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PENRITH NEPEAN HOSPITAL_ ENVIRONMENTAL ASSESSMENT

Prepared for NSW Health Infrastructure
26 August 2009

HASSELL

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Contents

Statement of Validity

Submission of Environmental Assessment
Prepared under Part 3A of the *Environmental Planning and Assessment Act 1979*

Environmental Assessment prepared by

Name	Margot Black
Qualifications	Bachelor of Arts in Planning (1992) Bachelor of Arts (Geography) (1988)
Address	HASSELL Level 2 88 Cumberland Street Sydney NSW 2000

Applicant and Land Details

Applicant	New South Wales Health Infrastructure
Subject site	Penrith Nepean Hospital, Derby Street, Kingswood, Penrith, New South Wales
Lot and DP	Lot 1 of DP 1114090

Project Summary

The proposed works are for the redevelopment of Penrith Nepean Hospital including
_Construction of a new “East Block”;
_Refurbishment and expansion of the Intensive Care Unit (ICU), including demolition and replacement of chapel ;
_Expansion of the Renal Dialysis Incentre Unit; and
_Associated car parking, access, landscaping, engineering services, and site works.

Environmental Assessment

An Environmental Assessment is attached.

Declaration

I certify that I have prepared the contents of the Environmental Assessment in accordance with the requirements of the *Environmental Planning and Assessment Act 1979* and that, to the best of my knowledge, the information contained in this report is not false or misleading.

Signature

Name Margot Black
Date 26 August 2009

Executive Summary

This Environmental Assessment has been prepared for NSW Health Infrastructure. It accompanies a Major Project application for redevelopment of the Penrith Nepean Hospital located at Derby Street, Kingswood, Penrith, New South Wales.

The application is seeking approval under Part 3A of the *Environmental Planning and Assessment Act 1979* for the following works:

_Construction of a new "East Block";
_Refurbishment and expansion of the Intensive Care Unit (ICU), including demolition of chapel and construction of replacement chapel;
_Expansion of the Renal Dialysis Incentre Unit; and
_Associated car parking, access, landscaping, engineering services, and site works.

The Penrith Nepean Hospital is the major tertiary referral hospital for the Sydney West Area Health Service (SWAHS) Western Cluster, a Level 6 Teaching Hospital and the second trauma centre in Western Sydney. A growing and ageing population with increasing co-morbidities, increased incidence and prevalence of chronic disease and its risk factors, a significant rise in emergency department activity, and the need to maintain operations as a regional trauma service are all driving the need for the redevelopment of the Hospital.

Relevant stakeholders and interest groups have been engaged throughout the development of the proposal, including State authorities, Penrith City Council, utility providers, Hospital staff, and community groups. All issues raised have been considered in the final design detailing of the scheme and within this Environmental Assessment.

An assessment of the proposed development has been undertaken against the relevant legislation, environmental planning instruments, policies and guidelines, as well as against the Director General's Requirements that have been issued for the proposed development.

The site is considered suitable for the proposed development. The Penrith Nepean Hospital is appropriately utilised for medical purposes, and would appropriately support the redevelopment which provides further medical services.

The proposed development of the Hospital is in the public interest as it will improve the quality and safety of patient care and the patient's experience of the health system. Social benefits will be derived from the proposed development through the improved health outcomes for the region, enabled through the expansion of Hospital services. Health services will address the needs of the growing and ageing population, specifically focusing on services currently in high demand. This will benefit the regional community including residents of the Penrith, Blue Mountains, Hawkesbury, Lithgow and South West Blacktown Local Government Areas.

The proposed development is expected to provide economic benefits by: increasing potential commercial opportunities on or adjacent to the Hospital; enhancing the Hospital's capacity to recruit and retain health professionals through new facilities offering better working environments; providing employment opportunities in the short term as part of construction works; increasing long term local and specialised employment opportunities in Greater Western Sydney, particularly in the health and health education sectors; and enhancing the ability of the Penrith region to attract new residents, especially health professionals.

An Environmental Assessment of the proposed development has been undertaken in accordance with the *Environmental Planning and Assessment Act 1979*. Consideration of the potential impacts of the proposed development has been undertaken and the following key points identified:

_The development has been designed in consideration to the Hospital campus as a whole and considering the existing built form of the site. Materials, finishes and colours have been chosen to complement the existing buildings and ensure that the new buildings are well integrated into the campus. Furthermore, the proposed landscaping of the site helps to soften any visual impacts of the new buildings. It is considered that the proposed development will improve the quality of the Hospital campus, by providing updated buildings that compliment the existing buildings on site.
_The proposed development will not impact upon the solar access of residential properties in the vicinity, being located internally to the Hospital campus at greater than 150 metres from the nearest residential properties. The East Block only results in overshadowing of surrounding Hospital buildings at the winter solstice 9am period, where the administrative buildings to the south may experience some overshadowing. The ICU expansion results in little overshadowing effects given it's location within the main cluster of Hospital buildings that make up the North, West and South Blocks.

Executive Summary

_As the proposed development works are for the redevelopment of the existing Hospital, procedures for handling and storing waste are already in place and enforced by Hospital Management. Waste management is coordinated across the Sydney West Area Health Service (SWAHS) and is subject to the Waste Management Policy Manual.

_The impacts associated with utilities and services are expected to be minimal, as existing systems can be utilised and modified to service the development. Furthermore, the new facilities to be provided for the East Block will be provided in dedicated plant areas, located on Level Two and Three, which will be fully contained within the building envelope or within the roof structure and therefore not visible externally.

_Potential pollutant linkages to surface water and groundwater resources are unlikely to be caused by the proposed development. Any surface run-off is likely to flow into local stormwater drains and is therefore likely to be diluted before discharging into the Nepean River, and the risk is therefore neglible. The risk of offsite migration of contaminated groundwater is considered to be neglible due to the depth of the groundwater and the fact that no potential sources of contamination have been identified on the site.

_The proposed development will provide 149 car parking spaces, and therefore provides an additional two parking spaces over and above the DCP requirements.

_There is no known or statutorily listed historical heritage, or historical archaeological items, on the Hospital campus.

_The proposed development does not include the removal of, or any direct interference with, trees located on the site and will involve only possible removal of minor vegetation as part of landscaping works. Therefore the impacts on fauna or fauna habitat is expected to be nil or minimal.

_No contamination has been identified on the site.

_The age of the Hospital buildings means that the refurbishment of the Intensive Care Unit and Renal Dialysis Incentre Unit may involve the removal or disturbance of materials that could contain hazardous materials such as asbestos or polychlorinated biphenyls (PCB's).

_The subsurface profile of the soil has been identified as "Class H" classification due to the presence of residual soils with a high potential for shrink / swell behaviour. In addition, the Luddenham Group soils which underlay the site have high soil erosion hazards, and saline soils may be encountered during excavation

_The key potential noise impacts are traffic noise associated with access to, and use of, the new East Block carpark and other parts of the Hospital through the internal driveway. Due to the location of the proposed development internally to the site and at a distance of over 150 metres from the nearest residential area, the external impacts are considered to be minimal. There may also be noise impacts associated with the operation of plant and equipment.

Mitigation measures and monitoring procedures have been identified to minimise the potential impacts that have been identified as part of this assessment. These have been incorporated into a Draft Statement of Commitments which will form the basis of environmental management of the project during the construction and operational phases.

This assessment concludes that when assessed against all relevant matters in the Director General's Requirements, and Section 3A of the *Environmental Planning and Assessment Act 1979* the Project Application is considered to be compliant and is recommended for approval.

1 ____Introduction

1.1_Purpose of this Report

This Environmental Assessment has been prepared for NSW Health Infrastructure. It accompanies a Major Project application for redevelopment of the Penrith Nepean Hospital located at Derby Street, Kingswood, Penrith, New South Wales.

The application is seeking approval under Part 3A of the *Environmental Planning and Assessment Act 1979* for the following works:

_Construction of a new "East Block";
_Refurbishment and expansion of the Intensive Care Unit (ICU), including demolition of chapel and construction of replacement chapel;
_Expansion of the Renal Dialysis Incentre Unit; and
_Associated car parking, access, landscaping, engineering services, and site works.

1.2_Background

Prior to the preparation of this Environmental Assessment, a concept design for the proposed works was prepared and submitted to the Department of Planning as part of a project application (September 2008). In November 2008, the Department of Planning advised that the Minister had formed the opinion that the proposed redevelopment was a major project under the *State Environmental Planning Policy (Major Development) 2005*, and the Minister authorised the submission of a Concept Plan and provided Director General's Requirements (DGR's) (refer to letter attached at Appendix J).

Since this time, the design has been further developed and defined. Based on discussions with the Department of Planning, the decision was made that the Concept Plan application would not be lodged and instead approval would be sought for the detailed design under a Project Application and Environmental Assessment.

The Project Application for the proposed works was submitted to the Department of Planning on 14 July 2009, and a new set of DGR's provided on 30 July 2009 (attached at Appendix K). Confirmation has been received from the Department of Planning that the status of "major project" is still applicable to the proposed development (refer to letter attached at Appendix J).

This report provides the Environmental Assessment, and associated documentation, required to form the application for approval of project as per clause 75E of the *Environmental Planning and Assessment Act* (EP&A Act).

1.3_Works Not Included in this Assessment

Some of the enabling works, and other minor works, for the proposed redevelopment of the Hospital can be carried out without consent under the State Environment Planning Policy (Infrastructure) 2007, and are therefore not included in this application. For information purposes, a description of these works is provided below:

_Demolition of the existing Learning and Development building and STES store;
_Erection of three modular buildings, to accommodate services displaced due to the demolition, in the north-east sector of the Hospital campus; and
_Refurbishment of the Medical Assessment Unit (MAU) and Central Sterilising Services Department (CSSD).

The potential impacts associated with these works have been assessed using the Review of Environmental Factors (REF) process under Part 5 of the EP&A Act.

2 ____Description of the Site

2.1_Site Context

The subject site is known as the Penrith Nepean Hospital and is located in Kingswood, New South Wales, in the Penrith Local Government Area (LGA). The Penrith LGA is located at the base of the Blue Mountains, beside the Nepean River, and is one of the fastest growing areas in Sydney.

Penrith Nepean Hospital is located approximately 50 kilometres west of Sydney City, 27 kilometres west of Parramatta, 37 kilometres east of Katoomba, 60 kilometres south east of Lithgow and 20 kilometres south of Richmond. It is two kilometres east of Penrith City Centre.

Penrith Nepean Hospital (the site) has an area of 16.28 hectares, and is bounded by the Great Western Highway (to the north), Somerset Street (to the east), Derby Street (to the south) and Parker Street (to the west). Major traffic routes in the area are the Great Western Highway (directly to the north of the site) and the Western Motorway (2.7 kilometres to the south of the site). Kingswood Railway Station is approximately 700 metres to the north east of the site on the Great Western Highway.

The land immediately adjoining the site is characterised by the following uses:

_The northern end of the site is bounded by the Great Western Highway. Directly north of the Highway there are a number of low density industrial and commercial units along Cox Avenue. The Penrith Cemetery is located to the north east of the site. The Nepean Private Hospital is located adjacent to the site in the north-west corner bounded by Barber Avenue, Parker Street and the Great Western Highway.
_Land uses to the east of the site are primarily low density residential development, of one or two storeys in height. Low scale retail stores line the Great Western Highway, opposite the Kingswood Railway Station. Further low scale retail strips exist along Bringelly Road. Kingswood Park is located further east, approximately 800 metres east of the site, and the University of Western Sydney Kingswood campus is located approximately 1.5 kilometres to the south east.
_The southern frontage is bounded by Derby Street. The building at 60 Derby Street and directly facing the main entrance to the Hospital is a medical and physiotherapist centre. The southern boundary is predominantly low density residential development, with some of the dwellings incorporating specialist consultation rooms.
_The western boundary, much like the southern boundary, consists predominantly of low density residential development.

A locality / context plan showing the site in the context of the surrounding area is provided in Appendix A and shown in Figure 2.1 below.

Description of the Site

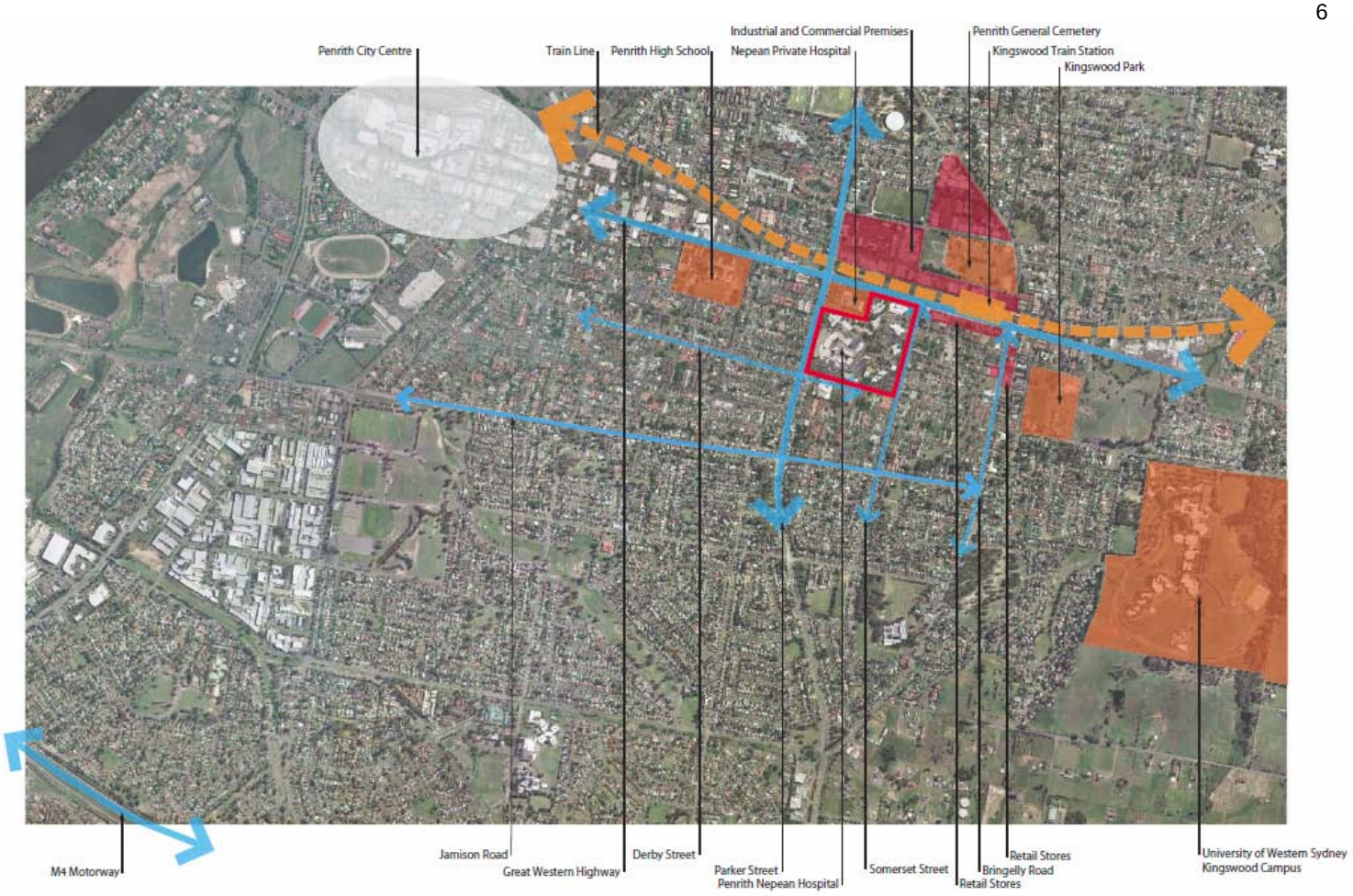

Figure 2.1_Site Locality / Context Plan

2.2_Site Description

The site is used as a Hospital, with ancillary services and facilities also provided on the site.

The Penrith Nepean Hospital is part of the "Western Cluster" that serves the health needs of a catchment population including the Penrith Local Government Area (LGA), and the surrounding LGA's of Hawkesbury, Lithgow, Blue Mountains and South-West Blacktown.

Penrith Nepean Hospital is operated by the Sydney West Area Health Service (SWAHS). It provides a full range of services including emergency, critical care, acute medicine, planned and emergency surgery, maternity, neonatal, paediatric medicine and minor surgery, mental health, aged care, rehabilitation services, drug and alcohol services, and a broad range of specialist outpatient clinics and services. Inpatient services at the Hospital generally have the capacity to manage high complexity patients who require specialist care. The Hospital acts as the major tertiary referral hospital and second regional trauma centre for the SWAHS Western Cluster.

The existing Hospital was opened in 1956 and since then several upgrades, redevelopments and additions have been undertaken at the Hospital to accommodate a growing catchment population, new technologies and health service requirements, and increasing demand on the Hospital.

The site is formally described as Lot 1 of Deposited Plan 1114090. The site location and boundary is shown in Figure 2.2.

Description of the Site

Figure 2.2_Site location and boundary

Existing site survey plans are provided in Appendix B. Please note that the 3 storey brick building and adjacent metal building shown on the survey plans is to be demolished as part of the enabling works for this development (refer to section 1.2 of this report).

An overall site plan is attached at Appendix B, and shown in Figure 2.3 below.

Description of the Site

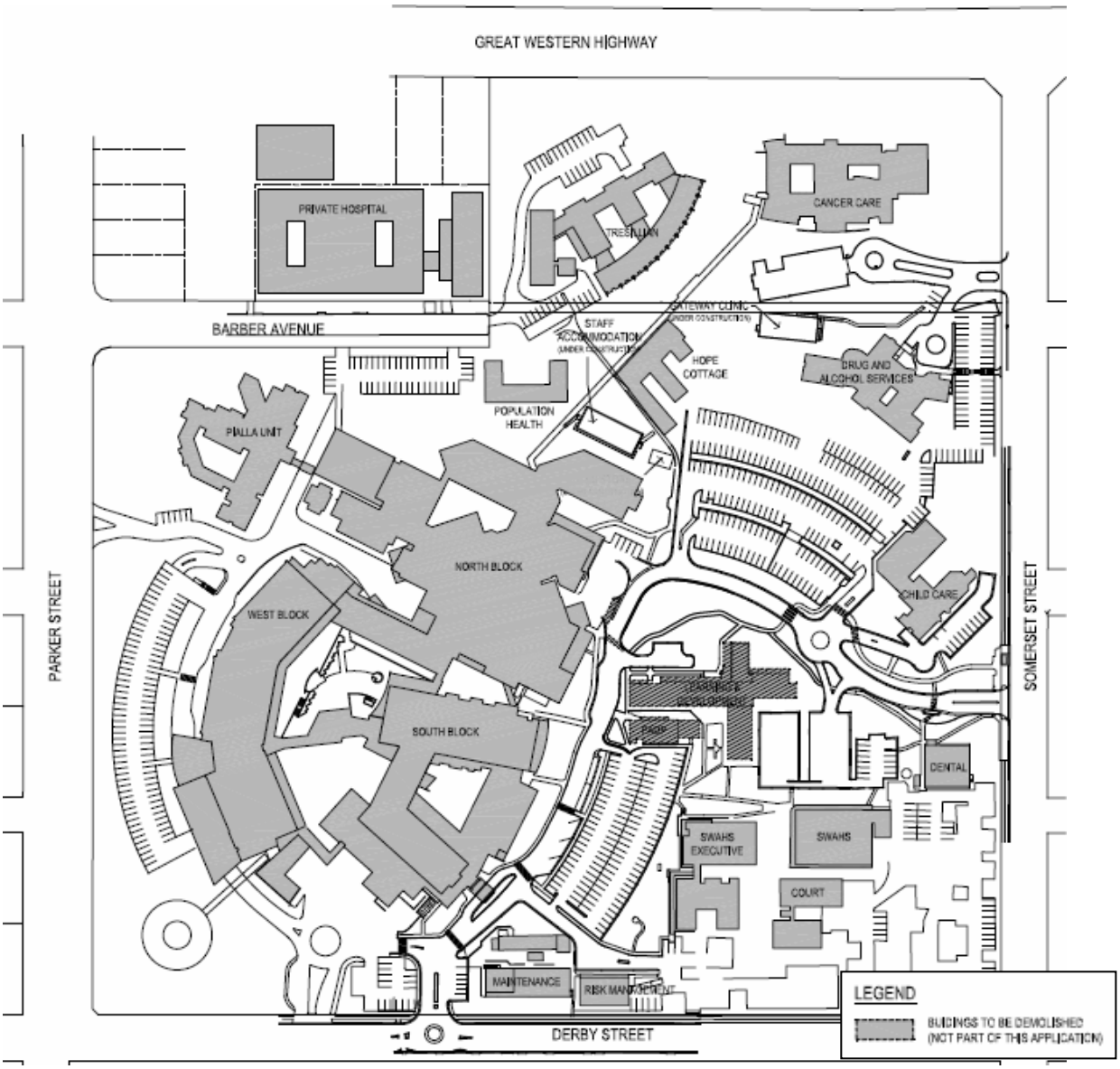

Figure 2.3_Existing Site Plan

A Site Analysis Plan is attached at Appendix C which identifies:
_Existing buildings on the site;
_Existing vegetation;
_Vehicle entry points;
_Contour lines; and
_View corridors.

A detailed description of the site is provided in the following sections 2.2.1 to 2.2.7 of this report.

2.2.1_Built Form

The Penrith Nepean Hospital is a large health campus consisting of multiple buildings in a range of building types and materials. The main concentration of buildings is at the central and southern parts of the site, where the North, South and West Blocks are located.

Description of the Site

2.2.2_Topography and Geology

A preliminary geotechnical investigation of the site has been undertaken by Golder Associates (attached at Appendix V). The Report provides the following description of the topography of the site:

> *"The Nepean Hospital is situated at the northern end of a N-S trending ridge. The surrounding area is characterised by gently undulating topography ranging between 50-60m AHD. The Main Site area slopes from the southwest corner (~58m AHD) radially at an approximate 1-5° gradient to the north and east to a low of ~52m AHD at the eastern end of the proposed development."* (Golder Associates, 2009:3)

Golder Associates (2009:5) identify that the underlying geology of the site is mid-Triassic Bringelly Shale, and the underlying soils are of the Luddenham Group. The following comments are further noted (Golder Associates, 2009:15):

- *The residual soils are likely to be shallow, typically less than 2m in depth, and to comprise stiff to very stiff clay of medium to high plasticity in a dry to moist condition, containing some ironstone gravel.*
- *The underlying Bringelly Shale is expected to be extremely to highly weathered and of typically very low to low strength, gradually decreasing in weathering and increasing in strength with depth.*

2.2.3_Hydrology and Hydrogeology

Golder Associates (2009:15) identify the site is located within a watershed. Results of groundwater bores undertaken by others in the vicinity of the site indicate ground water to be present generally in deep clays and deeper fractured bands within the Bringelly Shale at depths of greater than 5 metres below ground surface levels Golder Associates (2009:15).

Surface water currently drains from roofs, car parks and carriageways into stormwater pipes which extend away from the main site to the north (Golder Associates, 2009:4). According to signs, local council storm water drains discharge into the Nepean River.

2.2.4_Flora

The site has been identified as possibly containing Shale Plains Woodland, a subset of Cumberland Plains Woodland (CPW), a threatened species under the *Threatened Species Conservation Amendment Act 2002* and the *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999* (refer to Figure 2.4 below).

Figure 2.4_Location of Cumberland Plain Woodland on the Hospital site, as identified by NSW National Parks & Wildlife Service, Native Vegetation of the Cumberland Plain, Map 11. (Note: areas identified as 10 are Shale Plains Woodland with canopy cover <10% (Urban Area)).

Due to the possible presence of CPW, a Flora and Fauna Assessment (attached at Appendix Z) has been undertaken by Total Earth Care (TEC). The Assessment provides the following description of the flora present on the site (TEC, 2009:5-6):

Description of the Site

_*"A total of 33 plant species were recorded within the subject site… including 13 native species and 20 introduced species. Of the 20 introduced species, one is listed as noxious under Order 20 of the NSW Noxious Weeds Act 1993 for Penrith LGA (Large-leaved Privet or Ligustrum lucidum).*

_*The Shale Plains Woodland (SPW) community present on the subject site persists primarily as mature canopy trees characteristic of the community, including Eucalyptus moluccana Grey Box and Corymbia maculata Spotted Gum. Other canopy species occurring within the subject site, most of which have been planted, include native species such as Eucalyptus microcorys Tallowood and exotic or non-indigenous species such as Jacaranda mimosifolia Jacaranda, and Schefflera actinophylla Umbrella Tree. (TEC, 2009:5)*

_*The mid-storey and understorey have been removed over much of the site. Melaleuca decora, a characteristic species of the mid-storey of CPW, is scattered over the site in low abundances and has most likely been planted. Where present over the remainder of the site, the understorey has largely been planted and comprises native species such as Callistemon salignus Willow Bottlebrush.*

_*Species of the groundcover stratum mainly comprise horticultural plantings retained in landscaped garden beds and include Hardenbergia violacae Purple Coral Pea, Hibbertia scandens Climbing Guinea Flower and exotic species such as Trachelospermum jasminoides Star Jasmine. Open grassy areas are mown and support a mixture of native and exotic grasses and herbaceous species, such as Cynodon dactylon Couch, Pennisetum clandestinum Kikuyu Grass, Setaria gracilis Slender Pigeon Grass and Plantago lanceolata Lamb's Tongues. Mowing limits the opportunity for groundcovers to naturally regenerate."*

_*No threatened flora species or populations were identified on the subject site.*

Total Earth Care identify that the *"vegetation community has undergone significant modification as a result of disturbance related to construction of hospital buildings and associated infrastructure, clearing, and maintenance regimes such as mowing"* (TEC, 2009:6). Furthermore the likelihood of regeneration of the species identified as characteristic of CPW is minimal *"as the soil seedbank was most probably removed prior to the original construction works or it has since been built over"* and also *"current mowing regimes further reduce the potential for native groundcover to regenerate"* (TEC, 2009:6).

2.2.5_Fauna

The Flora and Fauna Assessment (attached at Appendix Z) undertaken by Total Earth Care, also provides the following description of the fauna present on the site (TEC, 2009:7):

_*A total of six vertebrate fauna species were recorded during the survey... Six species of birds were visually and aurally identified and these species are generally typical of urban, peri-urban and surrounding natural areas within the Sydney Basin BioRegion. Furthermore, these species are widespread in distribution and common to abundant within their ranges.*

_*No threatened fauna species or populations were identified on the subject site.*

Total Earth Care conclude that *"relative to the modified condition of native vegetation on the subject site, limited connectivity to bushland, and a general lack of many habitat features and resources … the subject site has a poor level of fauna habitat value"* (TEC, 2009:8).

2.2.6_Transport and Access

The Kingswood Railway Station is approximately 700 metres walking distance from the nearest Hospital entry. There are bus services on all surrounding streets, with services running at 15 and 30 minutes intervals during the peak hours to surrounding districts.

The road network which services the Hospital campus comprises the following:

_The Great Western Highway is an arterial route linking Sydney City with Parramatta, Penrith and the Blue Mountains. The Great Western Highway is constructed on a 6 lane divided carriageway in the vicinity of the site, with a continuous median separating eastbound and westbound flows. A turning bay is provided in the eastbound direction to allow right hand turns into Somerset Street. Right hand turns out of Somerset Street into the Great Western Highway are not permitted and are physically prevented by a traffic island. The intersection of the Great Western Highway and Somerset Street operates under normal priority rules.

_Parker Street is an arterial road constructed on a 6 lane divided carriageway along the western edge of the site. The intersections of Parker Street with the Great Western Highway and Derby Street are signalised with movements allowed in both directions. The Parker Street access to the Hospital campus is located approximately

Description of the Site

opposite and to the north of the intersection with Lethbridge Street. Ingress and egress movements at this access point are limited to left in/left out only with a median in Parker Street preventing any other turns.

_Derby Street is a collector road having one traffic and one parking lane in each direction.

_Somerset Street is a local street performing some collector road functions. Somerset Street also features one lane for traffic and one lane for parking in each direction.

The main vehicular access point to the Hospital campus is from Derby Street, with additional access points from Somerset Street, Parker Street and Barber Avenue. An internal road network connects the access points with most other points of the Hospital campus.

Pedestrian footpaths are provided along the Hospital boundaries and also on most of the surrounding side streets. There are pedestrian phases and marked pedestrian crossings at the signalised intersections of Parker Street with the Great Western Highway and Derby Street. Pedestrian footpaths and crossings are also provided within the Hospital campus.

Derby Street is part of the bike network identified in the Penrith Integrated Transport and Land Use Strategy 2008, but there are no known bicycle links within Hospital.

2.2.7_Car Parking

Currently there are 1,277 car parking spaces provided on-site, in the areas shown on Figure 2.5 below.

Figure 2.5_Current On-Site Parking Areas shown coloured blue (source: TEF Traffic Report, 2008)

3 ____Description of the Proposed Development

3.1_Overview of the Proposed Development

The proposed development covered by this Environmental Assessment involves the following works:

_Construction of a new East Block adjoining the existing North Block, comprising of:
- _Level one:
  - _ Car parking for 119 vehicles including two disabled access spaces;
  - _ Staff bicycle store for 10 bicycles;
  - _ Plant and equipment to service the building (chiller plant, medical air plant, fire sprinkler pump room, substation, and rainwater tank with OSD tank below);
  - _ Courtyard to the east of the building, with a void above to levels two and three.
- _Level two: An Ambulatory Procedure Centre (APC) including:
  - _Main entrance to East Block;
  - _Six new operating theatres (linking to existing theatre suite in North Block);
  - _Outpatients area (O/P);
  - _Pre- and post-operative areas including stage 1 and stage 2 recovery areas, extended day only (EDO) area for overnight stay
  - _Associated utility rooms, change rooms (staff), and patient ablutions.
- _Level three:
  - _60 overnight surgical beds (30 of which will be relocated from West Block) in two wards;
  - _External terraces;
  - _Raised green roof (2,525m^2);
  - _Plant room;
  - _Associated utility rooms, offices and meeting rooms.
- _Level four:
  - _Plant rooms.

_Construction of a new internal pedestrian link between the new East Block (level two) and the existing North Block.

_New external car parking (26 spaces) and access road to service the East Block, including a drop off bay near the building entrance and a fire vehicle layby to the north of the building;

_Refurbishment and expansion of the existing Intensive Care Unit (ICU), including:
- _ Demolition of chapel and construction of replacement chapel (locations shown in Figure 3.2);
- _ Level two:
  - _ An increase in beds from 19 to 24
  - _ Additional office space, meeting room, and storage space;
  - _ Male and female change rooms for staff;
  - _ Clinical Cardiovascular Unit.
- _ Level three:
  - _ Ancillary ICU functions including consulting rooms, meeting room, offices and testing labs;
  - _ Plant room; and

_Expansion of the Renal Dialysis Incentre Unit from two dialysis stations to eight dialysis stations in the vacated surgical bed space on Level 5 of West Block.

A site plan showing the location of the works is provided in Appendix B, and shown in figure 3.1.

Description of the Proposed Development

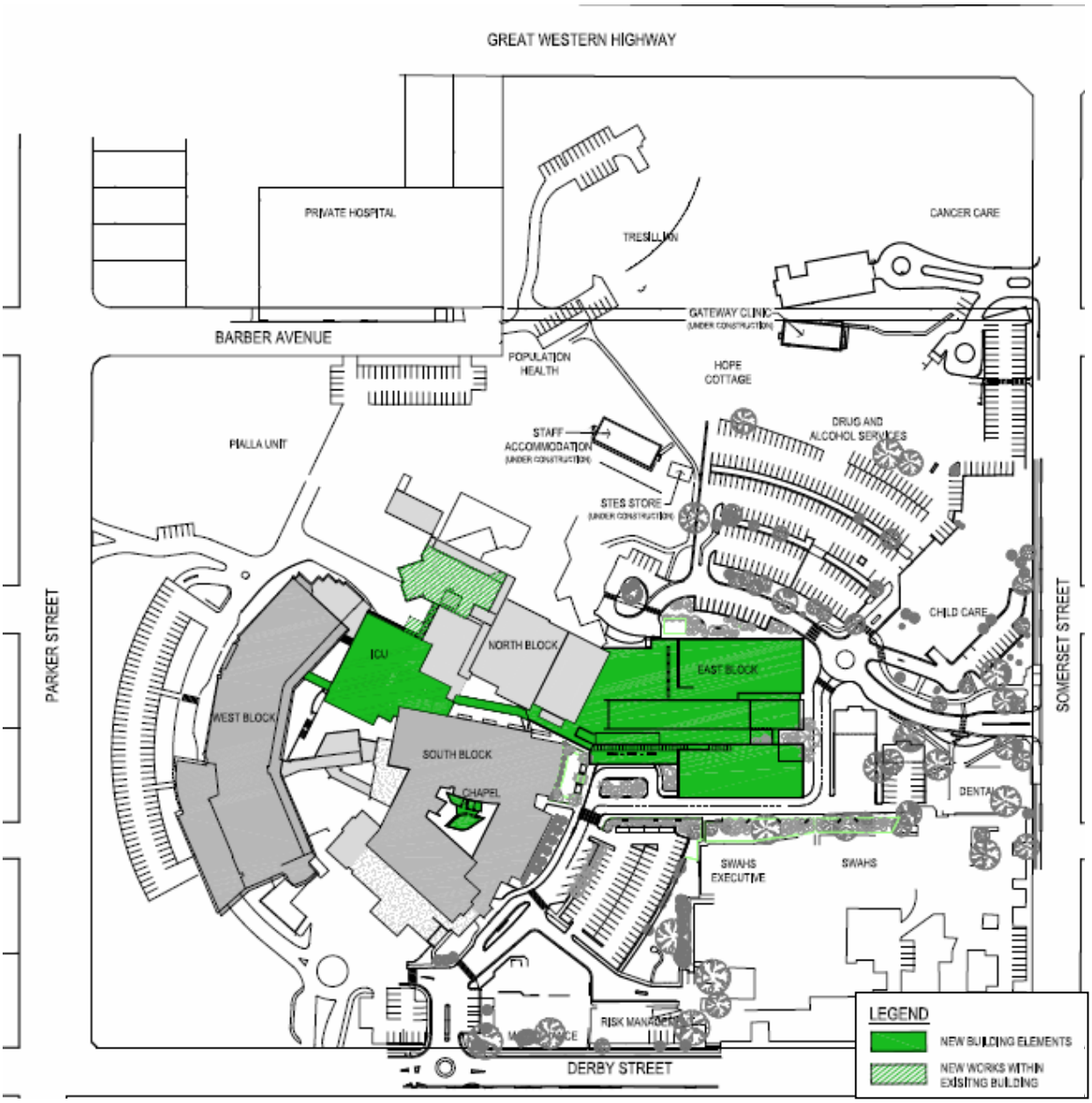

Figure 3.1_Site Plan showing location of proposed works.

The East Block is to be constructed on a cleared site, and the ICU works involve increasing the footprint of the existing building.

Plans showing the existing and proposed ICU site area are provided in Appendix B, and shown in Figures 3.2 and 3.3.

Description of the Proposed Development

Figure 3.2_Existing ICU site area, showing location of existing chapel and new chapel

Figure 3.3_Proposed ICU site area

Description of the Proposed Development

The following architectural plans have been provided, and are attached at Appendix D.

Drawing Name	Drawing Number
East Block Plan - Level 1	EB-SK100
East Block Plan - Level 2	EB-SK101
East Block Plan - Level 3	EB-SK102
East Block Plan - Level 4	EB-SK103
East Block Roof Plan	EB-SK104
East Block Elevations - 1	EB-SK150
East Block Sections	EB-SK200
ICU Plan - Level 2	ICU-SK101
ICU Plan - Level 3	ICU-SK102
ICU Plan – Roof	ICU-SK103
ICU Plan - Level 4	ICU-SK104
ICU Elevations	ICU-SK150
ICU Sections	ICU-SK200
Renal Concept Plan, Option 2	
Proposed Chapel Plan	SK040

Please note that the Renal Dialysis Incentre Unit has been designed to concept plan level only at this stage. This is an internal alteration within Level 5 of the West Block.

Additionally, the relocated chapel is currently in the design stage, with a proposed chapel plan provided for information purposes.

3.2_Design Intent and Built Form

The design of the project has been divided into two parts, namely: the refurbished and extended Intensive Care Unit (ICU) and a new Ambulatory Procedures Centre (East Block). The two projects differ in their impact and design as the ICU is a project bounded by existing buildings, whereas East Block (although an attachment to the existing Theatre Block), is largely a new building set to the east of the main Hospital complex.

Photomontages of the new East Block building are provided in Appendix F, and shown in Figure 3.4 and 3.8.

Description of the Proposed Development

Figure 3.4_Proposed East Block, 3D Render

Our design approach began with an initial analysis of the whole Hospital campus. A subsequent preliminary master plan was presented to SWAHS that incorporated the two projects in the overall context of a broader master plan strategy for the site. The master plan responds to future demands, works with the existing infrastructure, and relates to the landscape and the overall setting.

A diverse built language has developed on the Hospital campus over time, which consists predominantly of low and medium scale buildings that are compact in form, of brick / masonry construction, and typically have flat roofs. The specific design of the two proposed new extensions (ICU and East Block) considers the existing built form, functioning and materiality of the current Hospital.

The East Block building (shown in Figure 3.4) will be one of the few that is orthogonally organised on the site. It will set the standard for future built arrangements and will be the catalyst for a more efficient and flexible utilisation of the site in general.

The existing series of internal pedestrian spines within the Hospital campus, which connect the primary functional parts, provides a framework for the ongoing development and possible future extension of the Hospital.

3.2.1_Intensive Care Unit

The refurbishment and expansion of the Intensive Care Unit (ICU) includes expanding the footprint of the existing ICU facility within the North Block. Level One will accommodate existing facilities including the loading dock, kiosk, and domestic services, and Levels Two and Three will be modified to provide the Intensive Care wards at Level Two, and an associated Level Three area that incorporates plant and ancillary functions for the ICU.

The project includes a new link connecting the East and West Blocks. This connection will require a bridge to be connected across part of the lower courtyard.

The design continues a theme of parapeted masonry walls that exist in the East and West Block. The height and bulk will be low in scale. The upper level (Level Three) has been set back from the southern side so as to allow low angle winter sun into the café area and to diminish the perceived height of the building from within the courtyard space.

An important consideration has been to maximise natural light into the ICU itself. This has required a cut out of the roof to allow daylight into otherwise internal ward areas.

An external terrace has been included on the south portion over the loading dock area. It is proposed that this area is to be used by patients when appropriate.

The east-west link running across the southern section of the ICU has been designed as a transparent and reflective singular element. The purpose of the reflectivity is to provide a sense of mirroring the courtyard, thereby reducing the sense of enclosure. It is proposed that the link would incorporate a pergola structure that will provide shelter for the outdoor use of the courtyard area.

Colours will be complimentary to the existing scheme by way of face brick, painted concrete and clear anodised or powder coated aluminium profiles.

Description of the Proposed Development

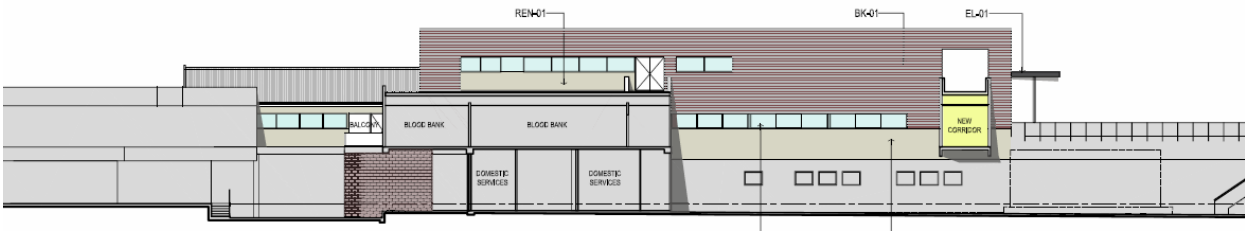

Figure 3.5_ICU West Elevation

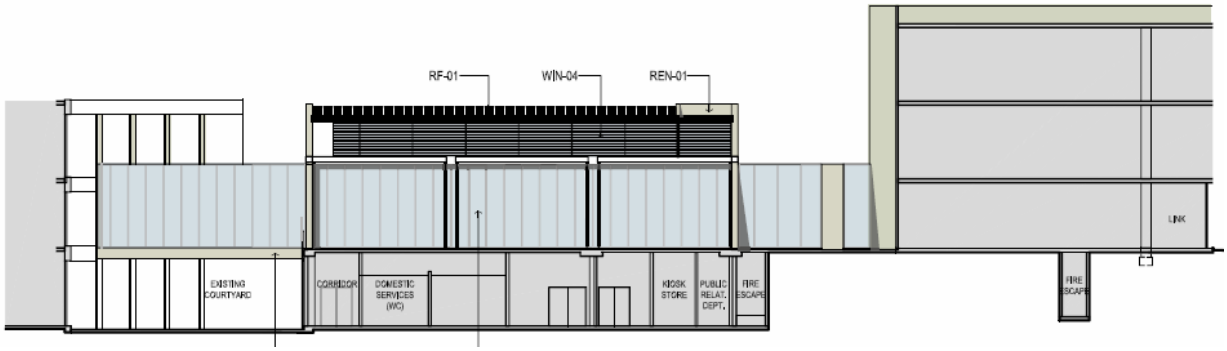

Figure 3.6_ICU South Elevation

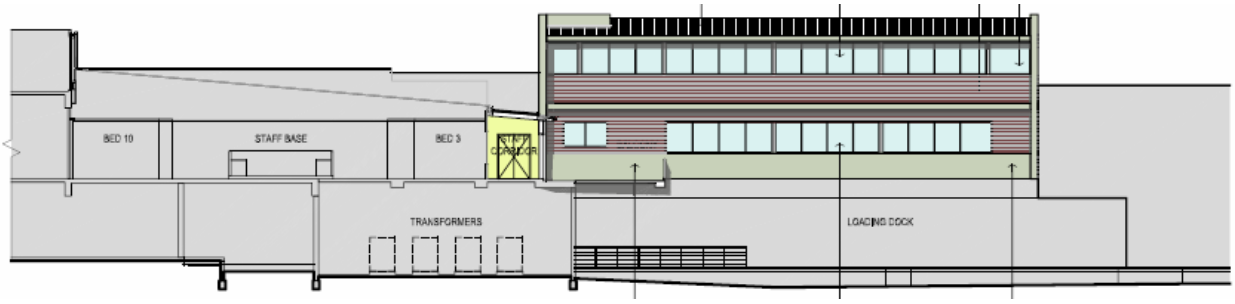

Figure 3.7_ICU North Elevation

3.2.2_East Block

The East Block is a four level building consisting of the following:
_Car parking at level one;
_Ambulatory Procedure Centre at level two;
_Wards at level three; and
_Plant rooms at level four.

The design of the East Block considers environmental impacts and best fit for the given site. The building required integration with the existing theatre block, which gave rise to the form of the building comprising a step down and then step up form, so as to allow a meshing of roof geometries and built forms. The building builds its three storey height to the east in order to carry ward areas and associated upper level plant areas.

The building incorporates a series of fingers or extrusions that lead out into the landscape to the east. The linearity is reinforced through the use of parapet blade walls that conceal roofs and gutters.

The bulk of the building has deliberately been broken down into linear and floating elements that oversail and layer adjacent one another. The ground level footprint is set in, thus enabling better utilisation of the available land area and also providing cover above pedestrian areas.

The building minimises landform disturbance and consequent civil works through a careful placement of the entry area and associated perimeter roadworks. The design is responsive to the natural landscape, with an emphasis on enhancing existing the planting and environment. The healing effects of providing places for respite and views to

Description of the Proposed Development

nature have been exploited and enhanced where possible. An inside-outside connectivity of the building has been exploited to create spaces from within, that engages with the landscape and elevates a sense of connection to nature.

A courtyard on level one to the east of the building, with a void above to levels two and three, enables the landscape treatment to enter the building footprint, adding natural light to level one and two above and a sense of nature over all of its three levels.

An existing east-west cross-site pedestrian landscaped link (to the south of the building) has been reinforced to strengthen the existing condition and give rise to a major external pedestrian connection from East Block to the east and Kingswood area.

The concept of 'Entry Forecourt' to the Hospital is now created by the location of the East Block. A level pedestrian link will connect the entrance to the Main Hospital Entry.

The ground level (level one) has been designed to accommodate vehicle parking, but also could easily be adapted to future fitout for ancillary functional requirements.

Figure 3.8_Proposed East Block, North Elevation

Level two is the main entry / outpatient and day procedure centre level. It is accessed via a link to the main Hospital and also via a covered drop off area that has been designed to accommodate 'set down' and 'pass by' vehicle areas. The arrival area leads directly via airlock to the main reception and waiting area. A central lift core allows delivery and movement to all levels of the building.

An internal open stair will relieve lift traffic, provide a visible focus for the lobby and will also engage with the courtyard.

The ward areas on level three have been oriented east-west so as to provide a best case for the orientation and consequent internal environment within the wards themselves. The wards are arranged around a central shared area containing staff and patient areas as well as associated outdoor space.

Description of the Proposed Development

Plant areas are arranged to be centralised on the roof as well as a chiller plant room located adjacent to existing plant at Level one.

Materials are complimentary to those found on the Hospital campus. The use of brick at the base, and blade elements will anchor the building visually. Lightweight and maintenance-free metal wall panelling, in conjunction with glazing, will be used on the upper levels. The intent is that the combination of materials will be integrated in a refreshing manner to provide a point of departure from the norm.

Accent colours will develop from the existing natural and building palette evident on the site.

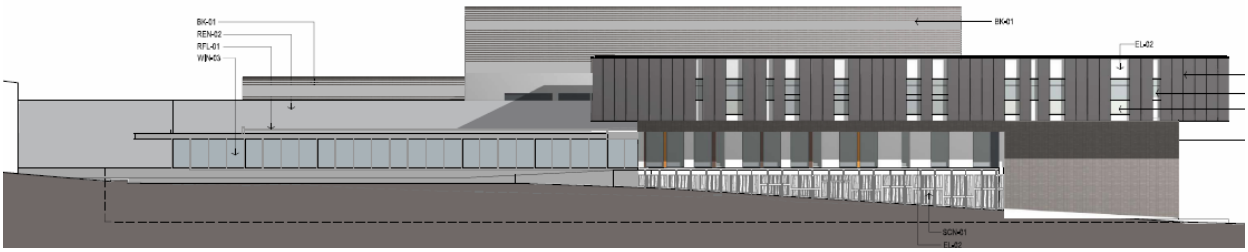

Figure 3.9_East Block South Elevation

Figure 3.10_East Block East Elevation

Figure 3.11_East Block North Elevation

3.2.3_Renal Dialysis Incentre Unit

Concept plans have been produced for the Renal Incentre Dialysis Unit (attached at Appendix D). The works are internal within level five of the West Block.

3.2.4_Chapel

A new 'multi faith' chapel is to be constructed in the existing courtyard within the South Block of the Hospital. A proposed plan is provided in Figure 3.12.

The existing courtyard is surrounded by buildings on all four sides, ranging from one to four storeys in height. The courtyard is in a visible location as it faces on to the main South Block entry with a double height glass wall facing on to the space.

Description of the Proposed Development

The key design issues to be considered and incorporated include:

_Maximising available natural light;
_Creating a visually aesthetic design;
_Providing privacy and screening from adjacent departments and public spaces;
_Considering the entire courtyard space;
_Providing a link to the South Block; and
_Ability to use modular or preassembled components for ease of construction access into the confined space.

The total area of the chapel and ancillary facilities (interview rooms / offices) is approximately 130m^2.

Figure 3.12_Proposed Chapel Plan

Description of the Proposed Development

3.2.5_Gross Floor Areas

The proposed floor space areas for the proposed development are summarised in Table 3.1 below.

Table 3.1 - Building Gross Floor Areas

Building	Level	Gross Floor Area
East Block	1	4,150m^2
	2	4,650m^2
	3	2,760m^2
	4	400m^2
Intensive Care Unit	2	2,485m^2
	3	620m^2
Renal Dialysis Incentre Unit	4	413m^2
Chapel and ancillary facilities	1	130m^2

3.3_Car Parking and Access

The proposed development will result in a loss of some car parking spaces and construction of new car parking spaces, including the provision of 119 car parking spaces (including two disabled access parks) on Level One of the new East Block. The existing and proposed car parking provisions are shown in Figure 3.13.

A staff bicycle store is to be provided on level one of the East Block, as well as two bicycle racks adjacent to the main entrance of East Block.

A new access road is to be constructed to service the East Block, including a drop off bay near the building entrance and a fire vehicle layby to the north of the building (refer to Site Plan attached at Appendix B).

Description of the Proposed Development

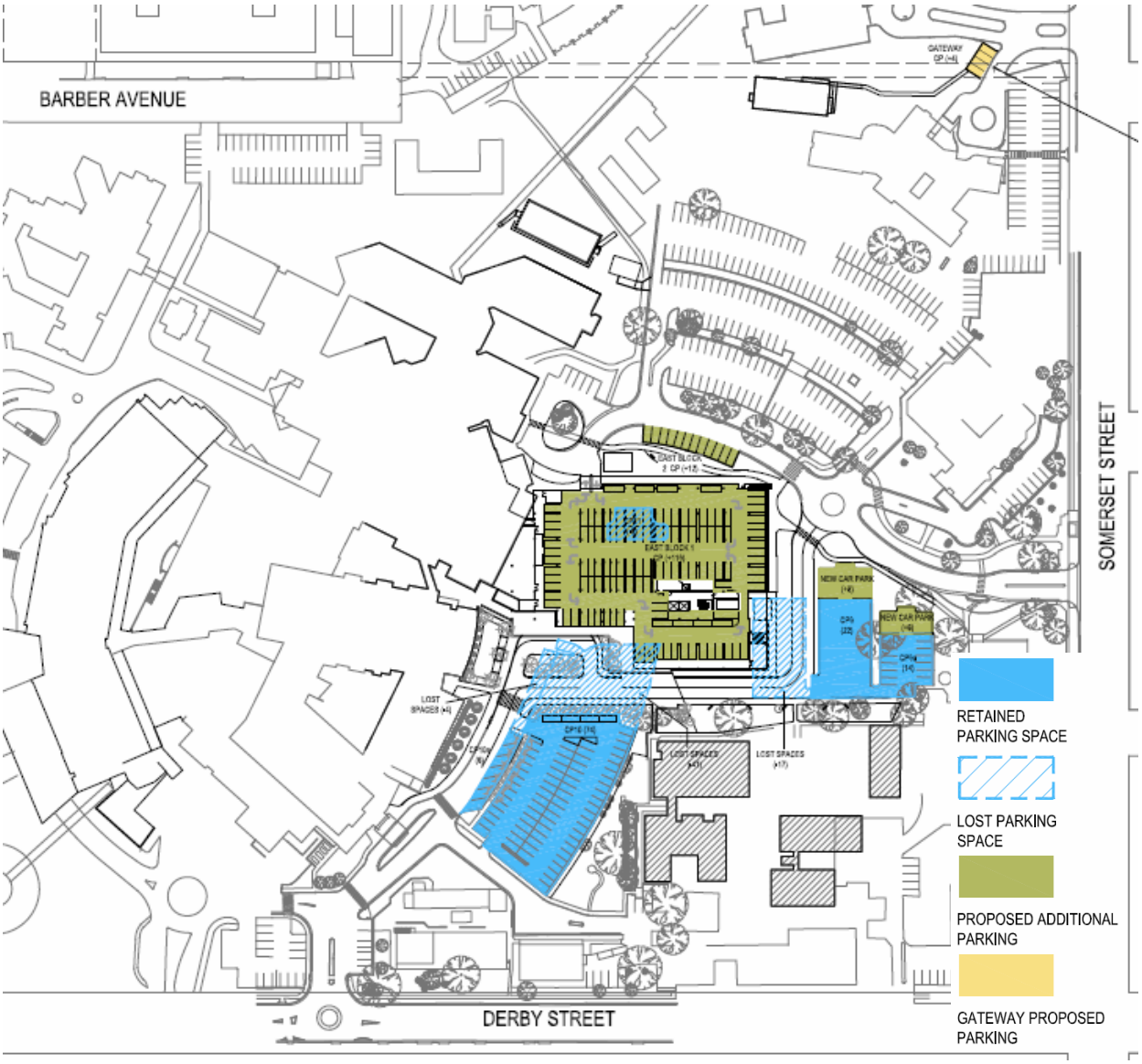

Figure 3.13_Car Parking Plan

Pedestrian linkages have been incorporated into the landscaping design to enhance linkages to other parts of the Hospital campus, enhancing the wayfinding through the site.

3.4_Landscaping

Landscape design is seen as a vital aspect of the proposed development to support the integration of the new East Block building into the wider Penrith Nepean Hospital site. Landscaping is to consist of the following elements:
_Canopy level trees and low shrubs / ground cover;
_Lawn areas;
_Hard surfacing for accessways; and
_Benches provided throughout.

A courtyard at ground level to the east of the East Block building, with a void above to levels two and three, enables the landscape treatment to enter the building footprint, adding natural light and to the levels one and two footprints and a sense of nature over all of its three levels.

A Landscaping Plan is attached at Appendix H.

Description of the Proposed Development

3.5_Construction Staging

The proposed works will be undertaken according to the construction staging programme in Table 3.2.

Table 3.2 – Construction Staging

Works	Estimated timeframe
East Block East Block will be constructed as a single stage contract following demolition of the existing Learning and Development Building.	Jan 2010 - Dec 2011
ICU ICU will be refurbished and expanded in five main stages in parallel with East Block: _Stage 1: Demolition of existing support areas and chapel, and removal of demountables; _Stage 2: Construction of new 12 bed module and ambulatory areas on level two and offices / rooms on level three; _Stage 3: Decanting of existing seven bed module and support areas into new areas; _Stage 4: Demolition of existing seven bed module and refurbishment of support areas; and _Stage 5: Finalisation of interfaces.	May 2010 - Jun 2011
Renal Dialysis Incentre Unit The Renal Unit will be refurbished and expanded following the completion and commissioning of the East Block.	Jan 2012 - Apr 2012
Chapel Demolition of existing chapel to be undertaken as part of ICU Stage 1 works. Construction of new chapel to follow	May 2010 – Oct 2010

3.6_Project Justification

The Penrith Health Integrated Clinical Services Plan (PHI CSP), endorsed in June 2008 by the NSW Department of Health, provides the future direction for health service delivery at the Hospital and its catchment region to 2016.

The PHI CSP identifies the need for significant clinical service enhancements at Penrith Nepean Hospital to meet the increasing health care demands of the catchment population. This is being driven by:
_significant population growth;
_population ageing and increasing co-morbidities;
_increasing incidence/prevalence of chronic disease and its risk factors:
_a significant rise in emergency department activity;
_changing health care needs requiring new models of care; and
_advances in medical technology.

In recognition that the full clinical service enhancements could not be delivered within the capital budget, the PHI CSP identified the following service priorities for the proposed Hospital redevelopment:
_increase the number of overnight medical beds in parallel with the implementation of new models of care to support rapid assessment and short stay medical care;
_increase the number of operating theatres, surgical day only and extended day only beds, and surgical outpatient clinics as part of an Ambulatory Procedure Centre to support the shift in model of care from overnight to day only and extended day only surgery;
_increase the number of intensive care beds to support the role of Nepean Hospital as the major intensive care and trauma centre for the SWAHS western cluster;
_enhance the engineering services infrastructure to support clinical service expansion and provide capacity for future expansion;

Description of the Proposed Development

_increase the number of in-centre renal dialysis places; and
_enhance education and training space.

Benefits to be realised from the proposed development include:
_Delivering significant clinical service enhancements which help to meet the current and projected health care needs of the Hospital's catchment population to 2016;
_Increasing the number of beds for day only and extended day only surgery which will reduce waiting times for surgery;
_Reducing the number of residents of the catchment population accessing services in other SWAHS facilities or Area Health Services;
_Expanding ICU beds to meet the increasing needs of the catchment population and providing capacity to support the role of Nepean Hospital as a regional trauma centre;
_Increasing the number of medical beds and implementing new models of care for rapid assessment and short stay care;
_Delivering new and improved models of care to better meet the demands of Penrith Nepean Hospital catchment population;
_Supporting the recruitment and retention of health professionals through the provision of new facilities with better working environments; and
_Enabling the collocation / concentration of surgical services in East Block and of medical services in West Block which will improve patient navigation (the patient journey) over the care episode, enable the implementation of proposed models of care, provide better clinical functionality, and provide opportunities to maximise staffing efficiencies and sharing of services; and
_Providing a major investment in health infrastructure in the Sydney West region.

It is apparent that the proposed development is critical in order to meet the current and future health servicing demands of not only the local population, but the wider Sydney West area.

3.7_Ecologically Sustainable Design

Hospitals by their nature are complex building types, as they consist of a wide range of functional and services requirements that place a high demand on energy and water. NSW Health requires the incorporation of sustainable development principles and strategies to all health facilities, under Policy *TS-11 – Version 2: Engineering services & sustainable development guidelines*. The main concept is to reduce the environmental impact of healthcare facilities, by reducing their dependency on non-renewable sources such as energy and water, and reducing pollutants and green house gas emissions.

Sustainable design features like day lighting, energy and water conservation techniques, use of nontoxic and environmentally sound materials and finishes are to be incorporated into the development. At a minimum, energy and water conservation standards would meet the NSW Health requirements.

The sustainability initiatives that are being targeted for the proposed redevelopment include the following:
_Day lighting and shading;
_Mixed mode ventilation;
_Energy efficient utilities and services; and
_Rainwater harvesting.

Approaches to these elements are outlined below, and more details are provided in the Environmental Performance Report prepared by Steensen Varming (attached at Appendix U).

Day Lighting and Shading

The introduction of natural light into the East Block provides illumination without the need for artificial lighting, thus improving space ambience within the Hospital, and providing views to the outside. The design includes skylights and voids on Level Two, and full height glazing (with external shading devices) for the in-patient wards on Level Three.

Mixed Mode Ventilation

Mixed-mode ventilation combines both natural and mechanical ventilation systems, and allows air conditioning to be switched off at certain times, thus significantly reducing energy consumption. A mixed-mode ventilation approach has been considered viable for the inpatient wards on Level Three and the consultants' rooms on Level Two.

Description of the Proposed Development

Energy Efficient Utilities and Services

Sustainability initiatives have been incorporated into the utility and services design, and include:

Mechanical services
_Outside air economy cycles will be included in all air-conditioning systems,
_The use of high efficiency equipment such as variable speed low friction loss centrifugal chillers with environmentally friendly refrigerants such as R134a and R407c and high coefficients of performance at both full load and part load conditions.
_Economy cycles for all major air conditioning systems.

Electrical services
_Efficient external lighting to meet or exceed the minimum requirements of AS 1158 for illuminance levels.
_The use of luminaries with high efficiency lamps and electronic control gear and high frequency ballasts
_The use of daylight sensors to maximise energy reductions by utilising daylight.

Hydraulic services
_Efficient water fixtures and fittings would be installed in the East block. Generally, 3 star tap ware, 4 star urinals and dual flush WC's (i.e. 6/3l per flush) would be provided.
_A central hot water system would be provided with solar make up for heat loss recovery to hot water system. Heat exchange from mechanical system would be used as pre heat for hot water.
_Generally water meters would be provided for each service including hot water. Meters would also be provided to cooling tower discharge.

Rainwater harvesting

Rainwater collected from the roof will be passed to the harvesting tank via gutters and downpipes. The current proposal includes providing a rainwater tank of capacity 100m^3.

4 ____Alternatives to the Proposal

Extensive analysis of the needs for the new Hospital facilities was undertaken over a six month period to determine the most suitable option for the redevelopment.

The following alternatives to the proposal have been considered.

4.1_No Action

An option is to take no action, with Hospital facilities to remain as they currently exist. However this is not seen as a favourable option as the expansion of clinical and surgical services at Penrith Nepean Hospital is a key priority for improving health service delivery in the Sydney West region.

The Penrith Nepean Hospital is the major tertiary referral hospital for the SWAHS Western Cluster, a Level 6 Teaching Hospital and the second trauma centre in Western Sydney. A growing population, an ageing population with increasing co-morbidities, increased incidence and prevalence of chronic disease and its risk factors, a significant rise in emergency department activity, and the need to maintain operations as a regional trauma service are all driving the need for the expansion and redevelopment of the Hospital.

5 ____Stakeholder Consultation

Relevant stakeholders and interest groups have been engaged throughout the development of the proposal, including State authorities, Penrith City Council, utility providers, Hospital staff, and community groups.

Consultation letters were sent on 17 July 2009 to the parties below, which outlined the scope of the works, provided plans, and asked for feedback on the proposed development.
_Penrith City Council;
_Department of Transport and Infrastructure (formerly Ministry of Transport);
_Roads and Traffic Authority;
_Jemena Gas Networks (formerly Gas Light Company);
_Sydney Water; and
_Integral Energy.

Where required, responses to the consultation letters were followed up with the stakeholders to discuss issues and the project direction.

Copies of consultation letters sent, and responses received, are provided in Appendix M.

A summary of the consultation undertaken, and feedback received, is provided in Table 5.1 below. All issues have been considered in the final design detailing of the scheme and within this Environmental Assessment.

The parties with whom consultation has been undertaken is in accordance with the Director General's Requirements (attached at Appendix K).

Table 5.1 - Summary of Consultation

Organisation	Response / Issues Raised	Comment / Outcome
Jemena Gas Networks (formerly Gas Light Company)	A response to the consultation letter was received on 4 August 2009, indicating the below concerns and requirements. _Jemena Gas Networks have a number of high pressure Gas Mains located in the vicinity of the proposed development area which may be impacted, including: _200mm High Pressure Primary Main _200mm High Pressure Secondary Main _A Safety Management Study is required to ensure risk issues are addressed for the continuous safe operation of the pipelines in the changed environment. _The Safety Management Study findings and recommendations should be included as part of the development application. If this does not occur, Jemena will advise the Planning Authority of Jemena's concerns regarding the development and referencing the Safety Management Study.	Discussions with Jemena identified the main issue of concern was regarding construction access across the secondary and primary gas mains in the adjoining streets. Subsequent discussions with Jemena have resulted in an agreement to restrict construction access and egress to Somerset Street, where there are no gas mains. This agreement is incorporated into the proposed mitigation measures outlined in section 9.12 of this report. Consideration of the impacts to residents needs to undertaken in the Construction Traffic Management Plan. Jemena advised by email dated 11 August 2009 (attached at Appendix M) that they consider that Jemena are no longer directed affected by the redevelopment and therefore do not require any temporary protection measures or Safety Management Study.

Stakeholder Consultation

Integral Energy	A response to the consultation letter was received on 22 July 2009, indicating the below concerns and requirements. _The electricity supply system providing the main supply to the Nepean Hospital is somewhat limited in terms of additional supply capacity, and the backup supply system is only capable of providing alternate supply for existing load after considerable switching within the Integral network to move local load to free up feeder capacity for backup to the main feeder for a limited period. _There may be a requirement to engage Accredited Service Providers to provide network augmentation at the expense of Health. _An 'Application for the Connection of Load' should be provided on behalf of the Nepean Hospital so we can assess the effect on our network and advise what work is required to be performed to enable Integral to supply the increased load. In previous correspondence with Integral Energy, in September 2008, they advised that *(Note: first stage refers to the East Block and ICU development)*: _The proposed first stage 1 MVA additional load can be supplied via the existing normal supply system to the Hospital, but there is little alternate supply for this, or even the existing, load. _The proposed second stage 1.5 MVA additional load cannot be supplied via existing infrastructure nor supported with alternate supply from existing infrastructure - either internal or external to Hospital grounds.	Integral Energy has confirmed that the current supply has sufficient capacity for the expected demand for the ICU and East Block development. This is based on a load increase of no more than 1000kVA. Any future works will have to consider upgrading the existing network to meet any further additional demand. Discussions will need to be undertaken with Integral Energy. Subsequent to the planning process, mitigation measures will seek to ensure the upgrading of existing networks as a condition of development.
NSW Roads and Traffic Authority (RTA)	A response to the consultation letter was received on 12 August 2009, indicating that the RTA would like the following issues to be included in the transport and traffic impact assessment of the proposed development: _It is noted that the Metropolitan Strategy has designated Penrith as a Regional City and a major focal point for regional transport connections and jobs growth. It is important that the redevelopment of the Penrith Nepean Hospital takes into consideration, and contributes to the achievement of, transport objectives contained in this and other high-level NSW Government strategies. These strategies include the NSW State Plan and the draft North West Subregional Strategy. These policies share the aims of increasing the use of walking, cycling and public transport; appropriately co-locating new urban development within existing and improved transport services; and improving the efficiency of the road network. By addressing both the supply of transport services and measures to manage demand for car use, the EA report should demonstrate how users of the redevelopment of the Penrith Nepean Hospital, will be able to make travel choices that support the achievement of relevant State Plan targets.	Assessment of the proposed development against relevant State level plans, including the Metropolitan Strategy, has been undertaken and is provide in section 6.3 of this report. An assessment of the potential impacts of the development on traffic, transport and access has been undertaken, and mitigation measures proposed. Details are provided in section 9.14 of this report. Mitigation measures for construction include the requirement for the contractor to provide a construction management plan which will include measures to manage construction traffic and to mitigate any impacts for pedestrians and cyclists. Details are provided in section 9.26 of this report.

Stakeholder Consultation

	_Daily and peak traffic movements likely to be generated by the proposed development including the impact on nearby intersections and the need / associated funding for upgrading or road improvement works (if required). The key intersections to be examined / modelled include: _Parker Street / Great Western Highway; _Parker Street / Derby Street; _Great Western Highway / Bringelly Road; and _Any other local un-signalised intersections along the Great Western Highway and Parker Street that would be noticeably affected by the redevelopment. _Details of the proposed accesses and the parking provisions associated with the proposed development including compliance with the requirements of the relevant Australian Standards (i.e. turn paths, sight distance requirements, aisle widths etc.) _Proposed number of car parking spaces and compliance with the appropriate parking codes. _Details of service vehicle movements (including vehicle type and likely arrival and departure times). _The RTA requires the EA report to assess the implications of the proposed development for non-car travel modes (including public transport use, walking and cycling); the potential for implementing a location-specific sustainable travel plan (e.g. 'Travelsmart' or other travel behaviour change initiative); and the provision of facilities to increase the non-car mode share for travel to and from the site. This will entail an assessment of the accessibility of the development site by public transport. _The RTA will require in due course the provision of a traffic management plan for all demolition / construction activities, detailing vehicle routes, number of trucks, hours of operation, access arrangements and traffic control measures.	The assessment includes modelling of the key intersections surrounding the site, including those listed by the RTA, with the exception of the Great Western Highway / Bringelly Road intersection. The additional traffic volumes resulting from the proposed development at this intersection are considered to be very minor. This has been subsequently discussed and agreed with the RTA (refer to emails provided at Appendix M). The Traffic Report (attached at Appendix Y) identifies a range of alternative transport options and strategies to encourage the use of walking, cycling and public transport.
Department of Transport and Infrastructure (formerly Ministry of Transport)	The following have been identified by the Department of Transport and Infrastructure as the key transport matters to be addressed: _Determine the likely future demand for increased pedestrian and cycle access to the site and provide appropriate facilities for the secure storage of bikes together with amenities for cyclists. In this regard the proponent should address the Department of Planning's Guidelines for Walking and Cycling (2004); _Determine the adequacy of existing public transport services (including frequency) to the site and the likely cost to Government (if any) to meet likely demands; _Adopt a minimalist approach to the provision of car parking having regard to the accessibility of the subject site to	An assessment of the potential impacts of the development on traffic, transport and access has been undertaken, and mitigation measures proposed. Details are provided in section 9.14 of this report. Mitigation measures include the requirement for the contractor to provide a construction management plan to include measures to manage construction traffic and to mitigate any impacts for pedestrians and cyclists.

Stakeholder Consultation

	public transport services; _A Work Place Travel Plan to determine an appropriate level of parking provision consistent with an identified mode share target for access to the site by public transport for employees and visitors; and _Identify measures to mitigate potential impacts for pedestrians and cyclists during the construction of the project as part of a construction management plan. The Department would also like the opportunity to comment on any planning agreement that may secure funding for local and regional transport infrastructure.	The Traffic Report (attached at Appendix Y) identifies a range of alternative transport options and strategies to encourage the use of walking, cycling and public transport. It is not anticipated that a planning agreement will be necessary (refer to section 8 of this report), however the Department of Transport and Infrastructure will be contacted if an agreement is required.
Sydney Water	A response to the consultation letter was received on 4 August 2009, indicating the below concerns and requirements. Sydney Water requests that the Environmental Assessment includes: _Integrated Water Management Plan - including any proposed alternative water supplies, proposed end uses of potable and non-potable water, water sensitive urban design and any water conservation measures. _Assessment of Infrastructure – Sydney Water to be provided with information on water and wastewater services and any augmentation to services that will be required for the proposed development. Sydney Water servicing: _The development will result in a large increase in potable water and wastewater demand and as a result there will be a need to improve the overall reliability of the service to the development. _A trade waste permit (Section 73 Certificate) is required for any discharge of trade waste into Sydney Water's wastewater system. Sydney Water will further assess the impact of the development when an application is made for a Section 73 certificate. This will enable Sydney Water to specify any works required and assess if amplification and/or changes to the system are applicable.	An assessment of the existing Sydney Water assets has been carried out which indicates that sufficient capacity exists to service the new development. Potential impacts and associated mitigation measures are outlined in section 9.12 of this report. An application for a Section 73 certificate will be made following approval of the proposed development.
Penrith City Council	Meetings have been held with Council planning officers on 28 April 2008, 19 September 2008, and 3 November 2008 as the scheme has been developed. Overall support was given towards the project, with input provided on the preferred concept plan strategy and service enhancements. A further meeting was held with Council on 22 July 2009 to advise Council of the current plans and funding for the Hospital improvements. A response to the consultation letter was received on 11 August 2009, indicating the below concerns and requirements. *General Matters*	An assessment of the proposed development has been undertaken against all relevant environmental planning instruments, policies and guidelines and is documented in section 6 of this report. Details of the proposed built form are provided in 3.2 of this report. An assessment of the impacts of the proposed development on the built form and urban design are considered in section 9.5 and a visual impact assessment has been undertaken and is provided in

Stakeholder Consultation

_1. The proposal should be assessed against the relevant provisions of Penrith Local Environmental Plan 1998 (Urban Land).
_2. The proposal should be assessed against the relevant provisions of Penrith Development Control Plan 2006, in particular Section 2.2 (Crime Prevention Through Environmental Design), Section 2.6 (Landscape), Section 2.9 (Waste Planning) and Section 2.11 (Car Parking).
_3. The proposal should be assessed against the relevant provisions of State Environmental Planning Policy (Infrastructure) 2007, in particular Division 17(2) (Development in or adjacent to Road Corridors and Road Reservations). Appropriate consultation with the NSW Roads and Traffic Authority (RTA) should be undertaken in this regard.
_4. Further details should be provided with regard to the intended external facade treatments of the proposed building to ensure a suitably pleasing aesthetic appearance.
_5. Any proposed roof plant, equipment and/or machinery should be located within the roof structure of the proposed building to avoid the unsightly presentation typically associated with these structures.
_6. An assessment should be undertaken of potential noise impacts during construction and ongoing noise from plant such as chillers and the like and the suitability of the location of any proposed chemical or gas storages.
_7. Drainage from the development should not impact the downstream catchment or downstream properties.

Access and Traffic

_8. Details of the proposed car park and the number of car spaces is required to ascertain how the development will address the current on-street car parking demand surrounding the hospital. Reference should also be made to the Penrith Commuter Car Park proposal. These considerations warrant the preparation of a Parking Study prepared by a suitably qualified consultant addressing these issues. The Parking Study should take into account, but not be limited to, staff parking arrangements, future anticipated parking demands and existing conditions including the restricted parking area scheme surrounding the hospital and whether this scheme needs to be extended.
_9. Any improvements for bus set-down and pick-up arrangements should be identified and addressed.
_10. Cycle access, storage and facilities should be addressed to minimise car dependence.
_11. The proposed extensions including the under croft area should be designed to accommodate the highest and longest vehicles intended to service the site.
_12. A Traffic Management Plan should be prepared detailing the scope of proposed traffic management changes and an assessment on the impact of those changes and proposed traffic control measures to ameliorate any potential impact arsing from the proposal.
_13. The layout of the car parking areas associated with the development (including driveways, grades, turn paths, sight distance requirements, aisle widths and parking bay section 9.6 of this report.

All plant and equipment is to be contained within building or roof structures.

A full assessment of potential environmental impacts has been undertaken (refer to section 9 of this report), including the commissioning of specialist reports. The specific matters raised by the Council are incorporated into this assessment, and include consideration of:
_Noise impacts
_Impacts on water and groundwater
_Traffic, transport and access impacts
_BCA compliance
_Accessibility
_Safety, Security and Crime Prevention

In relation to the comments on the overall site design and master plan (which is not the subject of this Environmental Assessment), Council's comments have been noted and discussions will continue to be held with Council to incorporate these wherever possible.

Stakeholder Consultation

dimensions) should be in accordance with Australian Standard 2890.1-2004 and Australian Standard 2890.2-2002 for servicing areas. All internal vehicular movements should be achieved in a safe manner.

Building Code of Australia

_14. A Building Code of Australia (BCA) Compliance Report should be prepared for the proposal by a suitably qualified consultant to discuss the level of BCA compliance of the existing hospital buildings in regard to fire safety matters (Sections C, D and E of the BCA) and to provide recommendations as to whether any upgrading works should be carried out as part of the proposed works.

_15. An Accessibility Report prepared by a suitably qualified consultant should be prepared addressing the proposal's compliance with Part D3 and Clause F2.4 of the BCA, Australian Standard 1428 (Parts 1-4) and the Commonwealth Disability Discrimination Act 1992.

Safety, Security and Crime Prevention

_16. A Crime Prevention Through Environmental Design (CPTED) Report prepared by a suitably qualified consultant should be prepared. The CPTED Report should address Natural surveillance, Access control, Territorial reinforcement and ownership, and Space management.

_17. Consultation should be undertaken with the Penrith and St Marys Local Area Commands regarding the community safety considerations and implications of the development.

_18. A Security Management Plan should be prepared detailing the processes that will be implemented to effectively manage the security of patients, staff and visitors to the facility. This includes the use of security personnel, closed-circuit television systems, alarms and monitoring systems to provide a safe and secure environment.

Overall Site Design

_19. While Council is appreciative that a master plan for the entire hospital site has previously been prepared, Council requests that this master plan have regard for the interface of the site with surrounding land. In particular, Council's investigations of Kingswood's future urban structure have included the block to the immediate east (bounded by Somerset Street, Orth Street and Hargrave Street) which connects the hospital to Kingswood's future urban centre and the railway station beyond. In terms of the site master plan consideration should therefore be given to the following matters:

_a) Somerset Street's intersection with Orth Street and Hargrave Street will represent an important pedestrian and cyclist crossing point and hence a signalised crossing should be considered.

_b) Somerset Street will also accommodate pedestrians and cyclists on both sides through to the Great Western Highway for those wishing to access the retail edge thereby enabling greater passive surveillance for evening commuters.

_c) Derby Street will feature prominently in Kingwood's future urban structural form as it connects westward

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	directly to the Penrith City Centre and will accommodate a cyclist route (possibly a dedicated cycle path). _d) Creation of a formal entry to the eastern edge of the hospital onto Somerset Street at the abovementioned intersections would be desirable as a long-term objective. _e) Consideration should be given to future links within the hospital site to Derby Street to connect to cyclist paths in both directions (i.e. the university to the east and the Penrith City Centre to the west). Provision for cyclist storage racks and change rooms should be considered. _f) Development is encouraged to address Somerset Street with only a slight landscaped setback to create a more formal street character than the existing condition. _20. Based on the current master plan for the site, there is no apparent clear east/west and north/south axis. The hospital is currently maze-like in its layout/structure and is very difficult if not near impossible to navigate for visitors. This proposal has the potential to add to the confusion and will restrict any formal clarity by linking a building mass to the central body of the hospital. The master plan for the entire hospital site should therefore provide for the following: _a) Simplification and rationalisation of the internal streets. _b) Legible and obvious concepts for open green space within the hospital grounds fronting Somerset Street.	
Nepean Hospital Staff	Various meetings have been held with Hospital staff focusing on the development of the scheme design, including the following: _Staff information and consultation session at Blue Mountains Hospital and Springwood Hospital, 1 February 2008. _Nepean Staff Information and Consultation Forum, 19 February 2008. _Senior Staff Council presentation, 28 February 2008. _Nepean Staff Information and Consultation Forum, 11 March 2008. An open Staff Forum was held on 28 April 2009, and a second Staff Forum is programmed for 19 August 2009. Further forums will be convened at significant milestones throughout the project. The outcomes of the forums are posted on the Hospital website. Email broadcasts to all staff will also be prepared by the Communications Consultant, LDS Communications, at key points throughout the project. Regular consultation is undertaken with the Hospital executive via the following forums: _Monthly Project Control Group Meetings attended by senior executives of the Area Health Service, which commenced 13 March 2009. Minutes are distributed. _Fortnightly Executive User Group Meetings, comprising key members of the PCG, which commenced 26 May 2009. Minutes are distributed.	Briefing of Hospital staff will continue throughout the project to ensure they are aware of any changes which may impact upon them.

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	_Monthly Project Review Meetings between Aurora Projects, SWAHS and Health Infrastructure, which commenced 1 April 2009. Action lists are distributed.	
Community consultation	Consultation with the community has included: _Community information and consultation sessions held at Penrith Nepean Hospital and Katoomba, 14 December 2008. _Community information and consultation sessions held at Springwood, 15 December 2008.	Consultation with the community is to continue throughout the project, particularly to advise on proposed construction methods, timeframes and mitigation measures.
Division of General Practice	Consultation with the Division of General Practice has included: _Nepean Division of GP planning day, 9 February 2008. _Nepean Division of GP board meeting, 26 February 2008.	Briefing of the Nepean Division of General Practice will continue throughout the project, as necessary, to keep them informed about events.

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6.1_Acts and Regulations

6.1.1_Environmental Planning and Assessment Act 1979

As outlined in section 6.2.1 of this report, the proposed development has been declared by the Minister of Planning to be a project to which Part 3A of the EP&A Act applies.

The objects of the EP&A Act are outlined in section 5 of the Act, and are as follows:

"(a) to encourage:
(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,
(ii) the promotion and co-ordination of the orderly and economic use and development of land,
(iii) the protection, provision and co-ordination of communication and utility services,
(iv) the provision of land for public purposes,
(v) the provision and co-ordination of community services and facilities, and
(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and
(vii) ecologically sustainable development, and
(viii) the provision and maintenance of affordable housing, and
(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and
(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment."

The proposed development of the Hospital enables the more efficient provision of services to the community, and utilises the land for public purposes which are of considerable benefit to not only the local area but also the wider region. The development represents considerable social and economic benefits to the community, and these are outlined in sections 9.3 and 9.4 of this report. Protection of the environment is afforded by consideration of the potential impacts and through the application of the mitigation measures outlined in this Environmental Assessment. The design of the development includes ecologically sustainable development measures, as outlined in section 3.7 of this report. It is therefore considered that the proposed development meets the objects of the EP&A Act.

In accordance with Part 3A, section 75D of the EP&A Act, the Minister's approval is required to undertake the proposed development, and an application for approval of project must be made, as per clause 75E of the Act, reproduced below.

"75E Application for approval of project
(1) The proponent may apply for the approval of the Minister under this Part to carry out a project.
(2) The application is to:
(a) describe the project, and
(b) contain any other matter required by the Director-General.
(3) The application is to be lodged with the Director-General.
(4) An application may relate to part only of a project."

This clause requires that the application describes the project, and includes any matters required by the Director-General. In addition, under clause 75F the Director-General must prepare environmental assessment requirements, which may include guidelines prepared by the Minister. Clause 75F is reproduced below.

"75F Environmental assessment requirements for approval
(1) The Minister may, after consultation with the Minister for the Environment, publish guidelines in the Gazette with respect to environmental assessment requirements for the purpose of the Minister approving projects under this Part (including levels of assessment and the public authorities and others to be consulted).
(2) When an application is made for the Minister's approval for a project, the Director-General is to prepare environmental assessment requirements having regard to any such relevant guidelines in respect of the project.
(3) The Director-General is to notify the proponent of the environmental assessment requirements. The Director-General may modify those requirements by further notice to the proponent.

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(4) In preparing the environmental assessment requirements, the Director-General is to consult relevant public authorities and have regard to the need for the requirements to assess any key issues raised by those public authorities.
(5) The environmental assessment requirements may require an environmental assessment to be prepared by or on behalf of the proponent in the form approved by the Director-General.
(6) The Director-General may require the proponent to include in an environmental assessment a statement of the commitments the proponent is prepared to make for environmental management and mitigation measures on the site.
(7) This section is subject to section 75P."

The Director-General has provided a set of requirements that are to be addressed in this Environmental Assessment. These requirements are outlined in section 6.1.2 of this report, which also clarifies how these requirements have been met.

Clause 75H(1) of the Act states that:

"the proponent is to submit to the Director-General the environmental assessment required under this Division for approval to carry out the project."

This Environmental Assessment is therefore submitted to the Department of Planning for assessment as a Part 3A Major Project under the *Environmental Planning and Assessment Act 1979* (EP&A Act).

6.1.2_Director-General's Requirements

The Director-General's Requirements (DGRs) were received on 30 July 2009 (attached at Appendix K). The DGRs list 11 key issues that must be addressed in the Environmental Assessment. These issues are listed in the Table 6.1, and commentary provided on how they have been addressed by this Environmental Assessment.

Table 6.1 – Director-General's Requirements

Requirement	Comment
Relevant Environmental Planning Instruments, policies and guidelines to be addressed Planning provisions applying to the site, including permissibility and the provisions of all plans and policies including: _Objects of the EP&A Act; _State Environmental Planning Policy (Major Development) 2005; _State Environmental Planning Policy (Infrastructure) 2007; _State Environmental Planning Policy 55 – Remediation of Land; _Sydney Metropolitan Strategy and the Draft North West Subregional Strategy; _Penrith Local Environmental Plan 1998; and _Nature and extent of any non-compliance with relevant environmental planning instruments, plans and guidelines and justification for any non-compliance.	An assessment of the proposed development has been undertaken against the relevant environmental planning instruments, policies and guidelines and is documented in section 6 of this report.
Built Form / Urban Design _Height, bulk and scale of the proposed development within the context of the locality. _Design quality with specific consideration of the façade, massing, setbacks, building articulation, use of appropriate colours, materials/finishes, landscaping, safety by design and public domain. _Relationship of the development to the whole Penrith Health Campus site.	An assessment of the potential impacts of the proposed development in relation to built form and urban design has been undertaken, and is provided in section 9.5 of this report.

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_Details of proposed open space and landscaped areas.	
Transport and Accessibility Impacts (Construction and Operational) _A Traffic Study in accordance with the Roads and Traffic Authority's *Guide to Traffic Generating Development*, with particular regard to: _Existing road capacity, traffic conditions, expected impacts and any upgrade requirements; _Internal road layout and access arrangements; _Car parking arrangement for staff and visitors, whilst also demonstrating the minimalist approach to car parking based on the accessibility of the site to public transport; _Secure bicycle storage and amenities for cyclists; _Delivery, servicing and loading arrangements; and _Pedestrian and bicycle linkages within the site and wider hospital area. _Identify existing public transport and other transport services offered by the hospital, and adequacy to meet future demand. _Identify Travel Demand Management measures that will optimise the opportunity provided by the hospitals proximity to public transport.	An assessment of the potential transport, traffic and accessibility impacts of the proposed development has been undertaken, and is provided in section 9.14 of this report. A Traffic Study has been prepared and is attached at Appendix Y.
Ecologically Sustainable Development (ESD) Demonstrate how the development will incorporate ESD principles in the design, construction and ongoing operation phases of the development, including the use of water sensitive urban design measures and energy efficiency.	The proposed development incorporates ESD principles in the design, construction and operational stages. Details are provided in section 3.7 of this report.
Heritage Detail any potential Aboriginal and European archaeological heritage on the site, and how it would be considered, preserved and recognised appropriately.	An assessment of the potential impacts of the proposed development on Aboriginal and European archaeological heritage has been undertaken, and is provided in section 9.16 of this report.
Contributions The EA shall address Council's Section 94 Contribution Plan and/or details of any Voluntary Planning Agreement.	An assessment of the proposed development has been undertaken against Penrith City Council's Section 94 Plans, and is provided in section 6.2.6 of this report. The consideration of entering into planning agreements is considered in section 8 of this report.
Utilities Address the existing capacity and requirements of the development for the provision of utilities including staging of any infrastructure works.	An assessment of the existing utilities capacity and the requirements of the proposed development has been undertaken, and is provided in section 9.12 of this report.
Drainage, Stormwater and Groundwater Management Stormwater design to address any drainage, stormwater and groundwater management issues likely to result from development on the site including on site stormwater detention, water sensitive urban design and drainage infrastructure.	An assessment of the potential impacts of the proposed development in relation to drainage, stormwater and groundwater management has been undertaken, and is provided in section 9.13 of this report.
Construction Impacts Identify measures to ameliorate potential construction impacts including vehicular / pedestrian access, noise and vibration, air quality, water quality and waste management.	An assessment of the potential construction impacts associated with the proposed development has been undertaken, and is provided in section 9.26 of this report.

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Staging Provide details regarding the staging of the proposed development.	Details of the proposed staging of the development are provided in section 0 of this report.
Consultation Undertake and appropriate and justified level of consultation with the relevant Local or State government authorities, service providers, existing staff at Penrith Health Campus, community groups and other stakeholders. In addition the EA is to include written evidence of consultation with the following agencies, other authorities and groups: _Penrith City Council; _NSW Roads and Traffic Authority; _Department of Transport and Infrastructure; and _All relevant utility providers.	Consultation has been undertaken throughout the design of the proposed development with Hospital staff, community groups, Penrith City Council, State government authorities, and services and utility providers. The design has been amended to account for the responses received. Details and outcomes of the consultation that has been undertaken is provided in section 5 of this report.

6.1.3_Environmental Planning and Assessment Regulations 2000

Part 1A of the *Environmental Planning and Assessment Regulations 2000* (EP&A Regulations) outlines matters related to the assessment of Major Project applications, including matters which the Minister should consider, time limits for dealing with applications, and public information about project documentation.

The Regulations do not include any matters that must be addressed by the proponent of the proposed development.

6.2_Environmental Planning Instruments

Under clause 75R(3) of the EP&A Act, environmental planning instruments (other than State environmental planning policies) do not apply to or in respect of an approved Major Project.

However under clause 75J(3), *"in deciding whether or not to approve the carrying out of a project, the Minister may (but is not required to) take into account the provisions of any environmental planning instrument that would not (because of section 75R) apply to the project if approved".*

Therefore an assessment against all relevant environmental planning instruments has been included in this report, including:

_State Environmental Planning Policy (Major Development) 2005;
_State Environmental Planning Policy (Infrastructure) 2007;
_State Environmental Planning Policy 55 – Remediation of Land;
_Penrith LEP 1998 (Urban Land);
_Penrith Development Control Plan 2006; and
_The Penrith City Council Section 94 Contributions Plans.

The proposal's compliance with these instruments is discussed in the below sections.

6.2.1_State Environmental Planning Policy (Major Development) 2005

The *State Environmental Planning Policy (Major Development) 2005* (SEPP (Major Development)) identifies development to which the development assessment and approval process under Part 3A of the EP&A Act applies.

Assessment is made according to Clause 6 of the SEPP (Major Development), which states that:

"(1) Development that, in the opinion of the Minister, is development of a kind:
(a) that is described in Schedule 1 or 2, or
(b) that is described in Schedule 3 as a project to which Part 3A of the Act applies, or
(c) to the extent that it is not otherwise described in Schedules 1–3, that is described in Schedule 5, is declared to be a project to which Part 3A of the Act applies."

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Schedule 1 of the SEPP (Major Development) includes Group 7 'Health and public service facilities', Part 18 'Hospitals' which states the following:

"(1) Development that has a capital investment value of more than $15 million for the purpose of providing professional health care services to people admitted as in-patients (whether or not out-patients are also cared for or treated there), including ancillary facilities for:

(a) day surgery, day procedures or health consulting rooms, or
(b) accommodation for nurses or other health care workers, or
(c) accommodation for persons receiving health care or for their visitors, or
(d) shops or refreshment rooms, or
(e) transport of patients, including helipads and ambulance facilities, or
(f) educational purposes, or
(g) 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, or
(h) any other health-related use.

(2) For the purposes of this clause, professional health care services include preventative or convalescent care, diagnosis, medical or surgical treatment, psychiatric care or care for people with disabilities, care or counselling services provided by health care professionals."

The proposed redevelopment of the Penrith Nepean Hospital is consistent with the above criteria, having a capital investment value of approximately $64.4 million, and also in regard to the services it will provide. A Quantity Surveyor's Certificate of Cost verifying the capital investment value of the proposed development is attached at Appendix L.

Advice was received on 27 November 2008 that the Minister of Planning had formed the opinion that, pursuant to Clause 6 of the *State Environmental Planning Policy (Major Projects) 2005* (please note that this is now the *State Environmental Planning Policy (Major Development) 2005*), the proposed development meets the criteria under Schedule 1, Group 7, Clause 18 of the Major Projects SEPP (refer to letter attached at Appendix J). A subsequent change in plan to prepare detailed plans, rather than a concept plan as originally intended, has lead to a second declaration from the Department of Planning advising that the development remains as a Major Project to which Part 3A of the Act applies (refer to letter attached at Appendix J).

6.2.2_State Environmental Planning Policy (Infrastructure) 2007

The proposed development is considered a 'Health services facility' under the *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP). Under Clause 57 of the Infrastructure SEPP, certain development for the purposes of a 'Health services facility' can be carried out without consent on land in a prescribed zone, however this is not applicable to the works that form the proposed development in this application.

The Infrastructure SEPP also includes criteria for assessing developments that:
_have frontage to a classified road (clause 101)
_are for the purpose of a Hospital and are adjacent to the road corridor for a freeway, tollway or transitway (clause 102)
_are considered "traffic generating" development, with the definition including Hospital developments that result in the alteration / addition of 100 or more beds (clause 104 and Schedule 3)

According to clause 75R(2) of the EP&A Act, State environmental planning policies only apply to the declaration of a project as a project to which Part 3A applies, and to the *"carrying out of a project"*. As the abovementioned clauses 101, 102 and 104 of the Infrastructure SEPP relate to assessment of development applications, they are not applicable to the proposed development, as they do not relate to the declaration of the project as a Major Project or to the *"carrying out of a project"*.

Despite the Infrastructure SEPP not being applicable to the proposed development, the potential impacts of the development on transport, traffic and accessibility has been addressed in this Environmental Assessment in accordance with the Director-General Requirements (as outlined in section 6.1.2 of this report) which require, among other matters, a Traffic Study to be undertaken in accordance with the Roads and Traffic Authority's *Guide to Traffic Generating Development*. Consultation has also been undertaken with the Roads and Traffic Authority, and is outlined in section 5 of this report.

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6.2.3_State Environmental Planning Policy No 55 – Remediation of Land

The object of the *State Environmental Planning Policy No 55 – Remediation of Land* (SEPP 55) is "*to provide for a Statewide planning approach to the remediation of contaminated land"* (clause 2(1)).

Further objects of SEPP 55 are identified in clause 2(2), reproduced below.

> *"(2) In particular, this Policy aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment:*
> *(a) by specifying when consent is required, and when it is not required, for a remediation work, and*
> *(b) by specifying certain considerations that are relevant in rezoning land and in determining development applications in general and development applications for consent to carry out a remediation work in particular, and*
> *(c) by requiring that a remediation work meet certain standards and notification requirements."*

Clause 7 of SEPP 55 outlines the consideration that must be given in regards to contamination and remediation when a consent authority is determining a development application.

> *"(1) A consent authority must not consent to the carrying out of any development on land unless:*
> *(a) it has considered whether the land is contaminated, and*
> *(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*
> *(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.*
> *(2) Before determining an application for consent to carry out development that would involve a change of use on any of the land specified in subclause (4), the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned carried out in accordance with the contaminated land planning guidelines.*
> *(3) The applicant for development consent must carry out the investigation required by subclause (2) and must provide a report on it to the consent authority. The consent authority may require the applicant to carry out, and provide a report on, a detailed investigation (as referred to in the contaminated land planning guidelines) if it considers that the findings of the preliminary investigation warrant such an investigation.*
> *(4) The land concerned is:*
> *(a) land that is within an investigation area,*
> *(b) land on which development for a purpose referred to in Table 1 to the contaminated land planning guidelines is being, or is known to have been, carried out,*
> *(c) to the extent to which it is proposed to carry out development on it for residential, educational, recreational or child care purposes, or for the purposes of a hospital—land:*
> *(i) in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1 to the contaminated land planning guidelines has been carried out, and*
> *(ii) on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge)."*

In accordance with this clause, Heggies Pty Ltd has undertaken a Limited Stage 1 Preliminary Contamination Assessment of the site. Findings of the investigation are provided in section 9.19 of this report.

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6.2.4_Penrith Local Environment Plan 1998 (Urban Land)

The relevant local planning instrument for the site is the *Penrith Local Environmental Plan 1998* (Urban Land) (Penrith LEP). The subject site is zoned 5(a) Special Uses (Hospital) under the Penrith LEP, as shown in Figure 6.1 below.

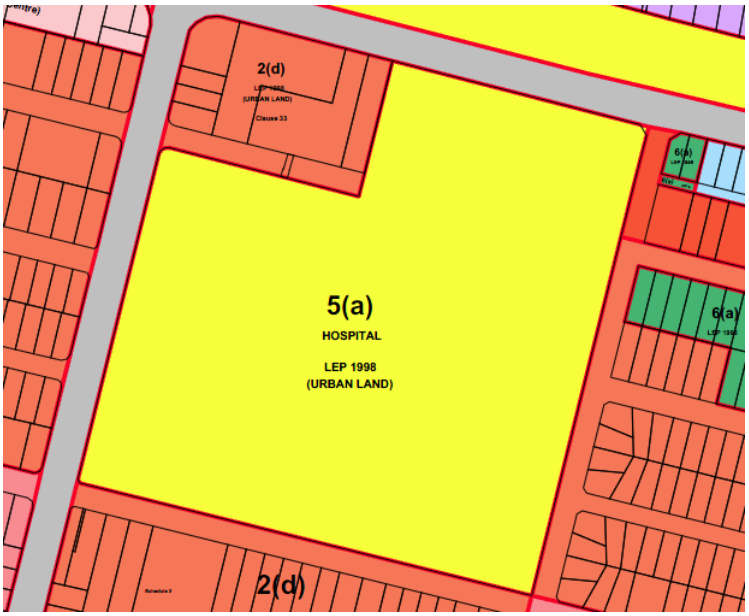

Figure 6.1_Penrith LEP 1998 (Urban Land) zoning

The objectives of the Penrith LEP are as follows:

"(a) Vision for the City
to promote development which is consistent with the council's vision for Penrith City, namely a harmony of urban and rural qualities with a strong commitment to environmental protection and enhancement;
(b) Development control
to replace existing environmental planning instruments by a single comprehensive plan to ensure a consistent approach to control of residential development in urban zones, and a high level of certainty for both the local community and the development industry;
(c) Housing need
(i) to encourage and guide private sector development in order to satisfy a wide range of recognised local demands for housing;
(ii) to facilitate development of special needs housing in areas where appropriate levels of services are available, or can be provided readily; and
(iii) to provide for visitor accommodation;
(d) Density and urban consolidation
(i) to enable the development of land for residential purposes;
(ii) to make a reasonable contribution to State Government objectives for urban consolidation within the metropolitan region;
(iii) to locate higher densities of development either in proximity to established networks of urban services, or in areas which may be serviced readily, particularly by public transport, shopping centres, educational facilities, community and child care facilities, water, sewerage and drainage; and
(iv) to determine residential densities which are compatible with the environmental character of established urban areas;
(e) Residential character
(i) to enhance the essential character and identity of established residential areas;
(ii) to contribute to the appropriate shape and configuration of urban development in new release areas;
(iii) to protect items of environmental value, particularly mature vegetation and significant watercourses, significant buildings and gardens, or scenic landscapes and views; and
(iv) to provide for a variety and mix of housing forms;

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(f) Residential amenity
(i) to promote development which safeguards the residential amenity of the area;
(ii) to provide for high levels of residential amenity, particularly acoustic and visual privacy, accessibility to services, climatic comfort of the indoor environment, and safety and security; and
(iii) to ensure that development makes a reasonable contribution to provision of the relevant community facilities;
(g) Employment
to permit small-scale business activities within residential areas which do not significantly adversely affect residential amenity;
(h) Environmental performance
(i) to promote development which safeguards the environment;
(ii) to improve the effective performance of residential development with regard to reduced demand for mechanical heating or cooling of dwellings through effective solar access and landscaping, reduced discharge of contaminated
stormwater run-off to the Nepean-Hawkesbury River through suitable design and management, and protection of vegetation endemic to Penrith City together with habitat for native species of fauna; and
(iii) to ensure appropriate consideration of environmental threats to life and property, particularly flooding or bushfire events;
(i) Community Services and Infrastructure
to allow for the provision of community services and infrastructure."

The proposed development is consistent with the vision for Penrith City of creating a *harmony of urban and rural qualities with a strong commitment to environmental protection and enhancement* as it maintains the development within the existing confines of the Hospital campus and has minimal impacts upon the surrounding residential environment, as outlined further in section 9 of this report, thus safeguarding residential amenity. Potential impacts of the proposed development have been identified and mitigation measures proposed in order to safeguard the environment, as outlined in section 9 of this report.

The relevant provisions of the LEP have been assessed against the proposed development, and are outlined below.

Clause	Description	Comment
Zoning (Part 3, Clause 9)	The objective for the Special Uses 5a (Hospital) zone is: *To facilitate certain development on land which is, or is proposed to be, used by public authorities, institutions, organisations or the council to provide and protect services, utilities or transport facilities and associated activities.*	The proposed development satisfies these objectives as it reinforces and upgrades the health services provided at the site by the NSW Department of Health as a public authority.
Permissibility (Part 3, Clause 9)	According to this clause, development permitted with consent within the Special Uses 5(a) (Hospital) zone, is a Hospital, and any purpose ancillary to that purpose including: _Drains; _Landscaping; _Public parks and gardens; _Roads; _Utility installations; and _Utility undertakings. All other land uses are prohibited in this zone.	As the proposed development is on a Hospital site and is for the provision of professional health services, the development is permissible with consent under the Penrith LEP.
Community services and infrastructure	The council must not grant consent to development unless the council has	An assessment of the existing utilities and services has been carried out which

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(Part 5, Clause 17)	considered whether adequate support services and utilities are or will be available to the site of the proposed development within a reasonable time.	demonstrates that sufficient capacity exists to service the new development. Detail is provided in section 9.12 of this report.
Tree preservation (Part 5, Clause 28)	Clause 28 (1) states that: *A person must not ringbark, cut down, poison, dig up, top, lop, remove, injure, or wilfully destroy any tree or vegetation by any action (including the addition of soil or drainage works around the base of a tree), except with the consent of the council*	The construction of the proposed development will be undertaken in the vicinity of existing trees and vegetation on the site. The potential impacts upon flora have therefore been identified and mitigation measures proposed, as outlined in section 9.17 of this report.

6.2.5_Penrith Development Control Plan 2006

The *Penrith Development Control Plan 2006* (Penrith DCP) was introduced in 2006 with the purpose of:

_Consolidating Council's existing, adopted development control plans and its key codes and policies that apply to development in the City of Penrith;
_Giving detailed guidance to people wishing to carry out development within the City of Penrith;
_Ensuring relevant, high quality information is submitted with development applications; and
_Ensuring the quality of development in the City of Penrith is of a high standard.

The compliance table below sets out the element objectives for development control in Penrith City Council area. A response to these key element objectives are provided below.

Clause	Description	Comment
Crime Prevention through Environmental Design (Section 2.2)	The aims of this clause are to: _*Enhance and improve community safety within the City of Penrith.* _*Create a physical environment that encourages a feeling of safety* _*Address community concerns with regard to issues of community safety and crime prevention.* _*Reduce the level of crime within the City of Penrith.* _*Prevent the opportunity for criminal activity.* _*Ensure that new developments promote crime prevention through environmental design.*	In order to ensure that the proposed development complies with these objectives, a Crime Prevention Through Environmental Design (CPTED) assessment has been undertaken by HASSELL and is attached at Appendix S. A summary of the key findings and recommended mitigation measures is provided in section 9.9 of this report.
Erosion and Sediment Control (Section 2.4)	The aims of this section of the Penrith DCP are to: _*Reduce the amount of sediment and contaminated water which leaves land within the Penrith City area;* _*Minimise the disturbance of sites during land use development activities and preserve, where possible, existing vegetation on development sites from damage or removal; and* _*Encourage prompt rehabilitation of*	An assessment of potential erosion and sediment impacts has been undertaken and is provided in section 9.23 of this report, including proposed measures to control erosion and sediment. An erosion and sediment control plan has been provided in Appendix T.

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	development sites by the implementation of revegetation strategies. The DCP requires that all subdivision, development and building applications where the project involves site disturbance, excavation or filling, must be accompanied by an erosion and sediment control plan.	
Landscape (Section 2.6)	According to this clause, the proposed development falls within *Category 3 - All developments that are above $2 million in value.* This clause requires the submission of the following documents: _Development Application Report; _Site Analysis Details; _Arboricultural Survey Report; _Landscape Concept Plan; and _Landscape Detail Plan.	It is noted that the need for the particular documents referenced in this clause is not applicable in this instance, in accordance with clause 75R(3) of the EP&A Act, however landscaping is to be undertaken and a Landscape Plan is attached at Appendix H.
Waste Planning (Section 2.9)	This clause requires that a Waste Management Plan is lodged with a development application for the demolition, construction and / or change of use of residential, commercial and industrial developments. The Waste Management Plan is required to cover: _*The types and volumes of wastes and recyclables likely to be generated as a result of the development;* _*How waste and recyclables will be stored and treated on site;* _*How waste and recyclables are to be disposed of; and* _*How ongoing waste management will operate once the development is complete.*	It is noted that the need for the Waste Management Plan referenced in this clause is not applicable in this instance, in accordance with clause 75R(3) of the EP&A Act, however the impacts have been taken into account in this Environmental Assessment. The waste management provisions on site have been examined with regard to these requirements. The Sydney West Area Health Service (SWAHS) has existing policy that covers all SWAHS Hospitals, including the Penrith Nepean Hospital, and this will be extended to the new buildings proposed under this development. More detail about the proposed waste management for the development is provided in section 9.11 of this report.
Car Parking (Section 2.11)	The parking requirements in the DCP for Hospitals are: *1 per 3 beds plus 1 per 3 employees*	The Traffic Report (attached at Appendix Y) identifies that the proposed development complies with the parking requirements in the DCP.

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6.2.6_Penrith City Council Section 94 Contributions Plans

Penrith City Council has a number of Development Contribution Plans that have been prepared under Section 94 of the EP&A Act.

Section 94 of the EP&A Act empowers Councils to require developer contributions towards the cost of providing required public amenities and services. The Act states that where a development will, or is likely to require the provision of, or increase the demand for public amenities and public services within an area, Councils may levy contributions from the developers for the provision of those amenities and/or services.

Under section 94B(1) a consent authority may only impose a contribution condition under section 94 or 94A if it is "*of a kind allowed by, and is determined in accordance with, a contributions plan"*. However under clause 94B(2) of the Act, if the consent authority is not a Council, the consent authority can impose conditions *"even though it is not authorised (or of a kind allowed) by, or is not determined in accordance with, a contributions plan"*. The consent authority must, before imposing the condition, have regard to any contribution plans that apply to the area (clause 94B(2)(b)).

An assessment of the relevant contribution plans is outlined in the table below. It is noted that none of the contribution plans listed below allow a contribution to be required for the proposed development, principally because the Plans target residential developments. Residential development is prohibited within Zone 5(a) Hospital under the *Penrith Local Environmental Plan 1998* (Urban Land).

These plans may however be considered by the consent authority, as allowed by section 94B(2) of the EP&A Act.

Development Contribution Plan	Description	Comment
Cultural Facilities	The purpose of the Plan is to enable the levying of developer contributions for the provision of Cultural Facilities, as a consequence of increased demand by additional population generated by new residential development including, but not limited to housing for older people, multi-unit housing (including integrated housing), shop top housing, dual occupancy and subdivision across the whole of the City. This Plan applies anywhere residential development is permitted within the City of Penrith.	Not applicable, as the Plan only applies to areas where residential development is permitted.
Footpath Construction in Established Residential Areas	The purpose of this Plan is to enable the levying of developer contributions for the provision of footpaths in the areas affected by this plan as a consequence of increased demand by an additional population generated by new development for residential purposes including, but not limited to housing for older people, multi-unit housing (including integrated housing), shop top housing, dual occupancy and subdivision. This Plan applies anywhere residential development is permitted within the established areas of the city.	Not applicable, as the Plan only applies to areas where residential development is permitted.
Kingswood Neighbourhood Centre	The purpose of this Plan is to enable the levying of developer contributions for the Kingswood Neighbourhood Centre required as a consequence of increased demand by an additional population generated by new development for residential purposes including, but not limited to housing for older people, multi-unit housing (including integrated housing), shop top housing, dual occupancy and subdivision within a defined benefiting catchment area.	Not applicable. The Hospital is within the Kingswood Neighbourhood Centre area, but the Plan only applies to areas where residential development is permitted.

Statutory and Policy Framework

	This Plan applies anywhere residential development is permitted within the area subject to this plan.	
Library Facilities (Amendment No.1)	The purpose of this Plan is to enable the levying of developer contributions for the Kingswood Neighbourhood Centre required as a consequence as a consequence of increased demand by an additional population generated by new development for residential purposes including, but not limited to housing for older people, multi-unit housing (including integrated housing), shop top housing, dual occupancy and subdivision across the whole of the city. This Plan applies anywhere residential development is permitted within the City of Penrith, with the exception of the Cranebrook release area, Erskine Park release area, Glenmore Park release area, and the established Stage 1 precinct of the Claremont Meadows release area.	Not applicable, as the Plan only applies to areas where residential development is permitted.
Penrith City District Open Space Facilities	The Plan allows the Council to impose a development contribution to contribute towards the provision of district open space facilities. This Plan applies anywhere residential development is permitted within the City of Penrith, with the exclusion of the Penrith Lakes development site.	Not applicable, as the Plan only applies to areas where residential development is permitted.
Penrith City Local Open Space	The Plan allows the Council to impose a development contribution to contribute towards the provision of local open space facilities. This Plan applies anywhere residential development is permitted within the City of Penrith, excluding industrial areas and the eight identified release areas.	Not applicable, as the Plan only applies to areas where residential development is permitted.

The proposed development will facilitate delivery of important health services to both the local community, and the wider South West Sydney region. The purpose of Contribution Plans is to seek contributions to cover the demand for additional services and facilities generated as a result of residential developments and the related increase in population. The Hospital development will assist in the provision of services, rather than creating extra demand.

Furthermore, it has been demonstrated that the proposed development can be undertaken using existing hard infrastructure and services. Refer to section 9.12 of this report.

It is considered that the proposed development provides public amenities and service and therefore meets the criteria of "provision of infrastructure" under Section 94ED(1)(a) which includes reference to:

> *"the provision, extension and augmentation of (or the recoupment of the cost of providing, extending or augmenting)* ***public amenities or public services****, affordable housing and transport or other infrastructure relating to land".*

Therefore, section 94EE (1) of the EP&A Act applies which states that the Minister is to determine development contributions for the provision of infrastructure. In determining the level and nature of development contributions,

> *"the Minister is, as far as reasonably practicable, to make the contribution reasonable having regard to the cost of the provision of infrastructure in relation to the development or class of development"* (section 94EE(2)(a)).

Due to the nature of the public amenities and services provided by the development of the Hospital, it is considered that no development contribution should be imposed for the development.

Statutory and Policy Framework

6.3_State Strategic Planning Documents

The following State strategic planning documents affect the subject site:

_NSW State Plan;
_Sydney Metropolitan Strategy - City of Cities: A plan for Sydney's Future 2005; and
_Draft North West Subregional Strategy.

The relevance of these documents to the proposed development is discussed below.

6.3.1_NSW State Plan

The NSW State Plan is a 10 year plan that sets out the goals that the community wants the NSW Government to work towards. The Plan identifies 14 goals for Government action with associated priorities and targets, categorised into the following areas:
_Rights, Respect and Responsibility;
_Delivering Better Services;
_Fairness and Opportunity;
_Growing Prosperity Across NSW; and
_Environment For Living.

Rights, Respect and Responsibility

Goals are:
_Keeping People Safe
_Building Harmonious Communities

The proposed development contributes to these goals by considering crime prevention planning in the design of the new facilities. A Crime Prevention Through Environmental Design Assessment has been undertaken and outcomes are highlighted in section 9.9 of this report.

Delivering Better Services

Goals are:
_Healthy Communities
_Students Fulfil Their Potential
_A High Quality Transport System
_Customer Friendly Services

The proposed development contributes to the goals by promoting the timely access to quality healthcare and hence promoting improved health outcomes and quality of life for the community. The expansion of clinical and surgical services at Penrith Nepean Hospital is a key priority for improving health service delivery in the Sydney West region.

Goals for transport systems aim to address the capacity of transport systems to respond to increased demand, encourage greater public transport usage and cycling, and improve the efficiency of the road network. The proposed development is contained within an existing developed site, and will utilise existing transport services. The Traffic Report (attached at Appendix Y) identifies a range of actions to encourage the use of alternative transport modes.

Fairness and Opportunity

Goals are:
_Strengthening Aboriginal Communities
_Opportunity and Support for the Most Vulnerable
_Early Intervention to Tackle Disadvantage

The Penrith Nepean Hospital contributes to these goals by providing important community services to all groups, including those which are most vulnerable or disadvantaged. Services include disability, drug dependency, and mental health services.

Statutory and Policy Framework

Growing Prosperity Across NSW

Goals are:
_NSW: Open for Business
_Stronger Rural and Regional Economies

The Hospital is an important employment and education asset to the region and the proposed development will help to boost both short-term and long-term employment opportunities in the region, including all levels of skill-based jobs.

Environment For Living

Goals are:
_Securing Our Supply of Water and Energy
_Practical Environmental Solutions
_Improved Urban Environments

The proposed development is within an existing Hospital campus and therefore concentrates services and minimises impacts upon other land use areas. This Environmental Assessment, and the incorporated mitigation measures, ensure that the capacity of the water, air and soil resources that we need to remain healthy are maintained. The proposed development improves the built form and functionality of the Hospital, and incorporates public space and landscaping to improve the Hospital environment for patients, visitors and staff.

6.3.2_Sydney Metropolitan Strategy - City of Cities: A Plan for Sydney's Future 2005

The *Sydney Metropolitan Strategy - City of Cities: A Plan for Sydney's Future 2005* (Metropolitan Strategy) is the key planning document guiding the long term growth of Sydney. The Metropolitan Strategy seeks to concentrate growth in identified centres, to ensure equitable access to Sydney's infrastructure and services.

The Metropolitan Strategy aims to meet the challenges associated with:

_Population Growth over the next 25 years - residential accommodation and employment opportunities are needed for an additional 1.1 million people who are projected to be living in the Greater Metropolitan Region by 2025;
_Dwindling land supply and the need to contain growth to protect conservation areas and agricultural land;
_Improvements to infrastructure, particularly public transport; and
_More effective use of natural resources, particularly energy and water.

There are 5 aims set out in the Metropolitan Strategy to achieve these challenges. These are:

_Enhance Liveability: Enhance Sydney's liveability, by ensuring a diverse choice of housing for an ageing and changing population, close to services, while protecting the character of our suburbs and communities;
_Strengthen Economic Competitiveness: Strengthen Sydney's long–term economic prosperity by increasing the city and region's competitiveness in globalised markets, and sharing the benefits across the city;
_Ensure Fairness: Provide fair access to jobs, services and lifestyle opportunities by aligning services close to where people live, and by providing access to high quality transport;
_Protect The Environment: Protect Sydney's unique environmental setting and reduce the city's use of natural resources and production of waste; and
_Improve Governance: Improve the quality of planning and decision making, and give the community confidence in our institutions.

The Metropolitan Strategy determines where key centres are to be located within the Sydney Metropolitan area to provide opportunities for growth and employment generation, shown in Figure 6.1 below.

Statutory and Policy Framework

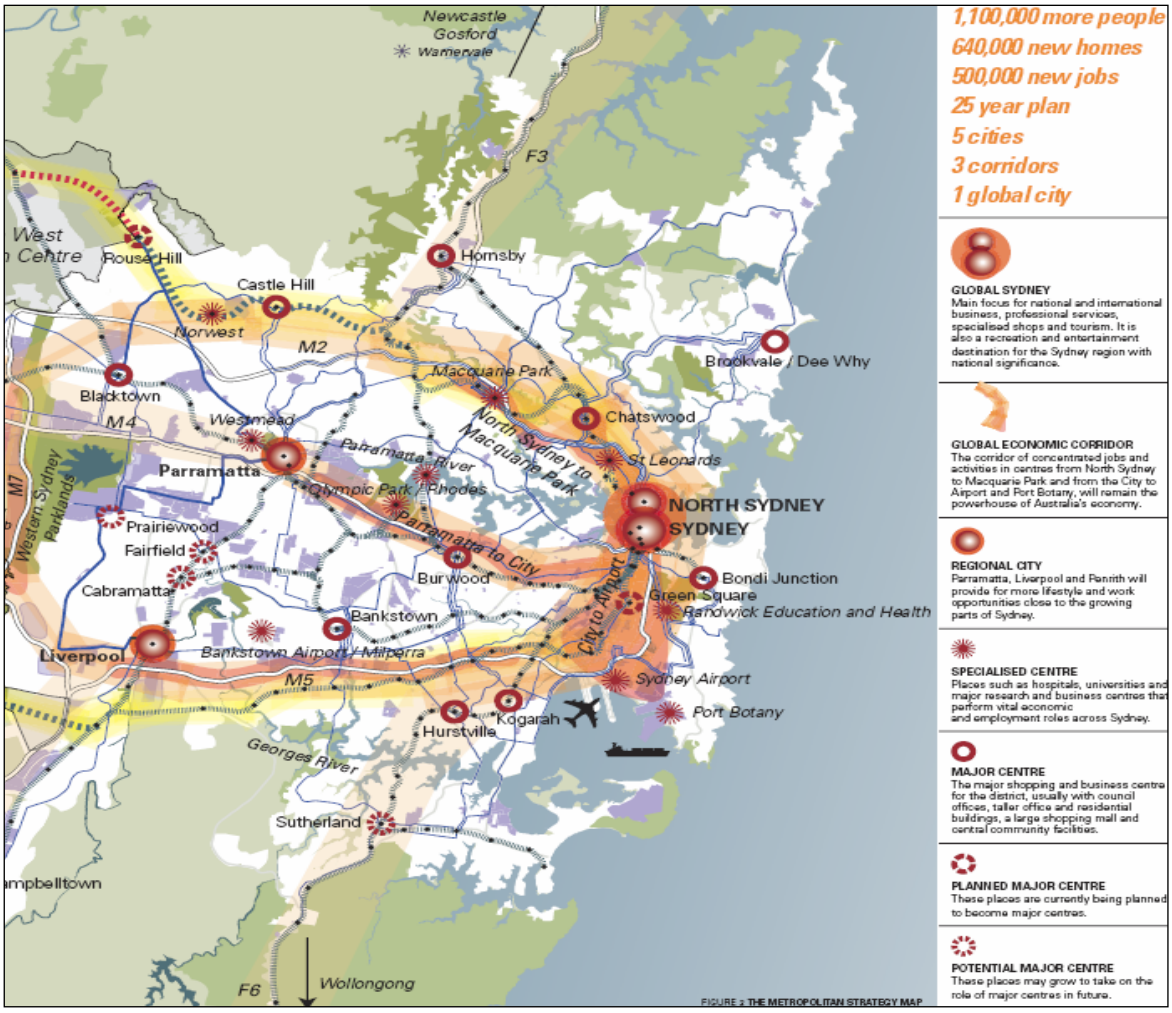


Figure 6.2_Metropolitan Strategy Cities and Centres (source: City of Cities: A plan for Sydney's Future, Department of Planning)

There are seven strategies in the Metropolitan Strategy including 'Economy and Employment', which aims to strengthen globally competitive industry networks and clusters and increase innovation and skills development. In spatial terms, the Strategy aims to:

_Protect employment lands in strategic locations;
_Encourage the redevelopment of disused industrial sites in suitable locations served by utilities and public transport and proximate to the labour force - and improve opportunities for new investment and jobs in these areas; and
_Plan and develop new greenfield sites to meet demand in new growth areas and growth that cannot be accommodated in established areas.

The strategy for economy and employment growth forecasts 500,000 new jobs will be required in Sydney by 2031. Jobs traditionally located within industrial areas, including manufacturing, textiles, clothing, machinery, transport and storage, are predicted to decline.

It is considered that the proposed development complies with the general aims of the Metropolitan Strategy as it supports the aim to strengthen economic growth by adding to the target of 10,000 jobs, while balancing social and environmental impacts. The development will help to meet the aims of the Sydney Metropolitan Strategy by strengthening the region's economic prosperity, providing jobs away from the declining industrial sector, and offering diversity and specialist services in line with the above strategies for Sydney as a whole.

The development is contained within an existing developed site, and will utilise existing transport services. The Traffic Report (attached at Appendix Y) identifies a range of alternative transport options and strategies to encourage the use of walking, cycling and public transport.

Statutory and Policy Framework

6.3.3_Draft North West Subregional Strategy

Due to the size and complexity of the metropolitan region, 10 subregions have been established under the Metropolitan Strategy, with each region required to develop a Subregional Strategy to interpret the actions and objectives of the Metropolitan Strategy at the subregional and local level. Penrith is within the North West subregion, as shown in Figure 6.3 below.

Figure 6.3_Metropolitan Strategy Subregions, showing Penrith within the North West subregion (Source: Draft North West Subregional Strategy)

Broad socio-economic planning for the North West Subregion includes:

_Accommodating 140,000 new dwellings by 2031. Over the life of the Metropolitan Strategy the majority of new dwellings will be located within close proximity to centres to ensure accessibility to jobs and services; and
_Locating future urban growth and intensification within the North West subregion to maximise potential around existing and proposed centres. In particular, growth will be planned close to infrastructure such as train stations and strategic bus corridors to ensure maximum use of such infrastructure.

Under the Strategy, Penrith will be developed as a Regional City and will attract new and improved shopping, health, education, business, recreational and cultural facilities. Significant growth is planned for Penrith Regional City including 10,000 new jobs and 10,000 additional residents within the City centre.

The Penrith Nepean Hospital is identified as a significant driver of jobs and infrastructure in the area. Specific references to the Hospital in the Strategy include the following:

_The Penrith Health Campus redevelopment project is a supported investment initiative recognised by the Draft Subregional Strategy as a State infrastructure strategy project in the following areas:
  _Nepean Hospital, Bed Capacity Expansion, Penrith
  _Nepean Hospital, North Block Refurbishment, Penrith
  _Nepean Psychiatric Emergency Care Centre, Penrith
_The Nepean Public and Private Hospitals at Penrith are identified as employment assets.
_The Nepean Hospital and the University of Western Sydney (UWS) are identified as important assets within the local government area, with Penrith Council to work with UWS and the Department of Health to investigate opportunities to strengthen connections between the UWS Penrith campus, Nepean Hospital and Penrith Regional City.

Statutory and Policy Framework

The Penrith City Council has adopted the Metropolitan Strategy centres typology in the *Penrith City – Centres Hierarchy*. This hierarchy identifies that Kingswood (including the Nepean Hospital precinct) will be established as a specialised centre by 2031. Specialised centres are considered to perform vital economic and employment roles across the subregion area.

7 ____Health Planning

The operation of the Penrith Nepean Hospital is subject to plans and policies adopted by the Sydney West Area Health Service (SWAHS). An overview of these are provided in this section.

7.1_State Health Plan – A New Direction for NSW

The *State Health Plan – A New Direction for NSW (2007)* is the overarching strategic document to guide the development of the NSW public health system towards 2010 and beyond.

The Plan reflects priorities in the Council of Australian Governments' national health reform agenda, including delivering better community based primary care; reducing the prevalence of risk factors that contribute to chronic disease; and improving health outcomes.

Seven strategic directions are identified in the Plan, as follows:

1. Make prevention everybody's business
2. Create better experiences for people using health services
3. Strengthen primary health and continuing care in the community
4. Build regional and other partnerships for health
5. Make smart choices about the costs and benefits of health services
6. Build a sustainable health workforce
7. Be ready for new risks and opportunities.

The Plan identifies the desired state of the health system in 2010, as a system that:

- _has a greater focus and investment in improving health and preventing illness while continuing to treat illness effectively, paying particular attention to reducing the health gap for communities that experience multiple disadvantage
- _is focused on quality and safety, providing patients with ready access to safe and satisfactory journeys through NSW health services and ensures patients and their carers are informed and involved in health care decisions and treated with respect
- _helps people to access the health care they need through a network of integrated primary health and community care services across the public and private health systems
- _has a greater focus on healthy ageing strategies integrating services across different levels of government and the private sector
- _engages more effectively with other government and non-government agencies, and the broader community, to provide a more integrated approach to planning, funding and delivering health services to local communities and regions
- _makes the most effective use of the finite resources available and manages costs, services and infrastructure effectively to meet the State's health care needs while maintaining financial sustainability
- _has a valued skilled workforce that is available in sufficient numbers, is well trained, organised and deployed creatively to focus on the changing needs of health consumers, carers and the wider population
- _is alert and capable of readily adapting to the changing needs of the community and is quick to anticipate and respond to new issues as they emerge.

7.2_Healthcare Services Plan 2005-2010

The *Sydney West Area Health Service (SWAHS) Healthcare Services Plan 2005-2010* outlines how services will be enhanced, developed, and delivered in the area up until 2010. The Plan is the first comprehensive planning process for the SWAHS, and covers all aspects of health service delivery, from population health programs and primary care and community health services through to acute, sub-acute and non-acute hospital services. The Plan will provide the main reference point for health service developments and enhancements across the area to 2010.

Health Planning

The service priorities identified for SWAHS are aged care, mental health, critical care, integrated primary health care services, and cardiology. The plan also identifies specific facility development strategies for the Penrith Nepean Hospital including:

- _development of new rehabilitation services;
- _development of a psychiatric emergency care centre;
- _increased capacity for critical care;
- _expansion of services for people attending outpatient care at Nepean Cancer Care Centre, including radiation oncology CT equipment;
- _additional cardiac catheterisation laboratories;
- _expanded renal dialysis services including inpatient and satellite dialysis services;
- _enhancements to surgical services to reduce elective surgery waiting lists, waiting times for surgery, and specialisation of facilities for planned surgery; and
- _expanded respiratory medicine capacity.

8 ____Planning Agreements

According to section 93F(1) of the EP&A Act, a planning agreement is a voluntary agreement between a planning authority and a developer under which the developer is **required** to *"dedicate land free of cost, pay a monetary contribution, or provide any other material public benefit, or any combination of them, to be used for or applied towards a public purpose"*.

Section 93F(2) defines a "public purpose" to include any of the following:

(a) the provision of (or the recoupment of the cost of providing) public amenities or public services,
(b) the provision of (or the recoupment of the cost of providing) affordable housing,
(c) the provision of (or the recoupment of the cost of providing) transport or other infrastructure relating to land,
(d) the funding of recurrent expenditure relating to the provision of public amenities or public services, affordable housing or transport or other infrastructure,
(e) the monitoring of the planning impacts of development,
(f) the conservation or enhancement of the natural environment.

As discussed in section 6.2.6 of this report, it is not considered that a development contribution is required for the development. The proposed development is providing public amenities and services, which provide important health services to both the local community, and the wider South West Sydney region. The development is thus assisting in the provision of services, rather than creating extra demand. Furthermore, it has been demonstrated that the proposed development can be undertaken using existing infrastructure and services (refer to section 9.12 of this report).

9 ____Environmental Assessment

An Environmental Assessment of the proposed development has been undertaken in accordance with the *Environmental Planning and Assessment Act 1979*, and is outlined in this section.

9.1_Suitability of the Site

The suitability of the site to support expanded Hospital services is determined having consideration to the current function of the site, the current land use, and the existing built form character.

The existing Hospital was opened in 1956 and since then several upgrades, redevelopments and additions have been undertaken at the Hospital to accommodate a growing catchment population, new technologies and health service requirements, and increasing demand on the Hospital.

The Penrith Nepean Hospital is appropriately utilised for medical purposes, and would appropriately support the redevelopment which provides further medical services. The SWAHS and the NSW Department of Health, through the *Healthcare Services Plan 2005-2010* (see section 7.2 of this report), supports the establishment of a new East Block, refurbishment of the ICU and expansion of the in-centre Renal Dialysis Service at the Penrith Nepean Hospital as part of its strategy to enhance access to medical services for the SWAHS residents.

The East Block building will be one of the few that is orthogonally organised on the site. It will set the standard for future built arrangements and will be the catalyst for a more efficient and flexible utilisation of the site in general. A diverse built language has developed over time, which includes a predominance of lower and medium scale buildings that are compact in form, of brick / masonry construction, and typically have flat roofs. The specific design of the two proposed new extensions (ICU and East Block) is informed through a discourse with the existing built form, functioning and materiality of the current Hospital.

9.2_The Public Interest

The proposed development of the Hospital is in the public interest as it will improve the quality and safety of patient care and the patient's experience of the health system. It will reduce the number of residents of the Penrith Nepean catchment population who need to travel longer distances to access health services, which often has a significant impact on the emotional and financial wellbeing of a person and their family or carer.

The redevelopment will expand health services and will deliver new and improved models of care for the short term management of medical patients. This will reduce the average length of hospital stay for a number of patients, and will enable them to resume their daily living activities faster.

9.3_Economic Impacts

The proposed development is expected to provide economic benefits to the Penrith LGA in the following ways:

_Increasing potential commercial opportunities on or adjacent to the Hospital;
_Enhancing the Hospital's capacity to recruit and retain health professionals through new facilities offering better working environments;
_Provision of employment opportunities in the short term as part of construction works;
_Increase in long term local and specialised employment opportunities in Greater Western Sydney, particularly in the health and health education sectors. This will also enhance the health/education cluster formed by the Penrith Nepean Hospital, the Kingswood TAFE and the University of Western Sydney Penrith Campus; and
_Enhancing the ability of the Penrith region to attract new residents, especially health professionals. Hospitals are identified in the Metropolitan Strategy as a significant factor in attracting people to a region, in addition to which, Kingswood is identified as being a specialised centre by 2031, performing a vital economic and employment role across the subregion.

9.4_Social Impacts

Social benefits will be derived from the proposed development through the improved health outcomes for the region, enabled through the expansion of Hospital services. Health services will address the needs of the growing and ageing population, specifically focusing on services currently in high demand. This will benefit the regional community including residents of the Penrith, Blue Mountains, Hawkesbury, Lithgow and South West Blacktown Local Government Areas.

Environmental Assessment

Benefits will also be gained from the increased education and employment opportunities afforded by the Hospital, as outlined in section 9.3 above.

9.5_Built Form and Urban Design

Figure 9.1_Proposed East Block, 3D Render

A diverse built language has developed on the Hospital campus over time, which consists predominantly of low and medium scale buildings that are compact in form, of brick / masonry construction, and typically have flat roofs. The specific design of the two proposed new extensions (ICU and East Block) considers the existing built form, functioning and materiality of the current Hospital.

The East Block building (shown in Figure 3.4) will be one of the few that is orthogonally organised on the site. It will set the standard for future built arrangements and will be the catalyst for a more efficient and flexible utilisation of the site in general.

The existing series of internal pedestrian spines within the Hospital campus, which connect the primary functional parts, provides a framework for the ongoing development and possible future extension of the Hospital.

Intensive Care Unit

The refurbishment and expansion of the Intensive Care Unit (ICU) includes expanding the footprint of the existing ICU facility within the North Block. Level One will accommodate existing facilities including the loading dock, kiosk, and domestic services, and Levels Two and Three will be modified to provide the Intensive Care wards at Level Two, and an associated Level Three area that incorporates plant and ancillary functions for the ICU.

The project includes a new link connecting the East and West Blocks. This connection will require a bridge to be connected across part of the lower courtyard.

The design continues a theme of parapeted masonry walls that exist in the East and West Block. The height and bulk will be low in scale. The upper level (Level Three) has been set back from the southern side so as to allow low angle winter sun into the café area and to diminish the perceived height of the building from within the courtyard space.

An important consideration has been to maximise natural light into the ICU itself. This has required a cut out of the roof to allow daylight into otherwise internal ward areas.

An external terrace has been included on the south portion over the loading dock area. It is proposed that this area is to be used by patients when appropriate.

The east-west link running across the southern section of the ICU has been designed as a transparent and reflective singular element. The purpose of the reflectivity is to provide a sense of mirroring the courtyard, thereby reducing the sense of enclosure. It is proposed that the link would incorporate a pergola structure that will provide shelter for the outdoor use of the courtyard area.

Materials and finishes used will be complimentary to the existing scheme by way of face brick, painted concrete and clear anodised or powder coated aluminium profiles. A sample board is provided in Appendix E, and shown in Figure 9.2 below.

Environmental Assessment

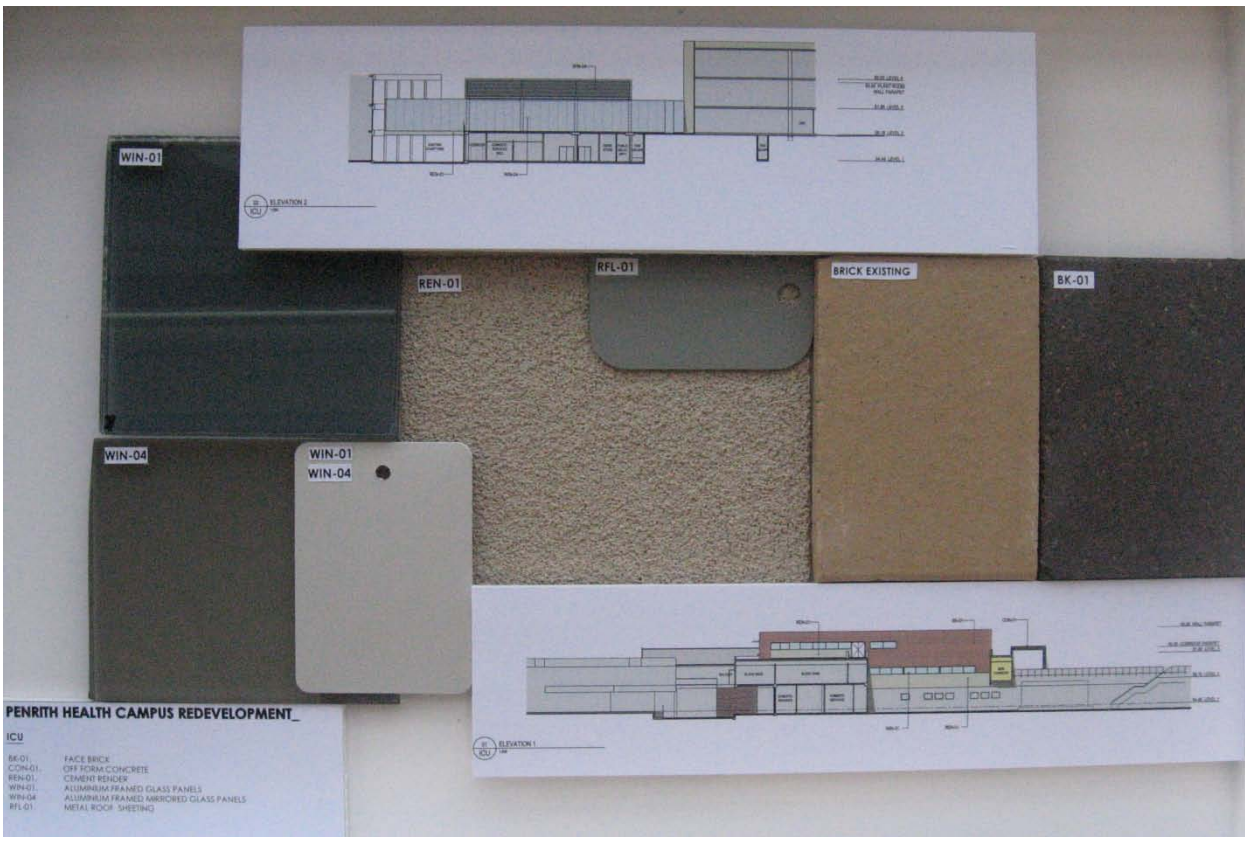


Figure 9.2_ICU Materials and Finishes Sample Board

East Block

The East Block is a four level building consisting of the following:
_Car parking at level one;
_Ambulatory Procedure Centre at level two;
_Wards at level three; and
_Plant rooms at level four.

The design of the East Block considers environmental impacts and best fit for the given site. The building required integration with the existing theatre block, which gave rise to the form of the building comprising a step down and then step up form, so as to allow a meshing of roof geometries and built forms. The building builds its three storey height to the east in order to carry ward areas and associated upper level plant areas.

The building incorporates a series of fingers or extrusions that lead out into the landscape to the east. The linearity is reinforced through the use of parapet blade walls that conceal roofs and gutters.

The bulk of the building has deliberately been broken down into linear and floating elements that oversail and layer adjacent one another. The ground level footprint is set in, thus enabling better utilisation of the available land area and also providing cover above pedestrian areas.

The building minimises landform disturbance and consequent civil works through a careful placement of the entry area and associated perimeter roadworks. The design is responsive to the natural landscape, with an emphasis on enhancing existing the planting and environment. The healing effects of providing places for respite and views to nature have been exploited and enhanced where possible. An inside-outside connectivity of the building has been exploited to create spaces from within, that engages with the landscape and elevates a sense of connection to nature.

Environmental Assessment

A courtyard on level one to the east of the building, with a void above to levels two and three, enables the landscape treatment to enter the building footprint, adding natural light to level one and two above and a sense of nature over all of its three levels.

An existing east-west cross-site pedestrian landscaped link (to the south of the building) has been reinforced to strengthen the existing condition and give rise to a major external pedestrian connection from East Block to the east and Kingswood area.

The concept of 'Entry Forecourt' to the Hospital is now created by the location of the East Block. A level pedestrian link will connect the entrance to the Main Hospital Entry.

The ground level (level one) has been designed to accommodate vehicle parking, but also could easily be adapted to future fitout for ancillary functional requirements.

Level two is the main entry / outpatient and day procedure centre level. It is accessed via a link to the main Hospital and also via a covered drop off area that has been designed to accommodate 'set down' and 'pass by' vehicle areas. The arrival area leads directly via airlock to the main reception and waiting area. A central lift core allows delivery and movement to all levels of the building.

An internal open stair will relieve lift traffic, provide a visible focus for the lobby and will also engage with the courtyard.

The ward areas on level three have been oriented east-west so as to provide a best case for the orientation and consequent internal environment within the wards themselves. The wards are arranged around a central shared area containing staff and patient areas as well as associated outdoor space.

Plant areas are arranged to be centralised on the roof as well as a chiller plant room located adjacent to existing plant at Level one.

Materials are complimentary to those found on the Hospital campus, and include face brick, off form concrete, metal composite cladding panels, paint finished fibre cement board, aluminium louvred screens and panels, and metal roof sheeting. A sample board is provided in Appendix E, and shown in Figure 9.3 below.

Environmental Assessment

Figure 9.3_East Block Materials and Finishes Sample Board

The use of brick at the base, and blade elements will anchor the building visually. Lightweight and maintenance-free metal wall panelling, in conjunction with glazing, will be used on the upper levels. The intent is that the combination of materials will be integrated in a refreshing manner to provide a point of departure from the norm.

Accent colours will develop from the existing natural and building palette evident on the site.

Renal Incentre Dialysis Unit

Concept plans have been produced for the Renal Incentre Dialysis Unit (attached at Appendix D). The works are internal within level five of the West Block.

Chapel

A new 'multi faith' chapel is to be constructed in the existing courtyard within the South Block of the Hospital.

The existing courtyard is surrounded by buildings on all four sides, ranging from one to four storeys in height. The courtyard is in a visible location as it faces on to the main South Block entry with a double height glass wall facing on to the space. The key design issues to be considered and incorporated include:
_Maximising available natural light;
_Creating a visually aesthetic design;
_Providing privacy and screening from adjacent departments and public spaces;
_Considering the entire courtyard space;
_Providing a link to the South Block; and
_Ability to use modular or preassembled components for ease of construction access into the confined space.

The total area of the chapel and ancillary facilities (interview rooms / offices) is approximately 130m^2.

Environmental Assessment

Safety by Design

Consideration has been given to the principles of Crime Prevention Through Environmental Design – refer to section 9.9 of this report.

9.6_Visual Impacts

As identified in section 9.5 of this report, the development has been designed in consideration to the Hospital campus as a whole and considering the existing built form of the site. Materials, finishes and colours have been chosen to complement the existing buildings and ensure that the new buildings are well integrated into the campus. Furthermore, the proposed landscaping of the site helps to soften any visual impacts of the new buildings.

Visual impacts to surrounding properties are expected to be minimal. The new East Block, ICU, and chapel buildings are internal to the Hospital campus, and are at a distance of greater than 150 metres from the nearest residential properties on surrounding streets. The low scale of the East Block building, and the fact that the ICU and chapel buildings are located within existing Hospital blocks, means that the new buildings are not visible from outside the Hospital campus.

The East Block incorporates parapet blade walls that conceal roofs and gutters. Plant areas are arranged to be centralised on the roof and contained within the roof structure, and are therefore not visible from ground level. Plant areas associated with the ICU are provided within the building / roof structure, while the Renal Unit is an internal refurbishment which will be serviced by the existing West Block plant.

It is considered that the proposed development will improve the quality of the Hospital campus, by providing updated buildings that compliment the existing buildings on site.

9.7_Sunlight Access

Shadow diagrams (attached at Appendix I) have been prepared showing solar access to the site at the solstice and equinox periods, shown in Figures 9.4 to 9.7 below.

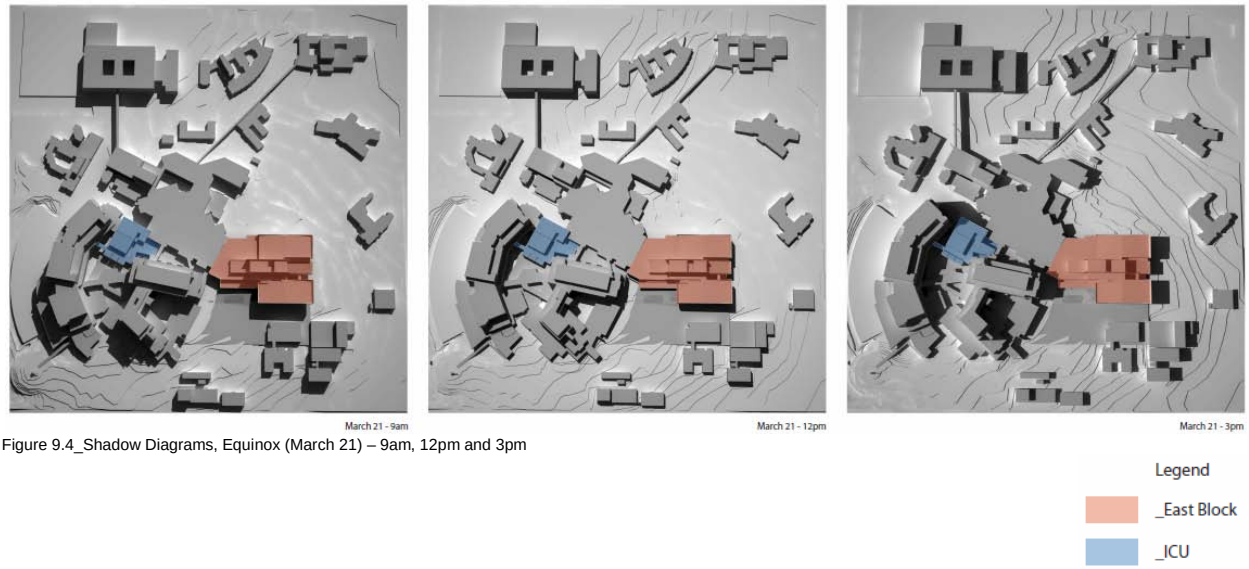


Figure 9.4_Shadow Diagrams, Equinox (March 21) – 9am, 12pm and 3pm

Environmental Assessment

Figure 9.5_Shadow Diagrams, Winter Solstice (June 21) – 9am, 12pm and 3pm

Figure 9.6_Shadow Diagrams, Equinox (September 21) – 9am, 12pm and 3pm

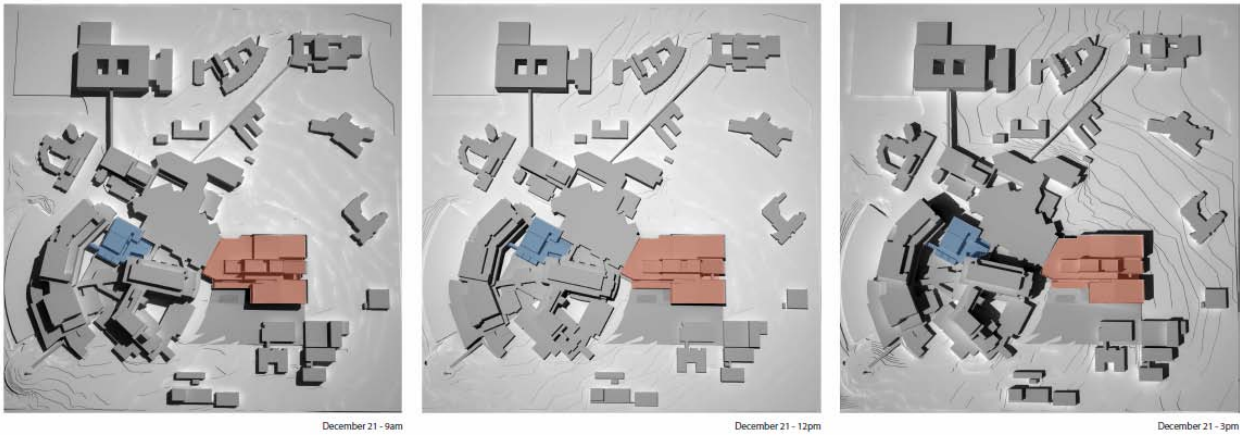
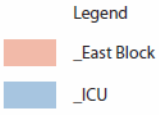


Figure 9.7_Shadow Diagrams, Summer Solstice (December 21) – 9am, 12pm and 3pm



The diagrams demonstrate that the proposed development will not impact upon the solar access of residential properties in the vicinity, being located internally to the Hospital campus at greater than 150 metres from the nearest residential properties.

The diagrams demonstrate that the East Block only results in overshadowing of surrounding Hospital buildings at the winter solstice (June 21) 9am period, where the administrative buildings to the south may experience some overshadowing.

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The ICU expansion results in little overshadowing effects given it's location within the main cluster of Hospital buildings that make up the North, West and South Blocks.

The new chapel building is located within the courtyard surrounded by existing Hospital buildings, which is shown in the diagrams to be subject to existing shadowing. Due to this constraint, one of the key criteria for the design of the chapel is to maximise the available natural light.

9.8_Amenity Impacts

The proposed development will positively impact upon the amenity for users of the current buildings, providing new and updated facilities and services for patients, visitors and staff.

As outlined in section 9.6, the visual impacts of the proposed development on the surrounding area are expected to be minimal due to the location of the site internal to the Hospital campus and away from the site boundary (at a distance of over 150 metres from the nearest residential area). This location also means that, as described in section 9.7, the proposed development will not impact upon the solar access of residential properties in the vicinity, and will only slightly modify the solar access of other existing buildings within the Hospital campus.

9.9_Safety, Security and Crime Prevention

The environmental conditions associated with buildings can influence the ability or desire to commit crime. Crime Prevention Through Environmental Design (CPTED) aims to create the reality (or perception) that the costs of committing crime are greater than the likely benefits. This is achieved by creating environmental and social conditions that:

_Maximise risk to offenders (increasing the likelihood of detection, challenge and apprehension);
_Maximise the effort required to commit crime (increasing the time, energy and resources required to commit crime);
_Minimise the actual and perceived benefits of crime (removing, minimising or concealing crime attractors and rewards); and
_Minimise excuse making opportunities (removing conditions that encourage/facilitate rationalisation of inappropriate behaviour).

A Crime Prevention Through Environmental Design (CPTED) assessment has been undertaken by HASSELL (attached at Appendix S) to address safety, security and crime prevention for the new East Block building and modified ICU building.

The proposed development at Penrith Nepean Hospital generally complies with the Department of Planning guidelines titled *'Crime prevention and the assessment of development applications' (2001)* by using appropriate design measures to minimise the incidence of crime. The CPTED Assessment Report has been undertaken with reference to the relevant sections of Part 2, Section 2.2 of the *Penrith Development Control Plan 2006*, which outlines CPTED controls and guidelines. Recommendations from the report are included in the Commitments / Mitigation Measures section below.

Recommendations from Penrith City Council, including undertaking consultation with the relevant Local Area Commands, and preparing a Security Management Plan, have been incorporated into the mitigation measures outlined below.

Commitments / Mitigation Measures

As requested by Penrith City Council, consultation is to be undertaken with the Penrith and St Mary's Local Area Commands regarding community safety considerations and implications of the development.

<u>Lighting</u>

It is recommended that the following lighting design criteria, as outlined in the Penrith DCP (2006:6), is taken into consideration during the detailed design of the lighting for East Block. A review of the existing lighting in place for the ICU and Renal units should also be undertaken against these criteria and measures incorporated where possible.

(a) All areas intended to be used at night should allow appropriate levels of visibility.
(b) Pedestrian pathways, lane ways and access routes in outdoor public spaces should be lit to the minimum Australian Standard of AS 1158. Lighting should be consistent in order to reduce the contrast between

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shadows and illuminated areas. Lighting should be designed in accordance with AS4282 – Control of the obtrusive effects of outdoor lighting.

(c) Lighting should have a wide beam of illumination, which reaches to the beam of the next light, or the perimeter of the site or area being traversed. Moreover, lighting should clearly illuminate the faces of users of pathways.

(d) Streetlights should shine on pedestrian pathways and possible entrapment spaces as well as on the road.

(e) Lights should be directed towards access/egress routes to illuminate potential offenders, rather than towards buildings or resident observation points.

(f) Lighting should take into account all vegetation and landscaping that may act as an entrapment spot.

(g) Lighting should be designed so that it is "vandal tough" or difficult for vandals to break.

(h) Where appropriate use movement sensitive and diffused lights.

(i) Avoid lighting spillage onto neighbouring properties as this can cause nuisance and reduce opportunities for natural surveillance.

(j) Illuminate possible places for intruders to hide.

(k) As a guide areas should be lit to enable users to identify a face 15 metres away.

(l) All lighting should be maintained and kept in a clean condition with al broken or burnt out globes replaced quickly.

(m) Use energy efficient lamps/fittings/switches to save energy.

Car Parking

It is recommended that:

Lighting of the car park should meet Australian standards for car parking, and be of a uniform nature so as to avoid problems associated with adjustment of vision for motorists and pedestrians moving from dark to light areas. Lighting should cover all of the parking area and not just driving aisles. Pedestrian exit and entry points should also be uniformly lit to ensure smooth visual transition from the interior of the facility to the external environment.

The car park is retained as light grey concrete or painted in a light colour in order to reflect as much light as possible. CCTV, intercoms and emergency alarms should be incorporated into the car park.

The car park incorporates signage to indicate the location of the exit, lifts, stairwells, intercoms, and emergency alarms.

The car park is generally spacious and open, however there are corners in the north-east and north-west which could provide concealment opportunities. It is recommended that mirrors are provided in this area to provide full visual coverage to pedestrians and vehicles approaching this area.

Particular attention should be paid to providing sufficient lighting and CCTV coverage to the lift area and stairwells, as they represent potential entrapment points.

All stairwell doors incorporate transparent panels to provide sightlines and give advanced warning of any potential dangers.

Signage and tactile pavement treatment is incorporated into the East Block car park detailed design, to direct disabled users to the lifts.

Entrapment Spots and Blind Corners

It is recommended that:

Consideration should be given to installing mirrors at the edge of the external East Block courtyard area to provide views around the corners.

Doors to any stairwells throughout the development incorporate glass panels.

Landscaping

It is recommended that a detailed landscape plan is prepared that:
_stipulates the use of canopy trees and low-level shrubs;
_stipulates spacing requirements for any dense low growth foliage;
_requires any vegetation near the main entrance to be of low-level so as to maintain visibility of the entrance;

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_highlights the location of street lighting and stipulates vegetation of a height and type that will not interfere with the lighting of the public space; and
_recommends appropriate plant varieties to achieve the above.

Building Identification and Way Finding

It is recommended that:

Signage on the Hospital campus is to be updated to clearly show the location of the new buildings and facilities, and to provide directions.

Where possible, new signage seeks to meet the following design criteria outlined in the Penrith DCP (2006:24):

(a) Signs should be large and legible, with strong colours, standard symbols (e.g. for washrooms) and simple graphics. They should indicate where to go for help or assistance.
(b) Signs should be strategically located at entrances and near activity nodes such as intersections of corridors or paths.
(c) Signs should indicate how to report maintenance problems in the complex.
(d) The main pedestrian route through a large building, sets of building or areas of open public space should be indicated as such with appropriate signage.
(e) Where exits to pedestrian routs are closed after hours this should be indicated at the entrance to the route and information on alternative routes should clearly advised.
(f) Signs that provide way finding information should not be relied upon solely, the overall legibility of the design needs to be well considered. Users of the space need to be able to intuitively understand where they are within the complex or area and how they can get away.

Security

It is recommended that:

Existing security systems provided at the Hospital are to be extended to the new buildings.

A Security Management Plan is prepared detailing the processes that will be implemented to effectively manage the security of patients, staff and visitors to the new facilities. This includes the use of security personnel, closed-circuit television systems, alarms and monitoring systems to provide a safe and secure environment.

9.10_Sustainability

NSW Health requires sustainable development principles and strategies to be applied to health facilities in accordance with *Premier's Memorandum No 2003-2 High Environmental Performance for Buildings* and the requirements of the *Environmental Performance Guide for Buildings (EPGB)*.

The sustainability initiatives that are being targeted for the proposed redevelopment include the following:
_Day lighting and shading;
_Mixed mode ventilation;
_Energy efficient utilities and services; and
_Rainwater harvesting.

Approaches to these elements are summarised in section 3.7 of this report, and more details are provided in the Environmental Performance Report prepared by Steensen Varming (attached at Appendix U).

The NSW Health *Engineering Services and Sustainable Development Guidelines (TS11), Version 2,* describes how sustainability measures should be considered and incorporated into Hospital developments. Generally, all projects greater than $10m the project shall undergo the Greenstar rating process, using the Greenstar Pilot Healthcare Tool, such as to achieve a minimum 4 star rating (NSW Health, TS11 Guideline, 2009:11).

Steensen Varming have completed a pre-assessment Green Star rating for the East Block (refer to the Environmental Performance Report, attached at Appendix U). A score of 18 points has been confirmed based on initiatives agreed to date, and with the additional initiatives proposed, Steensen Varming conclude that the project would definitely attain a 4 Star Rating. (Please note that the Green Star rating process will be followed for the development, but a formal certification is not to be undertaken).

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The NSW Health TS11 Guideline also requires an Environmental Assessment under the EPGB to be undertaken for each design stage. EPGB reporting considers resource consumption, environmental loadings, quality of indoor environment, functionality, and wider planning issues. For the East Block, a Scheme Design Environmental Assessment has been completed by Steensen Varming, which has given a rating of 79% (refer to the Environmental Performance Report, attached at Appendix U), indicating a high level of incorporation of sustainable initiatives.

Commitments / Mitigation Measures

A commitment is made, as per the NSW Health *Engineering Services and Sustainable Development Guidelines (TS11), Version 2,* to achieve a design that is capable of achieving a Green Star rating of at least 4 stars.

9.11_Waste Management

As the proposed development represents an expansion of services provided at the Hospital, there will be increased waste associated with the operation of the facilities. It is important that adequate waste management procedures are in place to minimise any potential environmental impacts.

(Note that construction waste is addressed in section 9.26 of this report).

As the proposed development works are for the redevelopment of the existing Hospital, procedures for handling and storing waste are already in place and enforced by Hospital Management. Waste management is coordinated across the Sydney West Area Health Service (SWAHS) and is subject to the Waste Management Policy Manual, attached at Appendix AB.

Sydney West Area Health Service (SWAHS) is committed to reducing to the minimum level possible the waste generated in the normal course of pursuing a high standard of health care. To meet this commitment SWAHS undertakes the following courses of action:

_Nomination of a Waste Coordinator to coordinate and oversee the Waste Management Program across SWAHS.
_Nomination of an officer at each unit of SWAHS to be responsible for the day-to-day management of waste activities, waste data collation and record keeping.
_Nomination of a committee that is responsible for waste minimisation strategies, monitoring and improving waste performance.
_Promotion and display of a Waste Commitment that clearly states SWAHS commitment to waste minimisation.
_Implementation of a Waste Policy Manual that includes, but is not limited to:
  _Definition of waste streams
  _Waste responsibilities
  _Legislative guidelines
  _Purchasing Policies
  _Waste tracking and monitoring systems
  _Correct segregation and disposal procedures
  _Transporting and storage requirements
  _OH&S waste related issues
  _Educational and promotional programs

The Waste Management Policy Manual is based on a wide range of waste guidelines and has incorporated waste legislative requirements.

SWAHS has implemented various waste systems that aim to meet the expected outcomes below:
_Compliance with legislative and licensing requirements by ensuring that employees of SWAHS are aware of the guidelines and apply these as part of their normal work routine.
_Standardisation of Waste Management Programs across SWAHS facilities to ensure best practice systems are in place.
_Improved waste performance through the implementation of annual waste minimisation strategies that support efficient recycling programs and cost efficiencies.
_Be recognised as a waste leader by both internal and external organisations including the Australian Council on Healthcare Standards (ACHS), NSW Department of Health (DoH) and Occupational Health Safety and Risk Numerical Profile (OHS&R).
_Compliance with the NSW Health OHS&R Numerical Profile Indicative Evidence 2000.

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_Purchasing policies that comply with the Waste Reduction and Purchasing Policy (WRAPP).
_All employees are educated on waste management and can demonstrate that knowledge through correct segregation and disposal methods.
_An effective promotional program that continually improves waste awareness and enhances employee involvement.

Commitments / Mitigation Measures

The operation of the new and refurbished facilities will be subject to standard Hospital procedures in regards to waste management, which include guidelines for meeting legislative requirements. Waste management is coordinated across the Sydney West Area Health Service (SWAHS) and is subject to the Waste Management Policy Manual, attached at Appendix AB.

9.12_Utilities and Services

Steensen Varming Pty Ltd has prepared a strategy (attached at Appendix AA) for utilities and services incorporating electrical, mechanical and medical gas services. The report also incorporates advice from Connell Wagner regarding required hydraulic systems.

Adjustments and upgrades of utilities and services are required to support the needs of the proposed development, including the following:
_Replacement of existing equipment e.g. chillers, cooling towers, and boilers.
_Provision of new equipment to serve the new East Block e.g. generators, cooling towers, chillers, upgraded bulk oxygen vessel, water tank, hot water system, rainwater tank and OSD.
_Alterations to other services to distribute supplies to the new East Block and modify services to existing buildings, including any necessary pipework.

More information is provided in the Steensen Varming report, attached at Appendix AA.

The impacts associated with utilities and services are expected to be minimal, as existing systems can be utilised and modified to service the development. Furthermore, the new facilities to be provided for the East Block will be provided in dedicated plant areas, located on Level Two and Three, which will be fully contained within the building envelope or within the roof structure and therefore not visible externally.

Consultation has been undertaken with all relevant utility and services companies, namely Jemena Gas Networks, Sydney Water, and Integral Energy, and issues raised and mitigated are outlined below. Details of the consultation responses are provided in section 5 of this report.

_Jemena Gas Networks
  _Jemena Gas Networks have requested that construction access and egress is restricted to Somerset Street where there are no gas mains. Jemena have advised that subject to these traffic management requirements, they are not impacted by the proposed development.
  _This requirement needs to be incorporated into the Traffic Management Plan, however consideration of the impacts upon residents in Somerset Street also needs to be addressed.

_Sydney Water
  _Sydney Water requested general information regarding proposed water and wastewater servicing and any required augmentation of services, and also highlighted that a Section 73 certificate would be required.
  _An assessment of the existing Sydney Water assets has been carried out which indicates that sufficient capacity exists to service the new development.
  _An application for a Section 73 certificate will be made following approval of the proposed development.

_Integral Energy
  _Integral Energy has confirmed that the current supply has sufficient capacity for the expected demand for the ICU and East Block development, but there is limited capacity for any additional electricity demand.
  _Any future works will have to consider upgrading the existing network to meet any further additional demand. Discussions will need to be undertaken with Integral Energy.

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Commitments / Mitigation Measures

Prior to the start of construction, utility and services companies are to be contacted to confirm the location of existing infrastructure on the site, and to arrange connections and disconnections.

Construction access and ingress is to be limited to Somerset Street. If there is any requirement to deviate from this, it must be agreed with Jemena Gas Networks and any other relevant utility providers

9.13_Drainage, Stormwater and Groundwater Impacts

The assessment by Connell Wagner (incorporated into the Steensen Varming Report, attached at Appendix AA) recommends the installation of new rainwater systems and stormwater drainage to service the proposed development. The recommended systems are to connect into the existing infrastructure, and include a new rainwater harvesting tank and on-site detention for the East Block, and an increase in capacity of the existing on-site detention for the North Block. A Concept Stormwater Drainage Plan has been prepared by Hughes Trueman (attached at Appendix X).

The existing stormwater discharges via gutter and downpipes into the site stormwater system. The provision of new and expanded on-site detention facilities will ensure that the development does not result in any adverse impacts on stormwater drainage systems.

A preliminary geotechnical investigation undertaken by Golder Associates (attached at Appendix V) shows that groundwater is likely to occur at depths greater than five metres below surface and is separated by relatively impermeable clay and shale sequences (Golder Associates, 2009:15). Therefore groundwater is unlikely to be encountered as the excavations associated with the development are less than three metres in depth.

Potential pollutant linkages to surface water and groundwater resources that may be caused by the proposed development were also assessed by Golder Associates. Any surface run-off is likely to flow into local stormwater drains and is therefore likely to be diluted before discharging into the Nepean River, and the risk is therefore neglible (Golder Associates, 2009:14). The risk of offsite migration of contaminated groundwater is considered to be neglible due to the depth of the groundwater and the fact that no potential sources of contamination have been identified on the site (Golder Associates, 2009:15).

Commitments / Mitigation Measures

Soil erosion and sediment control measures, to prevent or minimise any discharge into waterbodies, are included in section 9.23 of this report.

9.14_Transport, Traffic and Access

As described in section 3.3 of this report, the proposed development includes alterations to existing car parking spaces, and construction of new car parking, as shown in Figure 9.1.

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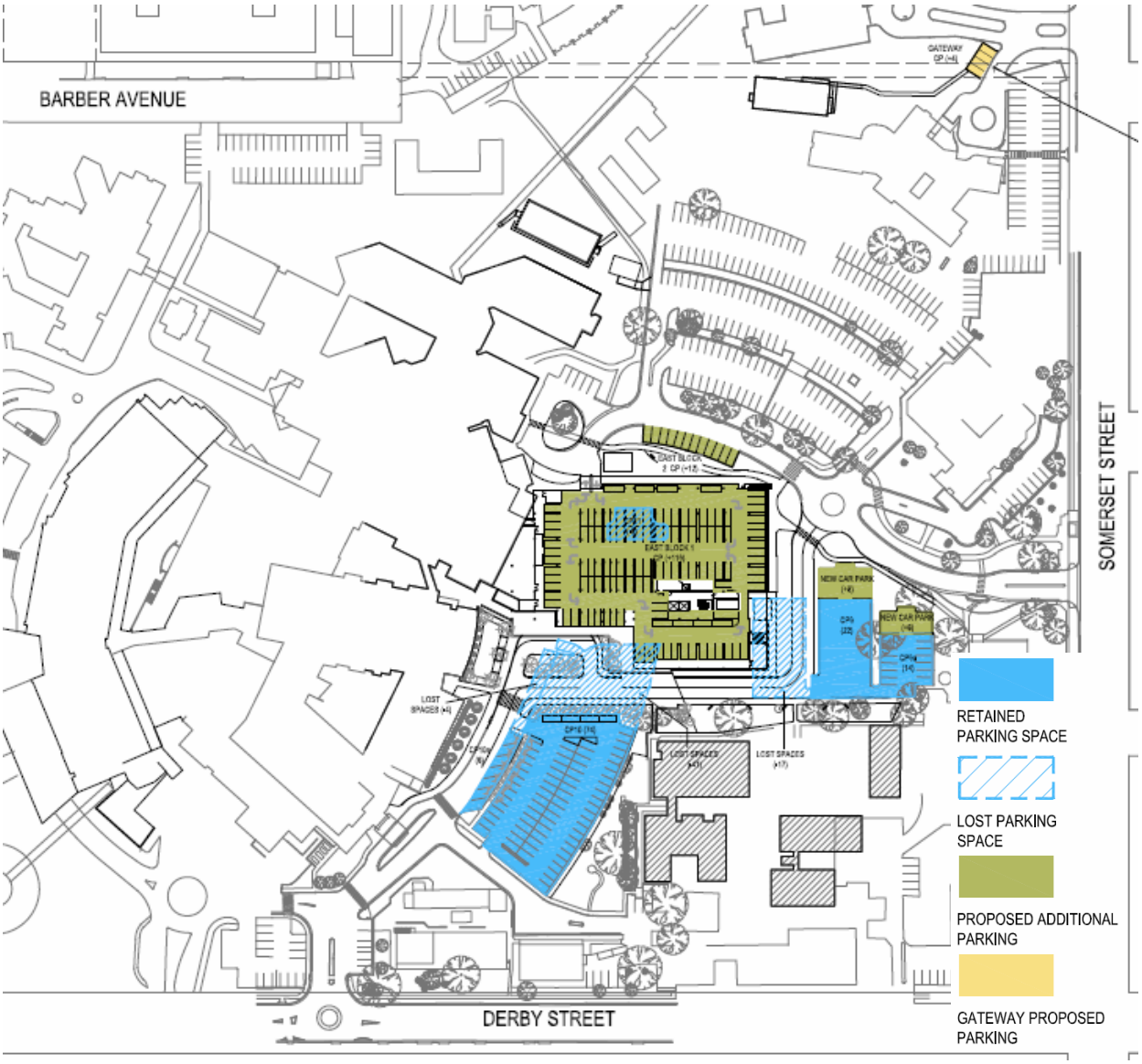

Figure 3.11_Car Parking Plan

A Traffic and Parking Impact Assessment report has been prepared by TEF Consulting (attached at Appendix Y). This report identifies that the 79 car parking spaces are required under the Penrith DCP, to service the proposed development.

In summary, the below are the requirements for parking for the proposed development:
_79 car parking spaces required under the Penrith DCP; plus
_68 car parking spaces to replace those lost as result of the construction of East Block; equals
_**147** total car parking spaces required.
The proposed development will provide **149** car parking spaces, and therefore provides an additional two parking spaces over and above the DCP requirements.

The Traffic report also highlights that for the entire Hospital site, the Penrith DCP requires 729 car parking spaces, and 1,182 spaces are provided (including those provided by the proposed development).

Furthermore, the Traffic report identifies a range of alternative transport options and strategies to encourage the use of walking, cycling and public transport, including:
_Providing a shuttle bus service between the Hospital and the bus/rail interchange during periods of peak staff arrivals and departures;
_Providing bicycle and motorcycle parking bays / racks / storage in car parking areas near all main buildings;

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_Providing showers and changing facilities with individual lockers;
_Developing and producing a Transport Access Guide (TAG) to include information on public transport and cycleways, and distribute to existing staff, include in induction packs and to be made available at the reception of each facility; and
_Providing interest free loans to staff for purchasing discounted season tickets.

The proposed development incorporates a staff bicycle store on level one of the East Block, as well as two bicycle racks adjacent to the main entrance of East Block.

Pedestrian linkages have been incorporated into the landscaping design to enhance linkages to other parts of the Hospital campus, enhancing the wayfinding through the site.

(Please note that traffic impacts related to construction are outlined in section 9.26 of this report.)

Commitments / Mitigation Measures

Suitable bicycle parking and storage areas are to be integrated on the site prior to issue of a Construction Certificate. The bicycle storage area must be designed in accordance with Australian Standard *AS 2890.3:1993 Parking Facilities – Bicycle parking facilities*. Details are to be provided prior to the issue of a Construction Certificate.

A commitment is given to further investigate measures to encourage the use of alternative transport options, as outlined in the TEF Consulting Report (attached at Appendix Y), and to implement where possible.

9.15_Accessibility

An accessibility report has been prepared by Morris Goding Accessibility Consulting (attached at Appendix N).

The report is a preliminary assessment of the design against Part D3 of the Building Code of Australia (BCA) and Australian Standard *AS 1428.1 General requirements for Access*. Advisory recommendations are also provided in accordance with the DDA Access Code and Australasian Health Facilities Guidelines (AHFG). Recommendations within the report will be incorporated to ensure the buildings are fully compliant.

Commitments / Mitigation Measures

The development will comply with the requirements of Part D3 of the Building Code of Australia (BCA) and Australian Standard *AS 1428.1 General requirements for Access*.

9.16_Heritage

There are no known or statutorily listed historical heritage, or historical archaeological items, on the Hospital campus.

An investigation was undertaken by Archaeology and Heritage Management Solutions Pty Ltd (AHMS) to assess the potential for archaeological items of significance to be uncovered on the site. A copy of the Archaeology Report is provided in Appendix P.

In relation to historical archaeology, the report highlights that *"Based on the pattern of historic occupation in the Kingswood area, it is likely that any earlier occupation (than the extant hospital) would have focussed along the Great Western Highway and have fronted that land and/or been associated with a particular industry, or agricultural/pastoral usage… these activities did not occur within the footprint of the current Study Area."* (AHMS, 2009:18)

In relation to Aboriginal archaeology, sites within 200 metres of creeklines are generally those where Aboriginal occupation is more intensive. The site is over 400 metres from a low order, semi-permanent creekline, and the nearest higher order creekline is over 3.5 kilometres away (Werrington Creek) and roughly the same distance from the Nepean River. The Archaelogy Report therefore concludes that *"the likelihood of extensive or significant archaeological materials in this location is low to nil"* (AHMS, 2009:16).

The investigation indicates that the Hospital campus has been significantly modified as part of previous Hospital development since the 1950s, including excavation and filling works, and installation of underground services. The

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area where the new East Block is to be sited is highly modified, as the construction of the Learning and Development building on the site *"would have required levelling of the immediate vicinity for its installation. This is likely to have heavily modified and truncated original soil profiles"* (AHMS, 2009:17). The vegetation in the area was also identified as being relatively young, and the landscape "*sufficiently disturbed that the presence of intact soil profiles and/or the potential for buried Aboriginal objects are low*" (AHMS, 2009:19).

The Archaeology Report concludes that *"there are no known historical archaeological relics or sites and there is no potential for meaningful historical archaeological relics or sites"* and *"there are no known Aboriginal objects or sites and there is negligible potential for Aboriginal archaeological sites or objects to be found"*.

Therefore, consistent with recommendations from the Archaeology Report, no further investigation is proposed prior to development as the likelihood of the site containing any artefacts is minimal.

Commitments / Mitigation Measures

If an item of archaeological significance is found during excavation or construction, work would cease immediately, the site would be closed and the Heritage Office would be informed. Actions would be undertaken in accordance with the *Heritage Act 1977, Part 6 Division 8 Controlling and restricting harm to buildings, works, relics and places not subject to interim heritage orders or State Heritage Register listing*, in particular Clause 136 *Order restricting harm to buildings*.

9.17_Flora

As noted in section 2.2.4 of this report, the site has been identified as possibly containing Shale Plains Woodland, a subset of Cumberland Plains Woodland (CPW), a threatened species under the *Threatened Species Conservation Amendment Act 2002* and the *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999*.

The proposed development does not include the removal of, or any direct interference with, trees located on the site (please note that tree removal is to be carried out under the SEPP Infrastructure - refer to section 1.2 of this report). Minor vegetation may be removed as part of landscaping works.

There is no significant vegetation in the vicinity of the ICU and chapel buildings, which could be impacted by transportation of materials to and from the site.

The proposed landscaping plan (attached at Appendix H) includes the retention of existing trees in the vicinity of the East Block development. Careful protection of these trees will be required during construction works.

Construction may pose other impacts on flora, such as the introduction of weeds from machinery brought on to the site, or the creation of an environment where weeds may flourish should building materials be stored at the site. Mitigation measures are proposed below to minimise these impacts.

Commitments / Mitigation Measures

If an external site compound is to be set up, it should be located away from any existing landscaping plantings.

Any landscaping or revegetation is to incorporate locally indigenous plant species that are characteristic of Cumberland Plain Woodland.

Machinery is to be cleaned of soil and debris before bringing it on to the site to reduce the potential spread of weeds and the fungal pathogen *Phytophthora cinnamomi*.

The site is to be made good on completion of construction with no excess construction materials or debris to remain on the site.

Trees to be retained on the site are to be protected from construction activities using the following measures:
_Services should be designed so that no trenching is required within 8 metres of the trees.
_A site arborist should supervise any activities in the vicinity of trees, including fencing, excavation and root pruning, and make periodic visits and reports to monitor the state of the trees.

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_Excavation in the vicinity of trees should be done initially by hand. Any roots encountered that are less that 50 millimetres in diameter should be cut cleanly with a hand saw. Any roots encountered that are greater than 50 millimetres in diameter should be retained intact and referred to the site arborist for advice.
_Prior to the start of construction, trees should be fenced (in groups where possible) to a radius of 8 metres from each trunk except where access is required for construction, to form tree protection zones. Fences should be chainlink, 1.8 metres high, and supported by steel posts.
_Where access is required within these radii for building purposes, the fence should be set back 1.5 metres from the building face and the soil surface between the fence and the building should be protected by plywood sheets or strapped planking.
_Where not otherwise protected, trunks should be armoured with 2 metres lengths of 50x100 millimetre hardwood timbers spaced at 150 millimetre centres and secured by 8 gauge wires or steel strapping at 300 millimetre spacing. The trunk protection should be maintained intact until the completion of all work on the site.
_There should be no pedestrian or vehicular access to the tree protection zones. No building activities should take place within the tree protection zones, including storage or stockpiling. Runoff from the site should not be allowed to enter the tree protection zones.
_The soil surface within the tree protection zones should be mulched with a layer of composted organic material (Vitagrow Landcure or similar) to a depth of 100 millimetres.
_At the end of construction all retained trees should be pruned to remove deadwood and weak branches. All pruning should be done in accordance with AS4373 Pruning of Amenity Trees.

9.18_Fauna

As highlighted in section 9.17 above, the proposed development does not include the removal of, or any direct interference with, trees located on the site and will involve only possible removal of minor vegetation as part of landscaping works. Therefore the impacts on fauna or fauna habitat is expected to be nil or minimal.

Furthermore, a Flora and Fauna Assessment (attached at Appendix Z) undertaken by Total Earth Care identifies that the Hospital campus offers only limited fauna habitat as there is a substantial lack of many of the *"natural habitat features and resources that are important in the maintenance of native fauna diversity and life cycles"* (TEC, 2009:20). (Please note that works outlined in this Assessment do not refer to works under this application).

Commitments / Mitigation Measures

Temporary fencing should be installed around construction and storage compounds to prevent access by native fauna and minimise opportunities for fauna to shelter in machinery or materials stockpiles.

9.19_Contamination

Heggies Pty Ltd have undertaken a Stage 1 Preliminary Contamination Assessment of the site (attached at Appendix R). This assessment builds upon the prior investigation undertaken by Golder Associates (attached at Appendix V) which was largely a desktop review.

The Heggies report highlights that activities involving the generation, storage and disposal of hospital wastes would be the most probably cause of any present day site contamination, and lists the following as the potential contaminants of concern:
_Heavy metals (including arsenic, cadmium, copper, chromium, lead, mercury, nickel, and zinc);
_Total petroleum hydrocarbons (TPHs);
_Benzene, toluene, ethylbenzene and xylenes (BTEX);
_Polycyclic aromatic hydrocarbons (PAHs)
_Organochlorine pesticides (OCPs), organophosphate pesticides (OPPs) and polychlorinated biphenyls (PCBs); and
_Asbestos.

Heggies reviewed the previous desktop review undertaken by Golder Associates, and undertook soil sampling at eight locations in order to develop a preliminary understanding of potential soil contamination.

Based upon their assessment, Heggies conclude that the soils within the area appear unlikely to contain the environmental contaminants of concern at concentrations exceeding the assessment criteria under the *DECC Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA, 1997).

Environmental Assessment

Commitments / Mitigation Measures

It is recommended that a detailed contamination assessment is undertaken in the area of the proposed East Block prior to the commencement of construction works, in accordance with the *DECC Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA, 1997), and any necessary remedial action or further investigations prescribed accordingly.

If any contamination is found during construction, it is tol be removed in accordance with Department of Environment and Climate Change (DECC) and Workcover requirements.

9.20_Hazardous Materials

The new East Block is to be erected on a cleared piece of land, and therefore there are no hazardous material matters to consider. The age of the Hospital buildings means that the refurbishment of the Intensive Care Unit and Renal Dialysis Incentre Unit may involve the removal or disturbance of materials that could contain hazardous materials such as asbestos or polychlorinated biphenyls (PCB's).

Commitments / Mitigation Measures

A hazardous materials assessment is to be undertaken on the Intensive Care Unit and Renal Dialysis Incentre Unit buildings prior to the commencement of works on these buildings.

9.21_Hazardous Substances

All storage of chemicals and gases is located centrally on the site in existing facilities. No new storage areas are proposed as part of this application.

9.22_Acid Sulfate Soils

The NSW Natural Resources Atlas sourcing information from the Acid Sulfate Risk Mapping (published by the Department of Infrastructure, Planning and Natural Resources (DIPNR 1994)) does not indicate any risk of acid sulfate soils occurring at the site.

9.23_Soil and Soil Erosion

Earthworks

Excavations up to a depth of two metres are likely to be required to prepare the site of the new East Block, with minor filling also required. Works to the ICU and walkway do not require excavation or filling being located over existing buildings or at-grade.

The Golder Associates Report (attached at Appendix V) and the Hughes Trueman Structural Concept Report (attached at Appendix W) provide technical specifications that are used to design the East Block foundations, as well as measures to ensure earthworks are undertaken in a manner to minimise any environmental impacts. These have been incorporated into the mitigation measures outlined below.

Soil Classifications and Behaviour

Golder Associates (2009:19) identify the potential for the residual clays on the site to be saline, and recommend that additional geotechnical investigations and testing is undertaken to more accurately evaluate design and construction requirements to alleviate the effects of the potential saline condition of the subsurface clay. Hughes Trueman state that the possible encounter of saline soils will be considered in the design of the steel and concrete elements where appropriate (HT, 2009:4).

The Golder Associates Geotechnical Report classifies the subsurface profile in accordance with *AS2870 "Residential Slabs and Footings – Construction"*, as being of Class H classification due to the presence of residual soils with a high potential for shrink / swell behaviour. Hughes Trueman have provided foundation construction specifications to account for this soil type, however additional geotechnical investigations and testing is recommended to confirm the soil behaviour.

Environmental Assessment

Soil Erosion

Golder Associates (2009:5) identify that the Luddenham Group soils which underlay the site have high soil erosion hazards. An Erosion and Sediment Control Concept Plan (attached at Appendix T) has been prepared which will form the basis of a detailed erosion and sediment control plan. The Concept Plan identifies erosion and sediment control measures, which are incorporated into the mitigation measures outlined below.

Golder Associates also recommend further geotechnical testing of the soils of the site is undertaken to appropriately manage the associated risk of erosion. Testing is to comprise particle size distribution of the soils and the determination of the Emerson Class Number to assess the dispersive nature of the soils (Golder Associates, 2009:19).

Commitments / Mitigation Measures

Geotechnical Investigations

Additional geotechnical investigations and testing is to be undertaken to:
_Evaluate design and construction requirements to alleviate the effects of the potential saline condition of the subsurface clay.
_Confirm the behaviour of the CLASS H site (high ground movement), in accordance with *AS/NZS 287001996 'Residential Slabs and Footings'*.
_Assess soil erosion potential, with testing to comprise particle size distribution of the soils and the determination of the Emerson Class Number to assess the dispersive nature of the soils.

Earthworks

Earthworks for the proposed cutting and filling shall be performed as follows:
_Excavate the existing topsoils from within the development footprint and stockpile these separately for either re-use for landscaping or removal from site.
_Excavate the subsurface soils in the building areas to the design level of the building pads / floor slab sub-grade. Stockpile these materials separately for removal from site or, should it be required, these soils may be suitable for re-use within the development as 'controlled fill' if they are suitably combined with appropriate imported granular materials.
_A suitably qualified Geotechnical Engineer is to be present during proof-roll testing of exposed residual soils at foundation levels for the building pads / floor slab sub-grade to assess the ability of the prepared surfaces to act both as a foundation platform for shallow footings and also as a sub-grade for the undercroft and walkway pavements. Should soft heaving areas be identified, such soils are to be removed as directed by the engineer on site and replaced using suitable granular fill material.
_Fill material is to be placed in no more than 250mm loose thickness and suitably compacted. The degree of compaction is to be verified by in-situ and laboratory testing.

The exposed residual clay soils will not be trafficable under wet conditions. Trafficked areas during the construction works need to be covered by a suitable layer of crushed gravel or concrete.

Footings

Footings are to be designed and constructed in accordance with sound engineering principles and the following preliminary recommendations and advice:
_All footings of the proposed East Block building or walkways must found on ground of similar bearing capacity to prevent differential movement resulting from the varying foundation materials. It is therefore recommended that all footings found either entirely within the residual soils or entirely at depth within the weathered shale using deepened pier footings where necessary.
_All footing excavations must be suitably cleaned free of loose debris and wet soil before construction.
_The foundation material is to be inspected at the time of footing excavation to ensure that all footings found on suitable ground with anticipated foundation conditions.
_With regards to the proposed ICU extension, the type and layout of the existing building foundations and the condition of the foundation materials are to be established to assess the capacity of the existing footings to carry the additional loading.

Environmental Assessment

Soil Erosion and Sediment Control

Proposed soil erosion and sediment control measures are as follows:

_Initial works shall be undertaken in the following sequence prior to commencing construction:
  _Install all temporary sediment fences and barrier fences. Where fences are adjacent to each other the sediment fence can be incorporated into the barrier fence.
  _Construct temporary stabilised site access.
  _Install sediment traps.
_Undertake site development works so that land disturbance is confined to areas of minimum workable size.
_At all times and in particular during windy and dry weather, large, unprotected areas will be kept moist (not wet) by sprinkling with water to keep dust under control.
_Any sand used in the concrete curing process (spread over the surface) will be removed as soon as possible and within 10 working days from placement.
_Water will be prevented from entering the permanent drainage system unless it is relatively sediment free, i.e. the catchment area has been permanently landscaped/stabilised and/or any likely sediment has been filtered through an approved structure.
_Temporary soil and water management structures will be removed only after the lands they are protecting are stabilised / rehabilitated.
_Acceptable receptors will be constructed for concrete and mortar slurries, paints, acid washings, light-weight waste materials and litter.
_Any existing trees which form part of the final landscaping plan will be protected from construction activities by:
  _Protecting them with barrier fencing or similar materials installed outside the drip line:
  _Ensuring that nothing is nailed to them:
  _Prohibiting paving, grading, sediment wash or placing of stockpiles within the drip line except under the following conditions.
  _Encroachment only occurs on one side and no closer to the trunk than either 1.5 metres or half the distance between the outer edge of the drip line and the trunk, which ever is the greater
  _A drainage system that allows air and water to circulate through the root zone (e.g. a gravel bed) is placed under all fill layers of more than 300 millimetres depth
  _Care is taken not to cut roots unnecessarily nor to compact the soil around them.
_Allow for grass stabilisation of unstable areas, open channels and rock batters as and where directed.
_Allow for establishment of other erosion protection measures as directed.
_Receptors for concrete and mortar slurries, paints, acid washings, light-weight waste materials and litter are to be emptied as necessary. disposal of waste shall be in a manner approved by the site superintendent.
_Erosion and sediment control measures shall be inspected to ensure that they operate effectively. repairs and or maintenance shall be undertaken regularly and as required, particularly following storm events.
_The contractor shall provide all monitoring controls and testing.
_The temporary access shall be maintained in a condition that prevents tracking or flowing of sediment onto public rights of way. This may require periodic top dressing with additional gravel as conditions demand and repair and/or cleanout of any measures used to trap sediment.
_All sediment spilled, dropped, washed or tracked onto public rights of way must be removed immediately.

The contractor will be responsible for the establishment and management of a detailed erosion and sediment control scheme to meet Council requirements.

9.24_Noise

Noise impacts must be considered having regard to the residential areas on Somerset Street (approximately 150 metres east of the site) and Derby Street (approximately 180 metres south west of the site), although these are considered to be at a distance great enough to minimise any impacts.

An Acoustic Report has been prepared by Norman Disney & Young (attached at Appendix O), which identifies the key potential impact as traffic noise associated with access to, and use of, the new East Block carpark and other parts of the Hospital through the internal driveway. Due to the location of the proposed development internally to the site and at a distance of over 150 metres from the nearest residential area, the external impacts are considered to be minimal.

Environmental Assessment

There may also be noise impacts associated with the operation of plant and equipment. Plant areas on the roof are to only contain air handling plant and cooling towers, and the detailed design will incorporate required noise attenuation measures in order to minimise any potential adverse impacts.

Potential noise impacts related to construction works are outlined in section 9.26 of this report.

Commitments / Mitigation Measures

All building materials and systems will meet the requirements of the NSW Health Facility Guidelines, AS/NZS 2107:2000 *"Acoustics-Recommended design sound levels and reverberation times for building interiors"*, and the *NSW DECC Industrial Noise Policy Guidelines*.

A detailed assessment of plant noise emissions will be conducted once the type and placement of mechanical plant is confirmed.

Noise attenuation measures are to be implemented for plant rooms at roof level, such as screens or barriers, internal insulation, attenuators and acoustic louvers.

Plant will be selected and operated in accordance with the *NSW DECC Industrial Noise Policy Guidelines* and the *Protection of the Environment Operations Act 1997*.

Following completion of construction, operational noise monitoring shall be undertaken to ensure noise levels meet criteria within the *NSW DECC Industrial Noise Policy Guidelines* (INP). If the results of operational noise monitoring are found to exceed operational noise criteria derived under the INP, further consideration of reasonable and feasible measures will be undertaken to minimise the noise impacts to surrounding sensitive receivers.

Investigative noise monitoring will be undertaken, as required, in response to any specific complaints that may be received.

9.25_Fire Safety

BCA Compatibility and Fire Safety Reports (attached at Appendix Q) have been prepared by Vic Lilli for the East Block and ICU buildings.

The reports identify matters that must be addressed in order to ensure the buildings fully comply with the Building Code of Australia (BCA) 2009. The identified aspects of the current design that do not comply with the relevant deemed-to-satisfy provisions of the BCA are:

_East Block central stairway;
_Vertical separation of window openings in the eastern façade of East Block;
_Egress travel distances to the East Block Level 1 carpark and plant area;
_Design of the fire hose reel system to East Block Level 2;
_Omission of zone smoke control and sprinklers from North Block; and
_Distance of travel via a non-fire-isolated exit from Level 3 - North Block.

It is proposed that the current design of the above aspects of the development are assessed as an alternative solution against the provisions of the BCA Performance Requirements.

It will be necessary for these aspects of the building design to be evaluated by a suitably qualified fire safety engineer in accordance with the *International Fire Engineering Guidelines 2005*. It will also be necessary for the alternative solution relating to the omission of sprinklers and zone smoke control to North Block to be referred to the NSW Fire Brigades for approval under Clause 144 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The evaluation and verification of these matters by a fire safety engineer must be concluded prior to the issue of certification for the design under Section 116G of the EP&A Act.
Commitments / Mitigation Measures

All works will comply with the provisions of the BCA, either in terms of the deemed-to-satisfy provisions or by way of alternate solution.

Environmental Assessment

Elements of the development that are to be undertaken as alternative solutions under the BCA, are to be evaluated by a suitably qualified fire safety engineer in accordance with the *International Fire Engineering Guidelines 2005*, and to be referred to the NSW Fire Brigades for approval where required. The evaluation and verification of these matters by a fire safety engineer must be concluded prior to the issue of certification for the design under Section 116G of the *Environmental Planning and Assessment Act 1979*.

9.26_Construction Impacts

Appropriate construction management is critical to ensure the Hospital can continue to function and serve it's patients throughout the works period, and to minimise any impacts upon patients, visitors and staff.

Impacts associated with the construction and demolition works may include noise, dust, traffic and access issues, and waste generation.

Commitments / Mitigation Measures

Prior to commencing construction, a Construction Management Plan will be prepared by the contractor. This plan will include the identification and mitigation of potential impacts during the construction of the project including the following:

_Development of a site specific soil erosion and sediment control plan;
_Construction hours;
_Air quality/dust control procedures;
_Noise management procedures;
_Construction waste management plan;
_Storage and handling of materials procedures;
_Details of hoarding requirements;
_Traffic Management Plan;
_Procedures during events, including pedestrian movements, signage etc;
_Environmental training and awareness; and,
_Emergency preparedness and response.

The Construction Management Plan is to clearly indicate the frequency of noise monitoring, the locations at which monitoring shall take place, recording and reporting of monitoring results, and if any exceedance is detected, the manner in which any non-compliance shall be rectified.

Work sites are to be inspected on a regular basis to ensure that the dust control procedures, such as regularly watering unsealed areas, which are to be incorporated into the Construction Management Plan are being implemented. Visual monitoring of dust generation from work areas is to be undertaken to ensure that excessive dust is not being produced.

Regular inspection of the work site(s) is to be undertaken to:
_Evaluate the effectiveness of waste storage and collection practices;
_Monitor waste recycling and disposal procedures to ensure they are being complied with;
_Ensure waste receptacles are not being overfilled and are being collected on a regular basis;
_Ensure there is no unauthorised waste disposal activity; and
_Inspect any portable toilet facilities to ensure they are being emptied on a regular basis.

General construction hours will be: Monday to Friday 7am to 6pm; and Saturday 7am to 3pm. Where construction work is undertaken which generates significant noise or vibration impacts, construction hours will be: Monday to Friday 9am to 12pm and 2pm to 5pm, and Saturday 9am to 12pm.

During construction, the project will be aiming for a minimum 80% recycling of construction waste which is line with the Greenstar Healthcare v1 tool. All waste will be separated into different streams on site by the Contractor.

10 ___Draft Statement of Commitments

A Draft Statement of Commitments has been prepared to outline the proposed environmental management of the development, including mitigation and monitoring measures to be implemented to minimise the potential impacts that have been identified.

10.1_Construction and Operational Environmental Management Plans

An Environmental Management Plan (EMP) outlines the environmental goals of the project, the mitigation measures to be implemented, the timing of implementation, responsibilities for implementation and management, and a review process to determine the effectiveness of strategies.

A Construction Environmental Management Plan (CEMP) and Operational Environmental Management Plan (OEMP) is to be prepared by NSW Health for the construction and operation of the development. The objectives of the EMPs would be as follows:

_Ensure works are carried out in accordance with the assessments detailed in this Environmental Assessment to mitigate the potential for adverse environmental impacts;
_Ensure that the works are carried out in accordance with statutory requirements and non-statutory policies;
_Ensure that employees engaged to undertake the works comply with the conditions detailed in the EMPs as well as relevant OH&S requirements; and
_Identify management responsibilities and reporting requirements to demonstrate compliance with the EMPs.

The EMPs would be working documents and are to be amended should the strategies implemented be found to be inadequate to manage environmental impacts. The EMPs would typically:

_Establish environmental goals and objectives;
_Detail the required mitigation measures recommended in this Environmental Assessment;
_List actions, timing and responsibilities for implementation that arise from the mitigation measures recommended in this Environmental Assessment;
_Detail statutory requirements;
_Provide a framework for reporting on relevant matters;
_Detail training requirements for personnel in environmental awareness and best practice EMS;
_Outline emergency procedures including contact names and corrective actions;
_Detail process surveillance and auditing procedures;
_List compliant handling procedures; and
_Detail quality assurance procedures.

10.2_Mitigation Measures and Monitoring

The following mitigation measures and monitoring procedures have been proposed for the development, and are summarised from the main body of this report.

Safety, Security and Crime Prevention

As requested by Penrith City Council, consultation is to be undertaken with the Penrith and St Mary's Local Area Commands regarding community safety considerations and implications of the development.

<u>Lighting</u>

It is recommended that the following lighting design criteria, as outlined in the Penrith DCP (2006:6), is taken into consideration during the detailed design of the lighting for East Block. A review of the existing lighting in place for the ICU and Renal units should also be undertaken against these criteria and measures incorporated where possible.

(a) All areas intended to be used at night should allow appropriate levels of visibility.
(b) Pedestrian pathways, lane ways and access routes in outdoor public spaces should be lit to the minimum Australian Standard of AS 1158. Lighting should be consistent in order to reduce the contrast between shadows and illuminated areas. Lighting should be designed in accordance with AS4282 – Control of the obtrusive effects of outdoor lighting.
(c) Lighting should have a wide beam of illumination, which reaches to the beam of the next light, or the perimeter of the site or area being traversed. Moreover, lighting should clearly illuminate the faces of users of pathways.

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(d) Streetlights should shine on pedestrian pathways and possible entrapment spaces as well as on the road.
(e) Lights should be directed towards access/egress routes to illuminate potential offenders, rather than towards buildings or resident observation points.
(f) Lighting should take into account all vegetation and landscaping that may act as an entrapment spot.
(g) Lighting should be designed so that it is "vandal tough" or difficult for vandals to break.
(h) Where appropriate use movement sensitive and diffused lights.
(i) Avoid lighting spillage onto neighbouring properties as this can cause nuisance and reduce opportunities for natural surveillance.
(j) Illuminate possible places for intruders to hide.
(k) As a guide areas should be lit to enable users to identify a face 15 metres away.
(l) All lighting should be maintained and kept in a clean condition with al broken or burnt out globes replaced quickly.
(m) Use energy efficient lamps/fittings/switches to save energy.

Car Parking

It is recommended that:

Lighting of the car park should meet Australian standards for car parking, and be of a uniform nature so as to avoid problems associated with adjustment of vision for motorists and pedestrians moving from dark to light areas. Lighting should cover all of the parking area and not just driving aisles. Pedestrian exit and entry points should also be uniformly lit to ensure smooth visual transition from the interior of the facility to the external environment.

The car park is retained as light grey concrete or painted in a light colour in order to reflect as much light as possible. CCTV, intercoms and emergency alarms should be incorporated into the car park.

The car park incorporates signage to indicate the location of the exit, lifts, stairwells, intercoms, and emergency alarms.

The car park is generally spacious and open, however there are corners in the north-east and north-west which could provide concealment opportunities. It is recommended that mirrors are provided in this area to provide full visual coverage to pedestrians and vehicles approaching this area.

Particular attention should be paid to providing sufficient lighting and CCTV coverage to the lift area and stairwells, as they represent potential entrapment points.

All stairwell doors incorporate transparent panels to provide sightlines and give advanced warning of any potential dangers.

Signage and tactile pavement treatment is incorporated into the East Block car park detailed design, to direct disabled users to the lifts.

Entrapment Spots and Blind Corners

It is recommended that:

Consideration should be given to installing mirrors at the edge of the external East Block courtyard area to provide views around the corners.

Doors to any stairwells throughout the development incorporate glass panels.

Landscaping

It is recommended that a detailed landscape plan is prepared that:
_stipulates the use of canopy trees and low-level shrubs;
_stipulates spacing requirements for any dense low growth foliage;
_requires any vegetation near the main entrance to be of low-level so as to maintain visibility of the entrance;
_highlights the location of street lighting and stipulates vegetation of a height and type that will not interfere with the lighting of the public space; and
_recommends appropriate plant varieties to achieve the above.

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Building Identification and Way Finding

It is recommended that:

Signage on the Hospital campus is to be updated to clearly show the location of the new buildings and facilities, and to provide directions.

Where possible, new signage seeks to meet the following design criteria outlined in the Penrith DCP (2006:24):

(a) *Signs should be large and legible, with strong colours, standard symbols (e.g. for washrooms) and simple graphics. They should indicate where to go for help or assistance.*
(b) *Signs should be strategically located at entrances and near activity nodes such as intersections of corridors or paths.*
(c) *Signs should indicate how to report maintenance problems in the complex.*
(d) *The main pedestrian route through a large building, sets of building or areas of open public space should be indicated as such with appropriate signage.*
(e) *Where exits to pedestrian routs are closed after hours this should be indicated at the entrance to the route and information on alternative routes should clearly advised.*
(f) *Signs that provide way finding information should not be relied upon solely, the overall legibility of the design needs to be well considered. Users of the space need to be able to intuitively understand where they are within the complex or area and how they can get away.*

Security

It is recommended that:

Existing security systems provided at the Hospital are to be extended to the new buildings.

A Security Management Plan is prepared detailing the processes that will be implemented to effectively manage the security of patients, staff and visitors to the new facilities. This includes the use of security personnel, closed-circuit television systems, alarms and monitoring systems to provide a safe and secure environment.

Sustainability

A commitment is made, as per the NSW Health *Engineering Services and Sustainable Development Guidelines (TS11), Version 2,* to achieve a design that is capable of achieving a Green Star rating of at least 4 stars.

Waste Management

The operation of the new and refurbished facilities will be subject to standard Hospital procedures in regards to waste management, which include guidelines for meeting legislative requirements. Waste management is coordinated across the Sydney West Area Health Service (SWAHS) and is subject to the Waste Management Policy Manual, attached at Appendix AB.

Utilities and Services

Prior to the start of construction, utility and services companies are to be contacted to confirm the location of existing infrastructure on the site, and to arrange connections and disconnections.

Construction access and ingress is to be limited to Somerset Street. If there is any requirement to deviate from this, it must be agreed with Jemena Gas Networks and any other relevant utility providers.

Drainage, Stormwater and Groundwater Impacts

Soil erosion and sediment control measures, to prevent or minimise any discharge into waterbodies, are included in section 9.23 of this report.

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Transport, Traffic and Access

Suitable bicycle parking and storage areas are to be integrated on the site prior to issue of a Construction Certificate. The bicycle storage area must be designed in accordance with Australian Standard *AS 2890.3:1993 Parking Facilities – Bicycle parking facilities*. Details are to be provided prior to the issue of a Construction Certificate.

A commitment is given to further investigate measures to encourage the use of alternative transport options, as outlined in the TEF Consulting Report (attached at Appendix Y), and to implement where possible.

Accessibility

The development will comply with the requirements of Part D3 of the Building Code of Australia (BCA) and Australian Standard *AS 1428.1 General requirements for Access*.

Heritage

If an item of archaeological significance is found during excavation or construction, work would cease immediately, the site would be closed and the Heritage Office would be informed. Actions would be undertaken in accordance with the *Heritage Act 1977, Part 6 Division 8 Controlling and restricting harm to buildings, works, relics and places not subject to interim heritage orders or State Heritage Register listing*, in particular Clause 136 *Order restricting harm to buildings*.

Flora

If an external site compound is to be set up, it should be located away from any existing landscaping plantings.

Any landscaping or revegetation is to incorporate locally indigenous plant species that are characteristic of Cumberland Plain Woodland.

Machinery is to be cleaned of soil and debris before bringing it on to the site to reduce the potential spread of weeds and the fungal pathogen *Phytophthora cinnamomi*.

The site is to be made good on completion of construction with no excess construction materials or debris to remain on the site.

Trees to be retained on the site are to be protected from construction activities using the following measures:

- _Services should be designed so that no trenching is required within 8 metres of the trees.
- _A site arborist should supervise any activities in the vicinity of trees, including fencing, excavation and root pruning, and make periodic visits and reports to monitor the state of the trees.
- _Excavation in the vicinity of trees should be done initially by hand. Any roots encountered that are less that 50 millimetres in diameter should be cut cleanly with a hand saw. Any roots encountered that are greater than 50 millimetres in diameter should be retained intact and referred to the site arborist for advice.
- _Prior to the start of construction, trees should be fenced (in groups where possible) to a radius of 8 metres from each trunk except where access is required for construction, to form tree protection zones. Fences should be chainlink, 1.8 metres high, and supported by steel posts.
- _Where access is required within these radii for building purposes, the fence should be set back 1.5 metres from the building face and the soil surface between the fence and the building should be protected by plywood sheets or strapped planking.
- _Where not otherwise protected, trunks should be armoured with 2 metres lengths of 50x100 millimetre hardwood timbers spaced at 150 millimetre centres and secured by 8 gauge wires or steel strapping at 300 millimetre spacing. The trunk protection should be maintained intact until the completion of all work on the site.
- _There should be no pedestrian or vehicular access to the tree protection zones. No building activities should take place within the tree protection zones, including storage or stockpiling. Runoff from the site should not be allowed to enter the tree protection zones.
- _The soil surface within the tree protection zones should be mulched with a layer of composted organic material (Vitagrow Landcure or similar) to a depth of 100 millimetres.
- _At the end of construction all retained trees should be pruned to remove deadwood and weak branches. All pruning should be done in accordance with *AS4373 Pruning of Amenity Trees*.

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Fauna

Temporary fencing should be installed around construction and storage compounds to prevent access by native fauna and minimise opportunities for fauna to shelter in machinery or materials stockpiles.

Contamination

It is recommended that a detailed contamination assessment is undertaken in the area of the proposed East Block prior to the commencement of construction works, in accordance with the *DECC Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA, 1997), and any necessary remedial action or further investigations prescribed accordingly.

If any contamination is found during construction, it is tol be removed in accordance with Department of Environment and Climate Change (DECC) and Workcover requirements.

Hazardous Materials

A hazardous materials assessment is to be undertaken on the Intensive Care Unit and Renal Dialysis Incentre Unit buildings prior to the commencement of works on these buildings.

Soil and Soil Erosion

Geotechnical Investigations

Additional geotechnical investigations and testing is to be undertaken to:

_Evaluate design and construction requirements to alleviate the effects of the potential saline condition of the subsurface clay.

_Confirm the behaviour of the CLASS H site (high ground movement), in accordance with *AS/NZS 287001996 'Residential Slabs and Footings'*.

_Assess soil erosion potential, with testing to comprise particle size distribution of the soils and the determination of the Emerson Class Number to assess the dispersive nature of the soils.

Earthworks

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_Excavate the existing topsoils from within the development footprint and stockpile these separately for either re-use for landscaping or removal from site.

_Excavate the subsurface soils in the building areas to the design level of the building pads / floor slab sub-grade. Stockpile these materials separately for removal from site or, should it be required, these soils may be suitable for re-use within the development as 'controlled fill' if they are suitably combined with appropriate imported granular materials.

_A suitably qualified Geotechnical Engineer is to be present during proof-roll testing of exposed residual soils at foundation levels for the building pads / floor slab sub-grade to assess the ability of the prepared surfaces to act both as a foundation platform for shallow footings and also as a sub-grade for the undercroft and walkway pavements. Should soft heaving areas be identified, such soils are to be removed as directed by the engineer on site and replaced using suitable granular fill material.

_Fill material is to be placed in no more than 250mm loose thickness and suitably compacted. The degree of compaction is to be verified by in-situ and laboratory testing.

The exposed residual clay soils will not be trafficable under wet conditions. Trafficked areas during the construction works need to be covered by a suitable layer of crushed gravel or concrete.

Footings

Footings are to be designed and constructed in accordance with sound engineering principles and the following preliminary recommendations and advice:

_All footings of the proposed East Block building or walkways must found on ground of similar bearing capacity to prevent differential movement resulting from the varying foundation materials. It is therefore recommended that all footings found either entirely within the residual soils or entirely at depth within the weathered shale using deepened pier footings where necessary.

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_All footing excavations must be suitably cleaned free of loose debris and wet soil before construction.
_The foundation material is to be inspected at the time of footing excavation to ensure that all footings found on suitable ground with anticipated foundation conditions.
_With regards to the proposed ICU extension, the type and layout of the existing building foundations and the condition of the foundation materials are to be established to assess the capacity of the existing footings to carry the additional loading.

Soil Erosion and Sediment Control

Proposed soil erosion and sediment control measures are as follows:
_Initial works shall be undertaken in the following sequence prior to commencing construction:
  _Install all temporary sediment fences and barrier fences. Where fences are adjacent to each other the sediment fence can be incorporated into the barrier fence.
  _Construct temporary stabilised site access.
  _Install sediment traps.
_Undertake site development works so that land disturbance is confined to areas of minimum workable size.
_At all times and in particular during windy and dry weather, large, unprotected areas will be kept moist (not wet) by sprinkling with water to keep dust under control.
_Any sand used in the concrete curing process (spread over the surface) will be removed as soon as possible and within 10 working days from placement.
_Water will be prevented from entering the permanent drainage system unless it is relatively sediment free, i.e. the catchment area has been permanently landscaped/stabilised and/or any likely sediment has been filtered through an approved structure.
_Temporary soil and water management structures will be removed only after the lands they are protecting are stabilised / rehabilitated.
_Acceptable receptors will be constructed for concrete and mortar slurries, paints, acid washings, light-weight waste materials and litter.
_Any existing trees which form part of the final landscaping plan will be protected from construction activities by:
  _Protecting them with barrier fencing or similar materials installed outside the drip line:
  _Ensuring that nothing is nailed to them:
  _Prohibiting paving, grading, sediment wash or placing of stockpiles within the drip line except under the following conditions.
  _Encroachment only occurs on one side and no closer to the trunk than either 1.5 metres or half the distance between the outer edge of the drip line and the trunk, which ever is the greater
  _A drainage system that allows air and water to circulate through the root zone (e.g. a gravel bed) is placed under all fill layers of more than 300 millimetres depth
  _Care is taken not to cut roots unnecessarily nor to compact the soil around them.
_Allow for grass stabilisation of unstable areas, open channels and rock batters as and where directed.
_Allow for establishment of other erosion protection measures as directed.
_Receptors for concrete and mortar slurries, paints, acid washings, light-weight waste materials and litter are to be emptied as necessary. disposal of waste shall be in a manner approved by the site superintendent.
_Erosion and sediment control measures shall be inspected to ensure that they operate effectively. repairs and or maintenance shall be undertaken regularly and as required, particularly following storm events.
_The contractor shall provide all monitoring controls and testing.
_The temporary access shall be maintained in a condition that prevents tracking or flowing of sediment onto public rights of way. This may require periodic top dressing with additional gravel as conditions demand and repair and/or cleanout of any measures used to trap sediment.
_All sediment spilled, dropped, washed or tracked onto public rights of way must be removed immediately.

_The contractor will be responsible for the establishment and management of a detailed erosion and sediment control scheme to meet Council requirements.

Noise

All building materials and systems will meet the requirements of the NSW Health Facility Guidelines, AS/NZS 2107:2000 *"Acoustics-Recommended design sound levels and reverberation times for building interiors"*, and the *NSW DECC Industrial Noise Policy Guidelines*.

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A detailed assessment of plant noise emissions will be conducted once the type and placement of mechanical plant is confirmed.

Noise attenuation measures are to be implemented for plant rooms at roof level, such as screens or barriers, internal insulation, attenuators and acoustic louvers.

Plant will be selected and operated in accordance with the *NSW DECC Industrial Noise Policy Guidelines* and the *Protection of the Environment Operations Act 1997*.

Following completion of construction, operational noise monitoring shall be undertaken to ensure noise levels meet criteria within the *NSW DECC Industrial Noise Policy Guidelines* (INP). If the results of operational noise monitoring are found to exceed operational noise criteria derived under the INP, further consideration of reasonable and feasible measures will be undertaken to minimise the noise impacts to surrounding sensitive receivers.

Investigative noise monitoring will be undertaken, as required, in response to any specific complaints that may be received.

Fire Safety

All works will comply with the provisions of the BCA, either in terms of the deemed-to-satisfy provisions or by way of alternate solution.

Elements of the development that are to be undertaken as alternative solutions under the BCA, are to be evaluated by a suitably qualified fire safety engineer in accordance with the *International Fire Engineering Guidelines 2005*, and to be referred to the NSW Fire Brigades for approval where required. The evaluation and verification of these matters by a fire safety engineer must be concluded prior to the issue of certification for the design under Section 116G of the *Environmental Planning and Assessment Act 1979*.

Construction Impacts

Prior to commencing construction, a Construction Management Plan will be prepared by the contractor. This plan will include the identification and mitigation of potential impacts during the construction of the project including the following:

_Development of a site specific soil erosion and sediment control plan;
_Construction hours;
_Air quality/dust control procedures;
_Noise management procedures;
_Construction waste management plan;
_Storage and handling of materials procedures;
_Details of hoarding requirements;
_Traffic Management Plan;
_Procedures during events, including pedestrian movements, signage etc;
_Environmental training and awareness; and,
_Emergency preparedness and response.

The Construction Management Plan is to clearly indicate the frequency of noise monitoring, the locations at which monitoring shall take place, recording and reporting of monitoring results, and if any exceedance is detected, the manner in which any non-compliance shall be rectified.

Work sites are to be inspected on a regular basis to ensure that the dust control procedures, such as regularly watering unsealed areas, which are to be incorporated into the Construction Management Plan are being implemented. Visual monitoring of dust generation from work areas is to be undertaken to ensure that excessive dust is not being produced.

Regular inspection of the work site(s) is to be undertaken to:
_Evaluate the effectiveness of waste storage and collection practices;
_Monitor waste recycling and disposal procedures to ensure they are being complied with;
_Ensure waste receptacles are not being overfilled and are being collected on a regular basis;

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_Ensure there is no unauthorised waste disposal activity; and
_Inspect any portable toilet facilities to ensure they are being emptied on a regular basis.

General construction hours will be: Monday to Friday 7am to 6pm; and Saturday 7am to 3pm. Where construction work is undertaken which generates significant noise or vibration impacts, construction hours will be: Monday to Friday 9am to 12pm and 2pm to 5pm, and Saturday 9am to 12pm.

During construction, the project will be aiming for a minimum 80% recycling of construction waste which is line with the Greenstar Healthcare v1 tool. All waste will be separated into different streams on site by the Contractor.

11 ___Conclusion

This Environmental Assessment has been prepared for NSW Health Infrastructure. It accompanies a Major Project application for redevelopment of the Penrith Nepean Hospital located at Derby Street, Kingswood, Penrith, New South Wales.

The application is seeking approval under Part 3A of the *Environmental Planning and Assessment Act 1979* for the following works:

_Construction of a new “East Block”;
_Refurbishment and expansion of the Intensive Care Unit (ICU), including demolition of chapel and construction of replacement chapel;
_Expansion of the Renal Dialysis Incentre Unit; and
_Associated car parking, access, landscaping, engineering services, and site works.

A growing population, an ageing population with increasing co-morbidities, increased incidence and prevalence of chronic disease and its risk factors, a significant rise in emergency department activity, and the need to maintain operations as a regional trauma service are all driving the need for the redevelopment of the Hospital.

The Environmental Assessment has been prepared in response to the Director General's Requirements, and is supported by a range of specialist documentation.

The Assessment finds that the proposed development of Penrith Nepean Hospital is appropriate having regard to:

_The established use and function of the site and the growing demand for medical facilities within the Sydney West Area.
_The relevant environmental planning instruments, policies and guidelines that apply to the site.
_The appropriate zoning of the site, designated to support Hospital functions.
_The consultation that has been undertaken with relevant stakeholders and interest groups, including State authorities, Penrith City Council, utility providers, Hospital staff, and community groups.
_The built form, landscape and overall urban design response is considerate of the existing Hospital campus and the surrounding residential properties and will ensure continued residential amenity.
_Car parking provided on the site meeting Penrith DCP requirements.
_The incorporation of sustainable initiatives into the design.
_The proposed mitigation measures and commitments which ensure only minimal environmental impacts are associated with the proposed development.

The proposed development of the Hospital is in the public interest as it will improve the quality and safety of patient care and the patient's experience of the health system. The development will also provide economic benefits by providing short-term and long-term employment opportunities in the health and health education sectors, and enhancing the ability of the Penrith region to attract new residents, especially health professionals.

When assessed against all relevant matters in the Director General’s Requirements, and Section 3A of the *Environmental Planning and Assessment Act 1979* the Project Application is considered to be compliant and is recommended for approval.