed at Section 9.8.

The noise sensitive receivers surrounding the site are:

- residential properties west of Hospital Road, on Barker Street and in Jane Street (approximately 90 from the south west corners of the site); and
- the Kiloh Centre, Royal Hospital for Women and the adjacent Child Care centre.

The operational sources of noise are:

- Rooftop ventilation fans;
- Fume cupboard fans;
- Chillers; and
- Traffic generated by the development.

Plant and Equipment Noise

The operational noise goals proposed by PKA for the development are:

- Day (7am-10pm) – 51 dBA L_{A90}
- Night (10pm-7am) – 48 dBA L_{A90}

PKA estimate that the potential noise level generated from the roof fans will be over 50-55 dBA at the nearest residential location, depending on the size and type of fans.

The estimated level of noise is therefore in excess of the noise goals. In order to mitigate the noise levels, PKA recommend the following mitigation measures:

- use of appropriate discharge silencers and fan enclosures;
- use of screening and variable Speed Fans for the chiller units; and
- design and specify other mechanical plant (mechanical plant rooms on levels 1-6, car park ventilation plant, roof to air handling plant, and roof top hot water plant) such that the applicable noise limits are met.

These measures will be included in determining the mechanical services equipment within the development at Construction Certificate stage.

Traffic Noise

PKA has also reviewed the potential for traffic noise generated by the development to impact upon surrounding development.

Based on Parsons Brinkerhoff's estimated and expected vehicle movements to and from the development during the peak periods (see Traffic Study and TMAP Report at **Appendix M**), PKA has determined that although there will be some increased noise levels to adjoining development as a result of increased traffic for the development, these increases will generally be within the acceptable 2dBA allowance.

Traffic travelling during the AM peak period will, however, generate increased noise levels of approximately 4dBA over the acceptable maximum noise level. Despite this, it is considered by Parson's Brinkerhoff that although a conservative approach was taken to assess the resultant number of vehicle movements during this time, the likely traffic flows to the development will generally be spread over a longer period such that the increase in noise will be within the acceptable 2dBA.

Given that the noise level increases (if they actually occur) are only for a short period of time during the day and that the likely resultant noise increases are expected to be within acceptable levels, it is considered unnecessary to further mitigate traffic noise to adjoining development to the west of Hospital Road.

9.6.2 Wind

Windtech Consultants Pty Ltd has prepared a Pedestrian Wind Environment Statement which is included at **Appendix S**. This statement includes an assessment of the likely impact of the proposed design of the building on the wind environment within and around the site.

The current prevailing winds are from the north-east and south between the months of September to April and from the west between the months of April and September.

The potential wind impacts from the development are to the various outdoor areas within and around the site, and on the Level 3 terrace on the eastern side of the proposed building.

Due to shielding from the local surrounding buildings to the north-east of the site and the development itself, it is not expected that the ground level areas around or within the site including the ground level garden area will be adversely affected by north-easterly winds. It is considered however, that the Level 3 terrace maybe exposed to north-easterly winds. The ground level areas and the Level 3 terrace are also considered to be relatively well shielded from southerly and westerly winds by the surrounding buildings, densely foliated trees situated to the west and the proposed development itself.

Windtech infer however that westerly winds do currently impact upon the Barker Street pedestrian footpath due to the exposure of this area to westerly winds and its east-west orientation. Despite this, the proposed development is not expected to aggravate this condition further.

Windtech also consider that there may be impacts on the southern entrance from southerly and westerly winds due to the small depth of the airlock. Revised air lock designs, as shown in the Architectural Drawings at **Appendix A**, mitigate this impact.

Overall however, the proposed development is not expected to have any adverse effects to the wind conditions within the site or to the local surrounding streets and pedestrian footpaths and thoroughfares.

9.6.3 Reflectivity

Windtech has reviewed the architectural drawings and prepared a Reflectivity Report to investigate the potential impact of solar glare from the proposed buildings on pedestrians or motorists along surrounding streets or neighbouring buildings (see **Appendix U**).

The various non-inclined aspects of the development are presented in **Figure 21** below. These have been assessed in terms of their potential glare impact on six location points surrounding the site.

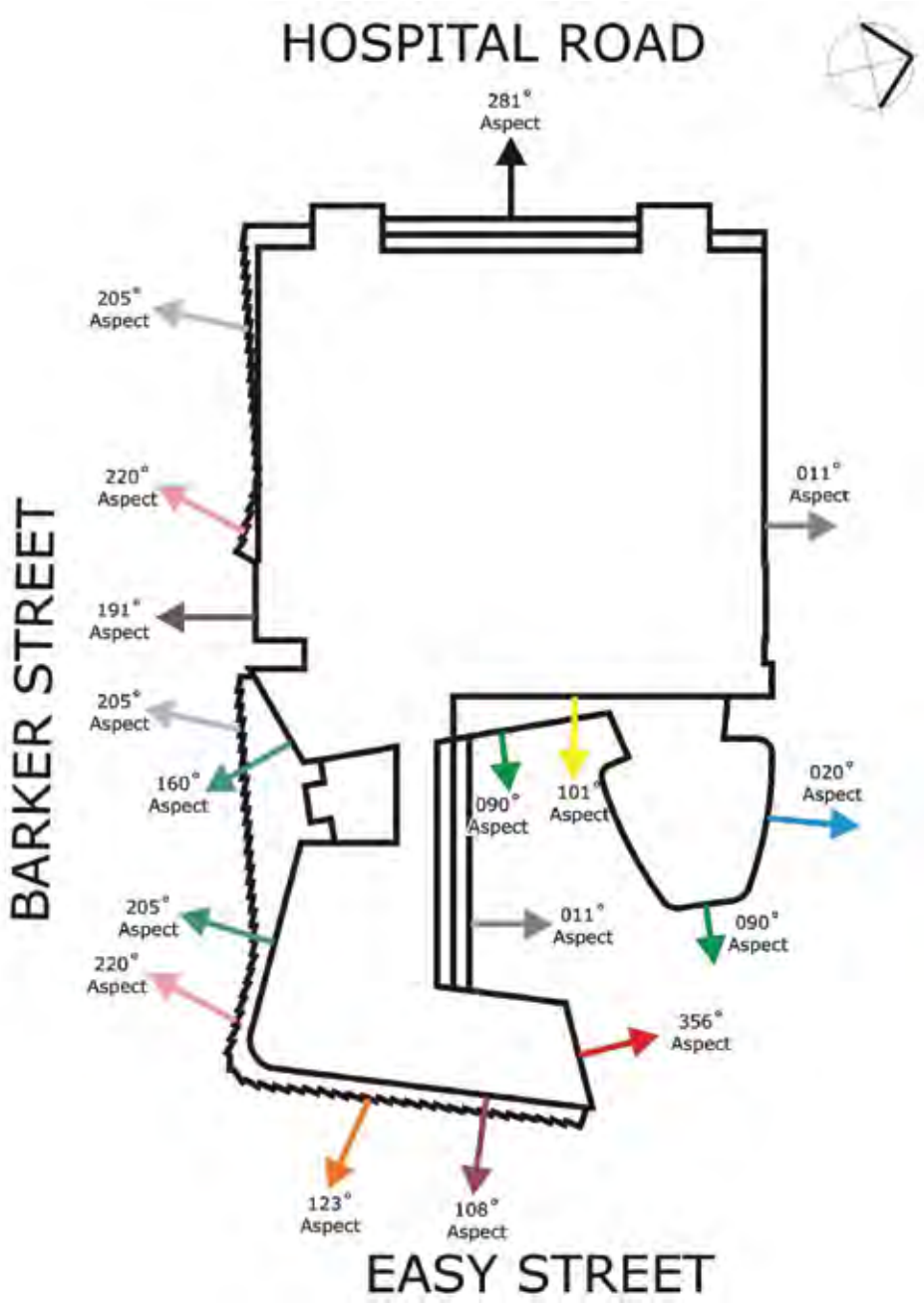

Figure 21 – Critical Non-Inclined Plane Aspects

The study found that the façade of the building facing aspects 191°, 011°, 205° and 220° have the potential to impact on motorists or pedestrians

Furthermore, Windtech conducted an analysis for the inclined plane awning. They found that during the months of November and December, reflections from the architectural roof structure at the south eastern corner of the building can potentially impact on west bound drivers on Barker Street.

In order to avoid any adverse glare to drivers and pedestrian on the surrounding streets of the proposed development, Windtech recommend that the glazing used on the façade meet the following reflectance properties:

- all areas of the façade should have a maximum normal specular reflectivity of visible light of 20%;
- the glazing on the top 3 levels of the 191° aspect and the 3rd level of the 011° aspect at the eastern edge have a normal specular reflectivity of visible light not exceeding 9%;
- the glazing of levels 2 and 3 of the 205° and 220° aspects between longitudinal lines Q and L as indicated in the architectural drawings have a normal specular reflectivity of visible light not exceeding 8%; and
- the inclined panels around the south east corner of the building be made from a clear or body-tinted glass so as to have a maximum normal specular reflectivity of 7%.

Alternatively, Windtech consider that shading across the relevant sections of the building façade or through the provision of vertical and/ or horizontal fins, blade walls, slab overhangs, etc or by external louvers or other façade elements could be used instead of the glazing treatments.

With the above recommendations satisfied, Windtech consider that the will be no adverse glare from the proposed development to motorists or pedestrians in any of the surrounding streets and other outdoor areas, or to the occupants of neighbouring buildings.

The facade treatments will meet these reflectance criteria and this is included as a Statement of Commitment in Section 10.

9.6.4 Sustainability

Cundall has prepared a Sustainability Report for the proposed development which is included at **Appendix V**. This report outlines the environmental initiatives which are to be adopted by the development and how these will improve the environmental performance of the proposed development.

Despite there being various environmental rating tools to assess different types of development, there is no single type of tool suited to the proposed Stage 2 development. However, relevant to the proposed development there is an environmental rating tool used in the United States called LEED (Leadership in Energy and Environmental Design). This tool however assesses the performance of laboratory buildings, which is not an endorsed rating tool in Australia. Despite this the base building will seek an equivalent 5 star rating energy rating under the NABERS rating scheme (Education model).

An alternative strategy has also been developed by Cundall for the remainder of the building. This is based on utilising aspects of various environmental rating tools to develop a hybridised tool suited to the specifics of the proposed Stage 2 development.

Whilst strategies in regard to operational management of the development including waste management, and indoor environmental quality are still being formulated, Cundall set out the following ESD initiatives which have been included within the design of the building and are to be included during construction and operation.

Management

- comprehensive commissioning and building tuning is to be undertaken;
- an Environmental Management Plan is to be developed to regulate environmental impacts throughout construction and operation;
- 60-80% of demolition and construction waste will be recycled/ reused; and
- a building users guide to inform and educate staff and facility management on how to capture and promote strong on-going environmental performance will be developed.

Indoor Environmental Quality

- central light wells are provided into the laboratory spaces with external shading devices to eliminate direct sun, whilst allowing diffuse light into the space;
- daylight will be able to permeate the auditorium;
- 100% fresh outside air with mechanical heat recovery will be supplied into the buildings;
- CO_2 sensors will be included to monitor levels and increase fresh air supply rates if CO_2 levels become undesirably high; and
- material selection has been determined to reduce contamination of air by common indoor pollutants, including the use of high frequency electronic ballasts to avoide the strain caused by low frequency flicker.

Energy

- inclusion of lighting controls based on occupancy levels and available daylight, individual AC controls and manual over ride that can be simply operated and energy reporting and monitoring;
- installation of a hybrid air conditioning system that includes a VRV system to condition the small cellular and open plan office areas and a chilled water system to condition the larger volume spaces;
- the large entrance/ foyer spaces are to be naturally ventilated;
- glazing is to be energy efficient throughout the building to limit solar heat gains; and
- energy generation operations are to be included, such as cogeneration and PV panels.

Water

- installation of dual flush toilets, handwash basins (6 litre/ minute) and smart flush urinals(0.8l per flush);
- rainwater storage will be provided to supply water for landscape irrigation and toilet flushing, reducing the quantity of high quality drinking water that is flushed down the toilet;
- possible recovery of fire sprinkler water for reuse in toilet flushing, rather than discharge to drains;
- filtering of stormwater for stormwater events up to 1 in 20 years and recapture of rainwater directly from the roof to be reused directly; and
- installation of a sub-metering system to reduce the considerable water losses that occur in many commercial buildings through leakage.

Materials

- use materials with a low embodied energy & high recycled content; and
- materials which are environmentally sensitive products will be avoided and the use of volatile organic compounds and formaldehydes will be minimised.

Transport

- encouragement of staff to use the most fuel efficient methods of transport;
- encouragement of staff to cycle to work, and provision of secure and accessible bicycle storage and amenities;
- 25% of the car spaces are to be sized and labelled for small vehicles; and
- a workforce travel package will be developed to inform occupants of their sustainable transport alternatives.

Emissions

- 100% of the refrigerants by volume will have an Ozone Depletion Potential of zero;
- all thermal insulants will have a low Ozone Depletion Potential in their manufacture and composition;
- stormwater run off will be filtered in accordance with best practice guidelines;
- the water efficiency measures will significantly reduce the waste water discharge to the sewer system relative to a standard building;
- external light pollution will be controlled by the lighting design.

These initiatives, including achievement of equivalent 5 star energy performance rating under the NABERS rating scheme (Education model) for the base building will be incorporated into the design, construction and operational practices of the building. This is a draft Statement of Commitment at Section 10.

9.6.5 Geotechnical and Contamination Issues

A Geotechnical Report has been prepared by Jeffery and Katauskas (**Appendix G**), which presents the results of a geotechnical investigation into the subsurface conditions at 11 nominated locations across the site.

The geotechnical implications of the proposed Stage 2 development comprise:

- the proposed excavation through the soil profile will require a full depth engineered retention system to be put in place;
- ground vibrations associated with rock excavation will need to be controlled due to the sensitivity of the activities within the surrounding buildings;

In order to mitigate any possible impacts upon the site or surrounding uses Jeffery and Katauskas provide a number of construction recommendations.

They also recommend that further geotechnical input is required at Construction Certificate stage.

In order to ensure the proposed excavation works will not adversely impact upon the site's soil profile or surrounding buildings, the relevant recommendations are included as commitments within the draft Statement of Commitments at Section 10.

Hazardous Materials and Contamination

An assessment of the hazardous materials and likelihood of contamination on the site is included at Section 6.6.7 above. Whilst asbestos has been found within the existing buildings on the site, the contamination assessment has found that levels of potentially contaminating compounds are less than the appropriate Health Investigation Levels.

In regard to the removal of hazardous materials on the site the following is proposed:

- all ACM found on the site, will be removed by NSW WorkCover Authority licensed asbestos contractors prior to, or as part of any refurbishment/ demolition works; and
- if any such materials are found, a sample will be taken and sent for asbestos identification analysis by a NATA accredited laboratory.
- a hazardous materials assessment of the Ambulance station buildings and the Black Dog Institute building will be undertaken prior to any works commencing on the site; and
- production of clearance certificates following removal of all asbestos containing materials at the site.

In regard to the potential for soil contamination on the site, the following is proposed:

- during demolition and excavation works, the site will be inspected by experienced environmental consultant;
- additional investigations comprising a minimum of 19 sampling locations will be undertaken on the site during the demolition works to meet the minimum sampling density outlined in the *NSW EPA (Contaminated Sites Sampling Design Guidelines 1995*.

The recommendations set out above are included within the draft Statement of Commitments at Section 10.

9.7 Social and Economic Issues

The Social and Economic issues associated with the proposed development have been broadly discussed in Section 6.8. However, specific to the Project Application, it is considered that additional social and economic benefits will be achieved. These include:

- Stage 2 will supply a total 25,470m^2 GFA of high quality, clinical research, laboratory and teaching facilities, including for associated facilities such as an auditorium, café, and MRI scanning for up to 650 staff;
- the development of Stage 2 involves an investment of approximately $117.9 million, which will also have flow on effects to other parts of the economy, i.e. the construction of Stage 2 will provide temporary employment opportunities within that sector;
- the proposed development incorporates the Ambulance Station ensuring that they remain to have a presence within the Prince of Wales Hospital Precinct and local community;
- additional car parking on the site is provided, which will ensure that no additional on-street car parking will be generated;
- additional landscaped areas will be provided on site for the benefit of staff and visitors;
- the proposed design of the building establishes a clear and articulated entrance to the precinct and the hospital precinct from Barker Street; and
- the proposed building at ground level provides a more comprehensible pedestrian environment.

9.8 Design and Operational Issues

9.8.1 Construction Management

The main challenges associated with the staged demolition and constructions of the development include:

- maintaining and retaining existing operations on the site, including ensuring sufficient parking is provided for remaining staff and students;
- ensuring that the Ambulance Station continues to serves the community without disruption;
- ensuring that cranes used during the construction of the development do not encroach into Obstacle Limitation Surface, so as to obviate the need for separate approval; and
- ensuring that demolition and construction impacts such as noise, vibration, traffic and sedimentation do not interfere with ongoing research on site and the amenity and operations of adjoining sites.

Winton Associates has prepared a Construction Management Plan (included at **Appendix W)**, to address these matters and outline the methods for which demolition and construction will be carried out. This plan is a preliminary management plan and a detailed Site Safety Management Plan will be prepared once a construction contractor has been engaged. This plan will provide a greater level of detail to that provided by the Construction Management Plan.

The Construction Management Plan outlines the stages for which the development will be carried out. This includes:

- Stage 1 & Preparatory works
- Site access and site establishment
- Stage 2A
- Stage 2B
- Stage 2C
- Stage 2D – completion

Site Access

A temporary car park entry ramp will be constructed to the north of the existing vehicle egress off Easy Street. This will facilitate a separate entry for construction and operation traffic to and from the site. This temporary access will be provided until Stage 2C is completed.

Obstacle Limitation Surface (OLS)

A non-luffing hammer crane head is expected to be used to undertake the construction of the development at each stage. This crane is not expected to penetrate into the OLS for the site.

Bus Stop

As part of the Stage 2A construction works the bus stop will be relocated temporarily further east along Barker Street, to the eastern side of Easy Street.

Car Parking

There will be adequate parking provided at each stage of the development and during each construction phase. This matter was previously addressed in Section 9.4.2 above.

Ambulance Station

In undertaking the Stage 2B works for demolition and construction, the existing Ambulance Station will require temporary relocation either elsewhere on the site or off site. Prior to the commencement of Stage 2B works, these arrangements will be finalised with the NSW Ambulance Service to ensure minimum disruption to services.

Construction Waste

Winton Associates has prepared a Demolition and Construction Waste Management Plan for the Stage 2 development, which is included at **Appendix W**. This plan details the methods for appropriate recycling, removal and reuse of waste during the demolition and construction stages of the development. Suitable demolition/construction waste storage facilities will be provided on site. The proposed methods of handling demolition and construction waste are considered appropriate for the development in that these measures follow best practice principles.

Construction Noise

The Acoustic Report prepared by PKA Consulting at **Appendix T**, provides a detailed assessment of the potential noise impacts that may be associated with the construction stages of the proposed development.

The Department of Environment and Climate Change's (DECC's) recent draft for consultation document "NSW Construction Noise Guideline" sets out the relevant noise criteria for which construction works should be carried out in accordance with.

Based on these criteria PKA recommend that:

- the preferable noise management level to the closest residential properties to Hospital Road should be 56.6 $L_{AEQ(15\ minutes)}$ during standard construction hours;
- the preferable noise level to within the Hospital wards and operating theatres is 40 $L_{AEQ(15minutes);}$
- the preferable noise level to the nearby child care centre be limited to 40 $L_{AEQ(15minutes)}$ for internal areas and 60 $L_{AEQ(15minutes)}$ for external areas; and
- the preferable noise level within administrative spaces and training spaces be limited to 60 $L_{AEQ(15minutes)}$.

Based on estimated emitted noise levels for various demolition and construction works and above criteria, PKA estimate that they expect that construction noise levels will exceed the preferable management goals, with regard to nearby residential areas, the child care centre, the Kiloh Centre and the Black Dog building. Specifically, clearing/paving and temporary ramp construction works are likely to be above the 75dB(A) level. In this regard, noise mitigation measures are required.

It is recognised that the Construction Management Plan already incorporates a number of measures to mitigate the impact of construction noise. However, PKA recommend the following measures be also implemented to further mitigate noise impacts:

- appropriate screening and hoarding be provided along the northern site boundary to provide noise mitigation to the Kiloh Centre and to a lesser extent the Black Dog Institute;
- temporary screening be provided around the car park and ramp construction sites to reduce noise impacts to the Black Dog Institute, ongoing operations of the POWMRI and adjacent residential buildings;
- consultation should be carried out with the child care centre to restrict noisy work during rest the child care centre's rest periods (being likely to be between 12pm and 1pm); and
- if possible, provide and use an electric tower crane.

Construction Traffic

Over the course of the development's demolition and construction period for Stage 2A (up to three months) approximately 2-3 trucks movement per hour will be generated.

Erosion and Sediment Control

TTW has prepared Erosion and Sediment Control plans for each sub-stage of the proposed Stage 2 development. These are included with the Stormwater Management Plans at **Appendix H**.

The details of these plans have been designed in accordance with best practice and will effectively minimise impacts to local and regional waterways during construction of the development.

9.8.2 Drainage and Flooding

Stormwater Management

Taylor Thomson Whitting Pty Ltd (TTW) has prepared a Civil Design Statement (**Appendix H**), which includes the proposed Stormwater Management Plan and an Erosion and Control Management Plan for the proposed development.

The proposed stormwater system has been designed in accordance with the proposed staging of works and to connect to Randwick Councils 1200mm stormwater pipe in Barker Street.

Based on their discussions with Council, TTW consider that the existing 1200mm stormwater pipe in Barker Street is acceptable and adequate as point of connection provided that an on-site detention system (OSD) is provided. Furthermore, minor diversion of existing stormwater pipe infrastructure is required.

In order to prevent any adverse impact on the stormwater system the following is proposed:

- all proposed pipe works (i.e. pipes and access pits) have been designed in accordance with requirements of Australian Rainfall & Runoff (AR&R), Randwick Council and AS3500.3 1998;
- all pipe works and overflows are designed to be directed to the OSD tank systems prior to discharging into the main stormwater network in Barker Street;
- the OSD system is designed in accordance with Randwick Councils requirement to provide temporary storage and restrict stormwater peak discharge flow rates from the site;
- absorption trenches are to be used as an alternative stormwater disposal method where possible;
- gross pollutant traps with oil and silt capture will be provided to treat stormwater discharge prior to the connection to the stormwater system; and
- the proposed stormwater system has also been designed to cater for the 100-year ARI storm event.

Overall therefore it is considered that the proposed stormwater management system will ensure that any adverse impacts upon the wider stormwater system will be prevented.

Flood Management

TTW have prepared a Flood Assessment of the site (**Appendix H**), the results of which are discussed at Section 6.9. Whilst TTW consider that the proposed development will not have any effect on adjacent, downstream and immediate upstream areas of the development for storms up to and including the 100-year ARI storm event, they recommend the following:

- the flood planning level (FPL) for any habitable floor at street level be 44.48 AHD, 500mm above the calculated 100-year flood level; and
- the FPL for any car park/ loading dock entrance/ exit at street level be 44.28m AHD, 300mm above the calculated 100-year flood level.

Cox Richardson have taken these recommendations into consideration in designing the Stage 2 development and as shown on the Architectural Plans (**Appendix A**), the level of any habitable floor and car park/ loading dock entrance exit on the site is at a level of 45m AHD or above.

The proposed design of the building therefore complies with TTWs recommendations.

9.8.3 Operational Waste Management

There are various and specialised types of waste by-products associated with the proposed research facilities. Consequently a Waste Management Plan has been prepared by Winton Associates to outline the methods for which this waste will be stored, managed and disposed of. This Waste Management Plan is included at **Appendix X**.

The types of operational waste from the Stage 2 development will include:

- Clinical waste
- Sharps
- Chemical (non radioactive) waste
- Recyclable paper
- Dirty linen
- General office/lab/kitchen waste
- Wet bag (animal carcass)
- Animal bedding
- Empty chemical containers
- Broken glass
- Recyclable copper wire

The Waste Management Plan outlines the estimated quantum of these types of waste, the types of containers the waste will be stored in and who is responsible for disposing of the waste.

It is proposed that the waste materials will be retained in bins/ containers etc within the areas of the building where it is produced. The waste disposal operators for either the Prince of Wales Hospital or UNSW will then collect the waste materials directly from the building and transfer it to either the Hospital or University, where it will be disposed of in accordance with the Prince of Wales and Sydney Children's Hospital Waste Management Plan or UNSW Laboratory Hazardous Waste Disposal Procedure. These detailed Waste Management Plans are appended to the Waste Management Plan included at **Appendix X**. (attached to the Waste Management Plan). No additional methods of waste disposal are required to support the proposed development.

9.8.4 BCA, Fire Safety and POPE

Davis Langdon has prepared an assessment of the proposed development against Sections C, D, E, F, G, H and J of the Building Code of Australia 2008 (BCA). This assessment is included at **Appendix Y**.

Overall, Davis Langdon consider that the design of the development is capable of meeting the relevant requirements of the BCA however they recommend the following:

- the Fire Resistance Level (FRL) of certain building elements, such as glass walls and the doors to the fire isolated stairs and the compartment sizes are to be assessed by a Fire Engineer at Construction Certificate Stage;
- further work be undertaken by the Access Consultant to ensure the design meets the requirements in regard to Exit travel distances, distance between alternate exits, travel via fire isolated exits, wheelchair provision in the auditorium, door openings and sufficient circulation space;
- fire fighting services, such as fire hydrants, fire hose reels, sprinklers, portable fire extinguishers, and fire control centres are provided;
- a smoke hazard management system;
- emergency lighting, directional signage, illuminated exit signage, sound and intercom system for emergency purposes be provided throughout the development;
- ensure the lift is an emergency lift which includes a stretcher facility;
- damp/ weatherproofing, sanitary and other facilities, ceiling heights and light and ventilation systems comply with Part F, and ventilation systems certified by a Mechanical Engineer;
- separation of the non-pope area of the auditorium by a wall with an FRL of not less than 60/60/60 and confirmation by an Electrical Consultant that the electrical system ensures the main isolation switch is readily available to NSW Fire Brigade and a separate sub-mains is provided; and
- the design of the building fabric, external glazing, building sealing, air movement, air-conditioning and ventilation systems, artificial lighting and power, hot water supply and access for maintenance meet the requirements of Part J following detailed design.

The detailed design and specifications of signage, lifts, mechanical and electrical services, glazing, fire fighting services etc will be included within the Construction Certificate documentation.

Mechanical and Electrical Services

A Mechanical and Electrical Services Report has been prepared by Shelmerdines Consulting Engineers (**Appendix Z**). This sets out the likely mechanical and electrical services which will be used within the building. These include:

- heating ventilation and air conditioning;
- laboratory exhaust systems;
- electrical kiosk substations and switchboards;
- a diesel generator; and
- uninterruptible power supply systems.

All proposed mechanical and electrical services will be generally in accordance with the recommendations of AS2243 'Safety in Laboratories' (Parts 1 to 10 inclusive) and AS/NZS 2982 'Laboratory Design and Construction'.

Furthermore, smoke control and stair pressurisation systems will be designed in accordance with AS1668-1:1998 'Fire and smoke control in multi-compartment buildings', and mechanical ventilation systems will be designed in accordance with AS1668.2-1991 'Mechanical ventilation for acceptable indoor air quality'.

Overall, the proposed development will comply with all relevant BCA requirements and Australian Standards. Commitment to this is included within the Draft Statement of Commitments (Section 10).

9.8.5 Accessibility

Access Associates Sydney has prepared a strategy report (**Appendix R**). This sets out the requirements needed to be incorporated into the design of the future buildings to ensure that they will comply with the objectives of the Disability Discrimination Act 1992 (DDA), the requirements of the BCA and relevant Australian Standards (AS).

Following comments by Davis Langdon in the BCA Report (**Appendix Y**) Access Associates Sydney have reviewed the Stage 2 drawings and have provided a statement on the proposed developments compliance with DDA and BCA (**Appendix R**). They state that the proposed development generally has continuous accessible paths of travel, however the following items are required to be addressed to ensure the development meets the objectives of the DDA:

- an operational management strategy is required at Stages 2B and 2C to provide a platform stairlift on the stairs linking the existing facility (staff areas only) with the proposed new work, as an interim solution if required by a member of staff with a disability (this is only an interim requirement until Stage 2D is completed);
- at Stage 2B on level 2, where an airlock is indicated at the entries to the labs on the southern side of the facility (within the Animal House area), the circulation space is to be amended to meet the requirements of AS1428.1;
- in Stages 2C and 2D the north-south corridors on levels 2-6 which link laboratory areas with office areas, doors are to be amended to provide fully complying latch side circulation space to meet the requirements of AS1428.1.
- joinery layout is to ensure that circulation space is not restricted.

Access Associates Sydney also consider that accessible facilities such as parking facilities, passenger set down and pick up provision at the main Barker Street entrance, way-finding provisions and unisex accessible sanitary facilities are provided which meet the intent of the DDA and BCA subject to:

- all accessible sanitary facilities include circulation space at the WC pan and basin;
- the staff facilities on level 1 in the Clinical Research and MRI area are identified as accessible;
- cubicles for people with ambulant disabilities are provided;
- accessible counters within the reception, café and laboratory areas are provided;
- development of an evacuation strategy to assist people with mobility impairment to evacuate the facility; and
- facilities for people with hearing impairment including hearing augmentation systems are provided;
- wheelchair seating spaces in the auditorium are provided.

Overall therefore, subject to the above recommendations, the proposed development will provide the continuous accessible paths of travel and accessible facilities to meet the intent of the DDA and BCA. Commitment to ensure Access Associates Sydney's recommendations are included in the on-doing refinement of the development is included within the draft Statement of Commitments included at Section 10.

9.8.6 Safety and Security

Section 6.10.2 sets out the proposed passive and active safety measures to be included within the design of the Stage 2 and 3 buildings. As shown on the Architectural Plans at **Appendix A**, the Stage 2 development includes the following measures within the design:

Way finding

- a simple direct approach to the highly visible main entry on Barker Street;
- ease of access to main public areas;
- clarity and separation of vehicle entry locations;
- use of large open spaces and bold colour at the entry, and within public internal spaces;
- direct secure internal access from basement car parking, via a lift to the common entry space at Barker Street level; and
- clarity of public domain with clear delineation of the Precinct courtyard from the Easy Street landscape via landscape and level changes.

Planting & Landscape

- security closures (doors and shutters) to all entries including car parks and service areas;
- visibility through the soft landscaping, with low ground covers, grasses and hard paving with taller tree canopies; to avoid concealed locations in the public domain;
- enhancement of the Easy Street footpath with new planting, to reinforce the public approach to the Hospitals;
- delineation between the bus stop waiting area on the Barker Street footpath and the porte cochere shared entry.

Details of the illumination and deterrence measures proposed for the development will be submitted for approval prior to the issue of the construction certificate. This is a Statement of Commitment at Section 10.

9.8.7 Utility Services

Sewer and Water

As discussed above in Section 6.10.3, the site is to connect with the existing Sydney Water sewer and water mains located in Barker Street. The capacity of the existing services, the potential requirement to upgrade the Sydney Water infrastructure and the possible relocation of the existing sewer vent on the site is to be agreed with Sydney Water once development consent has been approved. It is understood that there is sufficient capacity for these infrastructures to service the Stage 2 development. The requirement to obtain approval from Sydney Water is outlined in the draft Statement of Commitments at Section 10.

Telecommunications

The site is to connect into the existing telecommunications infrastructure currently servicing the site. The potential requirement to upgrade the existing infrastructure to accommodate the future development will be agreed with the relevant service provider once development consent has been approved.

Electrical Services

The proposed development is to connect with the existing electrical supply system currently servicing the site. Electrical kiosk substations will be established for each major construction stage (i.e. Stages 2a - 2d) and consultation with Energy Australia will be undertaken to ascertain the need for relocation and or/adjustment of services affected by the development.

Natural Gas

The proposed development will connect with the existing gas main located in Avoca Street. Consultation with the relevant provider will be undertaken to ascertain the existing capacity and potential need for upgrade.

Commitment to liaise with all the necessary service providers in regards to the provision of utility services on the site is included within the draft Statement of Commitments (Section 10).

10.0 Project Application Draft Statement of Commitments

POWMRI Ltd, the proponent of this Project Application commits to the following:

Subject	Commitments	Timing of approval
Stage 1 Construction Works	The Stage 1 works will be carried out in strict accordance with the same conditions of consent issued by Randwick Council for DA/468/2007.	At time of construction for Stage 1.
General Works	Not withstanding any other commitment (condition of consent), the consent for the Project Application permits separate construction certificates and occupation certificates to be issued for the development approved by the consent in stages, provided that all commitments (conditions of consent) relevant to the development incorporated within each stage have been complied with prior to the release of the construction certificate or occupation certificate for that stage.	
Heritage	A full report on the excavation and results of the assessment of Aboriginal heritage values will be provided to the AHIMS register at DECC in accordance with S91 of the NPW Act.	Prior to the construction certificate issue for the construction of the Stage 2A building.
	Archaeological testing to be undertaken over the areas of the site determined to have potential for aboriginal archaeological evidence in accordance with recommendations set out within Mary Dallas Consulting's preliminary assessment report.	Prior to construction of Stage 2A and in conjunction with the European archaeological assessment.
	Further archaeological assessment in accordance with CRMs European Archaeological Assessment to be undertaken to define the extent of European archaeological evidence across the site and to determine appropriate methods for retrieval and storage of found items.	Prior to construction of Stage 2A and in conjunction with the Aboriginal archaeological assessment and excavation investigations.
	There should be provision for an interpretative element/ landscape treatment for the Worker's Cottages on Barker Street as identified in the heritage assessment for the proposed Concept Plan, Graham Brooks & Associates. The design of this element should be considered in conjunction with the European Archaeological Assessment works.	Prior to construction of Stage 2A.
Reflectivity	Façade glazing will have the following properties: - Maximum normal specular reflectivity of visible light of 20% on all façade areas; - Normal specular reflectivity of visible light not exceeding 9% on the top 3 levels of the 191° aspect and the 3rd level of the 011° aspect at the eastern edge of the development; - Normal specular reflectivity of visible light not exceeding 8% of levels 2 and 3 of the 205° and 200° aspects between longitudinal lines Q and L indicated on the architectural plans; - Clear or body tinted glass with a maximum normal specular reflectivity of 7% on the inclined panels around the south east corner of the building.	At construction certificate stage for the building.

Subject	Commitments	Timing of approval
ESD	The ESD initiatives included within the Cundall report will be incorporated into the design and operational practices of the building.	At construction certificate stage for the building.
	The base building design will target an energy performance rating equivalent to the 5 star NABERS rating scheme (Education model).	At construction certificate stage for the building.
Geotechnical Issues	Implementation of the recommendations set out within the Geotechnical Report prepared by Jeffery & Katauskas.	Prior to and during construction works on the site
	Further work in the form of the following will be undertaken: - Dilapidation surveys of surrounding buildings and structures; - Continuous vibration monitoring during rock excavation; - Proof testing of anchors, if appropriate; - Geotechnical footing inspections and spoon testing, if appropriate; - Groundwater monitoring into bulk excavation; - Proof-rolling of pavement sub-grade; and - Density testing of engineered fill and sub-base.	Prior to the issue of the construction certificate for any excavation or construction activities.
Hazardous Materials	All Asbestos Containing Materials (ACM) found on the site is to be removed by NSW WorkCover Authority licensed asbestos contractors prior to any works starting on site.	Prior to construction certificate issue for the demolition of the buildings
	If potential ACM are found during the construction works a sample will be taken and sent for asbestos identification analysis by a NATA accredited laboratory.	During construction works
	Prior to the demolition of the Ambulance Station or Black Dog Institute a Hazardous Materials Survey is to be undertaken of these building to ascertain the likelihood of hazardous materials on the site and the appropriate method of removal.	Prior to construction certificate issue for the demolition of the Ambulance Station and Black Dog Institute.
	Clearance certificates are to be produced following removal of all asbestos containing materials at the site.	Prior to construction certificate issue for the demolition of the buildings
Contamination	The site is to be inspected by experienced environmental personnel during demolition and excavation works at the site.	During demolition and excavation works on the site
	Additional subsurface investigations comprising a minimum of 19 sampling locations are to be undertaken once the existing buildings have been demolished to meet the minimum sampling density outlined in the NSW EPA (Contaminated Sites Sampling Design Guidelines 1995.	Prior to the construction certificate for the Stage 2 development
Construction **Management**	A detailed Site Safety Management Plan will be prepared once a construction contractor has been engaged	Prior to issue of the construction certificate for any works on the site

Subject	Commitments	Timing of approval
Construction Noise	During the construction period, the following noise mitigation measures will be implemented: - Appropriate screening and hoarding will be provided along the northern site boundary; - Temporary screening will be provided around the car park and ramp construction site; - Consultation will also be carried out with the child care centre and noisey work will be restricted during the child care centre's rest period (12pm-1pm). - Use of an electric tower crane, if possible.	Prior to the issue of the construction certificate for any works on site.
BCA	The detailed design and specification of signage, lifts, mechanical services, glazing, fire fighting services etc will be provided within the construction certificate documentation.	Prior to the issue of the construction certificate for Stage 2A building.
	Compliance with the BCA and relevant Australian Standards.	At construction certificate stage.
Safety & Security	Details of the illumination and deterrence measures proposed for the development will be submitted for approval.	Prior to the issue of the construction certificate.
Utility Services	Liaise, and obtain approval from all relevant service providers in regard to the provision of utility services to the site.	At construction certificate stage.

11.0 Conclusion

The Concept Plan and Stage 2 Project Application proposal provide the opportunity to further Research and Development of Neurosciences in Australia and worldwide. Furthermore, the proposal will implement key objectives and outcomes of the Metropolitan Strategy and the draft East Subregional Strategy associated with fostering reinforcement and growth of a strong health and educational hub and centre of innovation and excellence at Randwick. The proposal creates the planning and development framework for the consolidation of activities at the site. Overall justification for the proposal has been established in this environmental assessment report and further detailed assessment and justification for the development of Stage 2, consistent with the Concept Plan, has also been submitted.

Concept Plan approval is sought for the consolidation and expansion of existing clinical and laboratory neuroscience research space within a multi-stage redevelopment of land occupied and used by the POWMRI and the Black Dog Institute, in associated with the University of New South Wales and the Prince of Wales Hospital / South Eastern Sydney and Illawarra Health Service to a maximum 61,000m^2 GFA and to a maximum overall building height of RL 89.00 (approximately 44.5m above ground level)

Concurrent Project Application approval is sought for Stage 2 (being Stages 2A to 2D) of the Concept Plan proposal (being some 25,470m^2 GFA and associated car parking and landscaping and ancillary uses), and including associated infrastructure works. Meanwhile, preservation of Stage 1 of the overall project (already approved by Randwick Council (DA/468/2007) for "proposed additions to Prince of Wales Medical Research Institute, comprising additional open office spaces located to the northeast and southwest corners of the building envelope, additional stairs and rooftop plant room located above the north-eastern addition", is also sought by agreeing that no further environmental assessment is required pursuant to Section 75P(1)(c) of the Act for works associated with that development consent.

The preceding environmental assessments demonstrate that the matters for which approval is sought address the Director-General's Requirements, are consistent with the Concept Plan, and consistent with the current zoning and relevant controls for the site.

Given the findings in the previous sections of this EA Report, the Concept Plan and Stage 2 Project Application for the proposal are justified on the basis that:

- the proposal is specifically identified in the draft East Subregional Strategy as a key medical research precinct within the Randwick Education and Health Specialised Centre with growth anticipated for up to 75,000m^2;
- the proposal fosters growth and consolidation of the health and education hub to promote links between academia and health services and collocate affiliated employment sectors; and
- the Environmental Assessment comprehensively analyses the potential environmental impacts of the Concept Plan and Stage 2 Project Application and provide a detailed justification for the development including land use, urban design principles and the proposed development staging framework.

The submitted documentation, and the reasons outlined above, also provide the Minister with the comfort to apply her powers under Section 75P(1)(c) to approve / preserve the existing Part 4 DA approval by Randwick City Council for the Stage 1 works without the need for further Environmental Assessment.

The measures outlined in the comprehensive Statement of Commitments for the Concept Plan and Stage 2 Project Application describe the range of strategies, guidelines and plans that will be prepared to inform the detailed design of each stage of the development and manage construction and on-going environmental impacts.