Life City Wollongong (Australia)

HI-TECH HOLISTIC CANCER & MEDICAL HOSPITAL FACILITY

LCW Life City Wollongong

The Client –

DELBEST Pty Limited

The consultant team includes –

Architects + Project Management	Boss Design Pty Ltd
Urban Design	Core Projects Pty Ltd
Town Planning	aberline+associates pty ltd
Landscape Architect	Dextrous Design
Ecological and Environmental Consultants	Kevin Mills & Associates
Traffic Assessment	Traffic Impact Services Pty Ltd

Content

‘Life City Wollongong (Australia)’

HI-TECH HOLISTIC CANCER & MEDICAL HOSPITAL FACILITY

Life City Wollongong will be a Hi-tech Holistic Inpatient Hospital Facility providing inpatient cancer treatments and medical services. This will be located at Berkeley, Wollongong, NSW, in the Illawarra Region.

This Hi-Tech, Holistic Hospital Facility will serve as a centre of excellence as it will incorporate the best practices of modern medicine with a holistic approach resulting in better outcomes for cancer patients.

RIP Prof. Chris O’Brien AM who worked at Royal Prince Alfred Hospital, Sydney envisioned the creation of “ LIFEHOUSE- a cancer hospital with holistic approach ” a unique model that we cherish, and we will attempt to emulate in the form of Life City.

Life City will serve as a similar facility in the Illawarra region for providing desperately needed treatment services for cancer inpatients, and this will provide comfortable facilities for the carers during their treatments.

This facility will be a tertiary level Cancer Hospital and it will also provide additional medical facilities such as Cardiology, Respiratory, Gastroenterology, Neurology, Endocrinology, and Rehabilitation will be incorporated. Psychiatry and Mental Health Services will also be available. A dedicated healthcare department will work in conjunction with these modalities to provide a holistic care to compliment wellness and contribute towards better health outcomes for the community.

It will be Australia’s largest Integrated Holistic Hi-Tech Medical Healthcare Facility with a unique and an Innovative approach to treat cancer inpatients, and also to provide a broad range of medical services.

This will be an environmentally friendly facility complying with green building programs, technologies, and design practices. Life City construction will be in line with the guidelines for project specific Environmental Management Plan (EMP) for the works in accordance with section 3 of the NSW Environmental Management System Guidelines 2007.

The administration has already affirmed with local transport agencies adequacy of services for public utilising this facility. Ample Parking places, set down areas, pedestrian safety, easy accessibility including disabled parking and access have been carefully incorporated in the facility design.

This venture will be contributing to jobs in health sector, and allied services. The employment opportunities will contribute to economic development of the Illawarra region. It will help towards education& training, Research & Development and skills development for a wide spectrum of residents in the area where employment is a major concern in the present climate.

The directors of Delbest Pty Ltd. Dr. M.K. Rashid and Dr. A. Rashid are local General Practitioners who have been practicing in the Berkeley / Unanderra area since 1976. Dr. Rashid is also Clinical Lecturer for Graduate School of Medicine at Wollogong University and has been involved in training of medical students in the region. He is an industry partner with University Of Wollongong in Healthcare Informatics Research and sponsors Ph.D and Master scholars.

Life City Wollongong, will provide world class environmentally friendly hi -tech holistic health care facilities to local, national, and the international community.

1. HEALTH

2. EMPLOYMENT

3. ENVIRONMENT

4. EDUCATION + TRAINING

5. TRANSPORT

Executive Summary

DELBEST Pty Limited proposes to develop the subject site at Warwick Street Berkeley for a Hi-Tech Holistic Cancer & Medical Hospital Facility – the Life City Wollongong (LCW). The total subject site area is 16.78 hectares being three lots that include a 24 metre wide transmission easement along the southern and south-eastern boundaries.
The site is currently zoned partly for residential use (4.79 hectares) and partly for environmental management (11.99 hectares) under the recently gazetted Wollongong Local Environmental Plan 2009. The current zoning does not allow the whole of the proposed development and as a consequence, a Part 3A application is proposed.

This report is a Preliminary Environmental Assessment and is seeking:

- a Clause 6 declaration – that the application can be considered under Part 3A of the *Environmental Planning and Assessment Act 1979*
- the Director General's Requirements for a full environmental assessment; and
- the authorisation of the Concept Plan.

The vacant site is located within the suburb of Berkeley in southern Wollongong. The site has existing vehicular access from Warwick Street and a proposed additional access through Wollongong Council owned property (Lot 2 DP 860917) to Nolan Street.

The site adjoins the residential areas of Berkeley to the north and south. The western boundary adjoins the F6 freeway and the eastern boundary adjoins the Council land that is also vacant.

The site is close to a range of services and facilities and is highly accessible for the existing communities of the area and region, including:

- easy access to the Wollongong and other Illawarra communities,
- railway access via Unanderra Railway Station,
- bus services between Wollongong to the north and Warrawong to the south-east via Unanderra and Berkeley with connecting services to the whole of the Illawarra.
- easy access to the F6 freeway via Nolan Street and Berkeley Road,
- being accessible to existing educational facilities including Primary and High Schools, TAFE and University of Wollongong,
- local shopping facilities available at Berkeley, Unanderra and Dapto,
- regional shopping available at Warrawong, Figtree, Shellharbour and Wollongong CBD,
- community, recreation and leisure facilities including Lake Illawarra.

There are no significant environmental constraints that cannot be accommodated and the site is capable of being serviced. The proposal has the potential of providing a significant upgrade to the current degraded natural environment and will assist in managing the current bush fire hazard contained within the site.

The proposed development consists of:

- a 320 beds hi-tech holistic cancer & medical hospital facility,
- a holistic health course for a range of healing therapies,
- Day surgery and Specialist rooms,
- senior living,
- ancillary accommodation for nurses, medical students and resident medical officers,
- a Library, Lecture Theatre, Auditorium & Conference Facilities,
- a resident care facility and hostel
- Wollongong Healthcare Technical High School, and
- 70% of the site landscaped including an area for regeneration of the local rainforest.

Specifically the Illawarra Regional Strategy identifies the **health care sector, including hospitals, medical centres, clinics and aged care facilities as major employment generators** in the Region. The Strategy expects this sector to grow to meet the changing needs of the Region such as the upgrade to the Wollongong Hospital to a teaching hospital.

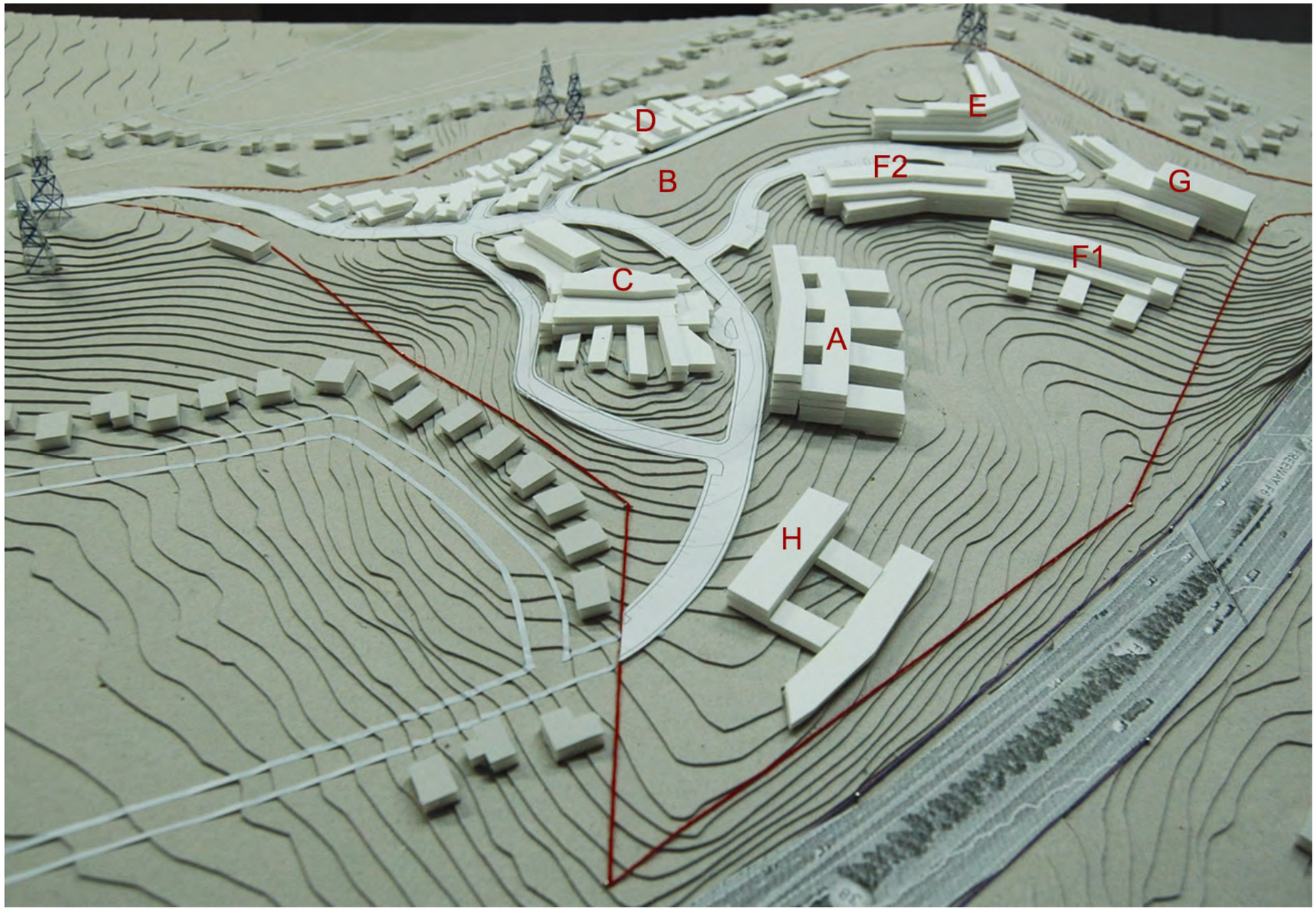
In terms of economic development and growth the Strategy states that particularly in manufacturing, research and development, retail, **health and community services**, property and business services, and tourism will be facilitated though the provision of suitable employment lands.

The Strategy states that Councils should **encourage the clustering of synergistic businesses** by consolidating existing centres and fast tracking approvals of cluster proposals such as business and finance, **medical and health**, and research and development.

The subject proposal is consistent with and relevant to achieving some of the principle healthcare outcomes of the regional strategy.

Overall public benefits:

- **Jobs** – the proposed development will attract and retain medical skills in the area and provide employment for more than 2600 people in a wide range of health care jobs as well as a range of support services jobs;
- **New services** – the proposed development provides an array of health, educational and research related services that are needed in the regional and broad community;
- **Technology** – the proposed development introduces a new level of hi-tech design and technology to assist in both diagnosis, recovery and research;
- **Increased healthcare choice** – the proposed development relieves pressure from the public health system and meets the increasing demand for private health care;
- **Provide a number of learning and training opportunities** – independently and some in conjunction with the University of Wollongong and the TAFE ranging from selective high school to tertiary and post graduate levels,
- **Integrated facilities** – the proposed development provides a holistic approach to healthcare on an integrated site, enabling people to access various facilities, services and learning in one locality and
- **Sustainable Development** – the proposal will provide best practice environmentally sustainable development and will be integrated with and enable the enhanced environmental protection areas and landscape to be provided and maintained on a sustainable basis.
- **Housing Choice** – the proposal will provide a range of housing options that are related to the overall holistic healthcare concept including seniors housing (all three levels), patient relative accommodation and healthcare worker accommodation.



LEGEND

A **Hi-tech Holistic Cancer & Medical Hospital Facility**

B **Holistic Health Course**

C **Day Surgery & Specialist Rooms**
Medical Centre
Child Care Centre
Respite Care Centre

D **Senior Living**

E **Serviced Apartments**
for Attendants of Patients & Patients seeking outpatient services

F1 **Educational & Research**
Library, Lecture Theatre, Auditorium
Research & Development Facility

F2 **Accommodation**
for Doctors, Nurses and Students.

G **Residential Care Facility and Hostel**

H **Wollongong Healthcare Technical High School**

1. Overview

DELBEST Pty Limited has commissioned a range of consultants to prepare and lodge this Preliminary Environmental Assessment including a Concept Plan with the NSW Department of Planning for the purposes of obtaining:

- a Clause 6 opinion that the project can be assessed under Part 3A of the *Environmental Planning and Assessment Act 1979*;
- the Director General's Requirements for a Holistic Health City at Berkeley in the Wollongong Local Government Area; and
- the authorisation of the Concept Plan to set the assessment framework for subsequent detailed project applications.

The proponent Delbest Pty Ltd – is the owner of the subject site. The site is currently partly zoned for residential development and partly zoned environmental management under the recently gazetted Wollongong Local Environmental Plan 2009.

A concept plan is has been prepared for the eight staged proposal that includes:

- 320 beds hi-tech holistic, cancer & medical hospital facility
- holistic health course for Yoga, Reiki and Laughter Therapy, Meditation, Auras, and Pranic Healing,
- day surgery and Specialist rooms,
- senior living development,
- ancillary accommodation for employees including doctors, nurses, medical students and patients seeking outpatient services.
- a Library, Lecture Theatre, Auditorium & Conference Facilities, lake & amphitheatre,
- Wollongong Healthcare Technical High School and sports oval.

It is estimated that the total project will provide 2600 permanent jobs and will cost in excess of $270 million in today's dollars.

The current zoning of the site does not allow all of the proposed uses, although the objective of the current zones are addressed by the proposal and the substantial environmental restoration and ongoing management are only feasible with a project of this scale.

A large proportion of the site has been retained for environmental management and enhancement particularly the skyline when viewed from the Berkeley residential area to the south-east and from Lake Illawarra to the south. A further area identified as remanent rainforest in the flora and fauna assessment is to be restored to its former natural character.

A concept landscape design by Dextrous Design is included as part of the concept.

This would not be viable if the subject site was developed under the existing local environmental plan zonings.

All infrastructure and buildings are proposed as best practice environmentally sustainable development and will be integrated with the enhanced environmental protection areas and landscape.

The environmentally sustainable components will include:

- full stormwater water storage and reuse;
- solar collectors to provide non-emergency electricity;
- low embodied energy building materials;
- indigenous landscaping to the whole of the site except small portions of the developed areas; and
- environmentally sustainable land management and construction practices.

The Traffic Impact Assessment has found that only the initial stages 1-3 can be accessed from Warwick Street. The Cancer and Medical Hospital Facility in stage 4 will require a new road through Wollongong City Council property to connect to Nolan Street.

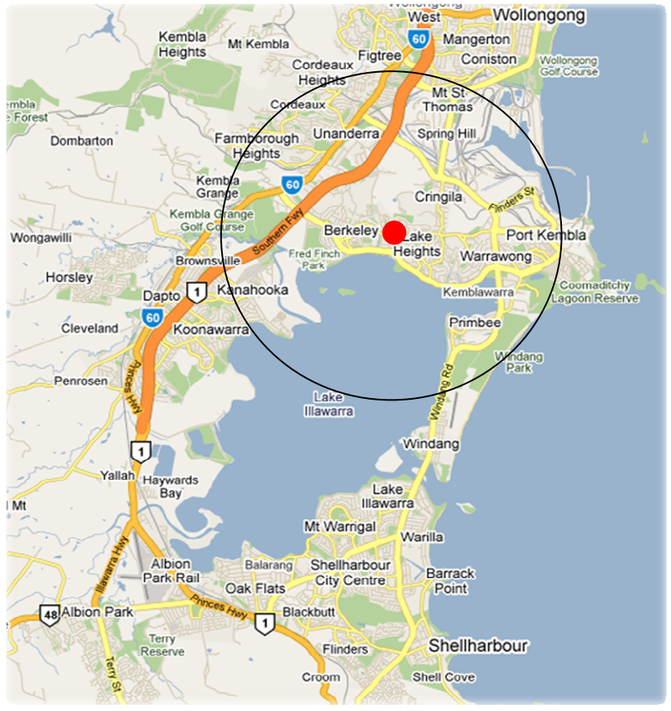

Thornbury Ave
Orana Pde
Stratford Rd
Lusa Dr
Doyle Ave
Warwick St
Hunt Pl
Newcombe St
Hoad Pl
Hopman Cres
1
60
Sylvester Ave
Canterbury Rd
Kingston Town Dr
Trifecta Pl
Manikato Pl
York St
Nottingham St
Cheshire St
Suffolk St
Norfolk St
Semaphore Rd
Maasthead Pl
Cumberland St
Northcliffe Dr
Kelly St
Rhonda St
Gallop St
Boronga Cres
Nannawilli St
Denniss St
Massey St
Derby St
Hertford St
Southern Fwy
N

2. The Site

2.1 Site description

The subject site is located in southern Wollongong at Berkeley, within the Illawarra Region of New South Wales. The subject site is adjacent to the F6 southern freeway linking Sydney to Wollongong and to the south coast of New South Wales. Berkeley is 93kms (1hr 28 mins) south of the Sydney CBD and 11.4kms (14 mins) south of the Wollongong CBD. It is a further 16.4kms (28 mins) from Berkeley to Shellharbour to the south and 7.3kms (10 mins) to Dapto to the south-west.

The Nan Tien Buddhist Temple is 4kms away by road but only 700m away in a straight line towards the north-east.



Location Map – Illawarra Region with 5 kilometre radius from the subject site

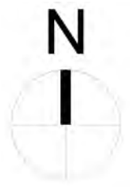
Lake Illawarra, the coastline and a number of recreational facilities - including Kembla Grange Race Course and Fred Finch Park - are within a 2 to 7km drive from the subject site. There are a number of employment areas within 5kms of the site including the BHP Billiton Steel Works and Bluescope Steel at Port Kembla just to the north-east and the Unanderra Industrial Area on the opposite side of the freeway to the subject site.

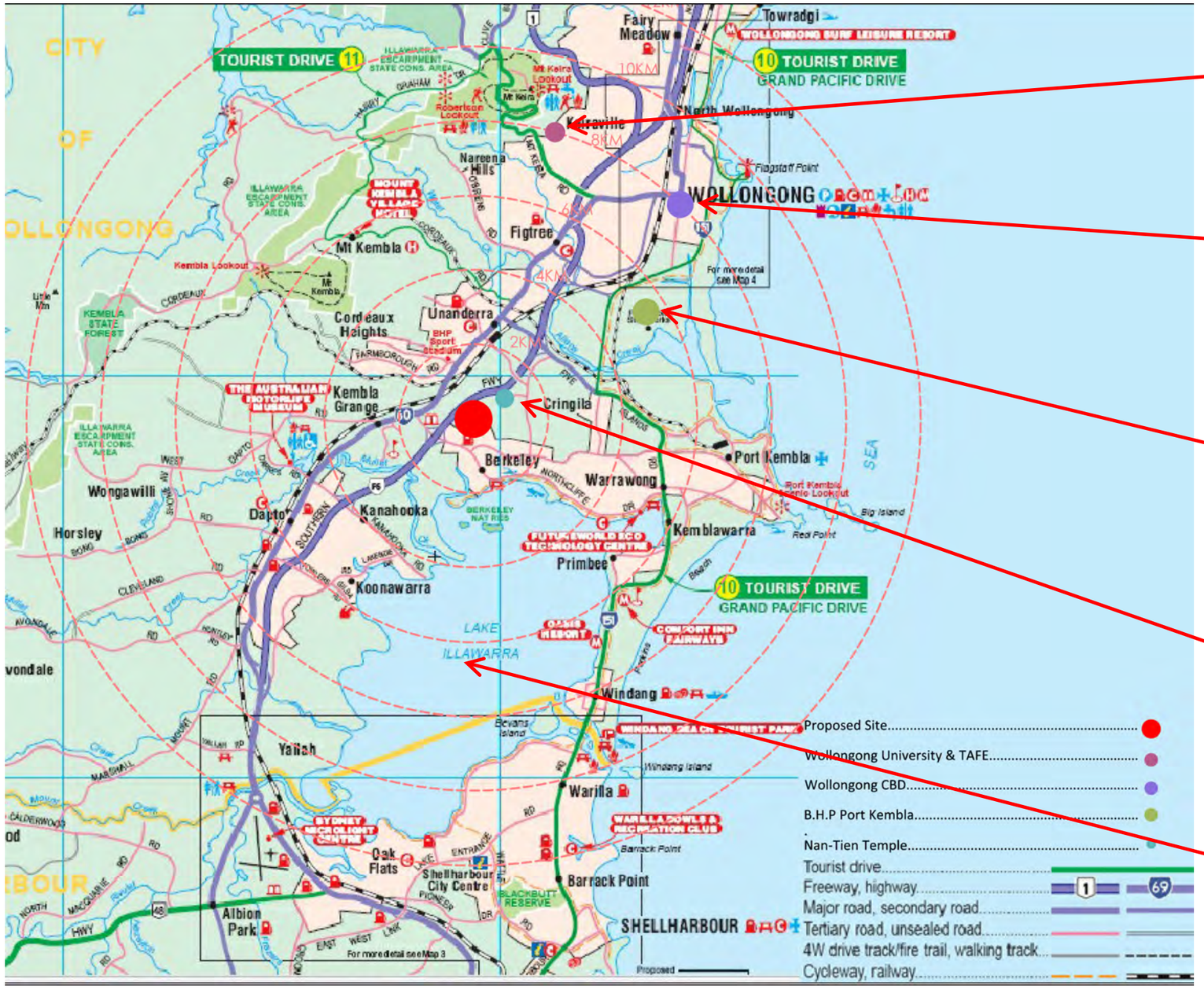
The subject site consists of three allotments with a total area of 16.78 hectares. The principal lot is Lot 4 DP 258635. A 24 metre wide easement for transmission lines is located on the southwest and southeast boundaries of the site - over Lots 1 & 2 in DP 765444. All three lots comprising the subject site and the adjoining Council owned site are currently vacant.

The site contains two high points at contours around 76 metres and 72 metres Australian Height Datum (AHD) with a ridge between the high points dropping to AHD 73 metres at the lowest point of the ridge. The site generally falls to all boundaries from this ridge forming a principle Catchment (A) towards the west (adjacent to the freeway) and a four other smaller natural water Catchments (B, C, D and E) to the north, east, and south.

The water Catchment C to the east has been identified in the Flora and Fauna Assessment by Kevin Mills and Associates as containing remanent local rainforest species and is proposed to be regenerated as shown on the Concept Plan. Development has generally been limited in Catchment C.

Contours and Catchments Plan



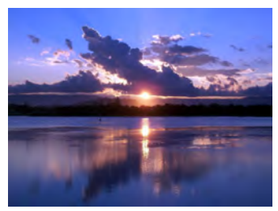


1. WOLLONGONG UNI

2. WOLLONGONG CBD

3. B.H.P PORT KEMBLA

4. NAN-TIEN TEMPLE



5. LAKE ILLAWARRA

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The site was zoned Residential 2a and Environmental Protection 7b under the previous Wollongong Local Environmental Plan 1990. The recently gazetted Wollongong LEP 2009 maintains the boundaries and broad intent of the zones, and rezones the respective areas to R2 (4.79 hectares) and E3 (11.98 hectares). The larger portion of the site is now zoned for environmental management rather than environmental protection. The objectives for the two current zones are as follows –

Zone Objectives for R2 **Low Density Residential** Zone

Objectives of R2 zone
• To provide for the housing needs of the community within a low density residential environment.
• To enable other land uses that provide facilities or services to meet the day to day needs of residents.

The proposed development relocates the ancillary and seniors housing residential components to a more appropriate part of the site that is not subject to impact from the freeway, has a vastly improved outlook, orientation, drainage and access to the restored natural environment of the subject site.

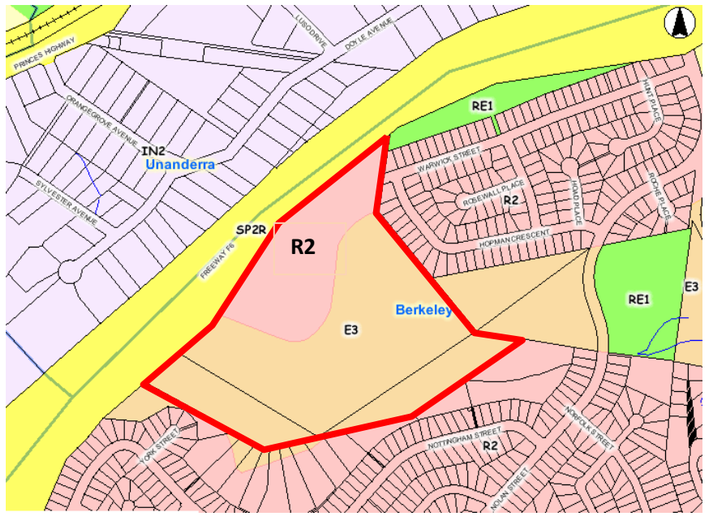
Zone Objectives for the E3 **Environmental Management** Zone.

Objectives of E3 zone
• To protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values.
• To provide for a limited range of development that does not have an adverse effect on those values.
The proposed development provides the means to manage the currently degraded natural environment while providing an environmentally sustainable hi-tech, holistic healthcare development that is integrated into the restored natural environment.

The current street frontage and vehicular access to the site is from the south-western end of Warwick Street. Warwick Street is a Local Residential Street with a carriageway that is approximately 10 metres wide. The site is adjacent to a bus route that provides access via the Illawarra bus route network to a large part of the Illawarra region and to the train station at Unanderra 2.2 km from the subject site.

A central portion of the site is shown as bush fire prone in the Wollongong Development Control Plan. This part of the bush fire prone area is isolated from other bush fire prone areas in the Wollongong Local Government Area and is contained on the subject site. The proposed development will have a significant impact on the bush fire characteristics of the subject site by reducing the risk and improving the access. A bushfire hazard study needs to be completed in conjunction with the detailed Environmental Assessment based on the proposed uses of the site and the provisions of the concept plan.

Locality Map showing relationship of subject site to major roads, railway stations and shops.



Wollongong Local Environmental Plan 2009 extract

Subject Site

LEGEND:

1) *Mixed regrowth forest/ woodland*
2) *Wattle forest/ woodland*
3) *Kikuyu Grassland*

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F6 SOUTHERN FREEWAY
WARWICK STREET
HORNSBY AVENUE
YORK STREET
NOTTINGHAM STREET
EXISTING RESIDENTIAL






The Flora and Fauna Assessment by **Kevin Mills & Associates,** Ecological and Environmental Consultants found that only three vegetation communities occur on the subject land, none of these being natural. The communities include an area of mixed re-growth forest/woodland, an area of wattle forest/woodland and areas of kikuyu grassland.

The assessment found that 'there are no large or old trees anywhere on the site, so the vegetation is regrowth rather than remnant from the original rainforest that once grew across the Berkeley Hills. Most of the trees appear to be quite young.'

'Native plant species are common within the mixed re-growth forest/woodland area and for a significant portion of this area it is a recommendation in the Flora and Fauna Assessment to retain the north-eastern corner of the property as an open space area where rainforest regeneration will be undertaken. That area was chosen because:

- it contains most of the native plants on the site;
- it is already starting to regenerate native vegetation, albeit amongst abundant weed growth;
- it is a separate catchment to the development;
- it is on Permian volcanic rock, rather than the sedimentary rock on most of the site;
- it is contiguous with the bushland on the adjoining council land.'

'There will be some loss of native vegetation on other portions of the subject site due to the proposed development however this will be offset by regenerating native vegetation in the area described above.'

It is also a recommendation of the Kevin Mills & Associates assessment that some local native species be incorporated into the landscaping of the remainder of the site. The local flora offers abundant choices for attractive plants, from trees to herbs. This is shown on the landscape concept plan by Dextrous Design.

The rainforest regeneration area has been incorporated into the concept plan and the weed removal and regeneration works are included in Stage 2, Precinct 2 of the proposal.

2.2 Site context

The site has the low density residential development of the Berkeley locality on both the north-eastern and southern boundaries. The F6 southern freeway is located on the north-western boundary. An area of land zoned E3 and owned by Wollongong City Council is located directly to the east of the subject site.

The site is part of an elevated ridge running southwest/ northeast across the western edge of the suburb of Berkeley. Other development on this ridge includes the Nan Tien Buddhist Temple, the southern freeway, some Electricity Transmission Infrastructure and some scattered low density housing.

The elevation of the site allows views toward Lake Illawarra to the Southeast and of the coast and ocean towards the east/northeast. Views of the surrounding urban areas are also available in nearly all directions. Views to the west are of the industrial zone to the west of the freeway and in the distance the Illawarra Escarpment.

The elevation of the site provides a partially green backdrop from a number of points within the Berkeley locality including the shopping centre area and from the Lake Illawarra; however the site is not visually part of the green Illawarra escarpment that is also visible from most parts of the Wollongong urban area including Berkeley.

Coledale District Hospital

Bulli District Hospital

Wollongong Hospital

Port Kembla Hospital

SUBJECT SITE

Shellharbour Hospital

Kiama Hospital

David Berry Hospital

Shoalhaven Memorial Hospital

Subject Site at Berkeley

Existing Public Hospitals (excl Garawarra Centre)

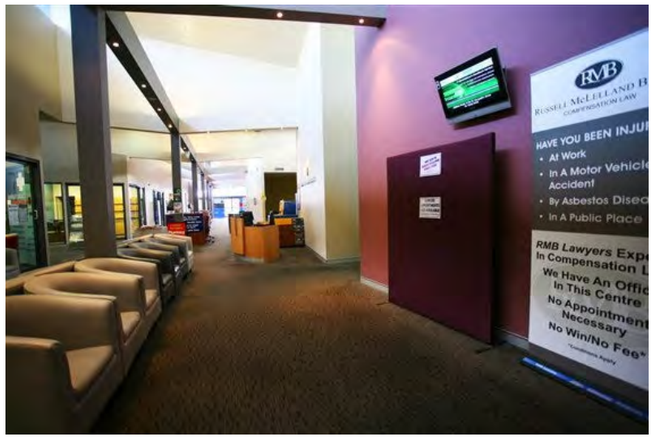
N

2.3 Regional Healthcare Context

An established health-care system operates in the Illawarra Region and the northern Shoalhaven Shire providing for a population of more than 350,000 people. This is within the South East Sydney Illawarra Health Service Area.

The following nine public health-care facilities (hospitals) are located in the Illawarra Region – they are listed in order from north to south of the subject site as shown on the following map.

- **Garawarra Centre –** This is a dementia aged care unit with 120 beds. Average occupancy in 2006/7 was just under 100%. This is not a full service hospital and is not shown on the relevant map or included in totals - being further north of Wollongong on the southern edge of Sutherland Shire and more than 40 km north from the subject site.
- **Coledale District Hospital –** this small hospital is a sub-acute facility with a total of 34 beds, fourteen of which are transitional aged care beds. The hospital offers inpatient rehabilitation services and community outpatient services. Average occupancy in 2006/7 was over 97%.
- **Bulli District Hospital –** This is a smaller district hospital with 62 beds offering geriatric, medical, surgical and emergency services. Average occupancy in 2006/7 was just over 97%. This hospital is located 17.5 km north of the subject site.
- **Wollongong Hospital –** this is the Principal Referral Hospital in the Illawarra region providing 468 beds and offering surgery, medicine, maternal and post natal care, paediatrics, intensive care, emergency and cancer care. Average occupancy in 2006/7 exceeded 100%. This hospital is located 6 km north of the subject site.
- **Port Kembla Hospital** – This hospital has 67 beds offering rehabilitation, aged care, palliative care, drug and alcohol services. Average occupancy in 2006/7 was just over 91%. This hospital is located 4.1 km east from the subject site.
- **Shellharbour Hospital** – This district hospital for the Shellharbour and Kiama local government areas is an acute care facility which provides emergency services, elective surgical services, general medical, antenatal and primary family health care, satellite renal dialysis and adolescent and adult mental health services. The general hospital has 87 medical, surgical and special care in-patient beds, and an 8 bed day surgery unit, in addition to 69 mental health in-patient beds.
The Emergency Department accommodates 21 treatment spaces in total. This hospital is located about 10 km southeast of the subject site.
- **Kiama Hospital** – This small hospital has 20 beds offering slow stream medical and nursing home respite care. Average occupancy in 2006/7 was just under 100%. This hospital is located 24 km south of the subject site.
- **David Berry Hospital –** Another small hospital with 26 beds including 17 for rehabilitation. This hospital offers rehabilitation and palliative care. Average occupancy in 2006/7 was just over 87%. This hospital is located 36.3 km south of the subject site.
- **Shoalhaven Memorial Hospital –** This is a Major District Hospital that is located at Nowra xx kilometres south from the subject site. The hospital has 143 beds for emergency, surgical, elective orthopaedic, gynaecology, paediatric, neonatal care, rehabilitation and aged care. Average occupancy in 2006/7 was just over 90%. This hospital is located 50.1 km south of the subject site.
- **Milton Ulladulla Hospital** – This hospital provides a 25 bed rural acute facility for general medicine, minor surgical, low risk obstetric, emergency and day-care services. Average occupancy in 2006/7 was just over 82%. This hospital is located 131 km south of the subject site.



THE CENTRE HEALTH COMPLEX – Captain Cook Dr, Medical Centre

There are also a number of private hospitals in the region as follows –

- **Figtree (Illawarra) Private Hospital** – This private hospital has 101 beds and offers medical, surgical and maternity services including coronary care, orthopaedics, obstetrics, urology and general surgery. This hospital is located 3.3 km from the subject site.
- **Shellharbour Private Hospital** – This private hospital has 59 beds and offers acute care, general surgery, ear nose and throat, plastic surgery, oral surgery, gynaecology, colorectal services, orthopaedics, pain management and rehabilitation and day surgery. This hospital is located 10.2 km southeast of the subject site.
- **Lawrence Hargrave Private Hospital** - This private hospital has 42 beds and offers medical and palliative care, rehabilitation, outpatient and day care services. This hospital is located 18.8 km north of the subject site.
- **Proposed Illawarra International Health Precinct –** this project as part of the proposed Dapto West release area has a recent Part 3A approval however a timetable for the implementation is not known at this stage. Stage 5 of the proposal is for the **Huntley Private Hospital, a** tertiary referral hospital with 310 beds. The overall precinct is planned to offer surgical, obstetrics and aged care services, radiology and pathology services, a medical centre, pharmacy and casualty as well as some ancillary facilities including accommodation. The site for this hospital is located 15.4 km southwest of the subject site.

There are a number of medical centres within the region, however a near by one to the subject site is **The Centre Health Complex at Barrack Heights** which is owned and operated by Dr M.K.Rashid; the Director of Delbest Pty Ltd, the proponent of the subject application. This centre provides comprehensive healthcare services under one roof. This includes primary healthcare, diagnostics, allied health, healthcare informatics, virtual clinics and local, regional and global community healthcare with access to general practitioners, specialists and remote diagnostic services.

Other medical centres in the region include –

Wollongong Medical Centre-
237-241 Crown Street, WOLLONGONG NSW 2500
Centre Health Complex-
8/9-25 Captain Cook Dr, Barrack Heights NSW 2528
Corrimal Medical Centre-
116 Railway St, Corrimal NSW 2518
Dapto Medical Centre-
112 Princes Hwy, Dapto NSW 2530
Warrawong Medical Centre-
43 King St, Warrawong 2502
Illawarra Dermatology and Laser Clinic-
25 Osborne St, Wollongong NSW 2500
Bayview Medical Centre-
166 Cowper St, Warrawong NSW 2502
Headspace Illawarra Youth Health Centre-
1/85 Smith St, Wollongong New South Wales 2500
Albion Park Medical Practice-
5/64 Terry St, Albion Park NSW 2527
Early Childhood Centre -
341 Crown St, Wollongong NSW 2500
Community Health Centre -
Tongarra Rd, Albion Park NSW 2527
Community Health Centre -
4 Marshall St, Dapto NSW 2530
Other day-surgery facilities are located in Wollongong being the **Southern Medical Day Care Centre** and the **Wollongong Day Surgery**.

Health education facilities are provided in the region at **Wollongong University** and at **Wollongong TAFE.**

The total number of hospital beds (public and private) currently available in the region is around 1047 (excluding aged care) for a population of over 350,000 people or about 1 bed per 334 persons. **Average occupancy is around 95%.**

site boundary
- proposed site
- easement line

environmental aspects
- proposed site
- sun
- desirable wind
- noise
- noise barrier wall

existing landscape aspect
- proposed site
- gully
- bog
- waterhole
- KMA AREA

road network
- proposed site
- southern fwy
- local road 1
- existing bus route
- connector road
- access to site
- motorway in-cut

N

2.4 Site Analysis and Plan

The site analysis has concluded the following –

- that the current land use zoning of the subject site has not been comprehensively reviewed for a considerable amount of time (more than 20 years) and at that time has apparently been influenced by the location of the electricity easement and freeway, other land ownership boundaries, road patterns, contours and broad patterns of vegetation. The visibility of the eastern portion of the subject site also seems to have been taken into consideration in determining the extent of the environmental management zone.

- that the detailed assessment by Kevin Mills and Associates of flora and fauna has accurately located the remanent area of local rainforest that has potential for regeneration both on the subject site and on adjacent Council land and has identified the reduced value of natural vegetation and weed infestation on the remainder of the subject site.

- that the portion of the subject site zoned residential has the least attractive characteristics for residential development given its poor amenity resulting from drainage/catchment pattern, freeway noise impacts and the enclosed outlook to the Unandarra Industrial Area to the west.

- that quality outlooks from the site are available from most of the south-eastern, eastern to north-eastern slopes of the subject site.

- that vehicular access from Nolan Street (collector road) will have minimal impact on the amenity of the locality compared to access from Warwick Street (local road), although Warwick Street is wide enough to support some additional traffic including the existing and modified local bus route.

- that the topography of the site can continue to provide a green horizon for those parts of the lower areas of Berkeley and Lake Illawarra that can see the upper portions of the subject site.

- that development of the site can be supportive of the local bus service and increase its viability.

- that development of the site can assist in reducing the existing bush fire risk to surrounding residential development and the current anti-social uses occurring on the undeveloped site and adjoining sites.

- that servicing of the subject site can initially be provided by an extension of the services existing in Warwick Street and other local roads to the south. Services upgrades may be necessary for the later stages of development.

1. Site area : 16.78ha
1a. Low density residential zone
1b. Environmental protection zone conservation

2. Electricity easement

3. Potential local rainforest rehabilitation

1. Proposed barrier planting

2. Holistic Course

1. Potential road

2. Potential bus route

1. Day Surgery & Specialist Rooms

2. Hi-tech Holistic Cancer & Medical Hospital Facility

3. Wollongong Healthcare Technical High School

4. Ancillary Accommodation

5. Educational & Research

6. Residential Care Facility and Hostel

7. Serviced Apartments

8. Senior Living

N

2.5 Constraints and Opportunities

The site of the proposed Life City Wollongong proposal is **constrained** by the following –

- The electricity easement along the southern and south-eastern boundaries of the subject site is not suited to the development of structures due to the elevated high voltage transmission lines. Some limited roads, vehicular access for maintenance, bushfire control and servicing, weed removal and replanting/landscaping is proposed within the guidelines of the Electricity Authority.
- Some portions of the site are considered too steep to provide appropriate development.
- That Warwick Street is not likely to be able to support the total traffic generation arising from the proposal.
- That the higher portions of the subject site should be substantially free of buildings and roads to allow a green horizon for those parts of the lower areas of Berkeley that can see the upper portions of the subject site.
- That residential development should be excluded from the major western catchment due to its poor quality outlook, and undesirable drainage and noise impacts from the freeway.
- That the height of buildings should be determined by the visibility of those buildings from surrounding localities so that the ridgeline is retained as green and that the buildings are contained beneath the proposed tree canopy.

The site of the proposed Life City Wollongong proposal provides the following **opportunities** –

- Good road access from the F6 Freeway and existing road system
- Potential to improve the existing bus service in terms of increased viability and sustainability
- Potential for the rehabilitation of the remanent natural vegetation and habitat on the subject site including an area suited to the restoration of the original rainforest species.
- Potential to relocate the residential portion from the existing R2 zone to that portion of the site that provides improved aspect, orientation and amenity
- A unique site that can support a Holistic Health Facility and ancillary facilities that are associated with the nearby Wollongong University and TAFE
- A more environmental sustainability transport system including the bus service
- Increased healthcare and ancillary employment and training
- Ancillary housing and seniors housing choice
- A site that can benefit from overall and comprehensive master planning.

3. Project Brief, Options and Justification

3.1 The Project Brief

The concept of the Life City Wollongong (LCW) has evolved over the years through local, national and international research. The concept is evidence based and it takes into consideration WHO Guidelines, Educational, Environmental, Cultural and Social dimensions.

The proposed LCW as a whole is one project that is proposed to develop in stages and each stage has been designed to be complimentary to and dependent on each other.

LCW encompasses a mix of medical and healthcare services, including –

- 320 beds hi-tech holistic, cancer & medical hospital facility
- holistic health course for Yoga, Reiki and Laughter Therapy, Meditation, Auras, and Pranic Healing,
- day surgery and Specialist rooms,
- senior living development,
- ancillary accommodation for employees including doctors, nurses, medical students and patients seeking outpatient services.
- a Library, Lecture Theatre, Auditorium & Conference Facilities, lake & amphitheatre,
- Wollongong Healthcare Technical High School and sports oval.

As a central facility the LCW will have a Holistic Cancer & Medical Hospital – a contemporary hospital complex which integrates the best of Western and Alternative Medicines. The hospital will provide medical services with international standards in a sustainable natural environment, operating under advanced modern enterprise management models. The LCW will be a world-class Medical Treatment and Research Facility providing integrated in patients and out patients. The hospital facility will become centre of excellence as it will not only cater to the acute care but will present an innovative concept of managing Chronic diseases with the best practices of modern medicine with holistic approach resulting in better outcomes for patients.

The hospital facility will incorporate a tertiary level hospital and will have facilities such as Cardiology, Respiratory, Gastroenterology, Neurology, Endocrinology and Oncology. Medical Rehabilitation, Psychiatry and Mental Health Services will also be provided. A dedicated holistic healthcare department will work in conjunction with the aforesaid modalities to provide holistic care to increase wellness and better outcome for patients.

Our vision includes State of the art clinical facilities, education research and development, healthcare informatics, residential aged care, mental healthcare, rehabilitation and innovative outdoor holistic course incorporating traditional health practices from across the globe. This facility will open up new opportunities for employment and training in the region and will provide world class health care facilities to the local, national and international community.

The current research based evidence indicates that ideally the seniors living including the residential care facility and hostel should be in close proximity to the medical centre and hospital. The Seniors Housing would also be made available along the lines of hospital styled serviced apartments where professional nurses can provide the residents with 24 hour considerate care. This will integrate medical and healthcare for the seniors. Seniors will also have access to leisure and recreation in a comprehensive program. These ancillary services will complement the medical rehabilitation and mental health hospital services.

The LCW will have a medical centre, to provide the medical care for both residents and the regional community. It will be an integrated medical centre, having provision for General Medical Practitioners, dentists, all allied health practitioners and visiting specialists. Accommodation for healthcare providers and practitioners will be provided on-site to facilitate their easy accessibility.

The outdoor holistic course will have facilities for yoga, reiki, laughter therapy, meditation, aura and Pranic healing in an accessible central open space area. This area will be landscaped with some shelters, picnic areas, walking and cycling tracks available to all the community.

The location has been well researched and chosen. It is centrally located in Wollongong and easily accessible. The design for the LCW will complement and enhance the natural landscape in an eco-friendly, contemporary, high-tech facility that will offer a very broad range of services to as wide as possible spectrum of the community.

LCW will further contribute to the economic development of the Illawarra Region. It will further prospects for health care, promote international connections between local, national and international communities. LCW evidence based sustainable industry will add to further job growth on and off the subject site and will contribute to the local and regional economy.

The LCW facility has been architecturally designed in detail to provide an attractive, pleasant, green, modern and safe environment for the community with minimal impact on the environment. In fact LCW will be a benchmark in design to highlight the establishment of a model healthcare facility for futuristic design of eco-friendly living. This facility will form the basis of a Four Corner Establishment in Healthcare that will compliment Healthcare Resources in the Illawarra Region provided by the University of Wollongong and the Nan Tien Temples as well as our Shellharbour Hi-Tech Health Care City Project.

3.2 Alternative Development Options

Alternative Option 1 – No development – retain natural vegetation.

This option would see the land remain in its current undeveloped state. The site would need to be acquired by a government authority and returned to the public domain.
The land would then have a similar status to adjoining Council owned land that is also zoned E3.
Both areas of land are currently vegetated with small trees and abundant weed growth. All areas have significant exotic species.
The current zonings do not provide for acquisition and this option does not provide a viable solution to the restoration of native bushland.
Restoration would not likely be able to be implemented.
There would be a consequent loss of economic benefits (employment, development spending, investment, etc.) in the local and regional community.

Alternative Option 2 – A smaller scale development generally in accordance with the current zoning.

This option would provide a reduced size and scale of the project in an attempt to reduce potential environmental impacts.
It would likely result in a reduced development footprint and density with consequent reduction of environmental impacts, including reduced traffic generation, reduced resource usage, retention of the E3 zoned area as undeveloped.
This option would not provide the momentum necessary to achieve the full range of healthcare to support the holistic approach being proposed. Major elements could no longer be included thus undermining the overall concept.
This option would prejudice economic and functional viability of the project and consequent loss of, or reduction in the ability to fund both environmental and public infrastructure.
Another outcome would be the loss of economic benefits (reduced employment, viability to restore the natural environment and investment etc.) for the community.
The residential portion of the development would likely be severely impacted from traffic noise from the F6, lack of outlook and solar orientation.
This option may not reduce impacts in direct proportion to the scale back in the size of the project.

Alternative Option 3 – A larger more intense development with increased capacity for healthcare facilities and increased residential accommodation.

This option would increase the size and scale of the project primarily to maximise financial returns. The area subject to Environmental Management would be compromised (reduced in area); however, this option may provide larger financial commitment for environmental and public infrastructure works.
This option may provide increased economic benefits to the local and regional community.
This option would increase development footprint and density with consequent intensification of environmental impacts.

3.3 Project Justification

In the context of the above options it is considered that primary justification for the proposed project is essentially demonstrated by the following:

- The proposal will provide a healthcare facility and ancillary facilities that are not currently provided in a holistic form on a dedicated site anywhere in Australia and rarely overseas.
- The proposal achieves the aims and objectives of the Wollongong Local Environmental Plan 2009 and is consistent with the Illawarra Regional Strategy.
- The development has been optimally sized and designed so that it is sustainable both environmentally and economically. A rigorous approach to impact assessment and management is fundamental to proving justification in this context.
- The Preliminary Environmental Assessment process demonstrates the suitability of the site for the proposed development;
- Operationally the development is sustainable from both the environmental and healthcare perspectives;
- A credible program of stakeholder and community consultation needs to be implemented through the various phases of the project to ensure that public interest issues are given relevant and appropriate consideration; and
- The project will provide consequent generation of funds from private investment for expenditure on the environmental rehabilitation and infrastructure works.

4 The Proposal and the Concept Plan

4.1 Green Principles toward Wellbeing

Objective

Adoption of green practices through market-based solutions. This will drive the proposed Wollongong Hi Tech Holistic Healthcare City towards sustainability by promoting green building programs, technologies, design practices and operations as well as the integration of green building initiatives into mainstream design, construction and operation of buildings and other facilities.

We will endeavour to take the following green initiatives under various categories:

4.1.1 Management

- Encourage the engagement of professionals who can assist the project team with the integration of "green" aims throughout design and construction phases.
- Encourage and recognize information management that enables "Wollongong Hi Tech Holistic Health Care City " users to optimize the facilities environmental performance. This can be done by developing a simple easy to use User's Guide and Maintenance Guide.
- Encourage to implement a comprehensive, project specific Environmental Management Plan (EMP) for the works in accordance with the Section 3 of the NSW Environmental Management System guidelines 2007.
- Aim to use the services if a contractor having valid ISO 14001 Environmental Management System accreditation prior to and throughout the project.
- Aim to implement management practices that minimise the amount of construction waste going to disposal.
- Incorporate a Building Management System integrated with the building to monitor and report on energy and water consumption, and monitor and control building services systems.
- Encourage reduction in indoor air quality problems arising from construction works for the comfort and well being of construction workers and building occupants.
- Encourage and recognize sustainable procurement strategies, which require energy and water efficiency to be considered, when selecting equipment.

4.1.2 Indoor Environment Quality

- Ventilation rates - Encourage designs that provide ample amounts of outside air to counteract build up of indoor pollutants.
- Air Change Effectiveness – Encourage systems that effectively deliver optimum air quality to any occupants throughout the occupied area
- CO2 monitoring abd Control and VOC Monitoring – Provision of carbon dioxide abd Volatile Organic Compound (VOC) levels to ensure delivery of outside air and monitoring of VOC pollutants.
- Other areas to be taken into account:
  - Thermal Comfort
  - Internal Noise levels
  - Formaldehyde minimisation
  - Mould prevention
  - Electric Lighting levels
  - Individual thermal comfort control
  - Exhaust riser
  - Air distribution system
  - Outdoor pollutant control

4.1.3 Energy

- Encourage and recognize designs that minimise the greenhouse gas emissions associated with operational energy consumption, and maximise potential operational energy efficiency of the buildings.
- Energy Sub-Metering: Installation of energy sub-metering to facilitate ongoing management of energy consumption. Sub-metering can be provided to separately monitor lighting and general power consumption for primary functional areas.
  The sub-meters must be connected to a Building Management System (BMS) or dedicated electronic energy monitoring and reporting system and continually demonstrate actual performance against energy benchmarks.

- Peak Energy Demand Reduction: Encourage and recognise designs that reduce peak demand on energy supply infrastructure.
- Energy Efficient Appliances: Installation of energy efficient appliances as part of the base building works.
- Lighting Zoning: Lighting design practices that offer greater flexibility for light switching, making easier to light only occupied areas.
- Car Park ventilation : Designs that facilitate the reduction of energy consumption by car park ventilation.

4.1.4 Water

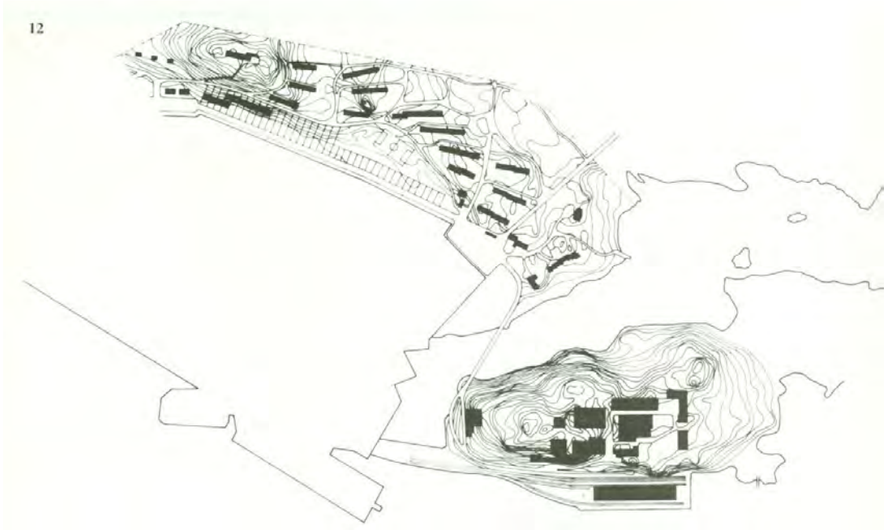
- Designs that reduce potable water consumption by building occupants
- Water meters – Installation of water meters for all major water uses in the project and an effective mechanism in place for monitoring water consumption data.
- Landscape irrigation – Design of systems that aim to reduce the consumption of potable water for landscape irrigation.
- Heat rejection water - Design of systems that aim to reduce the consumption from heat rejection systems.
- Potable Water use for equipment - Design of systems that aim to reduce the demand on potable water consumption from medical and laboratory equipment cooling.
- Water Efficient Appliances: Installation of water efficient appliances as part of the base building works.

4.1.5 Materials

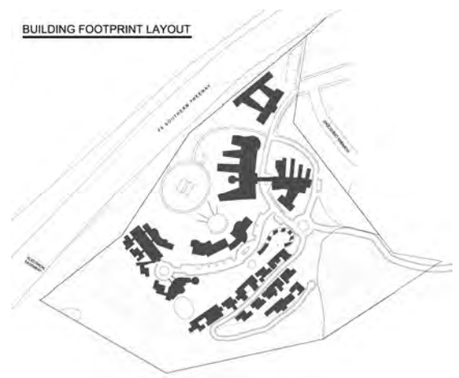
- Recycling Waste Storage – Inclusion of storage space that facilitates the recycling of resources used within buildings to reduce waste going to landfill.
- Recycled content and Re-used Products and Materials - Designs that prolong the useful life of existing products and materials and encourages uptake of products with recycled content.
- Minimise the use of Concrete– Reduction of embodied energy and resource depletion occurring through use of concrete
- PVC – Reduction in use of polyvinyl chloride (PVC) products in the project. Also reduce environmental and health impacts of PVC by encouraging the use of PVC material which adheres to best practices guidelines.
- Other areas to be taken into account:
  - Flooring
  - Joinery
  - Design for disassembly
  - Reduced use of virgin steel
  - Use of sustainable timber
  - Selection of ceilings, walls and partitions

4.1.6 Emissions

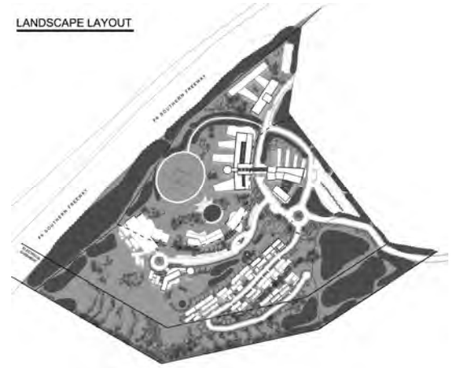
- Refrigerant – Selection of refrigerants that do not contribute to long-term damage to the Earth's stratospheric ozone layer. Also, encourage design that minimises environmental damage from refrigerant leaks.
- Insulant – Selection of inusulants that do not contribute to long term damage to the Earth's stratospheric ozone layer.
- Watercourse Pollution – Developments that minimize stormwater run off to, and the pollution of, natural watercourses.
- Discharge to Sewer – Developments that minimize discharge to the municipal sewerage system.

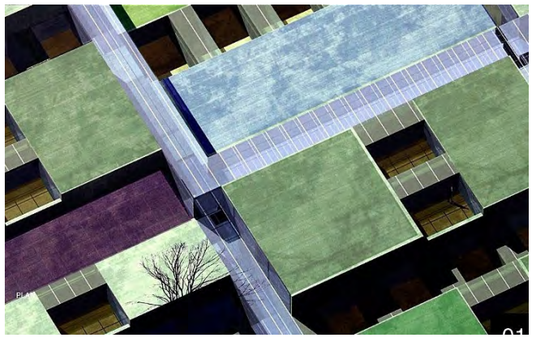


BUILDING FOOTPRINT LAYOUT

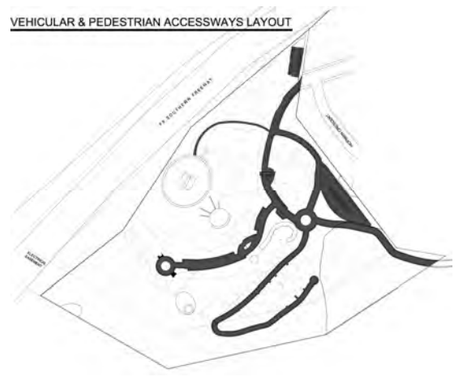


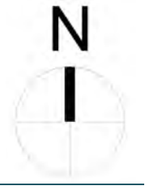
LANDSCAPE LAYOUT





VEHICULAR & PEDESTRIAN ACCESSWAYS LAYOUT

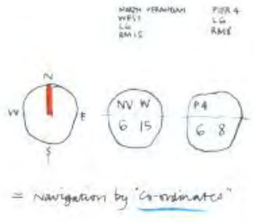


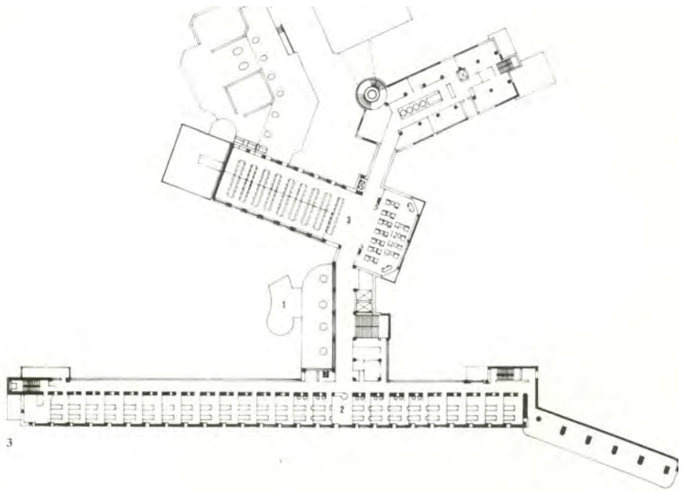


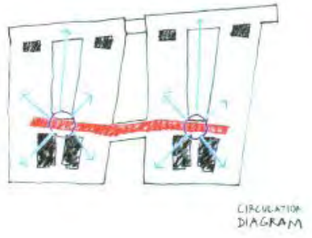
4.2 Urban Design, Architectural and Landscape Principles

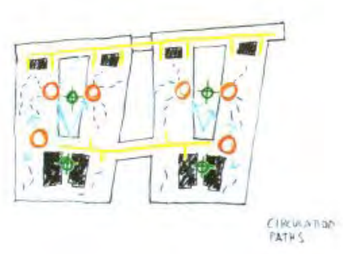
4.2.1 Urban Design Principles

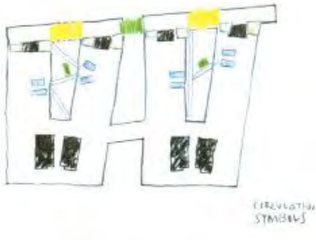
- The site at Berkeley enjoys a unique position in the Wollongong environs with views from the hilltop plateau.
- With its physical form adjacent to the F6 Southern Freeway, the Berkeley hill is a marker & dominant landmark in the landscape.
- The Urban Design 'Proposition' for the Life City Wollongong contributes positively toward the economic and social needs of the area.
- The 'Proposition' in physical form seeks to mitigate the negatives of the site and celebrates the positive attributes of the precinct.
- The 'Proposition' is based on **Principles** and **Directives**; and evolves out of historic precedents, site conditions, orientation, panoramic vistas, and functional requirements of the program.
- Consequently, the 'Built Form' defines the Hill-Top Plateau as a central '**Park Space'** and the functional accommodation snuggled into the hillside tumbling down, following the contours.
- The site is therefore organized on 'Principles' of **Precinctual Design** around a central focal landscaped park on the Hill-top plateau with discrete visually comprehensive areas in a collegiate manner.
- Each 'Precinct' address functional requirement coming together to form a cohesive whole.
- The specific functional requirements are organised as '**Thin Buildings**' and in '**Finger Forms**' to create internal landscaped courts within each facility, thus employing principles of passive environmental control amenity and sustainability with roof surface as solar & rainwater collectors, where appropriate.
- The solar power thus generated would be used to power the lighting needs for public space lighting on-site. The collected rainwater will be re-cycled from the catchment lakes proposed for visual amenity and landscape irrigation; and grey water utilization for toilets in the development.
- Each precinct is served with vehicular and service access as cul-de-sac carriageways, judiciously laid out to negotiate level differentials gently, with minimum impact on the existing site, and easy direct way-finding.
- The development is envisaged as a predominantly pedestrian precinct with more than 70% of the site devoted to **Landscape**, both created and natural. Consequently, the 'landscape' and green space is the **Glue** for the development.
- The 'Proposition' is envisaged to be developed in a viable phased manner. Each phase would be a comprehensive development in a **Precinctual** manner with the emphasis on '**Place Making**' to provide a sense of completeness within the whole site throughout **The Project** implementation and with the singular focus on the main programmatic theme of providing a viable sustainable '**Life City Wollongong**' facility at Berkeley.

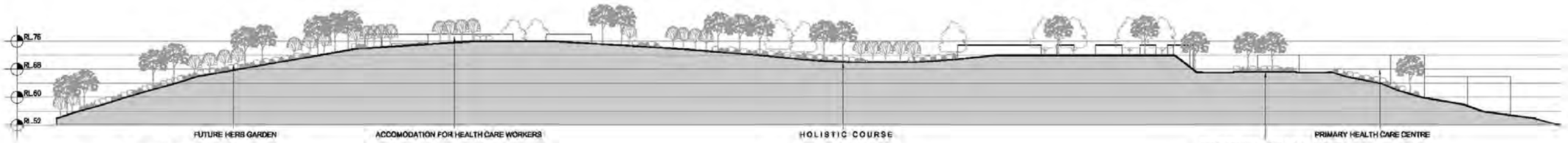












SECTION A

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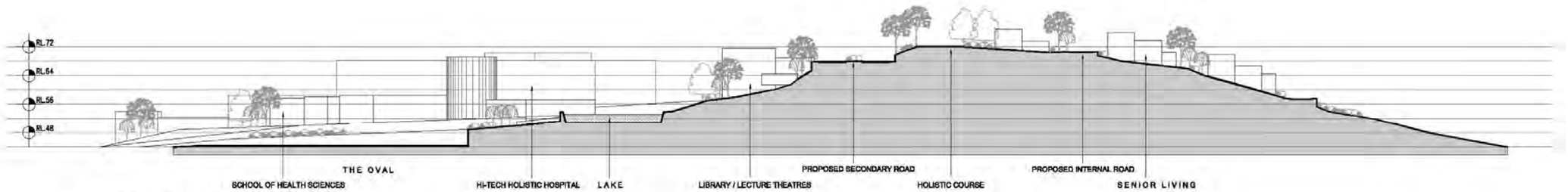

SECTION B

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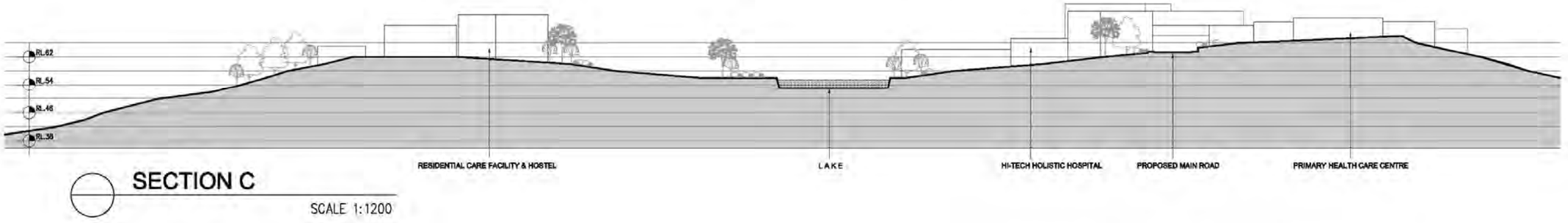

SECTION C

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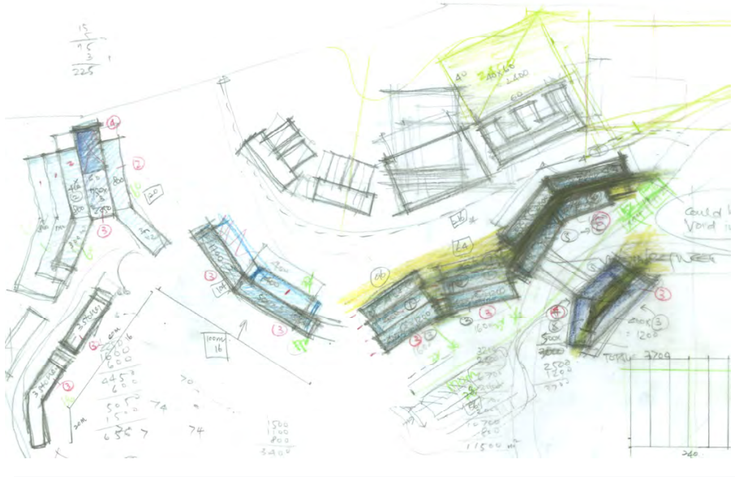
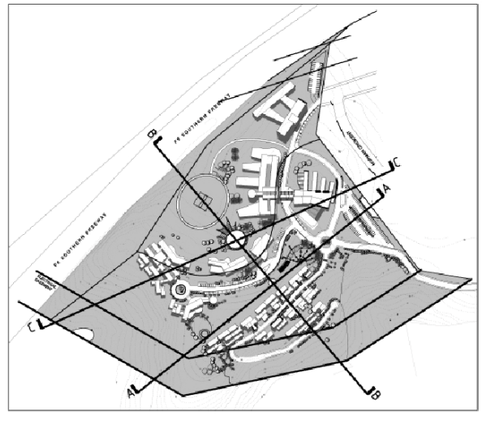




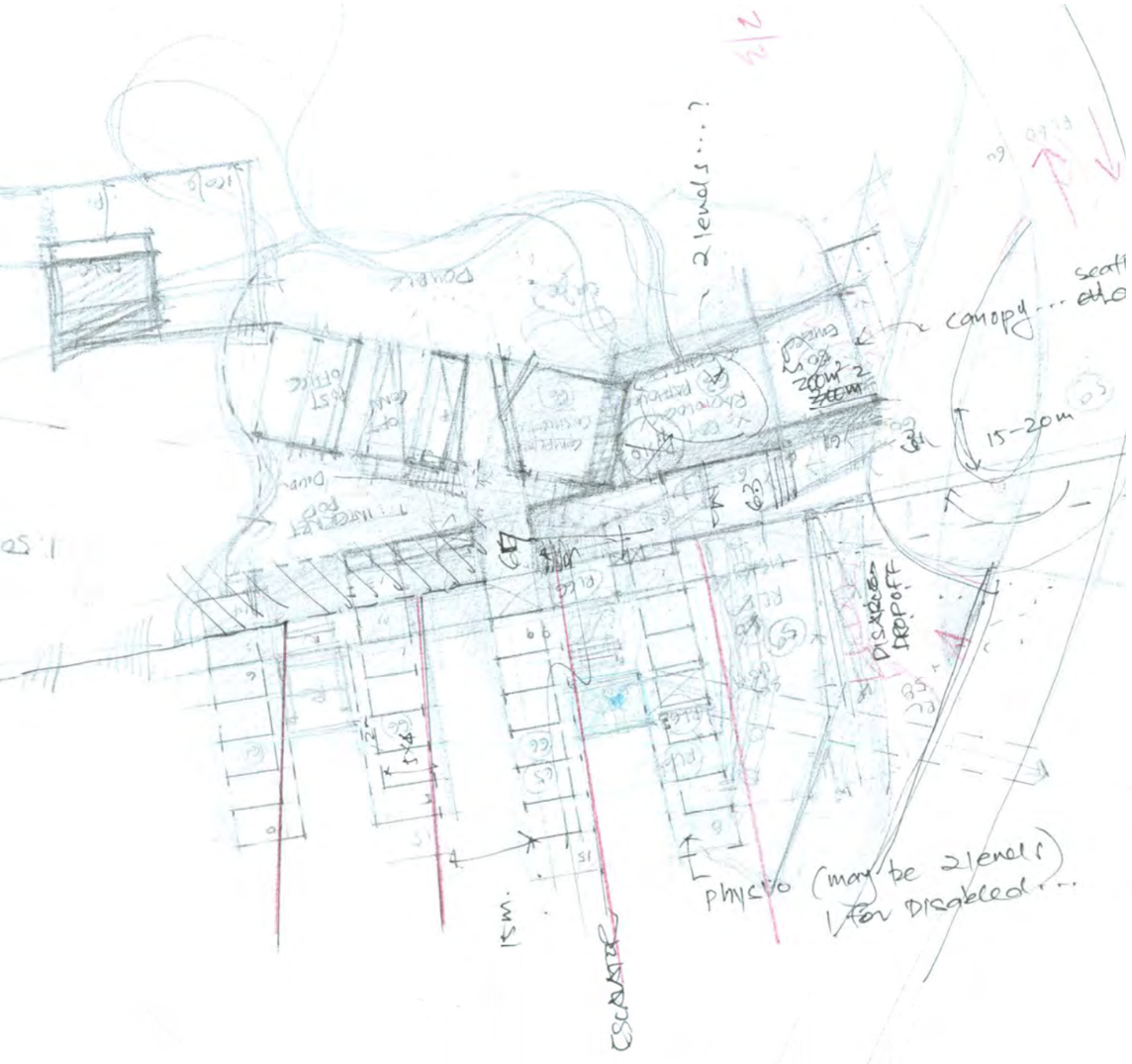
4.2.2 Architectural Principles

A preliminary visual impact assessment has been undertaken that has determined the location and height of buildings.
The site and surrounding area have high scenic qualities due principally to the landforms and vegetation of the subject site. Specifically, the vegetation associated with vacant subject site and the vacant surrounding sites and the elevation of the subject site in the Berkeley locality contribute significantly to the visual character of the area, as well as the visual definition of the site within the locality.
The visual catchment of the site is assessed to have the following characteristics:

- The site is most visible from the Lake Illawarra and its foreshores, with some views to the site from the surrounding Berkeley residential and open space areas limited by roadside and general neighbourhood vegetation, buildings and topography.
- The site is also visible from a short length of the F6 Freeway travelling northwards although it is mostly obscured by tree planting along the edges and centre of the carriageway.
- The site is not visible from the southbound lanes of the F6 Freeway.
- Parts of the site are visible from some of the neighbouring dwelling houses in Warwick Street and Hopman Crescent to the north and from Nottingham Street to the south.
- The site is not significantly visible from the remainder of the ridge of which it is part.
- Only partial views of the site are visible from the residential areas on the lower and flatter lands to the east and south of the site. From these areas the site is usually screened by foreground vegetation and buildings.

The architectural brief for development on the site is to protect the green ridge and hilltops on the subject site and, where possible enhance the scenic amenity the flatter coastal land by maintaining this vista.
Quality views and visual connections from the site to the coast and lake and other natural landscape features are to be maintained, as is the dominance of these elements over built form.
The bulk and scale of development is to be appropriate to the visual setting, including surrounding development, and the proposed development is to be integrated into its setting.

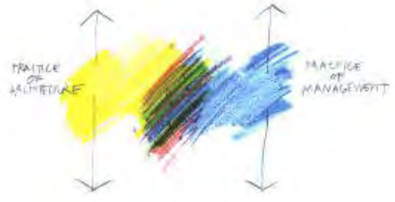
Specifically, the maintenance of visual and physical separation between the residential areas to the north and south by way of setbacks and landscaping should be provided.




CHANGE
by
Design


PRACTICE OF ARCHITECTURE


PRACTICE OF MANAGEMENT


PRACTICE OF ARCHITECTURE
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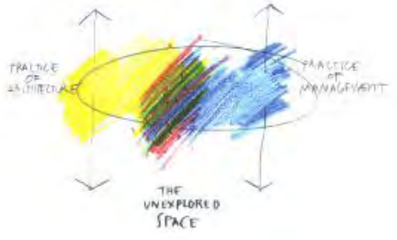
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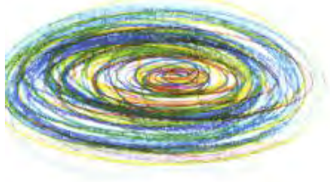
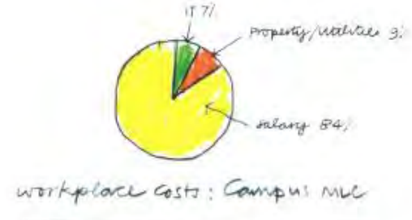
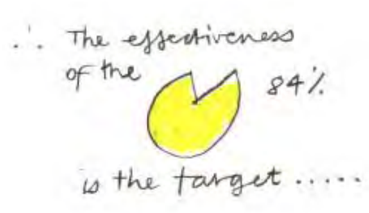
THE UNEXPLORED SPACE




IT 7/
Property/utilities 3/
salary 84/
workplace costs : Campus Mac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84%
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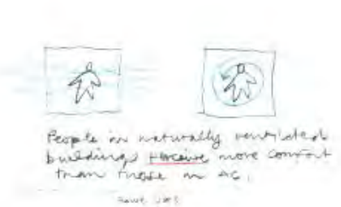
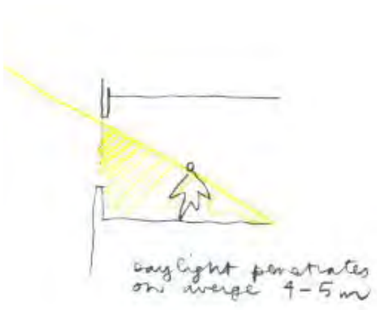

People in naturally ventilated buildings perceive more comfort than those in AC


Average sick based person loses 62.5 hours per year.


95% of people prefer daylight to work by

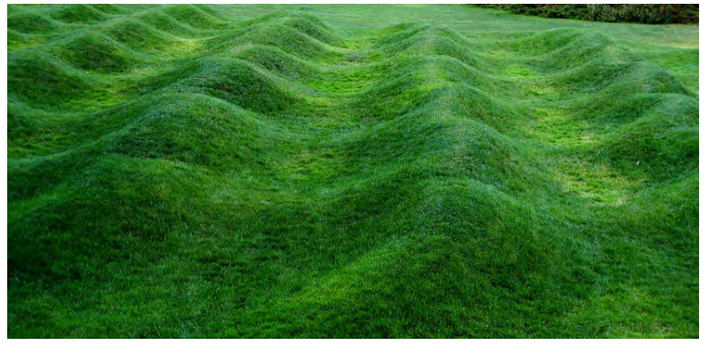

Daylight penetrates on average 4-5 m


Lightshelves increase daylight penetration


Exposure to pollution
2 - 5 times greater

Analysis in the context of the foregoing requirements has resulted in the following conclusions.

- That the proposed architectural and landscape treatments combine to reduce the visibility of the built form and hardstand areas and integrate the buildings into the natural landscape of the site.
- That can be achieved through the application of a number of design principles, including
  - minimisation of site disturbance;
  - minimisation of building and hardstand footprint and height;
  - articulation of built form;
  - utilisation of visually recessive colours and materials;
  - dispersal of built form within the natural environment;
  - retention of significant vegetation;
  - addition and enhancement of contextually appropriate vegetation;
  - incorporation of vegetation buffers to the perimeter; and
  - maintenance of vegetation on visible slopes, and the ridge.
- That the proposed development provide a quality healthcare facility development in a natural setting….whilst ensuring protection and enhancement of the site's environmental values.
- The proposed development should be in terms of visual impacts, a contextually responsive design outcome that satisfies applicable regulatory provisions and guidelines in that it would:
  - protect and enhance scenic amenity of the localities to the south, southeast and east;
  - reinforce local character and identity;
  - protect the existing green ridgeline;
  - maintain quality views and visual connections to and from the locality;
  - be of a bulk and scale appropriate to the localities visual setting; and
  - maintain the visual definition between the existing residential areas.
- That the site should be developed using best practice environmentally sustainable systems including solar energy use and wind turbines to provide non-emergency electricity, water conservation strategies including full stormwater water storage and reuse, encourage shared transportation choices, waste reduction and sustainable construction techniques including low embodied energy building materials and indigenous landscaping.



4.2.3 Landscape Design Principles

The landscape principles as follows have resulted from a detailed landscape appraisal of the subject site by Dextrous Design and the Flora and Fauna Assessment by Kevin Mills and Associates.

- To present the natural landscape as a central design element in the environmental success and public presentation of the healthcare facility.
- The resolution of a comprehensive and detailed landscape master plan, in response to the prevailing site conditions and constraints and its future capacity.
- To actively promote a philosophy of sustainability and eco-awareness, while satisfying the demands of a high standard holistic healthcare facility.
- The incorporation of low resource, recyclable, drought tolerant, long lasting and low maintenance, plants and landscape materials.
- To minimise impact on existing vegetation and enhance the integrity of local environment, through a considered process of environmental restoration of the local rainforest species.
- Identified high value species and sensitive plant communities to be preserved, incorporated and expanded as core design elements.
- To reduce the wider potential impact of landscape earthworks and specified construction materials including soil and mulch.
- Revegetation to be installed directly into existing grade with minimum machine levelling, to preserve existing grass areas and soil profile integrity, with site spoil to be reused for fill and mounding as required. Cleared site vegetation to be chipped as mulched to supplement requirements.
- To maximise the ecological potential of the site as a key natural resource and reverse it's currently degraded status.
- Implementation of long term and sustainable local rainforest rehabilitation program to restore the relevant part of the site to its original pre-farming environmental character and habitat value.
- To promote the natural environment as a broad development theme to reflect the site's local context and significance.
- Locally sourced endemic planting including street & amenity trees, to create corridors which link areas of retained vegetation on site with adjacent ecological communities.
- To protect the water quality of adjacent estuarine environments by reducing site run off.
- Integrated water sensitive urban design measures to be used including tank fed irrigation, vegetated swales, retention basins and permeable surface treatments, to mitigate stormwater, and potential sediment pollutant flow.
- The restoration of the degraded wetland area adjacent to the F6 Freeway to include regeneration of wetland species as a habitat for local bird life, and as a collection basin for overland stormwater flow in the major Catchment A.
- The meaningful inclusion of Aboriginal culture in the design resolution if relevant.
- To satisfy and adhere to identified fire safety requirements. The installation of low fuel revegetation plant species. In proximity to all proposed building, the use of non-flammable materials where possible, and the provision of unobstructed emergency access.
- The appropriate selection of plant species within fire safety zone setbacks.
- The creation of a safe and positive landscape experience for all potential users.
- All landscape treatment to meet general Disabled & Equal Access Guidelines.

LEGEND

A **Hi-tech Holistic Cancer & Medical Hospital Facility**

B **Holistic Health Course**

C **Day Surgery & Specialist Rooms**
Medical Centre
Child Care Centre
Respite Care Centre

D **Senior Living**

E **Serviced Apartments**
for Attendants of Patients & Patients seeking outpatient services

F1 **Educational & Research**
Library, Lecture Theatre, Auditorium
Research & Development Facility

F2 **Accommodation**
for Doctors, Nurses and Students.

G **Residential Care Facility and Hostel**

H **Wollongong Healthcare Technical High School**

I **Transport**
Including Ambulance facilities and Helipads

N

4.3 Overall concept plan

The proposal for a Life City in Wollongong and specifically at Berkeley is based on a concept that has been researched and formulated by Dr. M.K. Rashid, one of director of Delbest Pty Ltd over a period of more than 15 years.

The proposal has an estimated cost of $275 million excluding land and will generate around 2600 new jobs in a range of disciplines including healthcare, education and information technology.

The total project includes the broadest range of hospital and medical care facilities, research and educational facilities and accommodation facilities for practitioners, students and residents in a number of clusters and buildings over eight precincts as set out below. Due to the size and diverse nature of the proposal the construction will be staged over the eight precincts as indicated in the following table and on the concept plan.

Each Precinct will include infrastructure as required including services, roads, buildings and landscaping. Each Precinct will be fully serviced and landscaped in each stage as the overall project is completed in accordance with the Concept Plan.

All infrastructure and buildings are proposed as best practice environmentally sustainable development and will be integrated with the enhanced environmental protection areas and landscape.

In conjunction with the other energy-efficiency measures including major rooftop solar photovoltaic arrays and wind turbines to provide non-emergency electricity, innovative water conservation strategies including full stormwater water storage and reuse, alternative transportation choices will be investigated within the site and to surrounding transport hubs, waste reduction and sustainable construction techniques including low embodied energy building materials and indigenous landscaping to the whole of the site except for small portions of the developed areas, the proposed Life City Wollongong (LCW) at Berkeley will set a high standard for green development in Wollongong and nationwide.

The healthcare facilities will comprise of the following:

1. 320 bed High-Tech Holistic Cancer & Medical Hospital (Tertiary referral hospital) including Medical Rehabilitation, Oncology, Dementia, Holistic and Psychiatric wings.
2. Day surgery & Specialist rooms, Respite Care Centre and Child Care Centre, including Medical centre and associated facilities.
3. The Healthcare Educational and Training facilities include a library, lecture theatre and auditorium for healthcare education and a Selective School of Health Sciences for 350 Students.
4. An outdoor holistic course including Yoga, Reiki, Laughter Therapy, Meditation, Auras and Pranic Healing is also proposed in a central location on the subject site.

These facilities will be located in Precincts A,B,C and F and the total estimated cost is around $170 million.

The residential accommodation will provide the full range of housing types for seniors and other people associated with the holistic health facilities located on the subject site.

The proposed residential and visitor accommodation includes the following –

1. Independent Seniors Living comprising 90~100 two bedroom apartments (in Precinct 2).
2. Service apartment accommodation for health care workers for patient relatives and outpatients comprising total of 75 units of 1 and 2 bedroom type. (in precinct 5).
3. Residential Care Facility comprising a total of 120 single bed units of which 25-30 will be high needs care, 60 will be low care and a 20 bed Dementia Wing (in Precinct 6).
4. Hostel accommodation comprising 40 beds (in Precinct 6).
5. Ancillary accommodation for health carers comprising 30 units (in Precinct 7) as part of the Library, lecture theatre, auditorium complex.

These residential facilities will be located in Precincts C, D, E1,E2 and G, and the total estimated cost exceeding $69 million.

The maximum population resident on the subject site at any one time is estimated at 430 persons (including seniors and resident nurses and practitioners' ancillary to the hospital), patient relatives and outpatients plus a maximum of 330 patients in the hospital and primary health care centre.

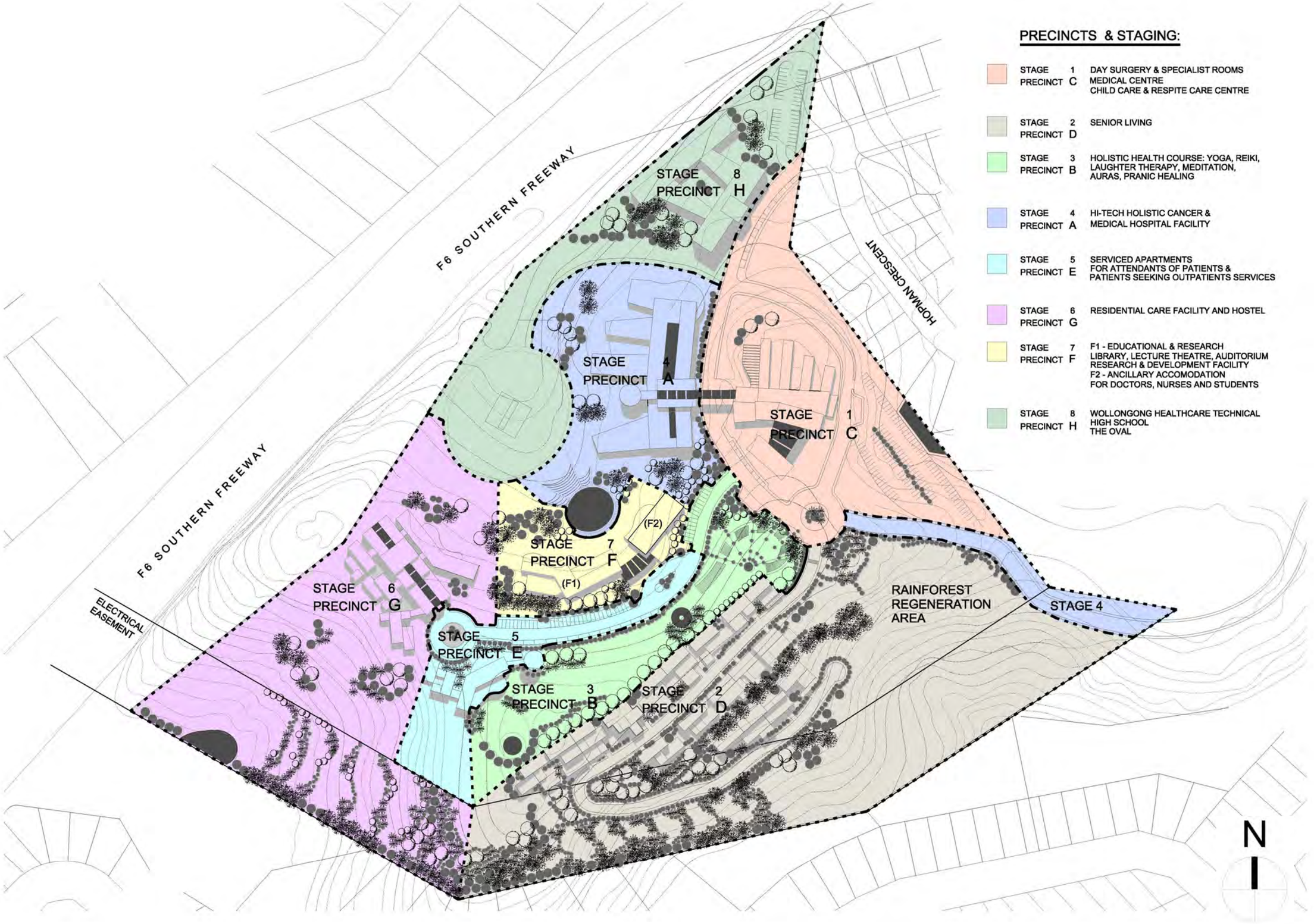
4.4 Precincts

It is proposed to develop the LCW in eight stages as follows.

Vehicular access, services and landscaped works

will be progressively implemented at each stage as follows.

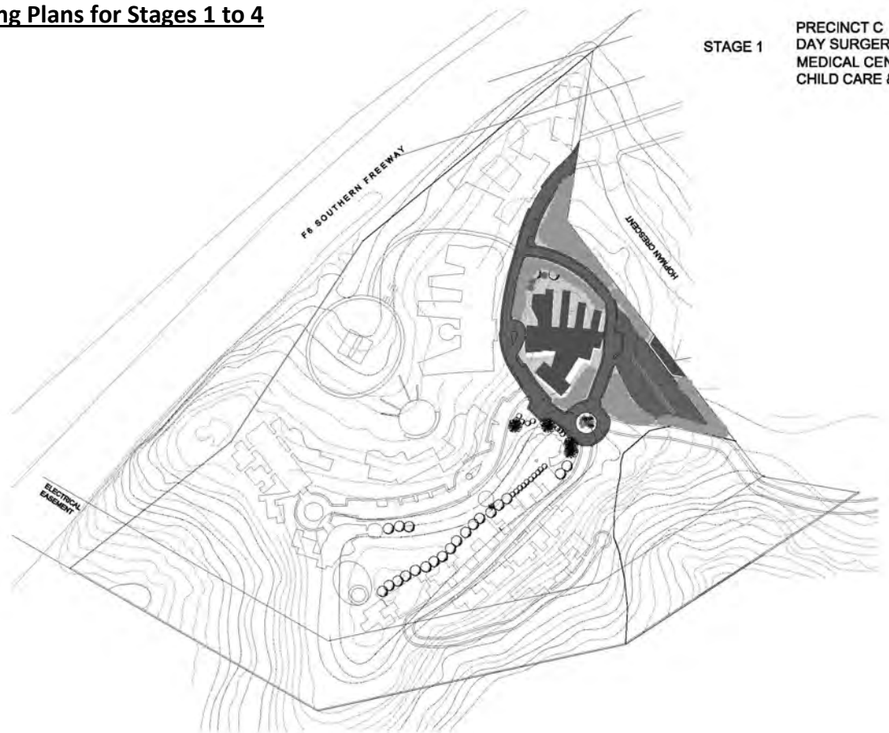
Precinct	Stage	Description of proposed development	Precinct site area m2 % of site	Building GFA and (footprint) m2	Landscaped area m2 % of precinct landscaped	Access	Services
A	4	**High-Tech Holistic Cancer & Medical Hospital** (Tertiary referral hospital) including Oncology and Holistic, Medical and Rehabilitation, Dementia and Psychiatric wings.	18036.5m² (11%)	13000 (4952.25)	10506.75m² (58%)	Warwick Street to be extended to junction with Nolan Street.	Connect services for hospital from Warwick St extension to precinct 4.
B	3	**Holistic Health Course** including Yoga, Reiki, Laughter Therapy, Meditation, Auras and Pranic Healing and outdoor structures for these activities.	26341.13m² (7%)	0 (0)	25521.9m² (97%)	Provide initial section of centre access cul-de-sac and on-street parking 15 spaces	Extend necessary services from Warwick St extension
C	1	**Day surgery & Specialist Rooms;** Medical Centre, Child Care Centre, Respite care Centre and the initial structural works and major tree planting for **Precinct B.**	22056.9m² (13%)	4800 (2998.7)	9250 m² (42%)	The extension of Warwick Street to the proposed roundabout.	Extension of whole of site services from Warwick Street to precinct 1
D	2	**Seniors Living**, further detail landscaping to the eastern edge of **Precinct B** and rainforest restoration**.**	47015.46m² (29%)	8000 (5896.5)	36996.7 m² (79%)	Provision of cul-de-sac from the roundabout into Precinct 2.	Extend services for precincts 5, 6, 7 and part 8 from Warwick St extension along centre access road.
E	5	**Serviced Apartment** for attendants of patients and patients seeking outpatients services.	10603.3m² (5%)	7500 (2861)	2670.6m² (25%)	Further extension of central cul-de-sac to secondary roundabout.	Extend all services for from precinct 1 to precinct 5.
F1	7	**Educational & Research**; Library + Lecture theatre + Auditorium + Research & Development facility	7288.2m² (5%)	3000 (2297.55)	4990.6 m² (68%)	No further roads required for this building	Connect to services in centre cul-de-sac.
F2	7	**Ancillary Accommodation** for doctors, nurses and students.					
G	6	**Residential Care Facility and Hostel** with total 160 beds	17219.1m² (19%)	5500 (3126.5)	14092.6 m² (82%)	No further roads required for this building	Connect to services in centre cul-de-sac.
H	8	**Wollongong Healthcare Technical High school** for 350 Students and the Oval	19241.1 m² (11%)	5000 (2590.4)	15190.5 m² (79%)	Internal roads only	Connect to services in Warwick St extension
Totals		**Subject Site**	167802 m²	46800 m² (24722.9 m²)	119219.65 m²	Total pavement area : 22492 m2	
% site			100%	15% Footprint	71% Landscape	14% Roads, parking and other pavement	



PRECINCTS & STAGING:

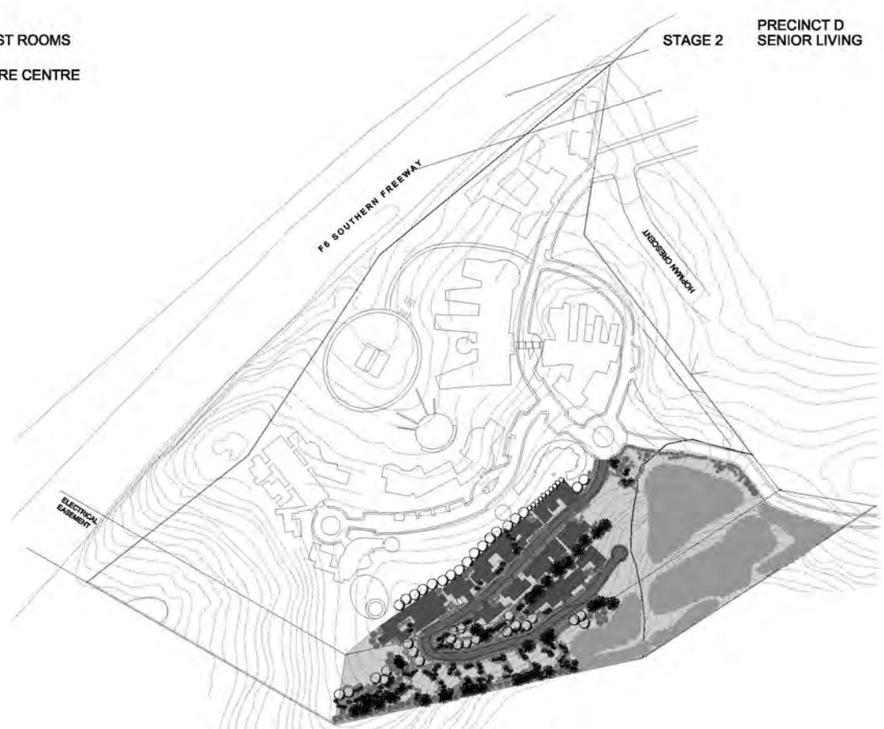
STAGE 1 PRECINCT C	DAY SURGERY & SPECIALIST ROOMS MEDICAL CENTRE CHILD CARE & RESPITE CARE CENTRE
STAGE 2 PRECINCT D	SENIOR LIVING
STAGE 3 PRECINCT B	HOLISTIC HEALTH COURSE: YOGA, REIKI, LAUGHTER THERAPY, MEDITATION, AURAS, PRANIC HEALING
STAGE 4 PRECINCT A	HI-TECH HOLISTIC CANCER & MEDICAL HOSPITAL FACILITY
STAGE 5 PRECINCT E	SERVICED APARTMENTS FOR ATTENDANTS OF PATIENTS & PATIENTS SEEKING OUTPATIENTS SERVICES
STAGE 6 PRECINCT G	RESIDENTIAL CARE FACILITY AND HOSTEL
STAGE 7 PRECINCT F	F1 - EDUCATIONAL & RESEARCH LIBRARY, LECTURE THEATRE, AUDITORIUM RESEARCH & DEVELOPMENT FACILITY F2 - ANCILLARY ACCOMODATION FOR DOCTORS, NURSES AND STUDENTS
STAGE 8 PRECINCT H	WOLLONGONG HEALTHCARE TECHNICAL HIGH SCHOOL THE OVAL

Staging Plans for Stages 1 to 4



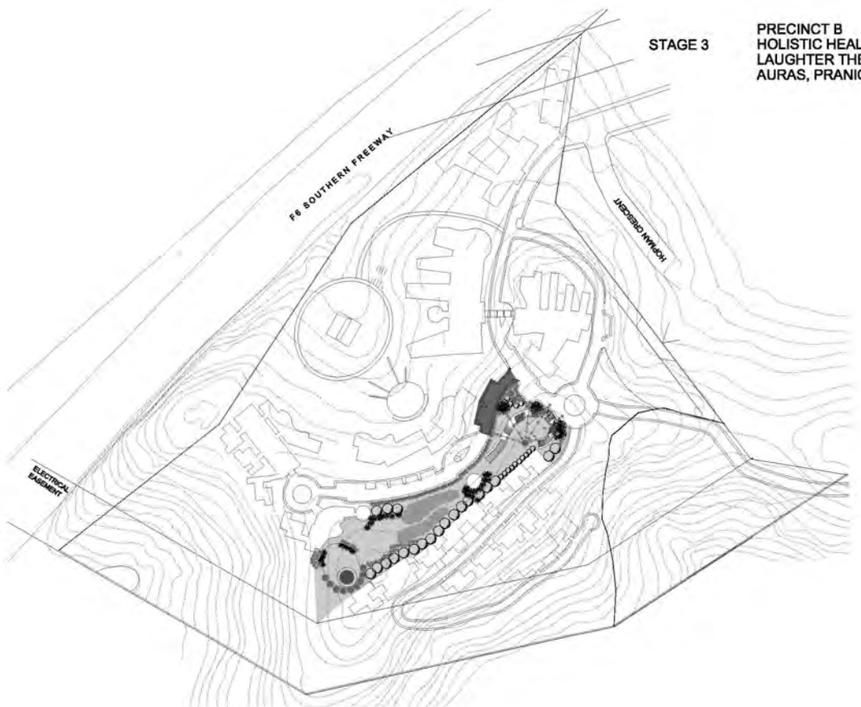
STAGE 1

PRECINCT C
DAY SURGERY & SPECIALIST ROOMS
MEDICAL CENTRE
CHILD CARE & RESPITE CARE CENTRE



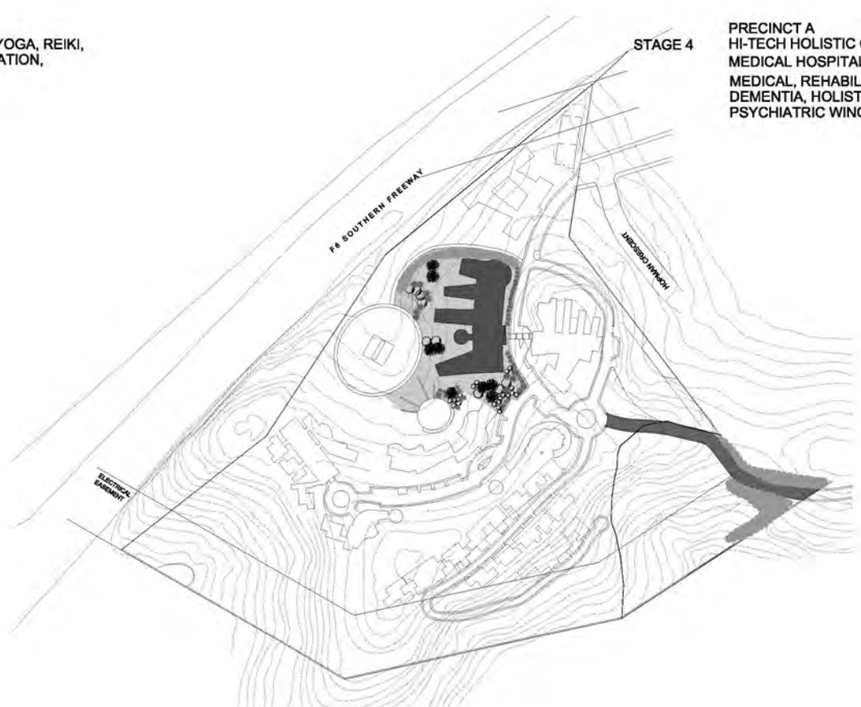
STAGE 2

PRECINCT D
SENIOR LIVING



STAGE 3

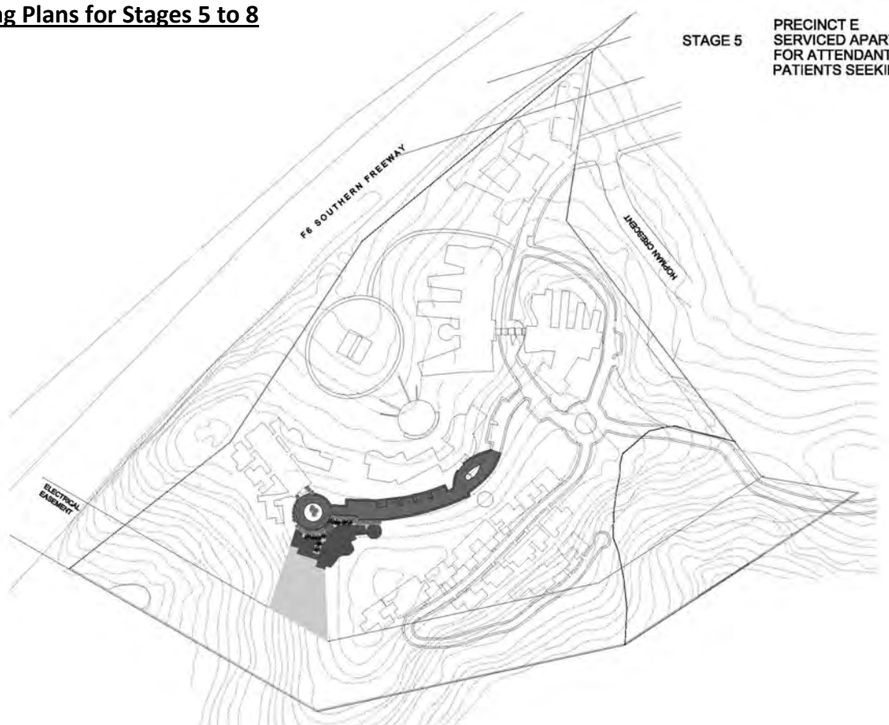
PRECINCT B
HOLISTIC HEALTH COURSE: YOGA, REIKI,
LAUGHTER THERAPY, MEDITATION,
AURAS, PRANIC HEALING



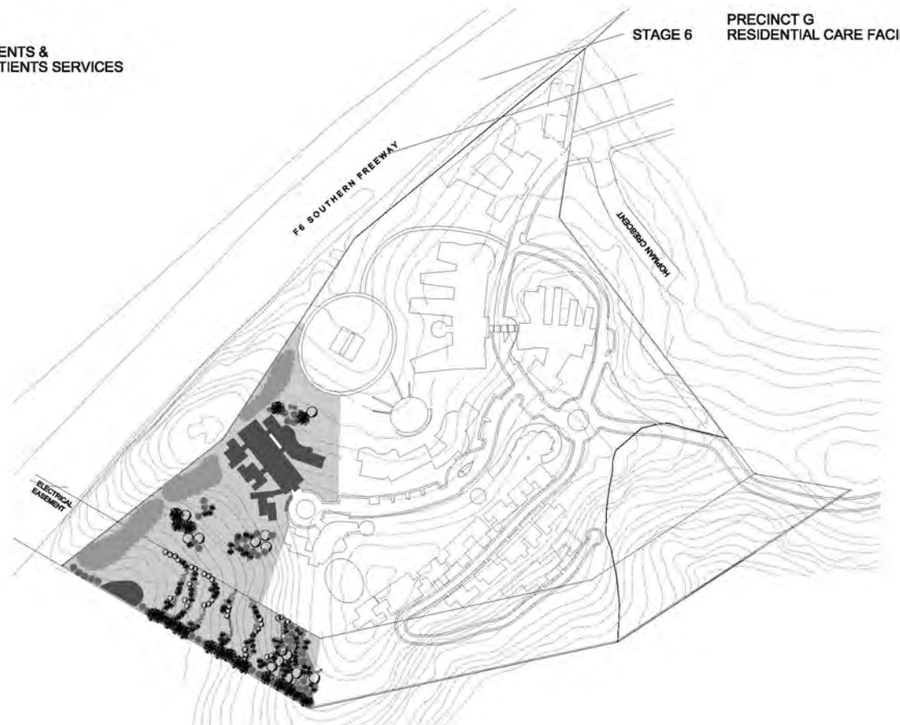
STAGE 4

PRECINCT A
HI-TECH HOLISTIC CANCER &
MEDICAL HOSPITAL FACILITY
MEDICAL, REHABILITATION, ONCOLOGY,
DEMENTIA, HOLISTIC &
PSYCHIATRIC WINGS

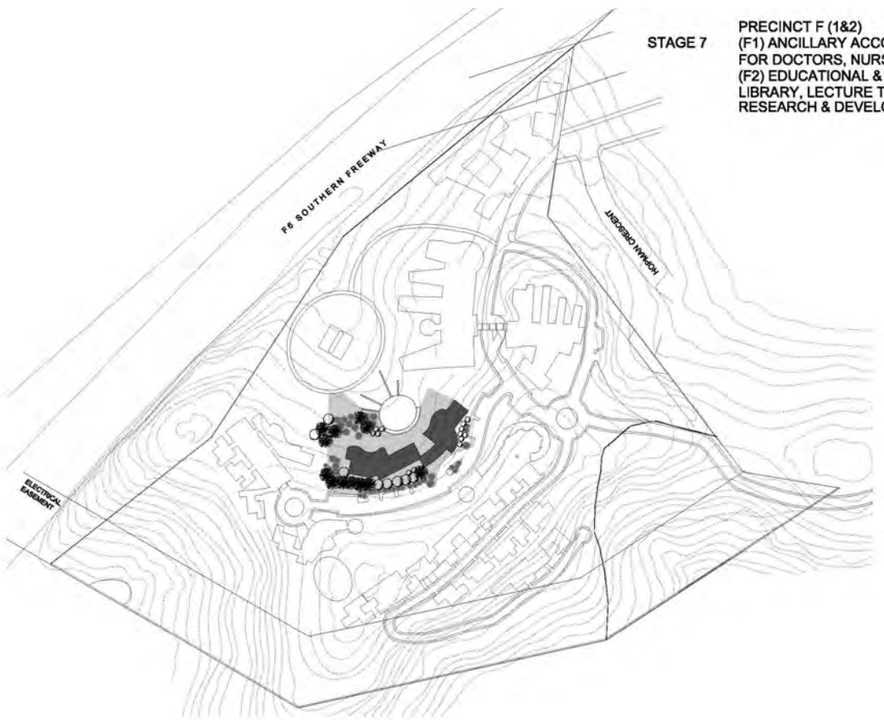
Staging Plans for Stages 5 to 8



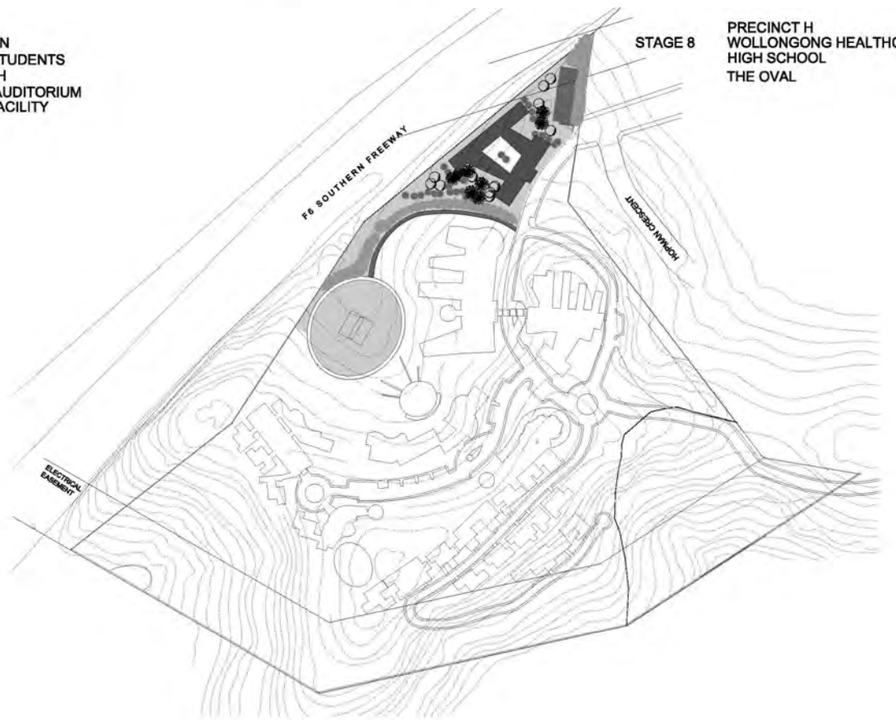
STAGE 5 PRECINCT E
SERVICED APARTMENTS
FOR ATTENDANTS OF PATIENTS &
PATIENTS SEEKING OUTPATIENTS SERVICES



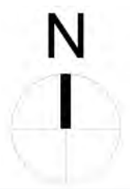
STAGE 6 PRECINCT G
RESIDENTIAL CARE FACILITY AND HOSTEL

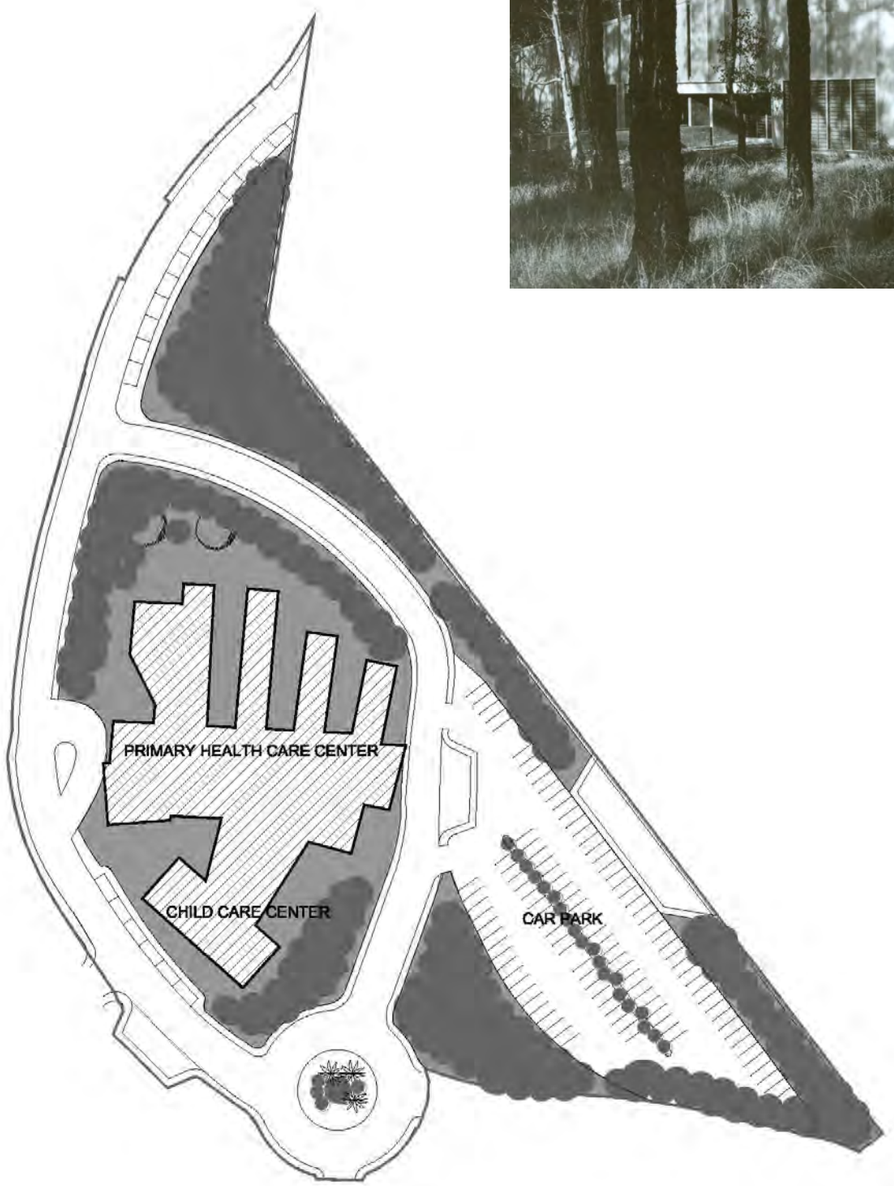


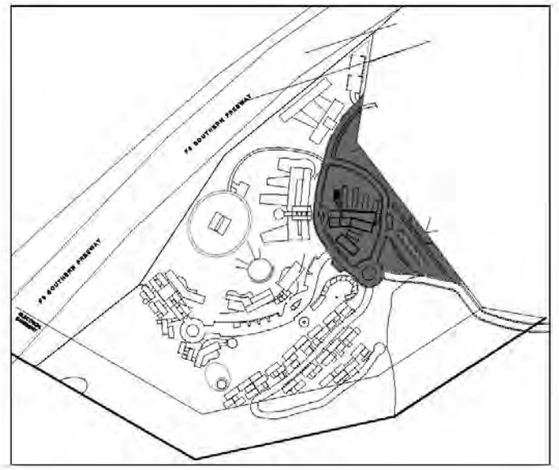
STAGE 7 PRECINCT F (1&2)
(F1) ANCILLARY ACCOMODATION
FOR DOCTORS, NURSES AND STUDENTS
(F2) EDUCATIONAL & RESEARCH
LIBRARY, LECTURE THEATRE, AUDITORIUM
RESEARCH & DEVELOPMENT FACILITY



STAGE 8 PRECINCT H
WOLLONGONG HEALTHCARE TECHNICAL
HIGH SCHOOL
THE OVAL




PRIMARY HEALTH CARE CENTER
CHILD CARE CENTER
CAR PARK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4.5 STAGE 1 /Precinct C

Day Surgery & Specialist Rooms

Medical Centre.
Child Care & Respite Care Centre.
Structural portion of Precinct B
including major tree planting.

Stage 1 of the proposed development consists of the completion of Precinct C – Day Surgery & Specialist Rooms, Medical Centre, Respite Care Centre and Child Care Centre including the extension of Warwick Street to the proposed roundabout on the site and a loop road to the bus stand facility and parking. Utility services for the initial stages of development will be extended from Warwick Street. Stage 1 also includes the initial structural and landscape site works including weed removal, soil stabilisation and major tree planting for Precinct B.

- Family Health Care Services
- Physiotherapy and Allied Health Care Services
- Dentist
- Optometrist
- Complimentary & Cosmetic Health Care
- Preventative Health Care
- Community Health
- Radiology
- Pathology
- Nuclear Medicine
- Associate Services
  - Convenience shop & Coffee shop & Post Office

Total site area : 22,056.9 m²

Building footprint area : 2,998.7 m²

Building gross floor area : 4,800 m²

Landscape area : 9,250 m²

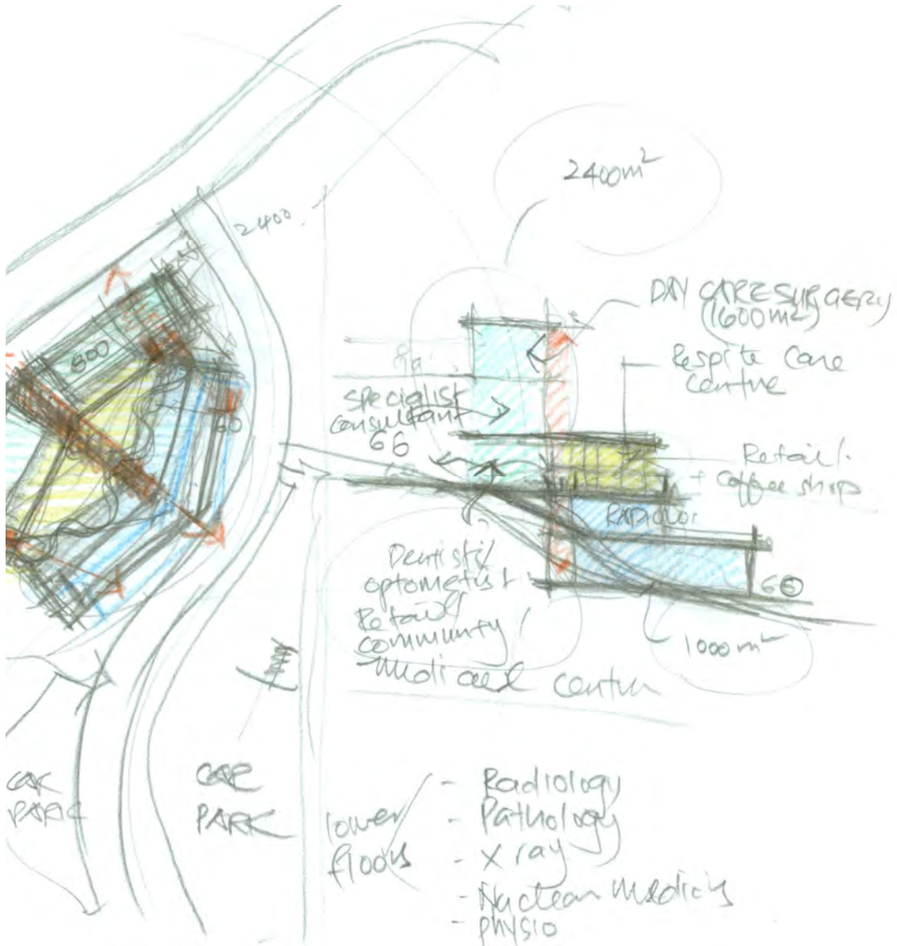
Number of storey : 2 Storey

Number of Car Parking : 250 cars

Employment : 290 Jobs

The child care centre will have places for 70 children and provide long day care and some occasional care for children associated with patients.

The Child Care Centre will be a double-storey structure with a total floor area of approximately 1200 sq m.




ACCOMODATION FOR
HEALTH CARE WORKERS
PATIENT RELATIVES & OUTPATIENTS
HOLISTIC COURSE: YOGA, REIKI,
LAUGHTER THERAPY, MEDITATION,
AURAS, PRANIC HEALING

N

4.6 STAGE 2 / Precinct **D**

Self-Care Seniors Housing.

Further landscaping of Precinct B including eastern edge.

This precinct contains the regenerated rainforest area and substantial other landscaped buffer area including part of the electricity easement, to the existing residential areas of Berkeley.

The Stage 2 Seniors Housing self care accommodation will together with the further Stage 6 provide the full range of residential accommodation for seniors. The seniors housing include the following –

- Independent Seniors Living comprising 90~100 two bedroom apartments

Total site area : 47,015.46m²

Building footprint area : 5,896.5 m²

Building Gross Floor Area : 8,000 m²

Landscape area : 36,996.7 m²

Number of storey : 2 Storey; 9m Height

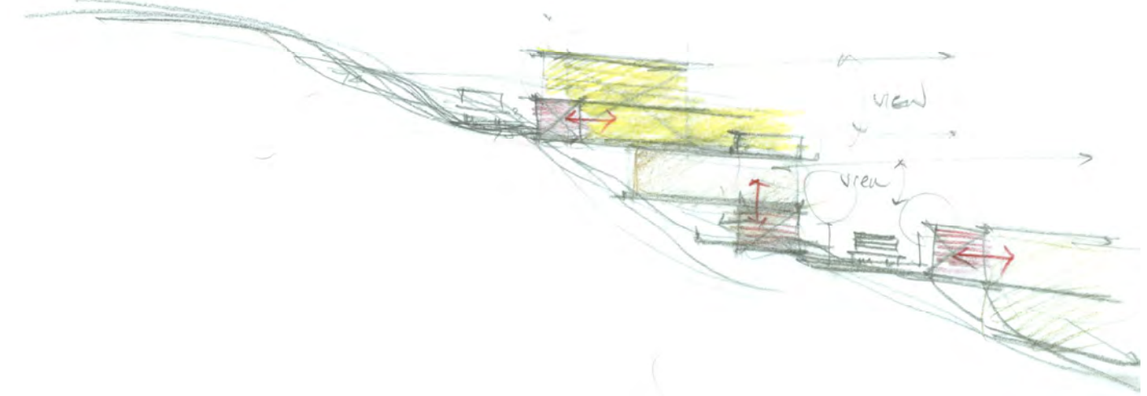
Number of Car Parking : 90 ~ 100 cars, 10 Visitors

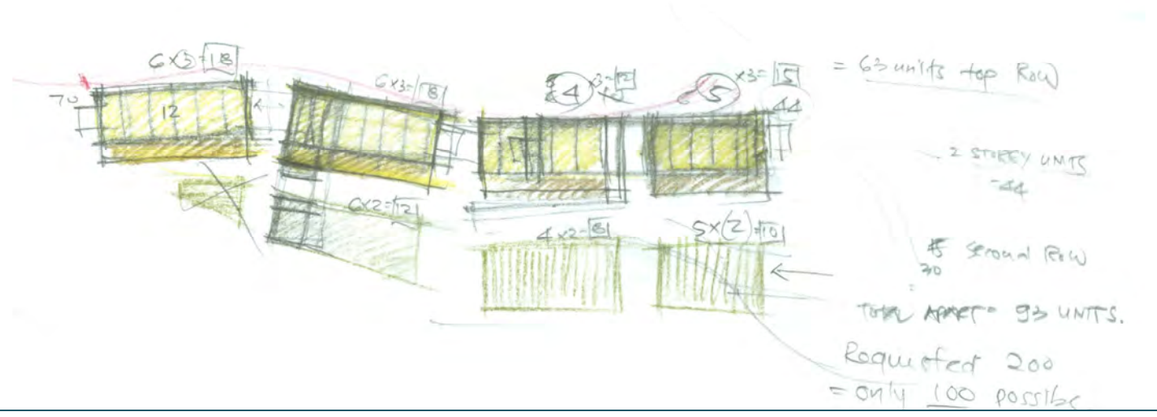
Employment : 35 Jobs

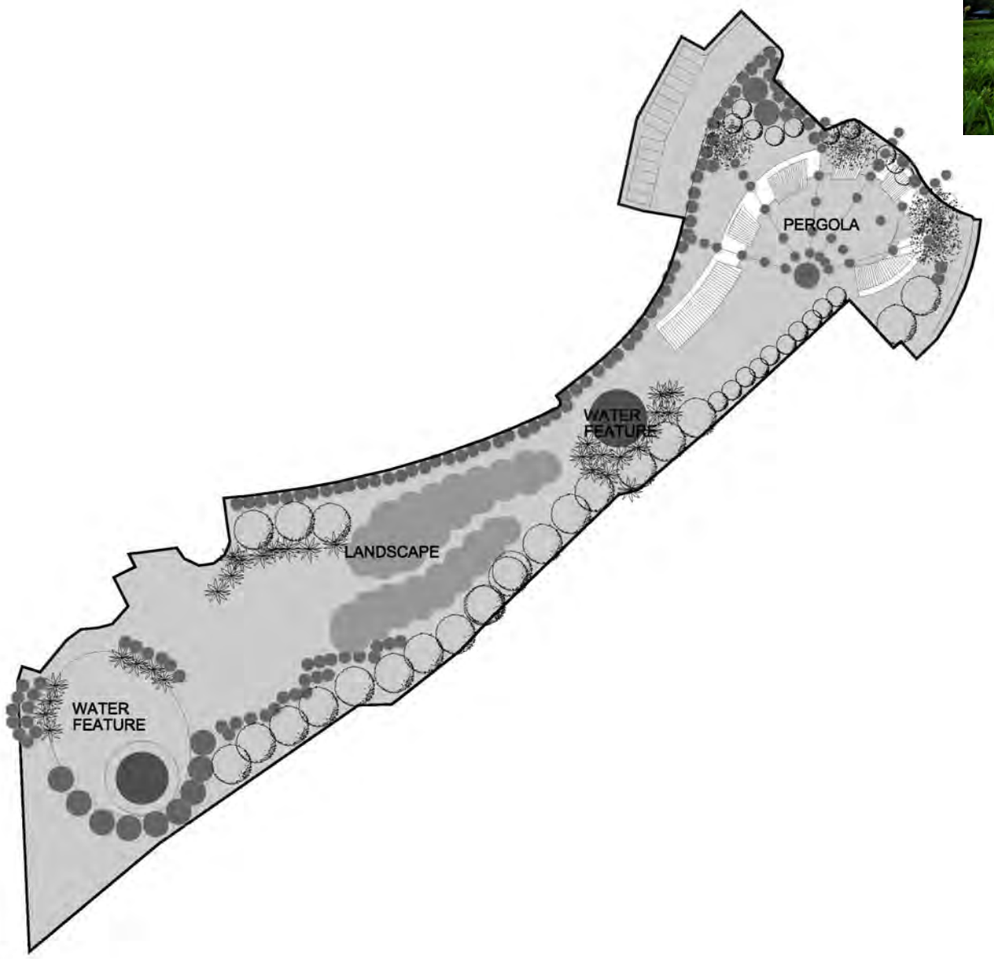
A two (2) storey, nine (9) metre height limit has been adopted for Precinct D to ensure the subject site retains a green horizon from Lake Illawarra and the flatter areas of Berkeley and that the seniors housing does not exceed the height of the tree canopy proposed as part of the landscape concept.
Stage 2 also includes further detailed landscape site works to the eastern edge of Precinct 3 including weed removal, soil stabilisation and planting.

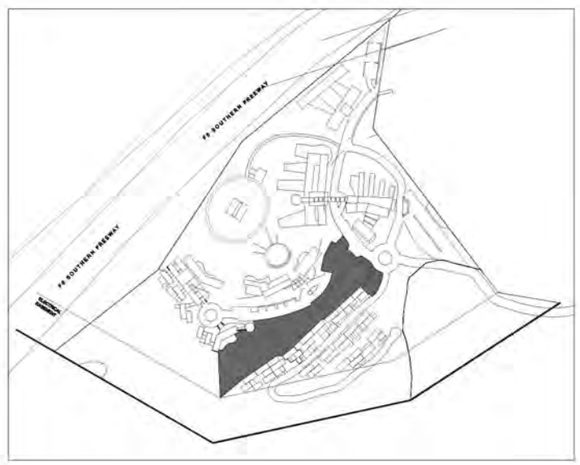
This precinct also contains portion of the landscaped environmental buffer to the south-east of the subject site and beneath the electrical easement. This will provide a minimum 24 metre wide landscaped buffer to the existing housing in Nottingham Street.

This precinct also contains Catchment C that is proposed as a local rainforest regeneration area (refer to Flora and Fauna Assessment by Kevin Mills and Associates).






PERGOLA
WATER FEATURE
LANDSCAPE
WATER FEATURE


FX SOUTHERN FREEWAY
FX SOUTHERN FREEWAY

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4.7 STAGE 3 / Precinct **B**
Holistic Health Course

In Stage 3 of the proposal, the completion of Precinct B will provide a central open space between the two high points on the subject site that will contain a holistic health course. The holistic course will be integrated into the proposed scenic landscaping of the higher green portion of the subject site. Both organised and casual group use of this area is envisaged. The course will have outdoor facilities for -

- Yoga
- Reiki
- Laughter Therapy
- Meditation
- Auras
- Pranic Healing and other outdoor health related activities.

Total site area : 26,341.13 m²

Building footprint area : N/A

Building Gross Floor Area : N/A

Landscape area : 25,521.9 m²

Number of storey : N/A

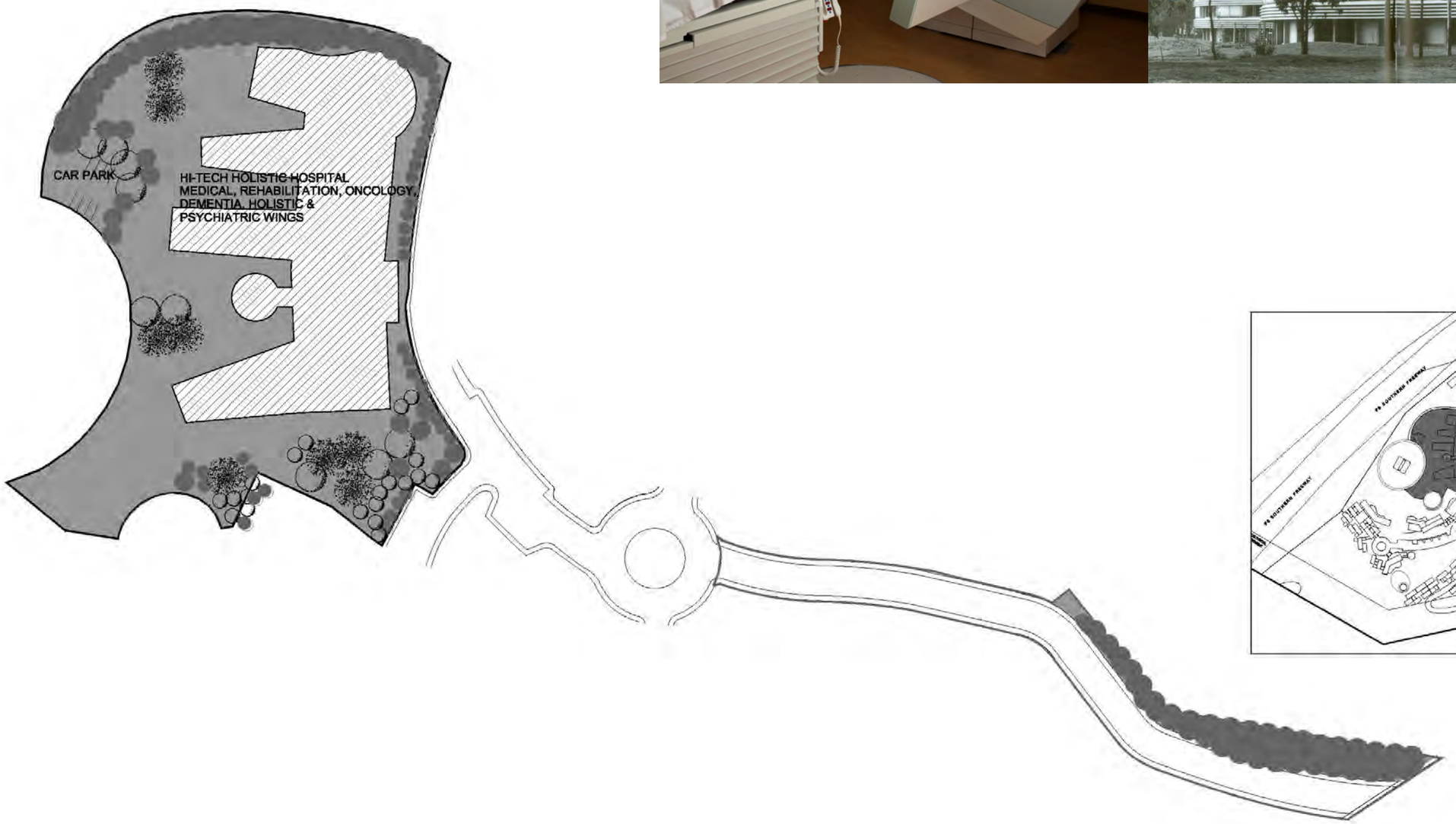
Number of Car Parking : 20

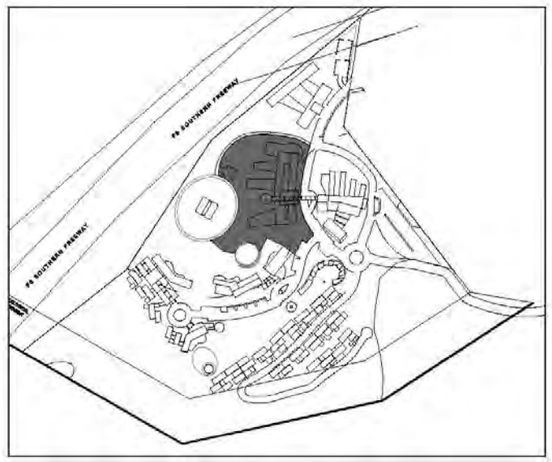
Employment : 30 Jobs

A short local road extension off the roundabout is proposed to provide direct access to on-street parking for 20 cars adjacent to the open space and holistic course.

Services will be extended from Stage 1.

Drainage will be directed towards the wetland area in Catchment 1 and to the stormwater system in Precinct D.


CAR PARK
HI-TECH HOLISTIC HOSPITAL
MEDICAL, REHABILITATION, ONCOLOGY,
DEMENTIA, HOLISTIC &
PSYCHIATRIC WINGS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4.8 STAGE 4 / Precinct **A**

Hi-tech Holistic Cancer & Medical Hospital Facility

Oncology & Holistic Wing.
Medical Wing.
Rehabilitation Wing.
Psychiatric & Dementia Wings.

In Stage 4 of the proposal the completion of Precinct A will provide a 320 bed high-tech holistic Cancer & Medical hospital facilities. This will be a key part of the overall development and will contain facilities for a broad range of holistic treatments.

- **Oncology & Holistic Wing**
  - 80 overnight beds for patients
  - Clinics
  - Associated facilities
  - Staff facilities

- **Medical Wing**
  - 80 overnight beds for patients
  - Associated Facilities

- **Rehabilitation Wing**
  - 80 overnight beds for patients
  - Pool & Spa
  - Gymnasium
  - Physiotherapy
  - Associated Facilities

- **Psychiatric & Dementia Wing**
  - 80 overnight beds for patients
  - Associated Facilities

Total site area : 18,036.5m²

Building footprint area : 4,952.25 m²

Building Gross Floor Area : 13,000 m²

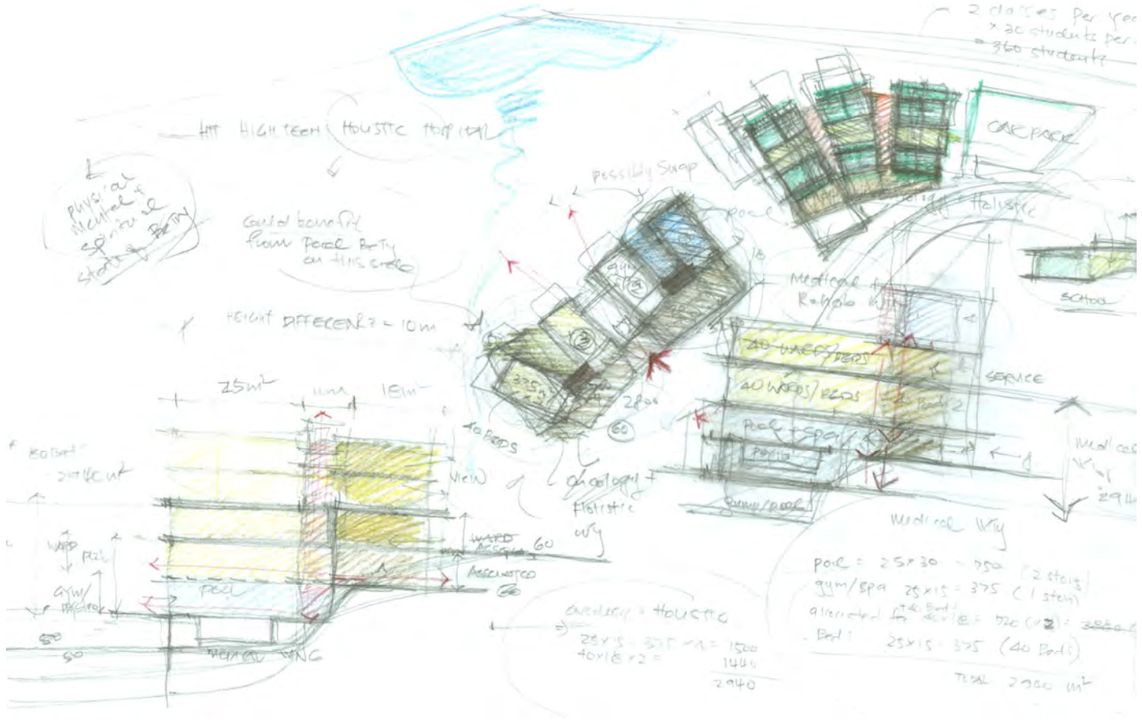
Landscape area : 10,506.75m²

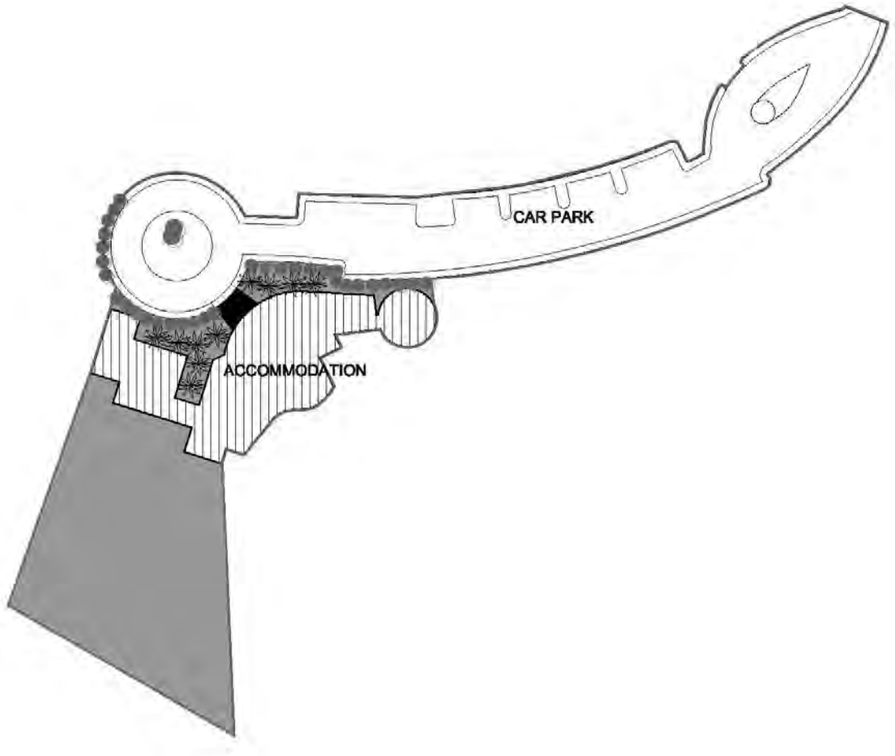
Number of storey : 4 Storey

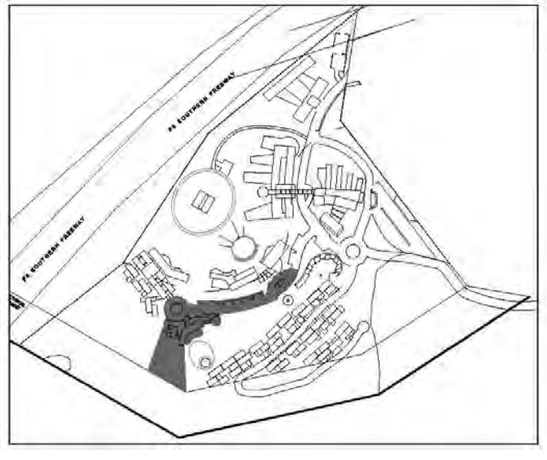
Number of Car Parking : 250 cars; 50 cars(external) + 200 cars(basement)

Employment : 1770 Jobs

The completion of this Precinct will significantly increase the traffic generation from the subject site so as to require the extension of Warwick Street through the adjacent Council owned site to Nolan Street.
Stage 4 will also include landscaping of the verges of the road extension to Nolan Street.







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4.9 STAGE 5 / Precinct **E**

Serviced Apartments

for attendants of patients and patients seeking outpatients services.

These apartments will comprise a total of 75 small to medium dwellings for patient relatives and outpatients.
The accommodation will be limited to people associated with the overall function of the LCW for a short, medium or long term timeframe.

- **75 Unit Serviced Apartments**
  - Hospital related
  - 1 Bedroom (60 m²) : 40 Units
  - 2 Bedroom (90 m²) : 35 Units

Total site area : 10,603.3 m²

Building footprint area : 2,861 m²

Building Gross Floor Area : 7,500 m²

Landscape area : 2,670.6 m²

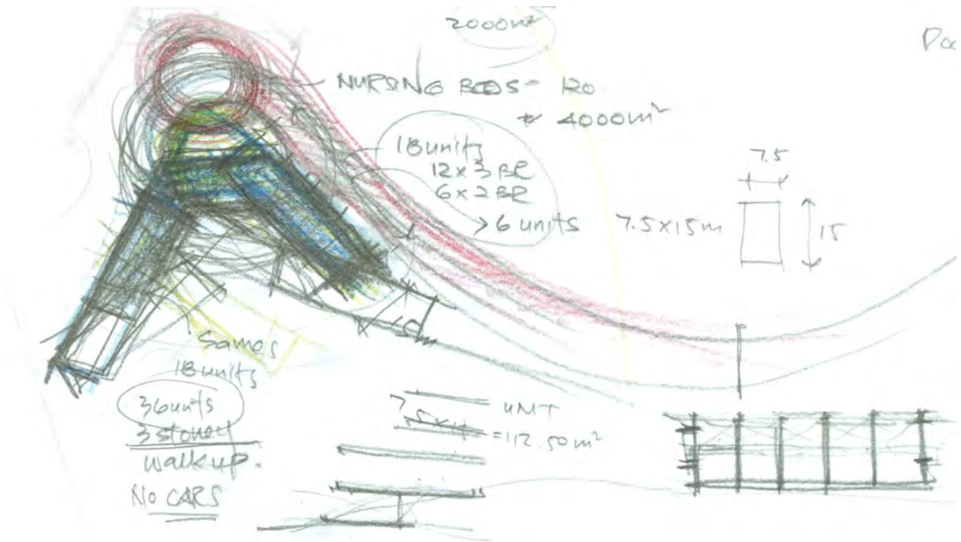
Number of storey : 4 Storey

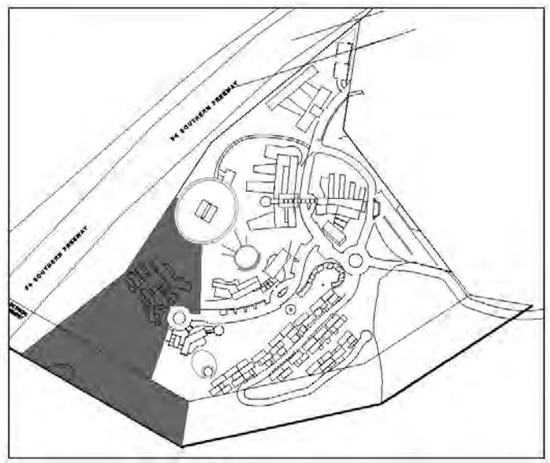
Number of Car Parking : 95 cars; 75 cars + 20 cars(visitors)

Employment : 50 Jobs

Services and access to Precinct E1 will be via an extension of the cul-de-sac provided in Precinct B.

This precinct also contains a further portion of the landscaped environmental buffer to the south of the subject site and beneath the electrical easement. This will provide a minimum 24 metre wide landscaped buffer to further of the existing housing in Nottingham Street.





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4.10 STAGE 6 / Precinct **G**

Residential Care Facility and Hostel.

Precinct G will comprise the building of the residential care facility and hostel with a total of 160 beds, and the landscaping of the remainder of the precinct including the final portion of the landscaped environmental buffer to the south of the subject site and beneath the electrical easement. This will provide a minimum 24 metre wide landscaped buffer to the existing housing in Nottingham Street.

No further road construction is required as part of this precinct and services will be available from the end of the cul-de-sac provided in Stage E1. The proposed residential care facility will comprise 120 beds in single rooms including low and high care and a dementia section. The hostel will provide a further 40 beds in an attached part of the same building.

- **120 Residential Care Facility Beds**
  - 25-30 beds for Dementia
  - 60 beds for Low care
  - 30 beds for High care
  - 25 m² per Bedroom
- Lounge rooms
- Common rooms
- Amenities staff facilities
- Service areas including commercial kitchen and laundry

- **40 x 1 Bedroom HOSTEL beds**
- Gym, Spa
- Theatre rooms
- Restaurant, Cafe

Total site area : 17,219.1m²

Building footprint area : 3,126.5m²

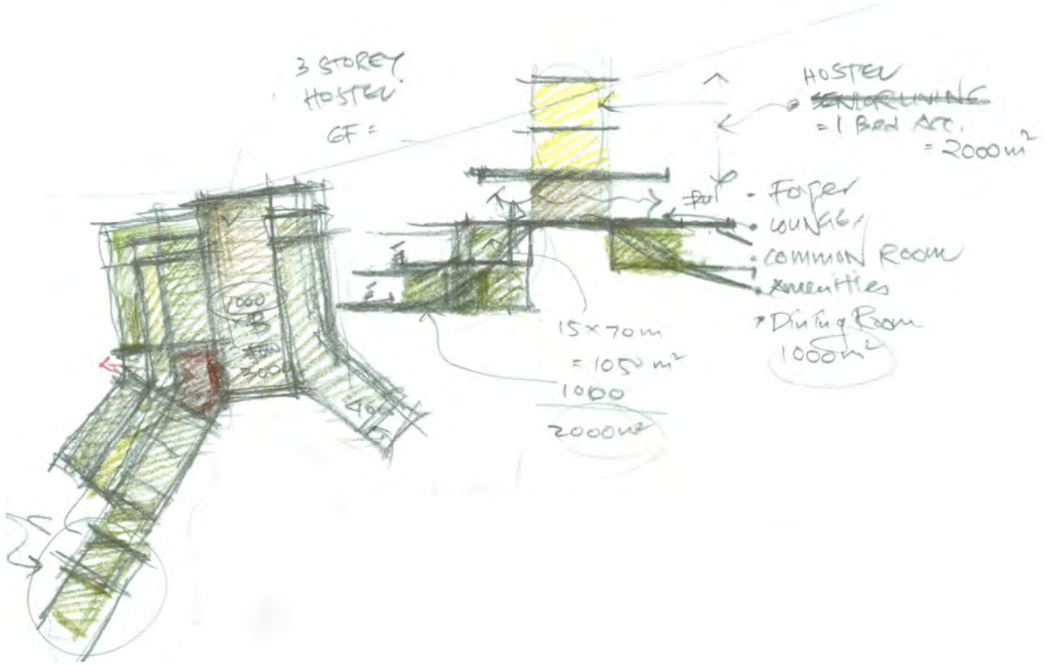
Building Gross Floor Area : 5,500m²

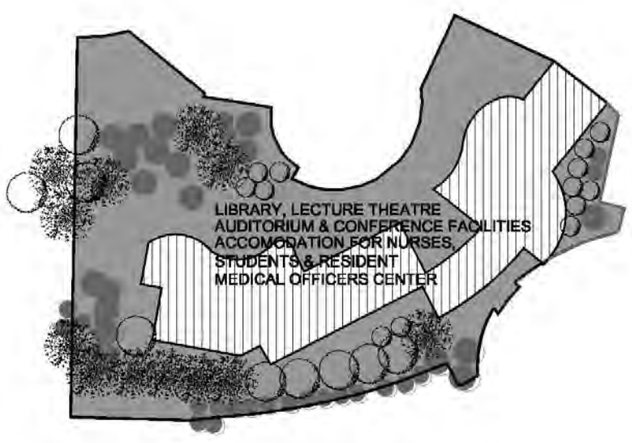
Landscape area : 14,092.6m²

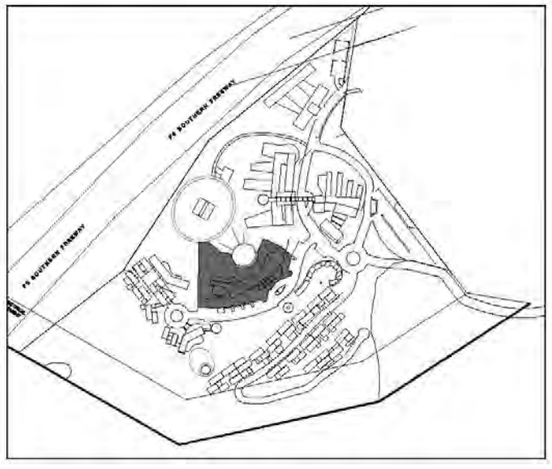
Number of storey : 4 Storey

Number of Car Parking : 25 cars

Employment : 200 Jobs




LIBRARY, LECTURE THEATRE
AUDITORIUM & CONFERENCE FACILITIES
ACCOMODATION FOR NURSES,
STUDENTS & RESIDENT
MEDICAL OFFICERS CENTER



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4.11 STAGE 7 / Precinct **F(1&2)**

F1 - Ancillary accommodation

For Doctors, Nurses and Students

F2 - Educational & Research

Library, lecture theatre and auditorium.
Research & Development facility

Stage 7 will provide a central facility for healthcare students and landscaping to the remainder of the precinct. The operation will include Graduate, Master & PHD collaboration with Wollongong University Graduate School of Medicine and the Department of Health Informatics.

The facilities are also used by the doctors, nurses, medical students. There will be occasional use by the selective high school students. Further landscaping of Catchment 1 will be included as part of Stage 7.

- **Educational & Research**
  - Lecture theatre
  - Auditorium
  - Library
  - Amenities
  - Lab
  - Conference rooms

- **Ancillary accommodation**
  - 1 Bedroom (65 m²) : 15 units
  - 2 Bedroom (85 m²) : 15 units

Total site area : 7,288.2 m²

Building footprint area : 2,297.55 m²

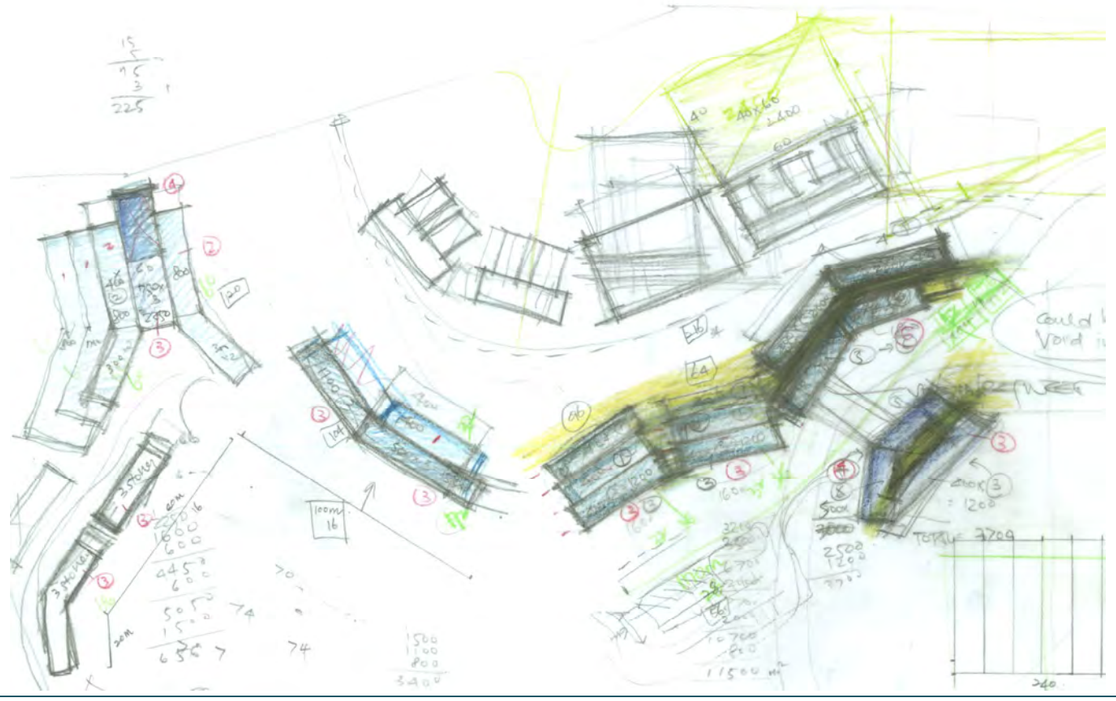
Building Gross Floor Area : 3,000 m²

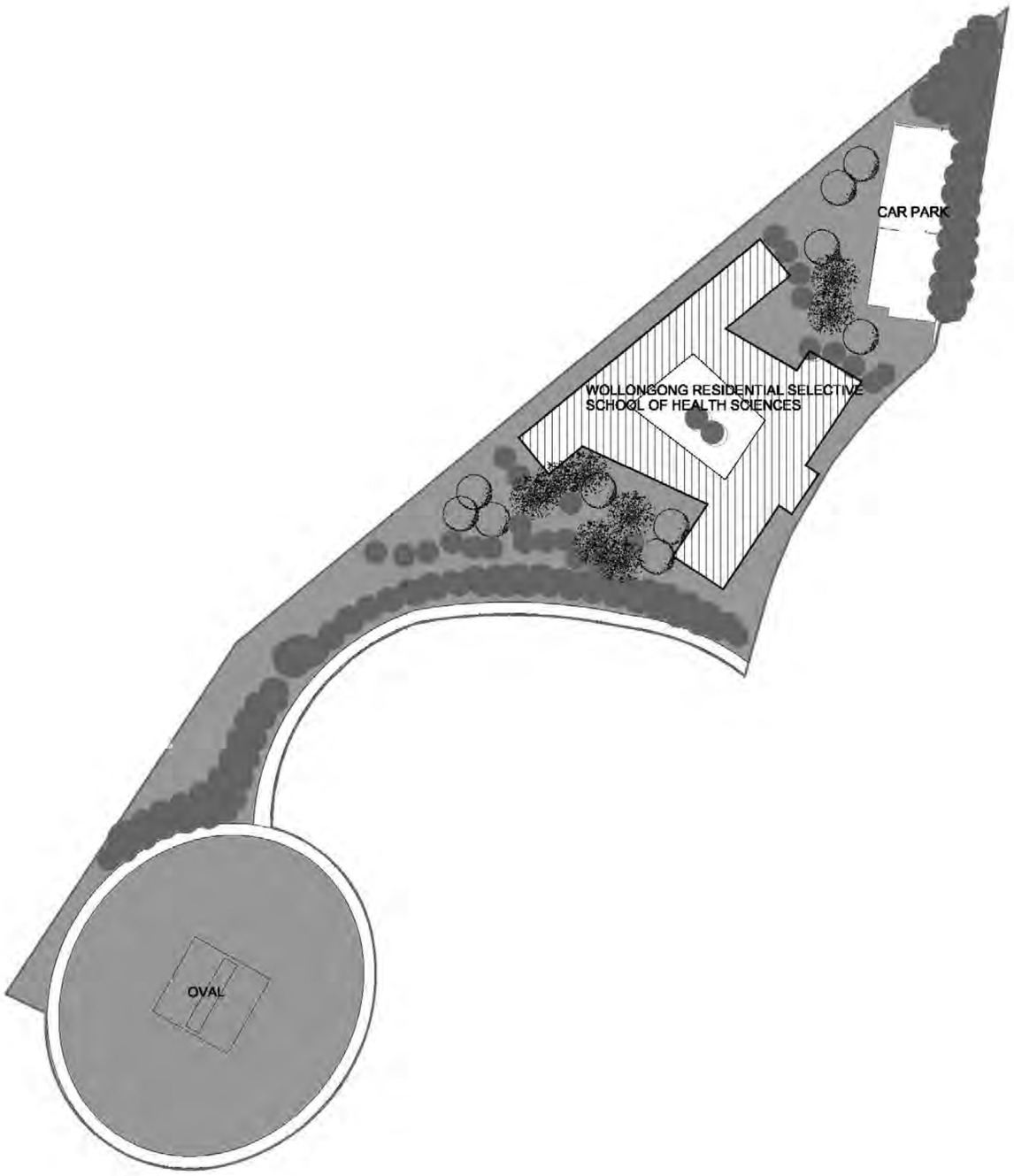
Landscape area : 4,990.6 m²

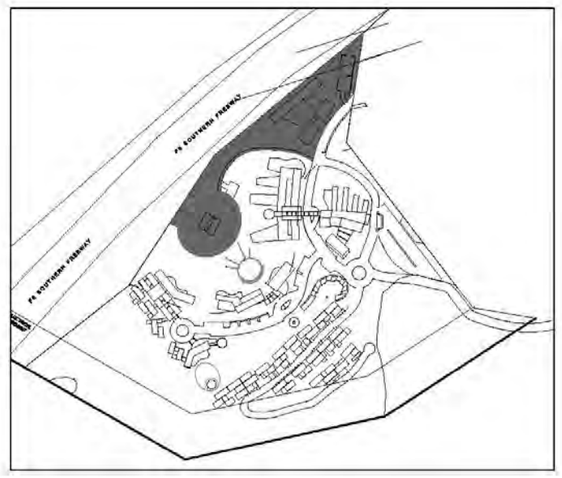
Number of storey : 3 Storey

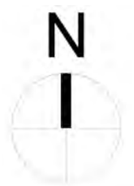
Number of Car Parking : 115 cars

Employment : 75 Jobs




CAR PARK
WOLLONGONG RESIDENTIAL SELECTIVE
SCHOOL OF HEALTH SCIENCES
OVAL

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4.12 STAGE 8 / Precinct **H**

Wollongong Healthcare Technical High School

Stage 8 will be the final stage of the development and will comprise the Selective High School and Tertiary Facility with a total of 350 pupils, the provision of an oval and the completion of landscaping of the Catchment 1 of the subject site. Access and services will be from the road provided in Stage 1.

No further road works or utility service extensions are required for this precinct.

- **Health education based selective secondary school**
  - Multipurpose and multi-media hall
  - Library
  - Class rooms
  - Studio spaces
  - Outdoor spaces including an oval
  - Work spaces
  - Seminar rooms
  - Administration offices and amenities

Total site area : 19,241.1 m²

Building footprint area : 2,590.4 m²

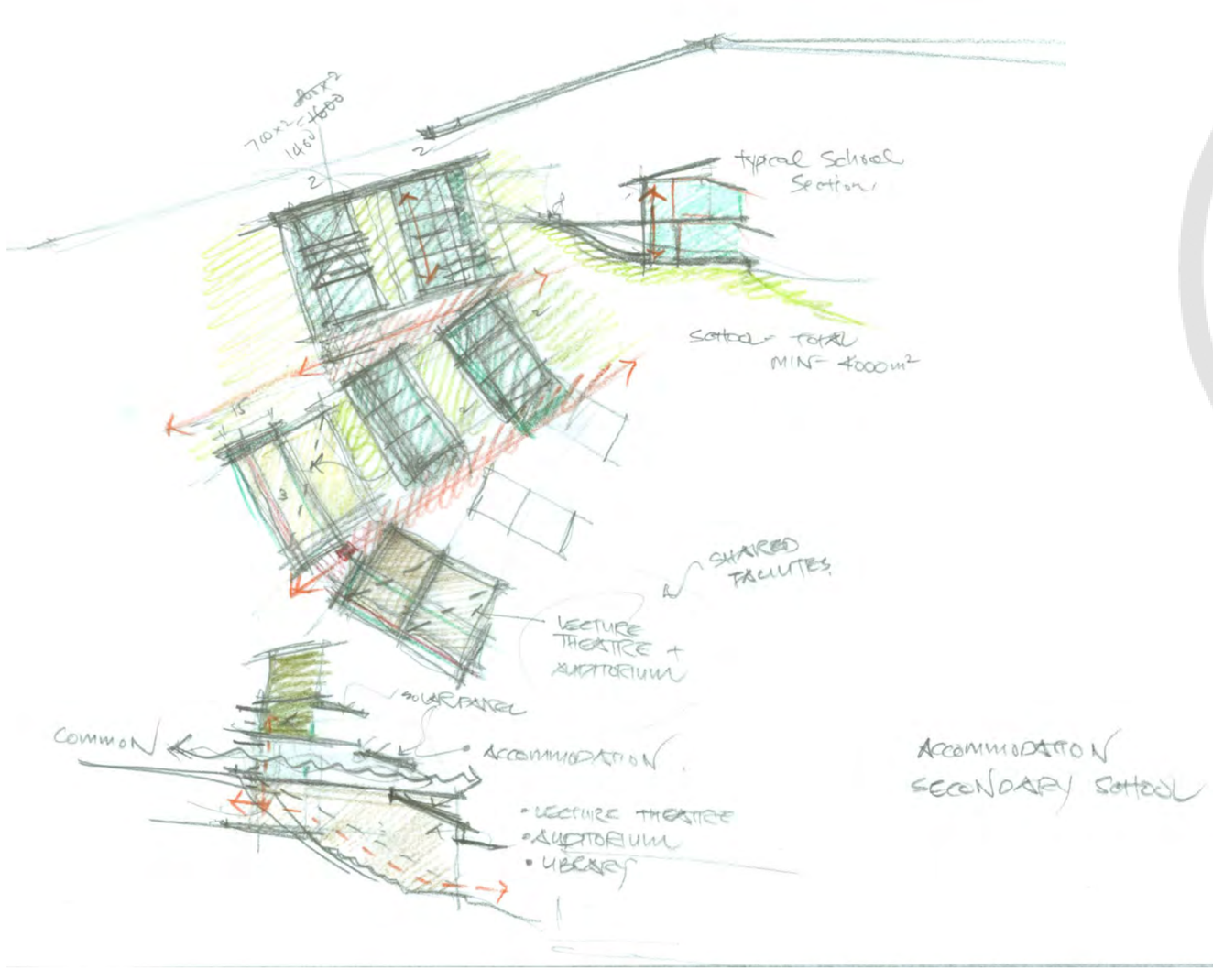
Building Gross Floor Area : 5,000 m²

Landscape area : 15,190.5 m²

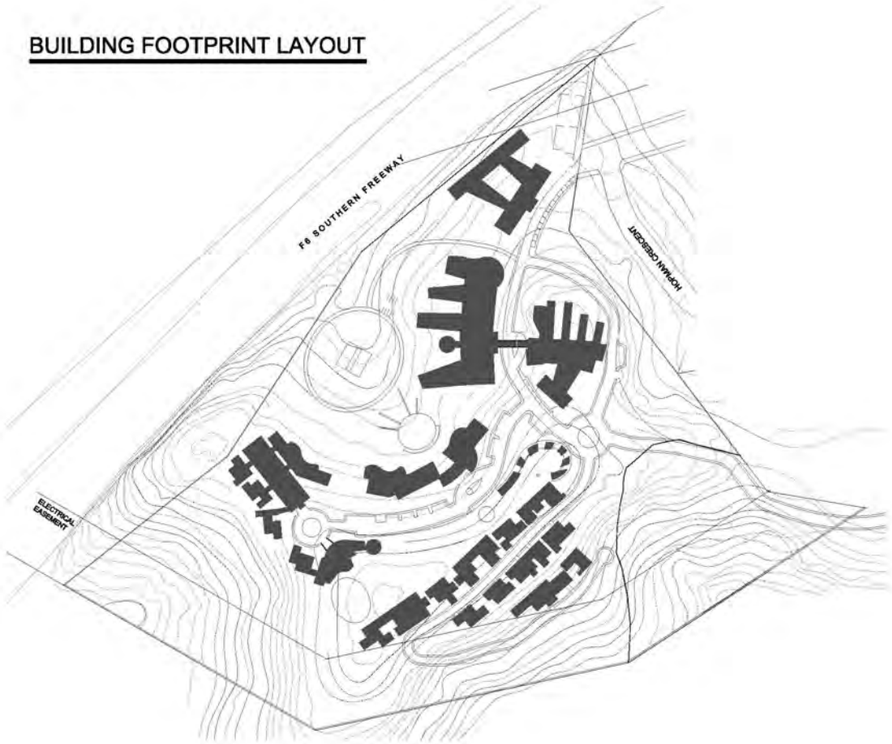
Number of storey : 2 Storey

Number of Car Parking : 50 cars

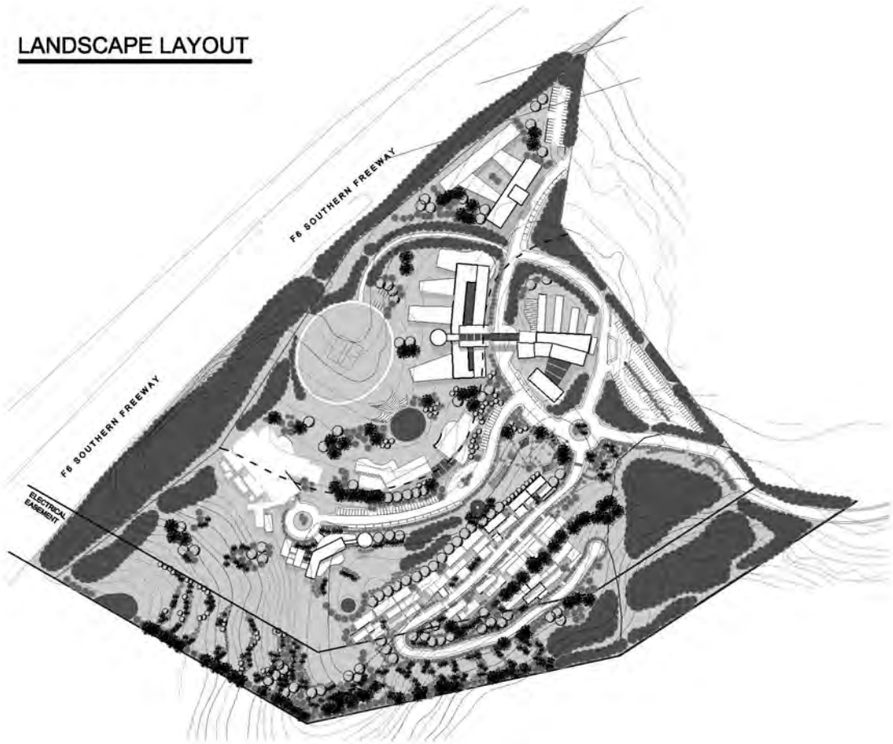
Employment : 150 Jobs



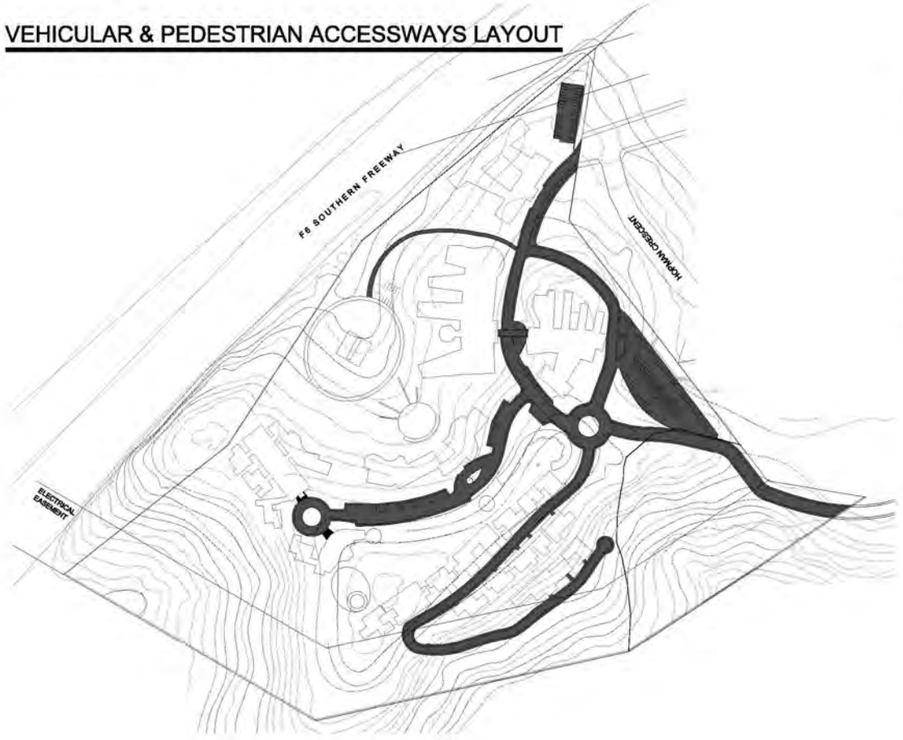
BUILDING FOOTPRINT LAYOUT



LANDSCAPE LAYOUT



VEHICULAR & PEDESTRIAN ACCESSWAYS LAYOUT



AREA BREAKDOWN

	STAGE AREA :	BUILDING FOOTPRINT AREA :	VEHICULAR & PEDESTRIAN ACCESSWAYS AREA :	LANDSCAPED AREA :
STAGE - 1	22056.9 M^2	2998.7 M^2	9808.52 M^2	9250 M^2
STAGE - 2	47015.5 M^2	5896.5 M^2	4047.12 M^2	36996.7 M^2
STAGE - 3	26341.1 M^2	-	-	25521.9 M^2
STAGE - 4	18036.5 M^2	4952.25 M^2	2577.5 M^2	10506.75 M^2
STAGE - 5	10603.3 M^2	2861 M^2	3335.55 M^2	2670.6 M^2
STAGE - 6	17219.1 M^2	3126.5 M^2	-	14092.6 M^2
STAGE - 7	7288.2 M^2	2297.55 M^2	-	4990.6 M^2
STAGE - 8	19241.1 M^2	2590.4 M^2	1460.67 M^2	15190.5 M^2

N

4.13 Staging Costs and Employment Estimates.

Stage	Project	Jobs(FTE)	Land use, building/statistics	Estimated costs
Stage 1	**Precinct C** - **Day Surgery & Specialist Rooms** Medical Centre Child Care & Respite care Centre and initial structural works and major tree planting for Precinct B	290	Medical Centre, Day Surgery, 15 Specialists + 10 emergency beds + 10 day surgery beds, Child Care – 70 children 250 car spaces. No of storeys: 1 to 2 storeys Total building area: 4800m2	Estimated costs: Buildings – PHCC $24,000,000 Roads/services $13,241,502 Open space/site $1,850,000 **Total Stage 1 $39,091,502**
Stage 2	**Precinct D -** **Seniors Living** parking and further detail landscaping to the eastern edge of Precinct B and rainforest restoration**.**	35	Self Care Seniors Housing 90~100 units 80 car spaces No of storeys: 2 storeys Total building area: 10000m2	Estimated costs: Buildings – $29,200,000 Roads/services $5,560,000 Open space/site $7,400,000 **Total Stage 2 $31,160,000**
Stage 3	**Precinct B** - **Holistic Health Course** Yoga & Reiki & Laughter Therapy, Meditation, Auras, Pranic Healing.	30	Open space activity including structures to facilitate outdoor health activities and kerbside parking for 15 cars	Estimated costs: Shelters – $0 Roads/services $0 Open space $6,210,000 **Total Stage 3 $6,210,000**
Stage 4	**Precinct A** - **Hi-Tech Holistic Cancer & Medical Hospital Facility** (Tertiary referral hospital)	1770	Hospital 320 Beds 250 car spaces No of storeys: 4 storeys Total building area: 13000m2	Estimated costs: Buildings – $110,500,000 Roads/services $3,480,000 Open space $1,940,000 **Total Stage 4 $115,920,000**
Stage 5	**Precinct E** - **Serviced Apartments** For attendants of patients & Patients seeking outpatients services	50	Hospital related accommodation 75 units & 95 car spaces No of storeys: 4 storeys Total building area: 7500m2	Estimated costs: Buildings - $16,500,000 Roads/services $4,500,000 Open space $490,000 **Total Stage 5 $21,990,000**
Stage 6	**Precinct G** - **Residential Care Facility and Hostel**	200	Residential Care Facility 160 RCF Beds / 25 car spaces No of storeys: 4 storeys Total building area: 5500m2	Estimated costs: Buildings - $24,750,000 Roads/services $0 Open space $2,600,000 **Total Stage 6 $27,350,000**
Stage 7	**Precinct F** - **Educational & Research (F2)** Library + Lecture theatre + Auditorium **Ancillary Accommodation (F1)** for Doctors, Nurses and Students	75	Educational / Specialised accommodation 30 units/ 115 car spaces No of storeys: 3 storeys Total building area: 3000m2	Estimated costs: Buildings - $9,000,000 Roads/services $0 Open space $920,000 **Total Stage 7 $9,920,000**
Stage 8	**Precinct H** - **Wollongong Healthcare Technical High School** and the Oval	150	Educational Establishments 350 Students, 30 Academic Staff & 50 car spaces No of storeys: 2 storeys Total building area: 5000m2	Estimated costs: Buildings - $17,500,000 Roads/services $1,972,350 Open space/oval $2,810,000 **Total Stage 8 $22,282,350**
TOTALS		2600	880 off street car spaces Total building area: 48800m2	**Estimated cost $274,950,000** Fees/ contingencies $35,908,500 **TOTAL EST COST $310,858,500**

5 Consultation with authorities + Public consultation

5.1 Wollongong City Council

A number of discussions have taken place with Councillors, Administrators and staff of Wollongong City Council over a number of years. Pre Lodgement meeting was held with council (Sept 2008) Recommendation was made for the project to be submitted as Part 3(A) under Environmental Planning and Assessment Act. Another submission was lodged in response to the recently exhibited draft LEP requesting an amendment to the draft to facilitate a similar range of land uses to the subject proposal. The amendment did not proceed as it had not been included in the draft and was considered to significant to be added to the plan at that stage.

A more recent meeting was held with officers of Wollongong City Council and the Department of Planning Regional Office to discuss the current proposed project.

The issues discussed covered:

- Vehicular access to the site and use of the adjoining roads. Wollongong Council officers have expressed some concern regarding additional traffic volumes generated from the proposal along Warwick Street. This local street currently has a carriageway width of 9 metres and comprises portion the of the local bus route.
- Local open space and the use of parklands. Wollongong Council officers also suggested that as the proposed primary access to Nolan Street traverses the Council owned environmental management zone adjacent to the site that further discussions be held with the property section of the Council.
- The zoning of the site - Environmental Management. It was suggested that the rationale to the environmental management zone be further investigated. It was agreed that the purpose for the environmental management zone was probably scenic rather than ecological.
- Bush fire risk assessment and requirements.

5.2 NSW Health and other approvals

The proposal is not inconsistent with the NSW and Illawarra Health Care Strategy and preliminary work has commenced to pursue the necessary licensing and other approval required for the various proposed healthcare facilities.

5.3 NSW Roads and Traffic Authority

Detailed discussions have not yet been held with the Roads and Traffic Authority.

The proposed development has a common boundary with the South Coast Freeway. The subject site is accessible from the freeway via the Berkeley Road intersection to and from the north and south.

The subject site and the proposed development do not require any change to the existing arterial road traffic provisions.

Traffic noise impacts on portion of the subject site from the freeway between the end of the acoustic wall at the northeast corner of the site and the start of the deep cutting further to the south.

The concept plan proposes to locate the residential portions of the development away from the noise affected portion of the site. Stage 8 of the proposal containing the Selective School for Health Sciences may require the extension of the acoustic wall towards the south. Stage 4 containing the Tertiary Referral Hospital is a considerable distance from the freeway is not likely to be impacted on by traffic noise. A detailed acoustic report will be required with the Environmental Assessment.

5.4 Services Infrastructure

No detailed discussions have been pursued with service authorities at the Preliminary Environmental Assessment stage however the subject site is adjacent to two fully serviced residential sections of the Berkeley neighbourhood and can likely be serviced by an extension of the existing electricity, water and sewer, telecommunications, and gas infrastructure. currently available in the locality.

5.5 Community Consultation

No formal consultation has been undertaken in respect to the Preliminary Environmental Assessment or the concept plan at this stage. Nevertheless the Berkeley Community have been made aware of the concept via a number of local and regional news reports and press statements over the last 5-10 years. Community support for the concept of a holistic healthcare development and the creation of healthcare and related jobs is evident from the response during this time.

A more extensive and focussed consultation needs to be undertaken at the next stage.

MAP 2
BIODIVERSITY

Map Legend

- Regional City
- Major Regional Centre
- Planned Major Regional Centre
- Major Town
- Town
- Aquatic Reserve
- Rail Network and Station
- Freeway and Highway
- Main Road
- River and Creek
- Local Government Area
- Illawarra Regional Strategy Boundary
- Existing Urban Area
- Water Body
- Ocean
- National Park Estate
- State Forest
- Woronora and Metropolitan Special Areas (Water Catchment)
- Rural and Natural Resource Area

Significant Native Vegetation

- Endangered Ecological Community
- Vegetation types identified as > 70% cleared
- Other High Conservation Value Vegetation
- Indicative DEC Regional Habitat Corridor
- Other Indicative Habitat Corridor
- Nationally Important Wetland
- Highly Vulnerable Estuary

State Environmental Planning Policy 14

- Coastal Wetland

State Environmental Planning Policy 26

- Littoral Rainforest

N

6 Preliminary Statutory Assessment

This section outlines the areas of compliance and non-compliance with relevant Environmental Planning Instruments and the *Environmental Planning and Assessment Act 1979*.

6.1 Strategic Planning

The Illawarra Regional Strategy 2006-31 applying to Wollongong, Shellharbour and Kiama Local Government Areas published by the Department of Planning in January 2007, proposes economic growth, to generate local job and housing opportunities and attract fresh business investment while at the same time ensuring that the region's population will have access to more lifestyle options and sensitive environmental areas are protected.

The Strategy proposes a population increase from 281000 to 328600 being an additional 47600 people in an additional 38000 new dwellings and an additional 30000 jobs in the region over 25 years to 2031. Half of the new dwellings are proposed to be medium to high density housing. West Dapto is to provide about half of the total proposed new dwellings. The Strategy concludes that the region could accommodate higher rates of growth in consistency with the Sustainability Criteria supporting the Regional Strategy and that the Illawarra Region needs to attract economic opportunities to continue to thrive.

At the present time more than 15% of the regions workforce commute to Sydney for work. The containment of this is considered a major challenge in the Strategy.

The strategy also recognises that the population is ageing. Although the existing median age is relatively young at 36 years this will increase to 44 years by 2031. Although the median age will remain young in comparison to other parts of New South Wales most of the population growth will in fact be in the over 50 years category.

The Strategy emphasises that the proposed growth must occur within the environmental constraints including native vegetation, coastal values and aquatic biodiversity of the region. One of the more relevant environmental challenges is stated as 'to improve protect and enhancement of natural environments, including significant biodiversity corridors, coastal lakes and estuaries, and landscape values'.

In terms of Regional Transport the strategy requires land use planning decisions to consider transport access implications to minimise the need to travel, and encourage energy and resource efficiency.

In terms of housing choice the Strategy requires an appropriate mix of housing (density) but even though most of the proposed population growth is in the 50+ age category to Strategy does not mention Seniors Housing or Residential Care Facilities.

Specifically the Strategy identifies the **health care sector, including hospitals, medical centres, clinics and aged care facilities as a major employment generator** in the Region. The Strategy expects this sector to grow to meet the changing needs of the Region such as the upgrade to the Wollongong Hospital to a teaching hospital.

In terms of economic development and growth the Strategy states that particularly in manufacturing, research and development, retail, **health and community services**, property and business services, and tourism will be facilitated though the provision of suitable employment lands.

The Strategy identifies the Illawarra Region as being within the Sydney Basin Bioregion - one of the most biologically diverse in NSW. The strategy specifically recognises the importance of the Illawarra Escarpment and the high value estuaries, coastal lakes and wetlands. The subject site although not within any of these areas is within the Illawarra Lake Catchment and will need to address water quality issues.

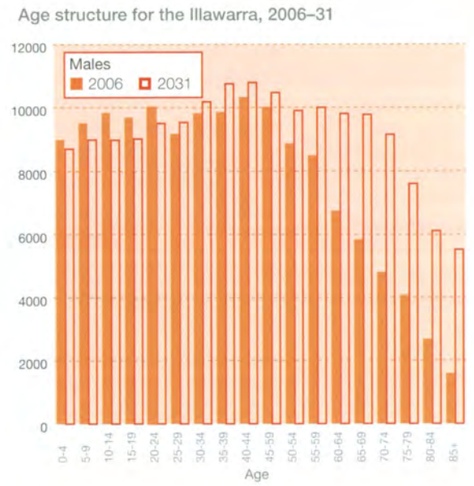
The Strategy states that Councils should **encourage the clustering of synergistic businesses** by consolidating existing centres and fast tracking approvals of cluster proposals such as business and finance, **medical and health**, and research and development.

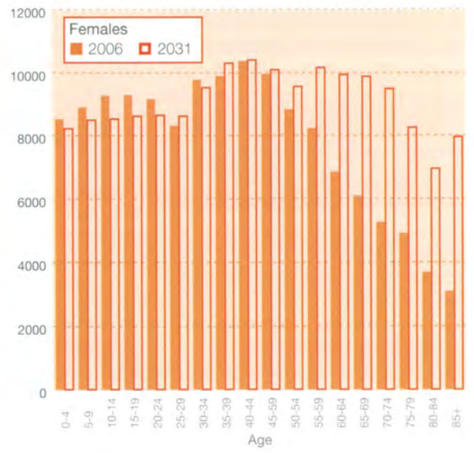
The Strategy also addresses the natural hazards of flooding, coastal inundation and shoreline recession. The subject site is not impacted on by any of these hazards.

Water, energy and waste issues are included in the Strategy and need to be specifically addressed by the proposed development.

The Strategy also addresses rural landscape and communities and cultural heritage none of which are specifically relevant to the subject site.

The Strategy is being monitored annually and is due to be comprehensively reviewed in 2011-12.





6.2 State Environmental Planning Policy (Major Development) 2005/non-compliance with relevant EPIs

The proposed development is located on a site that is zoned partly for residential use and partly for environmental management. The two separate zones allow for some of the proposed uses to be approved, subject to obtaining development consent from the Wollongong City Council. However, the two zones do not permit all of the proposed uses

The Major Development SEPP allows the NSW Department of Planning to consider proposed developments that would otherwise be prohibited by the zone - if the proposal meets certain criteria. Clause **6** sets out the process for the identification of Part 3A projects in part as -

'(1) Development that, in the opinion of the Minister, is development of a kind:

(a) that is described in Schedule 1 or 2,'

Schedule 1 of the State Environmental Planning Policy (Major Projects) 2005 provides a list of the types (also known as classes) of development which can be considered major projects. These development types include:

- agriculture, timber, food and related industries;
- mining, petroleum production, quarries and associated processing industries;
- chemical, manufacturing and related industries;
- general manufacturing, distribution and storage facilities
- tourism and recreational facilities;
- **health and public service facilities;**
- transport, energy and water infrastructure;
- resource and waste-related industries.

The subject proposal is essentially health and public service facilities with ancillary uses including some educational and residential uses being seniors housing and other accommodation relating to the other health facilities.

Schedule 1 in Group 7 Health and public service facilities sets out the thresholds for the project as follows -

'Hospitals

(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.

Educational facilities

Development for the purpose of teaching or research (including universities, TAFE or schools) that has a capital investment value of more than $30 million.'

Schedule 1 commonly sets thresholds (such as a total capital investment value or the number of operational employees) before a proposal may be considered a major project. For health and public service facilities (Hospitals) the relevant threshold is that it would have to have a capital investment value of more than $15 million. If the Minister forms the opinion that a particular project meets the threshold, then it is declared a major project.

For health and public service facilities (Educational Facilities) the relevant threshold is that it would have to have a capital investment value of more than $30 million. If the Minister forms the opinion that a particular project meets the threshold, then it is declared a major project.

The proposed development comes within the ambit of this Policy by virtue of Schedule 1 clause 18 and 20 as the capital investment value of the overall project exceeds $275 million. The hospital (stage 4) has an estimated cost of $115 million and the medical centre (stage 2) has an estimated cost of $35 million. The Educational Facilities (stages 7 and 8) are estimated to cost a total of $32 million in today's dollars. The Minister for Planning is consequently the consent authority for the development and this Preliminary Environmental Assessment is therefore seeking a Clause 6 declaration – that the application can be considered under Part 3A of the *Environmental Planning and Assessment Act 1979,* the Director General's Requirements for a full environmental assessment and the authorisation of the Concept Plan.

6.3 Other State Environmental Planning Policies

Application of SEPPs and REPs

The subject site is subject to the provisions of any State environmental planning policy and any regional environmental plan that prevail over the Wollongong Local Environmental Plan 2009 as provided by section 36 of the Act except for the following State environmental planning policies and regional environmental plans (or provisions) that do not apply to the subject site (refer clause 1.9 of Wollongong Local Environmental Plan 2009).

State Environmental Planning Policy No 1—Development Standards

State Environmental Planning Policy No 4—Development Without Consent and Miscellaneous Exempt and Complying Development (clause 6 and Parts 3 and 4)

State Environmental Planning Policy No 60—Exempt and Complying Development

Illawarra Regional Environmental Plan No 1.

The following State Policies and Plans do apply to the subject site. A full assessment of these policies has not been carried out at for this Preliminary Environmental Assessment.

- State Environmental Planning Policy 11 - Traffic Generating Development
- State Environmental Planning Policy 19 - Bushland in Urban Areas
- State Environmental Planning Policy 53 - Metropolitan Residential Development
- State Environmental Planning Policy 55 - Remediation of Land
- State Environmental Planning Policy 65 - Design Quality of Residential Flat Development
- State Environmental Planning Policy (Major Projects) 2005

  Refer to 5.2 of this report.
- State Environmental Planning Policy (Seniors Living)

  The Seniors Living SEPP sets criteria for housing for seniors and disabled people. All of the detail criteria in the State Policy can be complied with. The site has minimal constraints in terms of this style of development. This policy applies to the Seniors Housing in Precinct 2 and the Residential Care Facility and Hostel in Precinct 6. The policy allows for Seniors Housing in non-urban areas on sites adjacent to urban areas. The E3 Environmental Management is excluded from this provision so that Seniors Housing is prohibited in the E3 zone.

State Environmental Planning Policy (Infrastructure).

- Draft State Environmental Planning Policy 66 - Integration of Transport and Land Uses
- S117 Directions
- Regional Environmental Plan
- Standard Instrument (LEPs) Order 2006

A comprehensive assessment of the project in terms of these State Policies and Plans has not been undertaken at this stage of the proposal.

6.4 Wollongong Local Environmental Plan 2009

The stated aims of plan are as follows (Part 1 Section 1.2).

(1) This Plan aims to make local environmental planning provisions for land in Wollongong in accordance with the relevant standard environmental planning instrument under section 33A of the Act.

(2) The particular aims of this Plan are as follows:

(a) to provide a framework for land use management,

(b) to encourage economic and business development to increase employment opportunities,

(c) to encourage a range of housing choices consistent with the capacity of the land,

(d) to improve the quality of life and the social well-being and amenity of residents, business operators, workers and visitors,

(e) to conserve and enhance remnant terrestrial, aquatic and riparian habitats, native vegetation and fauna species,

(f) to conserve and enhance heritage,

(g) to ensure that development is consistent with the constraints of the land and can be appropriately serviced by infrastructure,

(h) to ensure that significant landscapes are conserved, including the Illawarra Escarpment, Lake Illawarra, the drinking water catchment and the coastline.

The subject proposal is based on at least satisfying these aims, and wherever possible exceeding the outcomes as follows –

(a) The Concept Plan proposes areas for rainforest regeneration and indigenous planting of substantial other areas comprising 70% of the subject site, locating built structures so as minimise impact on the environmental aesthetics of the locality and providing a green ridgeline within the developed area of Berkeley and Unandarra.

(b) The project has a capital investment of $275 million and will provide long term employment of healthcare and related professions exceeding of 600 persons on-site and further job creation in surrounding industries.

(c) Proposed housing choice including Hostel, Residential Care Facility and Self Care Seniors Living as well as hospital related workers, outpatients and visitors

(d) The vision of the proposal is to provide for the holistic health care of all people in the region and outside the region by the provision of a wide mix of healthcare options in an environmentally sustainable precinct. The concept is directly responsive to improving the quality of life and the social well-being and amenity of all people in and outside the region.

(e) The proposal includes the natural rehabilitation of in excess of 70% of the subject site and ensuring that the rehabilitated areas including an area of local rainforest rehabilitation will be environmentally sustainable and protected for the long-term.

(f) The subject site can be serviced by the extension of existing service infrastructure; however, the proposal includes a number of initiatives designed to reduce reliance on existing infrastructure and support sustainable development principles.

(g) Although the Illawarra Escarpment, Lake Illawarra, the drinking water catchment and the coastline provide significant landscapes they are not a contiguous part of the subject site, although the site is within the Illawarra Lake catchment area. Stormwater management, natural indigenous landscaping of 70% of the site and water conservation and energy efficiency are major elements of the proposal.

In terms of the WLEP 2009 Aims the proposal goes beyond the satisfaction of the particular aims.

The Wollongong Local Environmental Plan 2009 zones the subject site R2 - Low Density Residential (47,908 m2 or 29 %) and E3 – Environmental Management (119,892 m2 or 71 %).

The WLEP 2009 permits with consent in the R2 zone -

'Attached dwellings; Bed and breakfast accommodation; Boarding houses; Boat launching ramps; **Child care centres**; Community facilities; Dual occupancies; Dwelling houses; Environmental facilities; Exhibition homes; Exhibition villages; Group homes; **Health consulting rooms**; **Hospitals**; **Hostels**; Information and education facilities; Jetties; **Multi dwelling housing**; Neighbourhood shops; Places of public worship; **Recreation areas**; Recreation facilities (indoor); Recreation

facilities (outdoor**)**; Residential flat buildings; **Roads**; Semi-detached dwellings; **Seniors housing**; Shop top housing; Signage; Veterinary hospitals'.

The WLEP 2009 permits with consent in the E3 zone –

'Animal boarding or training establishments; Bed and breakfast accommodation; Building identification signs; Business identification signs; Community facilities; **Dwelling houses**; Earthworks; **Environmental facilities**; **Environmental protection works**; Extensive agriculture; Farm buildings; Farm stay accommodation; Forestry; **Recreation areas**; **Roads**; Secondary dwellings'.

The WLEP 2009 does not identify the E3 zone as an **environmentally sensitive area. These areas are identified in the WLEP 2009 as** meaning any of the following:
(a) the coastal waters of the State,
(b) a coastal lake,
(c) land to which *State Environmental Planning Policy No 14—Coastal Wetlands* or *State Environmental Planning Policy No 26—Littoral Rainforests*,
(d) land reserved as an aquatic reserve under the *Fisheries Management Act 1994* or as a marine park under the *Marine Parks Act 1997*,
(e) land within a wetland of international significance declared under the Ramsar Convention on Wetlands or within a World heritage area declared under the World Heritage Convention,
(f) land within 100 metres of land to which paragraph (c), (d) or (e) applies,
(g) land identified in this or any other environmental planning instrument as being of high Aboriginal cultural significance or high biodiversity significance,
(h) land reserved as a state conservation area under the *National Parks and Wildlife Act 1974*,
(i) land reserved or dedicated under the *Crown Lands Act 1989* for the preservation of flora, fauna, geological formations or for other environmental protection purposes,
(j) land identified as being critical habitat under the *Threatened Species Conservation Act 1995* or Part 7A of the *Fisheries Management Act 1994*,
(j1) land identified as containing an endangered ecological community under the *Fisheries Management Act 1994* or the *Threatened Species Conservation Act 1995*,
(j2) land to which clause 7.3 (Flood planning area) applies,
(j3) land to which clause 7.8 (Illawarra Escarpment area conservation) applies.
The subject site does not come under any of these areas or is it subject to any of these Acts.

The following land uses are defined in the Wollongong Local Environmental Plan 2009 (also refer to appendix A of this report) and apply to the proposed land uses in the various precincts of the concept plan -
child care centre (Precinct 1)
educational establishment (Precinct 8)
environmental protection works (All Precincts)
health services facility (Precinct 4)
day surgeries and medical centres,
(c) **health consulting rooms** (Precinct 1)
(e) **hospitals** (Precinct 4)
hospital including **ancillary facilities** for (or that consist of) any of the following:
(a) **day surgery, day procedures or health consulting rooms** (Precinct 1)
(b) **accommodation for nurses or other health care workers (**Precinct 5)
(c) **accommodation for persons receiving health care or for their visitors** (Precinct 5)
hostel (Precinct 6)
landscaped area (All Precincts)
medical centre (Precinct 1)
recreation area (Precinct 3 and 8)
residential care facility (Precinct 6)
road (All Precincts)
school (Precinct 8)
seniors housing means residential accommodation that consists of:
(a) a **residential care facility (**Precinct 2), or
(b) a **hostel (**Precinct 6)**,** or
(c) a group of **self-contained dwellings (**Precinct 2)
waterbody (artificial) or **artificial waterbody** (Precinct 8).

The following table shows the current zoning of each of the precincts in the concept plan, the proposed development/landuse in that Precinct from the WLEP 2009 and the permissibility of those uses. The E3 Environmental management zone is therefore primarily based on environmental aesthetics (refer ZONE OBJECTIVE) and allows a range of uses that could potentially impact on the natural environment in a more significant manner than the proposed development.

Precinct and proposed development	Wollongong LEP 2009 zone/s for precinct	Proposed land use definition from Wollongong LEP 2009	Permissibility
A - **Hi-tech Holistic Cancer & Medical Hospital Facility** - Oncology & Holistic, Medical, Rehabilitation, Psychiatric & Dementia wings.	**R2** - Low Density Residential with a small portion zoned **E3** Environmental management	***health services facility*** means – (e) ***hospital***	Permissible with consent in R2 zone, prohibited in E3 zone.
B - **Holistic Health Course** - Yoga, Reiki, Laughter Therapy, Meditation, Auras, Pranic Healing.	**E3** - Environmental management	***recreation area***	Permissible with consent in E3 zone.
C – **Day Surgery & Specialist rooms** Medical Centre, Child Care Centre and Respite Care Centre	**E3** – Environmental management with a small portion zoned **R2** - Low Density Residential	***health services facility*** means - (a) **day surgeries and medical centres**	Permissible with consent in R2 zone, prohibited in E3 zone.
		child care centre	Permissible with consent in R2 zone, prohibited in E3 zone.
D - **Seniors Housing –** self-contained dwellings	**E3** - Environmental management	***seniors housing that consists of:*** ***(c) a group of self-contained dwellings***	Prohibited in the E3 zone.
E – **Serviced Apartments** for attendants of patients and patients seeking outpatient services.	**E3** – Environmental management	***ancillary facilities to hospital – part of hospital definition***	Prohibited in the E3 zone.
F1 - **Educational & Research –** Library, Lecture theatre and Auditorium. Research & Development facility.	**E3** – Environmental management	***educational establishment*** *and ancillary* accommodation, ***school and waterbody (artificial)***	Prohibited in both R2 zone and E3 zone but permissible under Part 30 of the Infrastructure SEPP subject to a determination by the Director in respect of the particular zone, that is a land use zone in which (in the opinion of the relevant authority) equivalent land uses are permitted to those permitted in that named land use zone.
F2 - Ancillary Accommodation for Doctors, Nurses and Students	**R2** - Low Density Residential		
G - **Residential Care Facility and Hostel**	**E3** - Environmental management	***seniors housing*** that consists of: (a) ***a residential care facility***, and (b) ***a hostel***	Prohibited in the E3 zone.
H - **Wollongong Healthcare Technical High School** for 350 students, the Oval	**R2** - Low Density Residential	***educational establishment/ school***	Prohibited in both R2 zone and E3 zone but permissible under Part 30 of the Infrastructure SEPP subject to a determination by the Director in respect of the particular zone, that is a land use zone in which (in the opinion of the relevant authority) equivalent land uses are permitted to those permitted in that named land use zone.
	R2 - Low Density Residential	***recreation area***	Prohibited in R2 zone but is ancillary to the School.

Other land uses proposed in the Concept Plan include ***road, landscaped area, bush fire hazard reduction work and environmental protection works.*** These uses are distributed across all precincts and will be developed as ancillary to other land uses. The landscaped areas, bush fire hazard reduction work and the environmental protection works occupy more than 70% of the total site area. Roads including paving and external car parking areas occupy less than 15% of the total site area.

6.5 Environmental Planning and Assessment Act and Regulations

The Environmental Planning and Assessment Act, the Regulations and State Environmental Planning Policy (Major Development) 2005 contain a number of provisions concerning environmentally sensitive land or sensitive coastal locations. Seventy one percent of the subject site is zoned Environmental Management E3 under the Wollongong LEP 2009.

Under the Environmental Planning and Assessment Act section 75 states that in Section 75 J (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. However, the regulations may preclude approval for the carrying out of a class of project (other than a critical infrastructure project) that such an instrument would otherwise prohibit.'
Further in Section 75 O(3) 'In deciding whether or not to give approval for the concept plan for 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. However, the regulations may preclude approval for a concept plan for the carrying out of a class of project (other than a critical infrastructure project) that such an instrument would otherwise prohibit.'

The Environmental Planning Regulations in Section 8N refers to projects or concept plans for which approval may not be given concerning environmentally sensitive land or sensitive coastal locations as follows -
'(1) For the purposes of sections 75J (3) and 75O (3) of the Act, approval for a project application may not be given under Part 3A of the Act for any project, or part of a project, that:
(a) is located within an environmentally sensitive area of State significance or a sensitive coastal location, and
(b) is prohibited by an environmental planning instrument that would not (because of section 75R of the Act) apply to the project if approved.
(2) To avoid doubt, a project is not prohibited for the purposes of subclause (1) (b) if:
(a) it is not permitted because of the application of a development standard under the environmental planning instrument, or
(b) it is prohibited under the environmental planning instrument but is permitted to be carried out because of the application of another environmental planning instrument to the environmental planning instrument.
(3) In this clause:
environmentally sensitive area of State significance has the same meaning as it has in State Environmental Planning Policy (Major Development) 2005.
sensitive coastal location has the same meaning as it has in State Environmental Planning Policy (Major Development) 2005.

Under State Environmental Planning Policy (Major Development) 2005 environmentally sensitive area of State significance and sensitive coastal location are defined as follows - 'Section 3 Definitions and key concepts
environmentally sensitive area of State significance means:
(a) coastal waters of the State, or
(b) land to which State Environmental Planning Policy No 14—Coastal Wetlands or State Environmental Planning Policy No 26—Littoral Rainforests applies, or
(c) land reserved as an aquatic reserve under the Fisheries Management Act 1994 or as a marine park under the Marine Parks Act 1997, or
(d) land within a wetland of international significance declared under the Ramsar Convention on Wetlands or within a World heritage area declared under the World Heritage Convention, or
(e) land identified in an environmental planning instrument as being of high Aboriginal cultural significance or high biodiversity significance, or
(f) land reserved as a State conservation area under the National Parks and Wildlife Act 1974, or
(g) land, places, buildings or structures listed on the State Heritage Register, or
(h) land reserved or dedicated under the Crown Lands Act 1989 for the preservation of flora, fauna, geological formations or for other environmental protection purposes, or
(i) land identified as being critical habitat under the Threatened Species Conservation Act 1995 or Part 7A of the Fisheries Management Act 1994.
sensitive coastal location means any of the following which occur within the coastal zone:
(a) land within 100m above mean high water mark of the sea, a bay or an estuary,
(b) a coastal lake,
(c) a declared Ramsar wetland within the meaning of the Environment Protection and Biodiversity Conservation Act 1999 of the Commonwealth,
(d) a declared World Heritage property within the meaning of the Environment Protection and Biodiversity Conservation Act 1999 of the Commonwealth,
(e) land declared as an aquatic reserve under the Fisheries Management Act 1994,
(f) land declared as a marine park under the Marine Parks Act 1997,
(g) land within 100m of any of the following:
(i) the water's edge of a coastal lake,
(ii) land to which paragraph (c), (d), (e) or (f) applies,
(iii) land reserved under the National Parks and Wildlife Act 1974,
(iv) land to which State Environmental Planning Policy No 14—Coastal Wetlands applies,
(h) residential land (within the meaning of State Environmental Planning Policy No 26—Littoral Rainforests) that is within a distance of 100m from the outer edge of the heavy black line on the series of maps held in the Department and marked "State Environmental Planning Policy No 26—Littoral Rainforests (Amendment No 2)"'

Application of other relevant provisions of EP & A Act are contained in Section 75R as follows -
(1) Part 4 and Part 5 do not, except as provided by this Part, apply to or in respect of an approved project (including the declaration of the project as a project to which this Part applies and any approval or other requirement under this Part for the project).
(2) Part 3 and State environmental planning policies apply to:
(a) the declaration of a project as a project to which this Part applies or as a critical infrastructure project, and
(b) the carrying out of a project, but (in the case of a critical infrastructure project) only to the extent that the provisions of such a policy expressly provide that they apply to and in respect of the particular project.
(3) Environmental planning instruments (other than State environmental planning policies) do not apply to or in respect of an approved project.
Note. See sections 75J (3) and 75O (3) in relation to the application of such instruments when an application for approval of a project or a concept plan is being considered.

(3A) The Minister may, by order published on the NSW legislation website, amend an environmental planning instrument to authorise the carrying out of any of the following development (or to remove or modify any provisions of the instrument that purport to prohibit or restrict the carrying out of any of the following development):
(a) development that is an approved project,
(b) development that is a project for which a concept plan has been approved (whether or not approval for carrying out the project or any part of the project is subject to this Part).
(4) Divisions 6 and 6A of Part 4 apply to projects (and the giving of approval for the carrying out of projects under this Part) in the same way as they apply to development and the granting of consent to the carrying out of development under Part 4, subject to any necessary modifications and any modifications prescribed by the regulations. However, a condition cannot be imposed under section 94, 94A, 94EF or 94F unless that section would have applied if this Part did not apply to the project and a development consent were granted.
(5) Division 2A of Part 6 applies to a critical infrastructure project only to the extent that the regulations so provide.

The portion of the subject site now zoned Environmental Management E3 under the Wollongong LEP 2009 has the following zone objectives and allows with consent the following uses-

Objectives of E3 zone

• To protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values.
• To provide for a limited range of development that does not have an adverse effect on those values.

The proposed development provides the means to manage the currently degraded natural environment while providing an environmentally sustainable hi-tech, holistic healthcare development that is integrated into the restored natural environment.

Permitted Uses

'Animal boarding or training establishments; Bed and breakfast accommodation; Building identification signs; Business identification signs; Community facilities; Dwelling houses; Earthworks; Environmental facilities; Environmental protection works; Extensive agriculture; Farm buildings; Farm stay accommodation; Forestry; Recreation areas; Roads; Secondary dwellings'.

The WLEP 2009 does not identify the E3 zone as an **environmentally sensitive area. These areas are identified in the WLEP 2009 as** meaning any of the following:
(a) the coastal waters of the State,
(b) a coastal lake,
(c) land to which *State Environmental Planning Policy No 14—Coastal Wetlands* or *State Environmental Planning Policy No 26—Littoral Rainforests*,
(d) land reserved as an aquatic reserve under the *Fisheries Management Act 1994* or as a marine park under the *Marine Parks Act 1997*,
(e) land within a wetland of international significance declared under the Ramsar Convention on Wetlands or within a World heritage area declared under the World Heritage Convention,
(f) land within 100 metres of land to which paragraph (c), (d) or (e) applies,
(g) land identified in this or any other environmental planning instrument as being of high Aboriginal cultural significance or high biodiversity significance,
(h) land reserved as a state conservation area under the *National Parks and Wildlife Act 1974*,
(i) land reserved or dedicated under the *Crown Lands Act 1989* for the preservation of flora, fauna, geological formations or for other environmental protection purposes,
(j) land identified as being critical habitat under the *Threatened Species Conservation Act 1995* or Part 7A of the *Fisheries Management Act 1994*,
(j1) land identified as containing an endangered ecological community under the *Fisheries Management Act 1994* or the *Threatened Species Conservation Act 1995*,
(j2) land to which clause 7.3 (Flood planning area) applies,
(j3) land to which clause 7.8 (Illawarra Escarpment area conservation) applies.

The subject site does not come under any of the environmentally sensitive land or sensitive coastal locations nor is it subject to the environmentally sensitive or coastal lands provisions of these Acts and can therefore be properly considered as a section 3A application.

6.6 Other Assessment Criteria

6.6.1 Traffic

The concept plan incorporates bicycle and pedestrian friendly design, and improved access to public bus services.
Traffic Impact Services have carried out a Traffic Assessment as an initial input to the concept plan.

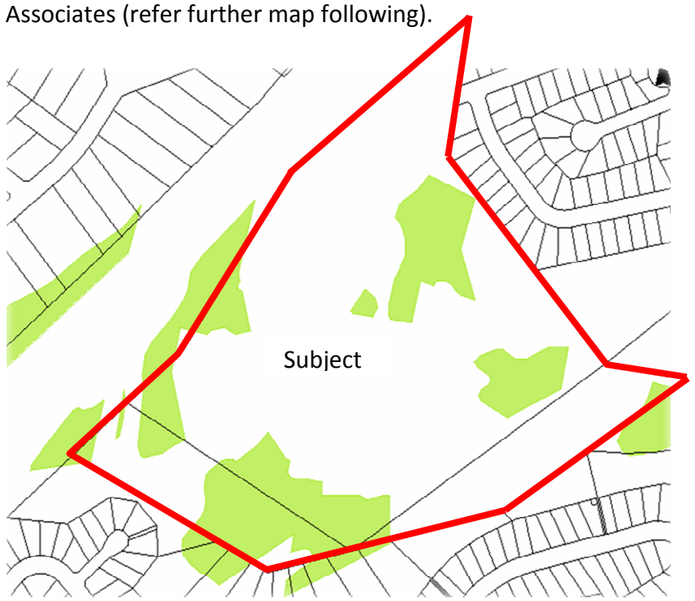
The assessment has found that it is a great concept put together by a clever architect and brilliant urban designer!

The regional bus service providers, Premier Illawarra operate Route 34 between Wollongong and Westfield at Warrawong via Unanderra and Berkeley. This route travels along Nolan Street adjacent to the subject site and has a 20 to 30 minute service Monday to Saturday and an hourly service on Sundays. The operator has expressed an interest in a short deviation to service the proposed development (refer Appendix 3 regarding letter from Premier Illawarra).

The Premier Illawarra ticketing system allows transfers from other routes making the proposed development accessible by public transport to most of the Illawarra Region.

6.6.2 Flora and Fauna

The Wollongong Local Environmental Plan 2009 includes the following Map showing areas that contain Biodiversity in respect to the subject site. This map does not totally correspond to the detailed assessment of the flora and fauna by Kevin Mills and Associates (refer further map following).



KEVIN MILLS & ASSOCIATES - ECOLOGICAL AND ENVIRONMENTAL CONSULTANTS have carried out a Flora and Fauna Assessment of the total site as an initial input to the concept plan.

The assessment has found that there are no large or old trees anywhere on the site, so the vegetation is regrowth rather than remnant from the original rainforest that once grew across the Berkeley Hills (Mills & Jakeman 1995). Most of the trees appear to be quite young.

The assessment findings include that the vast majority of the vegetation on the property is exotic (introduced). The native species are largely concentrated in the north-eastern part of the land. The assessment recommends the retention of the north-eastern corner of the property as an open space area where rainforest regeneration will be undertaken. That area was chosen because:

- it contains most of the native plants on the site;
- it is already starting to regenerate native vegetation, albeit amongst abundant weed growth;
- it is a separate catchment to the development;
- it is on Permian volcanic rock, rather than the sedimentary rock on most of the site;
- it is contiguous with the bushland on the adjoining council land.

The assessment found that there will be some loss of native vegetation from the development of the site however this will be offset by regenerating native vegetation in the area described above.

It is also a recommendation of this study that at some local native species be incorporated into the landscaping of the remainder of the site. The local flora offers abundant choices for attractive plants, from trees to herbs.

The assessment found that there will be no impact on threatened species. No species are expected to be resident on the land; such species may visit occasionally. Regeneration of the rainforest will assist local fauna, including threatened species.

In terms of wildlife corridors the assessment found that he land is on the western end of the Berkeley Hills, a low range of hills that support scattered patches of remnant native vegetation. Although not contiguous, these patches can act as 'stepping stones' for fauna movement. The regeneration of rainforest in the area identified in this study will assist fauna to move through the area.

The assessment found that the endangered ecological community known as Illawarra Subtropical Rainforest once covered all of the Berkeley Hills, particularly the volcanic soils. Remnants occur here and there and there is some regrowth of the constituent species on the study area. The main area supporting these species is identified in this report and it will be incorporated into an open space area for rainforest regeneration. The impact on the listed community is considered to be negligible and to be a positive open in the long term.

The conclusion of the Flora and Fauna Study by Kevin Mills and Associates was that the proposed development is not likely to have a significant impact on flora and fauna, including species, populations and communities listed under the NSW *Threatened Species Conservation Act 1995* and the NSW *Fisheries Management Act 1994*. Nor is there likely to be a significant impact under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*; referral to the Minister for assessment and approval are therefore not warranted.
The vegetation delineated as Community 1 on Figure 2 in the Flora and Fauna Assessment has some value as habitat for native flora and fauna. Retention of a significant part of this area, as recommended, along with a commitment to eventually regenerate the area to native rainforest vegetation will be a positive outcome of the development. The area that has been identified as the most appropriate for retention and rehabilitation as rainforest is shown on the concept plan.

6.6.3 Drainage

The subject site consists of 5 catchment areas with little or no drainage to or across the site from areas (catchments) external to the site. This provides a maximised opportunity to implement water sensitive urban design over the whole site (refer Contours and Catchments Map in section 2.1 of this report.
The key principles proposed are to:

- Protect existing natural features and ecological processes.
- Maintain the natural hydrologic behaviour of catchments.
- Protect water quality of surface and ground waters.
- Minimise demand on the reticulated water supply system.
- Minimise sewage discharges to the natural environment.
- Integrate water into the landscape to enhance ecological, visual, social, economic and cultural values.

Stormwater management, based on a water sensitive urban design will ensure that there is no deterioration in stormwater quality or any reduction in the environmental values of downstream receiving waters including Lake Illawarra as a result of the proposed development.
Proposed measures for the site will include:

- A stormwater retention and infiltration stormwater from roof areas;
- Vegetated swales; and
- Bio-retention systems to capture pollutants and treat stormwater prior to discharge from the site.

The stormwater quality treatment measures will be detailed in the subsequent detailed Environmental Assessment.

6.6.4 Bush Fire

The previous local environmental plan (WLEP 1990) and the current Development Control Plan under the recently gazetted Wollongong Local Environmental Plan 2009 show a part of the site as bush fire prone land. This area has burned as recently as 2009. This area is not attached to any bushfire prone land on any other site and can be assessed independently of other areas.

The vegetation in this area is primarily introduced and essentially consists of abundant weed growth. Some regrowth local rainforest species are largely concentrated in the north-eastern part of the land that is proposed to by rehabilitated.

The proposed development will have a significant impact on the characteristics of the bushfire threats from this land.

It is proposed to carry out ***bush fire hazard reduction work*** as part of the proposal including the establishment or maintenance of fire breaks on the land, and the controlled application of appropriate fire regimes or other means for the reduction or modification of available fuels within the site to mitigate against the spread of a bush fire from the site.
It is also proposed that works will include construction of tracks, trails and roads that will have regard to bushfire access and the provision of asset protection zones which are will be proposed to ensure compliance with the requirements of the Rural Fires Act 1997 and Planning for Bushfire Protection 2006.

As the existing vegetation and access to it will be significantly impacted by the development shown on the concept plan a detailed bushfire assessment has not been completed at this time. This is proposed to be undertaken in conjunction with the Environmental Assessment.

6.6.5 Noise

A portion (Catchment 1) of the subject site is impacted by traffic noise from the M6 Freeway on the western edge of the site.

The area subject to the traffic noise is mostly zoned residential and the noise impact is one of the primary reasons the residential components proposed in the concept plan have been relocated towards the eastern and southern portions of the subject site.

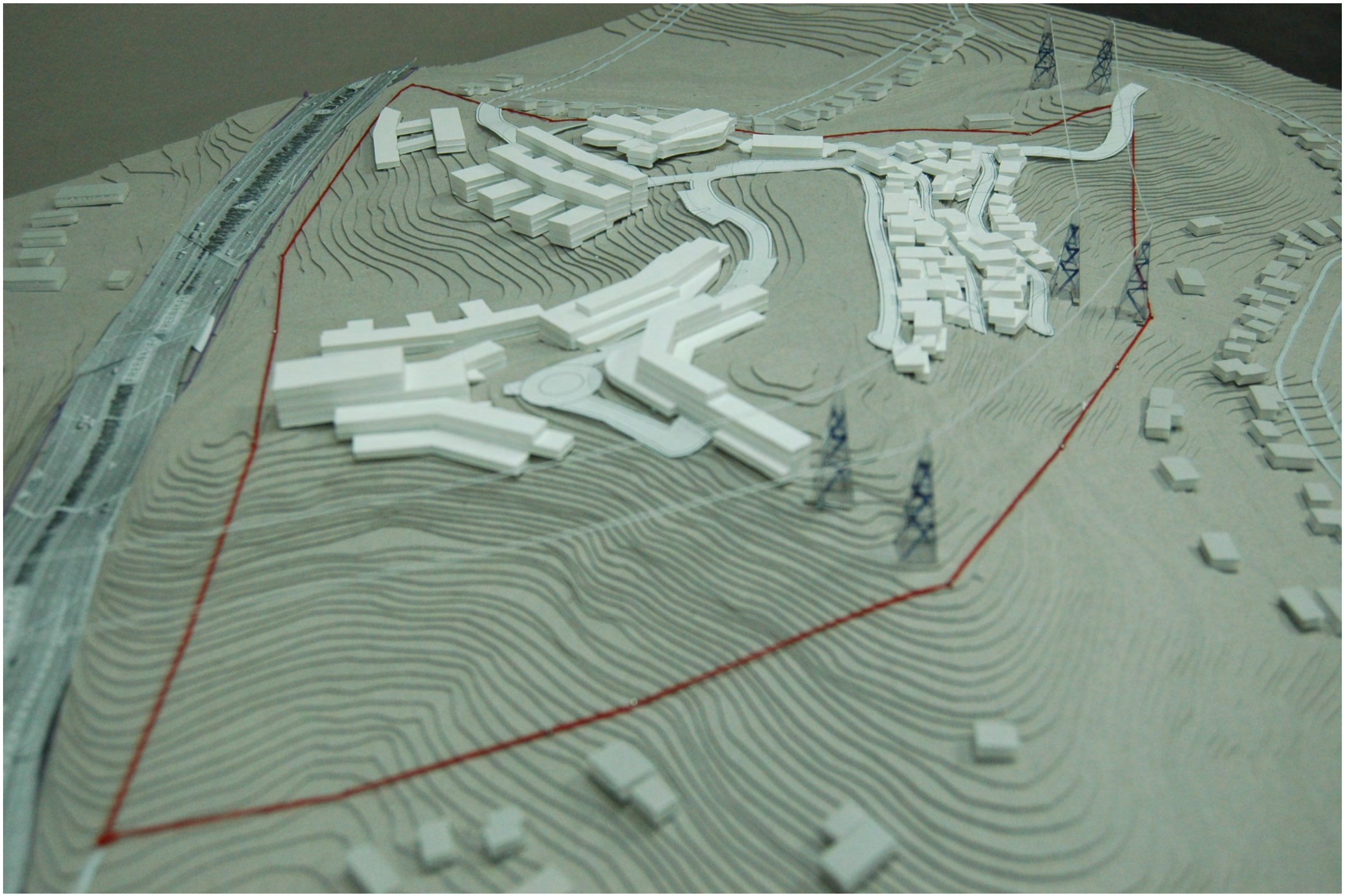
The extent of noise from the F6 is limited by the existing noise walls along the motorway to the northwest and the deep cutting of the motorway near the south western corner of the site. However there is a gap between the southern end of the sound wall and the deep cutting of the motorway that allows traffic noise to impact on portion of the residential zoned area of the site. The concept plan proposes to provide significant setbacks to buildings in this area and relocate the residential portion of the development away from this area (refer Site Analysis).

Further noise analysis will be required in the detailed assessment stages of the proposal.

6.6.6 Public Interest

The holistic healthcare concept has very broad and comprehensive public interest healthcare benefits for the local, regional and further populations.

All of the land-use components have a significant public interest benefit including healthcare, educational and specialised accommodation.



7 Conclusion and Request for Consideration

The subject proposal is consistent with and relevant to achieving some of the principle healthcare outcomes and the needs of the regional strategy.

Overall public benefits arise from the employment for more than 2600 people in a wide range of health care and teaching jobs as well as a range of support services jobs and the attraction and retention of medical skills in the one locality. Economic benefits will also have a positive impact on the region from the estimated capital expenditure of over $275 million.

The proposed development provides an array of health, educational and research related services that are needed in the regional and broad community that will relieve pressure from the public health system and assist in meeting the increased demand for private health care in the region.

The proposed development introduces a new level of hi-tech design and technology to assist in both diagnosis, recovery and research that is likely to provide off site facilities related to these technologies.

Overall the proposed development provides a holistic and integrated approach to healthcare on an integrated site, enabling people to access various facilities, services and learning in one locality

It will also provide a number of learning and training, research and development opportunities – independently and some in conjunction with the University of Wollongong and the TAFE ranging from selective high school teaching to tertiary and post graduate levels.

The above proposal will be developed within an environment encompassing best practice environmentally sustainable development and will be integrated with and enable the enhancement of the environmental protection areas and landscape over 70% of the site and provide for it to be maintained on a sustainable basis.

The concept plan shows how the appropriate parts of the environmental management zone and the residential zone can be restored from its current weed infested state by providing for some development in this area that does not compromise the rehabilitated natural environment. The proposed development of the environmental management zone is considered to have less impact on the long term sustainability of rehabilitating this area to a natural state than the land uses allowed in the zone by the Wollongong Local Environmental Plan 2009 being animal boarding or training establishments; bed and breakfast accommodation; building identification signs; business identification signs; community facilities; dwelling houses; earthworks; environmental facilities; environmental protection works; extensive agriculture; farm buildings; farm stay accommodation; forestry; recreation areas; roads; and secondary dwellings.

The proposal has -

• Good accessibility as site directly adjoins a main road (F6 Freeway), is on a bus route and is only 2.2 km from the Unanderra railway station.

• Sufficient land area to construct a Holistic Hospital and ancillary healthcare facilities

• Located within proximity to existing residential neighbourhoods while allowing significant landscape buffers to ensure their amenity and privacy

• Zoned for residential and environmental management with the proposal able to satisfy the zone objectives in a long term sustainable manner.

The concept plan also shows much of the residential zone on the subject site in the Wollongong Local Environmental Plan 2009 as open space and not being used for residential development as this area has the least attractive characteristics for residential development given its poor amenity resulting from drainage/catchment pattern, freeway noise impacts and the enclosed outlook to the Unandarra Industrial Area to the west.

The proposal will also provide a range of housing options that are related to the overall holistic healthcare concept including seniors housing (all three levels), patient relative accommodation and healthcare worker accommodation. These will ensure the development operation will not be subject to a lack of suitable accommodation and that private car movement will be minimised.

The purpose of lodging this Preliminary Environmental Assessment including a Concept Plan with the NSW Department of Planning is for the purposes of obtaining:

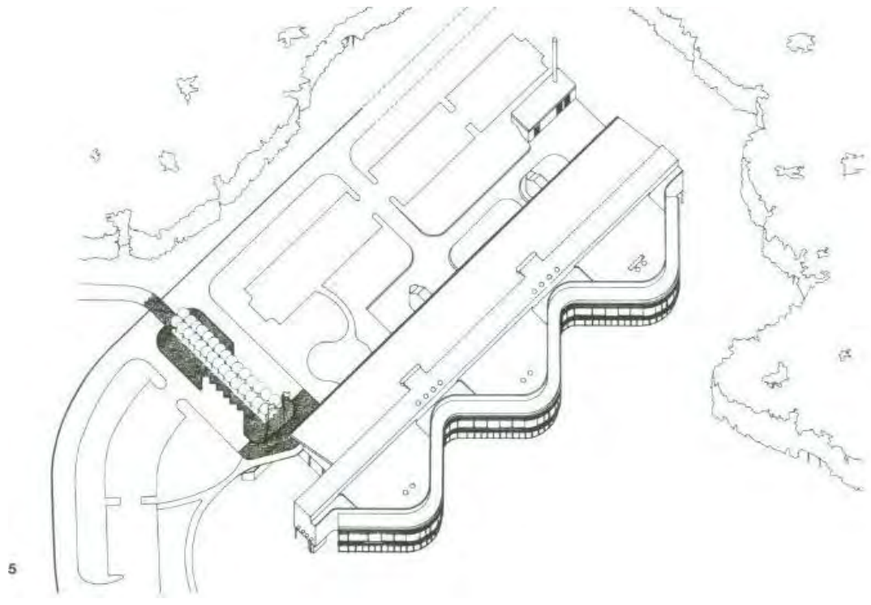
• a Clause 6 opinion that the project can be assessed under Part 3A of the *Environmental Planning and Assessment Act 1979*;

• the Director General's Requirements for the Wollongong Hitech Holistic Health City at Berkeley in the Wollongong Local Government Area; and

• the authorisation of the Concept Plan to set the assessment framework for subsequent detailed project applications.

In summary the proposed concept on balance provides for the sustainable rehabilitation of the site, a unique healthcare facility that will provide ongoing benefits to the local, regional and other communities and a significant and positive economic impact to the Illawarra Region.

Appendix 1 – Relevant definitions from the Wollongong Local Environmental Plan 2009



Appendix 1 – Relevant definitions from the Wollongong Local Environmental Plan 2009

child care centre means a building or place used for the supervision and care of
children that:
(a) provides long day care, pre-school care, occasional child care or out-of-school-hours care, and
(b) does not provide overnight accommodation for children other than those related to the owner or operator of the centre, but does not include:
(c) a building or place used for home-based child care, or
(d) an out-of-home care service provided by an agency or organisation accredited by the NSW Office of the Children's Guardian, or
(e) a baby-sitting, playgroup or child-minding service that is organised informally by the parents of the children concerned, or
(f) a service provided for fewer than 5 children (disregarding any children who are related to the person providing the service) at the premises at which at least one of the children resides, being a service that is not advertised, or
(g) a regular child-minding service that is provided in connection with a recreational or commercial facility (such as a gymnasium), by or on behalf of the person conducting the facility, to care for children while the children's parents are using the facility, or
(h) a service that is concerned primarily with the provision of:
(i) lessons or coaching in, or providing for participation in, a cultural, recreational, religious or sporting activity, or
(ii) private tutoring, or
(i) a school, or
(j) a service provided at exempt premises (within the meaning of Chapter 12 of the *Children and Young Persons (Care and Protection) Act 1998*), such as hospitals, but only if the service is established, registered or licensed as part of the institution operating on those premises.

educational establishment means a building or place used for education (including teaching), being:
(a) **a school**, or
(b) **a tertiary institution**, including a university or a TAFE establishment, that provides formal education and is constituted by or under an Act.

environmental protection works means works associated with the **rehabilitation of land towards its natural state** or any work to protect land from environmental degradation, and includes **bush regeneration works**, wetland protection works, erosion protection works, dune restoration works and the like.

health care professional means any person registered under an Act for the purpose of providing health care.

health services facility means a building or place used as a facility to provide medical or other services relating to the maintenance or improvement of the health, or the restoration to health, of persons or the prevention of disease in or treatment of injury to persons, and includes the following:
(a) **day surgeries and medical centres**,
(b) community health service facilities,
(c) **health consulting rooms**,
(d) facilities for the transport of patients, including helipads and ambulance facilities,
(e) **hospitals**.

hospital means a building or place used for the purpose of providing professional health care services (such as preventative or convalescent care, diagnosis, medical or surgical treatment, psychiatric care or care for people with disabilities, or counselling services provided by health care professionals) to people admitted as in patients (whether or not out-patients are also cared for or treated there), and includes **ancillary facilities** for (or that consist of) any of the following:
(a) day surgery, day procedures or health consulting rooms,
(b) **accommodation for nurses or other health care workers,**
(c) **accommodation for persons receiving health care or for their visitors**,
(d) shops or refreshment rooms,
(e) transport of patients, including helipads, ambulance facilities and car parking,
(f) educational purposes or any other health-related use,
(g) research purposes (whether or not it is carried out by hospital staff or health care workers or for commercial purposes),
(h) chapels,
(i) hospices,
(j) mortuaries.

hostel means premises that are generally staffed by social workers or support providers and at which:
(a) residential accommodation is provided in dormitories, or on a single or shared basis, or by a combination of them, and
(b) cooking, dining, laundering, cleaning and other facilities are provided on a shared basis.

landscaped area means a part of a site used for growing plants, grasses and trees, but
does not include any building, structure or hard paved area.

medical centre means business premises used for the purpose of providing health services (including preventative care, diagnosis, medical or surgical treatment, counselling or alternative therapies) to out-patients only, where such services are principally provided by health care professionals, and may include the ancillary provision of other health services.

native flora means any plant-life that is indigenous to New South Wales, whether
vascular or non-vascular and in any stage of biological development, and includes
fungi and lichens, and marine vegetation within the meaning of Part 7A of the
Fisheries Management Act 1994.

native vegetation has the same meaning as in the *Native Vegetation Act 2003*.

Note. The term is defined as follows:

Meaning of "native vegetation"

(1) ***Native vegetation*** means any of the following types of indigenous vegetation:
(a) trees (including any sapling or shrub, or any scrub),
(b) understorey plants,
(c) groundcover (being any type of herbaceous vegetation),
(d) plants occurring in a wetland.
(2) Vegetation is ***indigenous*** if it is of a species of vegetation, or if it comprises species of
vegetation, that existed in the State before European settlement.
(3) ***Native vegetation*** does not include any mangroves, seagrasses or any other type of
marine vegetation to which section 205 of the *Fisheries Management Act 1994* applies.

Natural Resource Sensitivity—Biodiversity Map means the Wollongong Local

Environmental Plan 2009 Natural Resource Sensitivity—
Biodiversity Map.

recreation area means a place used for outdoor recreation that is normally open to
the public, and includes:
(a) a children's playground, or
(b) an area used for community sporting activities, or
(c) a public park, reserve or garden or the like,
and any ancillary buildings, but does not include a recreation facility (indoor),
recreation facility (major) or recreation facility (outdoor).
residential care facility means accommodation for seniors (people aged 55 years or
more) or people with a disability that includes:
(a) meals and cleaning services, and
(b) personal care or nursing care, or both, and
(c) appropriate staffing, furniture, furnishings and equipment for the provision of
that accommodation and care,
not being a dwelling, hospital or psychiatric facility.
road means a public road or a private road within the meaning of the *Roads Act 1993*,
and includes a classified road.
school means a government school or non-government school within the meaning of
the *Education Act 1990*.
seniors housing means residential accommodation that consists of:
(a) a residential care facility, or
(b) a hostel, or
(c) a group of self-contained dwellings, or
(d) a combination of these, and that is, or is intended to be, used permanently for:
(e) seniors or people who have a disability, or
(f) people who live in the same household with seniors or people who have a disability, or
(g) staff employed to assist in the administration of the residential accommodation or in the provision of services to persons living in the accommodation, but does not include a hospital.
waterbody (artificial) or ***artificial waterbody*** means an artificial body of water, including any constructed waterway, canal, inlet, bay, channel, dam, pond, lake or artificial wetland, but does not include a dry detention basin or other stormwater management construction that is only intended to hold water intermittently.

Appendix 2 – Detail Staging and Cost Estimates

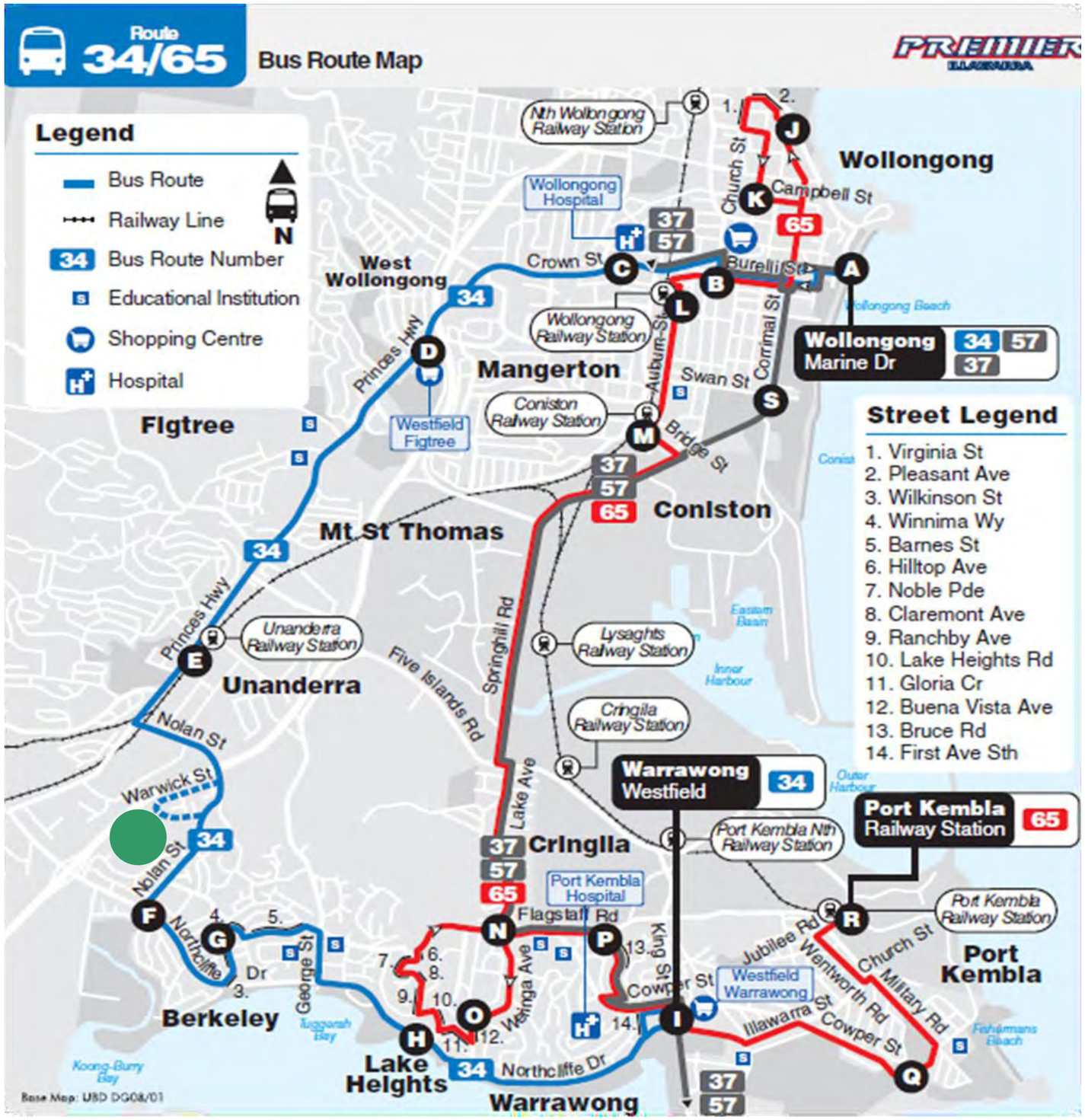
Appendix 2 – Detail Staging and Cost Estimates

Wollongong Hitech Holistic Healthcare City Cost Estimates

Stage	Precinct	Proposed Building Development	Stage area m2	Building			Vehicular & Pedestrian/Cycle Access ways and Servicing		Landscaped area and Forest Rehabilitation			Total Stage Cost $ mil
				Footprint m2	Gross Floor Area m2	Building cost $ mil	Area m2	Construction cost incl roads & services $ mil	Area m2	% of precinct landscaped	Landscape Construction cost $ mil	
1	**C** Part **B**	**Day Surgery & Specialist Rooms**, Medical Centre, Child Care & Respite Care Centre Structural works and major tree planting	22056.9	2998.7	4800	$24.0m	9809	$13.24m	9250	42%	$ 1.85m	$39.09m
2	**D** Part **B**	**Seniors Living** - 2 storeys Further landscape works to eastern edge	47015.46	5896.5	8000	$19.2m	4047	$5.56m	36996.7	79%	$ 7.4m	$31.16m
3	**B**	**Holistic Health Course** Yoga, Reiki, Laughter Therapy, Meditation, Auras, Pranic Healing	26341.13	na	0	$0	0	$0	25521.9	97%	$ 6.21m	$6.21m
4	**A**	**Hi-tech Holistic Cancer & medical Hospital Facility**, Medical, Rehabilitation, Oncology, Dementia, Holistic & Psychiatric Wings 4 storeys	18036.5	4952.25	13000	$110.5m	2578	$3,48m	10506.75	58%	$ 1.94m	$115.92m
5	**E**	**Serviced Apartment** for attendants of Patient and patients seeking Outpatients services,3 storeys	10603.3	2861	7500	$16.5m	3336	$4.5m	2670.6	25%	$ 0.49m	$21.99m
6	**G**	**Residential Care Facility and Hostel** 3-5 storeys	17219.1	3126.5	5500	$24.75m	0	$0	14092.6	82%	$ 2.6m	$27.35m
7	**F1** **F2**	**Educational & Research** Library, Lecture Theatre, Auditorium & Conference Facilities, **Ancillary Accommodation** for Doctors, Nurses and Students, 3 storeys	7288.2	2297.55	3000	$9.0m	0	$0	4990.6	68%	$ 0.92m	$9.92m
8	**H**	**Wollongong Healthcare Technical High School**, The Oval	19241.1	2590.4	5000	$17.5m	1460	$1.97m	15190.5	79%	$ 2.81m	$22.28m
Total areas m2			167802	24722.9	46800		21230		119219.65			
Percentage of site			100.0%	15%			14%		71%			
Total Cost						**$221.45m**		**$28.75m**			**$ 24.22m**	**$ 274.95m**
Percentage of costs						81%		11.0%			8%	100.0%

(2010 costs)

Appendix 3 – Letter from Premier Illawarra – re Bus Services



Site of proposed Wollongong Hitech Holistic Healthcare City

Appendix 3

– Letter from Premier Illawarra – re Bus Services

PREMIER ILLAWARRA
change the way you travel today
ABN 27 080 438 562

Princes Highway
Figtree NSW 2525
Phone: **02 4271 1322**
Fax: **02 4272 1608**
www.premierillawarra.com.au

4 March 2010

Dr M Rashid
Tannery St
Unanderra
NSW 2526

Re Warwick St Development Proposal

Dear Dr Rashid

Premier Illawarra's Route 34 operates between Wollongong and Westfield Warrawong via Unanderra and Berkeley and travels along Nolan Street adjacent to the development site.

Route 34 is a very well patronised service. The peak hour week day services have just recently been increased from a 30 minute service to a 20 minute service with a 30 minute service at other times. With the introduction of the new Wollongong integrated network in a few weeks time the weekend services on route 34 are to be doubled to a 30 minutes service on Saturdays and an hourly service on Sundays.

A deviation of the route to provide public transport to this development would be something that Premier Illawarra would definitely be interested in.
With Premier Illawarra's ticketing system allowing transfers from other routes the development would be easily accessible from the majority of the Illawarra region.

While the final decision on changes to public transport is the responsibility of the NSW Department of Transport and Infrastructure, they welcome improvements to public transport and should have no problem in approving this type of route variation.

Yours sincerely

Stuart Blair
Operations Manager

Appendix 4 - TRAFFIC IMPACT ASSESSMENT

Appendix 4 - TRAFFIC IMPACT ASSESSMENT

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List of Illustrations:

Figure 1 Location of Site

1.0 INTRODUCTION

This report has been prepared to accompany an application to the Dept of Planning for a Part 3A application for a proposed Holistic Health City at Warwick Street, Berkeley.

The proposal is to develop this land to provide for a Holistic Health City incorporating a broad range of medical and hospital care facilities, research and educational facilities and residential facilities for practitioners, students and residents in a number of clusters and buildings.

The location of the site is shown in Figure 1.

The purpose of this report is to provide a preliminary traffic assessment resulting from the proposed development concept for appropriate consideration by the Dept of Planning.

Traffic Impact Services has been engaged by Dr Rashid for this proposal.

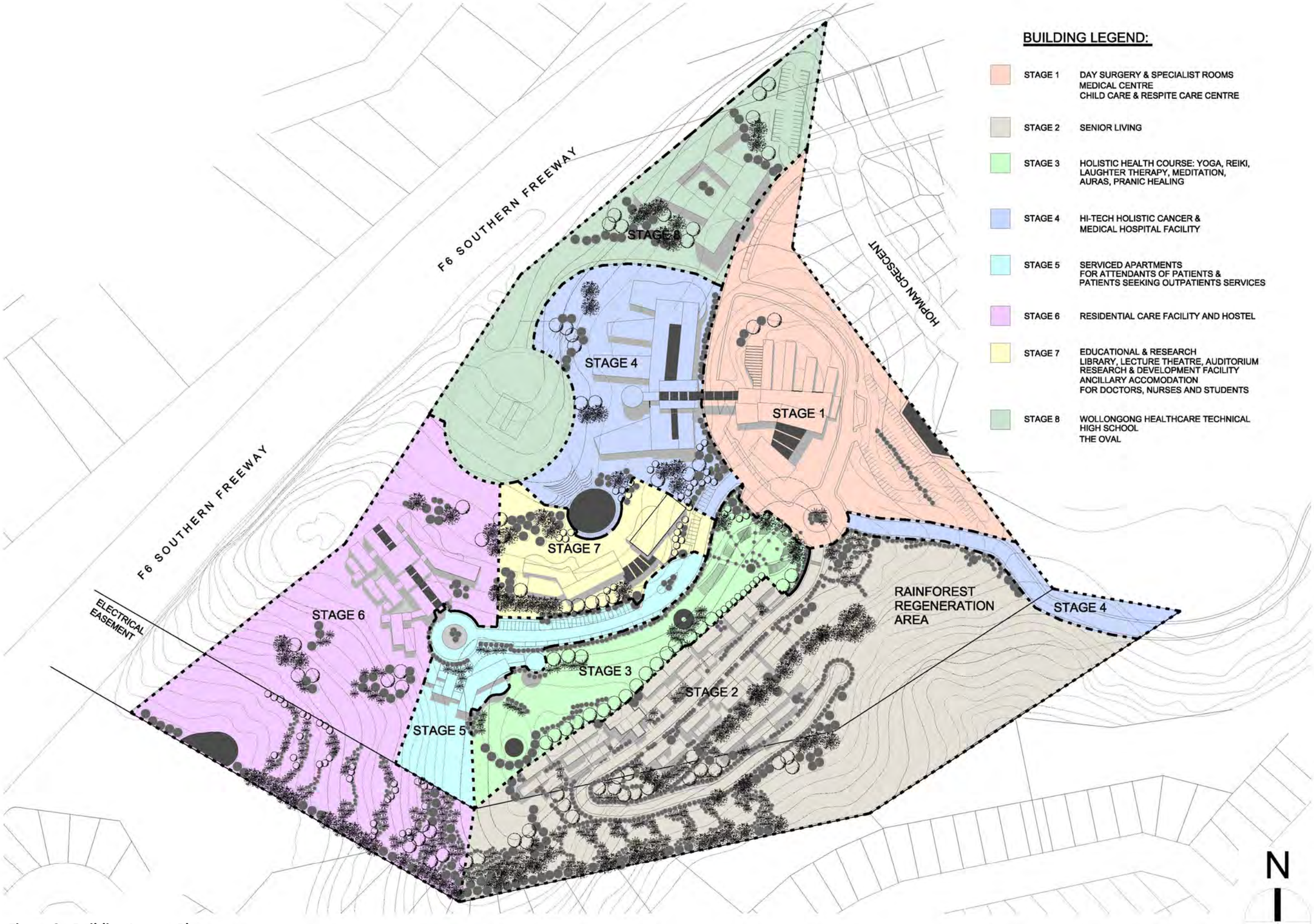


Figure 2 - Building Layout Plan

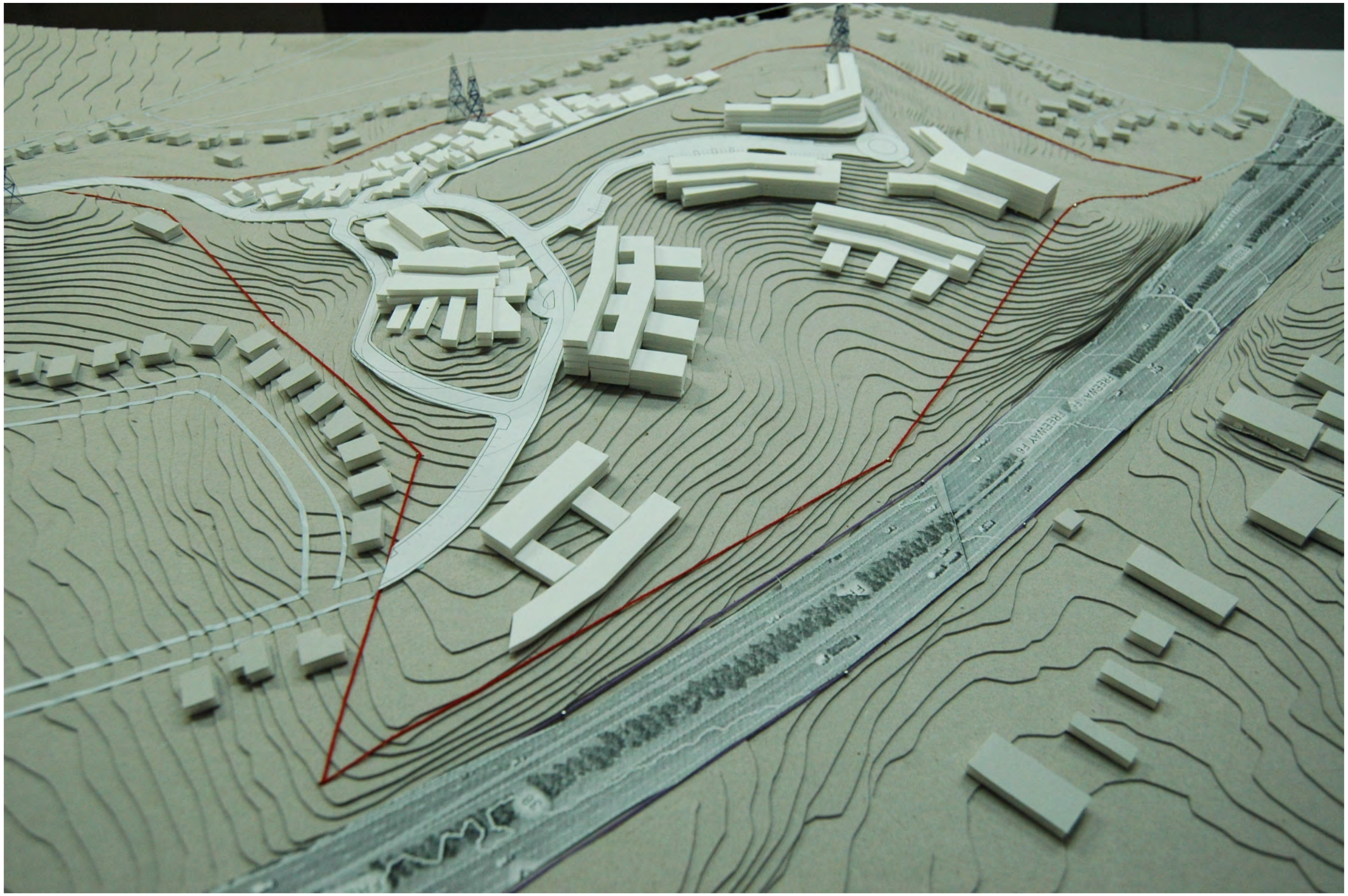
2.0 DEVELOPMENT PROPOSAL

The proposed development, due to its size and diverse nature, will need to be staged over several years and the following provides details of the stages and types of proposed uses and floor space.

A building layout plan is shown as Figure 2.

It is proposed to develop the WHHHC in eight stages as follows:

Stage	Description of Proposed Development	Building GFA & (footprint) m^2	Landscaped Area m^2	Access
1	**Precinct C** – Day surgery & Specialist rooms Medical centre, Child Care Centre & Respite care centre	4,800	9250	400m extension of Warwick St
2	**Precinct D** – Seniors Living	8,000	36996.7	Complete centre access road & roundabout
3	**Precinct B** – Holistic Health Course incl. Yoga, Reiki, Laughter Therapy, Meditation, Auras & Pranic Healing & outdoor structures for these activities	0	25521.9	Provide 100m o centre access road and on-street parking 15 spaces
4	**Precinct A** – Hi-tech Holistic Cancer & Medical Hospital Facility(tertiary referral hospital); 300 beds incl. Medical Rehabilitation, Oncology, Dementia, Holistic & Psychiatric Wings	13,000	10506.75	Warwick St to be extended to junction with Nolan St
5	**Precinct E** – Serviced Apartment (75 units) for attendants of patients and patients seeking outpatients services(ancillary to the hospital)	7,500	2670.6	60m further extension of Warwick St & three residential cul-de-sacs
6	**Precinct G** – Residential Care Facility & Hostel with total 120 beds	5,500	14092.6	No further roads required for this building
7	**Precinct F1** – Educational & Research; Library, Lecture theatre, Auditorium **Precinct F2** – Ancillary Accommodation for Doctors, Nurses & Students	3,000	4990.6	No further roads required for this building
8	**Precinct H** – Wollongong Healthcare Technical High School for 350 Students & Oval	5,000	15190.5	Internal roads only
Totals	**Subject Site**	46,800m^2	119,219.65m^2	26,159.4m^2



3.0 THE SITE

3.1 Location

The site is bounded by the Southern Freeway to the west, a residential area to the north being adjacent to Warwick Street and Hopman Crescent, Nolan Street to the east and a residential area off Northcliffe Drive to the south. The site topography provides for relatively steep terrain which then permits extensive views in many directions. The site is mainly accessible by car or bus public transport with the nearest rail station of Unanderra being a considerable distance away.

The site is irregular in shape and adjoins a section of Council open space on its northern eastern side which then has frontage to Nolan Street. It is proposed to use some of this open space land to provide a direct road connection between the site and Nolan Street.

3.2 Road Network

Although the site is now accessible from Warwick Street and Hopman Crescent, the proposal is to provide a new road to link directly with Nolan Street. Accordingly, the site will be mainly served by Nolan Street (a major collector road) and to a minimum extent by either Warwick Street or Hopman Crescent, which are both local roads.

Nolan Street links with the Princes Highway to the north and Northcliffe Drive to the south, both these roadways are designated as sub-arterial roads.

Nolan Street has a road width of 13 metres and, with its relatively steep topography, centre and double line markings have been provided to assist in the overall traffic flow. Traffic volumes using Nolan Street are not high for its classification as a Major Collector Road.

Wollongong Council has provided details of traffic volumes in Nolan Street in the sections north and south of the proposed site. The volumes are as follows:

Existing Traffic Volumes

Nolan St	AADT	AM Peak (8am-9am)	PM Peak (4pm-5pm)
Between Warwick St & Doyle St	5,590	445	560
Between Hopman Cres & Norfolk St	4,354	346	370

The volumes usually applicable to a Collector Road are 2,000 to 10,000 vehicles per day (vpd). (Refer Traffic Authority Functional Classification of Roads.) Many Councils however often divide these Collector Roads into two further classifications which are called either Minor and Major Collectors or Collector and Distribution Roads. Wollongong Council is one such Council.

It is common for the Minor Collector Roads to carry volumes in the order of 2,000 to 6,000 and the Major Collector Roads to carry volumes from 6,000 to 10,000 vpd. As is evident from the above, Nolan Street being a Major Collector Road has a daily volume of around 5,000 which in respect to volumes is at the lower end of its classification.

Warwick Street and Hopman Crescent are both 10 metres wide and classified as local roads. Traffic movement on these roads is relatively light with the upper limit being around 800 vehicles per day.

3.3 Public Transport

Bus public transport operates presently along Nolan Street using Route No. 34 provided by Premier Buses. Premier Buses has indicated that the additional activity arising from the proposed development would improve the viability of this route and, that travel through the site is considered a suitable arrangement.

4.0 TRAFFIC IMPLICATIONS OF PROPOSAL

The proposed development may be staged over some years, however, for the purpose of assessing the traffic impact the assessment has been undertaken for the full or ultimate development. The range of types of land uses proposed means that it does not fit comfortably into a standard planning definition. It is not strictly a hospital or an educational establishment and instead is a mix of a range of elements.

4.1 Traffic Generation

Although the proposed land uses are somewhat in the conceptual stage, the traffic generation of this proposal is able to be assumed and calculated by using data available from:

- RTA publication – "Guide to Traffic Generating Developments – Version 2.2 – 2002.
- Surveys undertaken at various similar land uses by this and various consultancies.

The following table outlines the type of land use, the suggested traffic generation for determining the peak hour and the final calculated number of trips per hour for the proposed development.

Traffic Generation of Land Uses

Stage	Land Use	GFA m2	Peak Hour Vehicle Rate	Total Trips After Each Stage	* Trips Per Hour
1	Day Surgery & Specialist Rooms Medical Centre Child Care & Respite Care Centre	4,800	- Medical Day Care: Specialists 15 x 4 = 60 Beds 10 x 1 = 10 - Child Care Centre: 70 children = 0.7 trips per child	119	70 49
2	Seniors Living	8,000	- Independent Housing 75 x 0.2 =	135	15
3	Holistic Health Course	Open Space	Assume 30 persons at any time: 6 public transport 24 @ 2 per vehicle	147	12
4	Hi-Tech Holistic Cancer & Medical Hospital Facility	13,000	320 beds at 0.97 per bed Reduced by 35 as staff accommodation on site	422	275
5	Serviced Apartment for attendants of patients and patients seeking outpatients services	7,500	75 Units Workers on-site and no traffic generation	457	0
6	Residential Care Facility & Hostel	5,500	120 beds Adopting housing for aged & disabled persons RTA Guidelines : 0.1 x 120	469	12
7	Educational & Research; Library, Lecture Theatre, Auditorium Ancillary Accommodation for doctors, nurses and students	3,000	Assume: - High public transport usage for students - Some students accommodation on-site - Say 100 trips	569	100
8	Wollongong Healthcare Technical High School	5,000	- 350 students Assume: - High public transport usage – small car park encouraging public transport - Students do not all have vehicles so occupancy rate high	670	101

***Reference Background to Trip Generation Rates Per Hour**

Ref. 1, Stage 1 - Table 3.1 of RTA Land Use Traffic Generation Data & Analysis 20 – 1992
- Section 3 of RTA Guidelines. Table 3.6

Ref. Stage 2 - RTA Traffic Generating Guidelines – 2002 Residential Section 3.3.4

Ref. Stage 4 - RTA Private Hospital Land Use Traffic Generation Data & Analysis 28

Ref. Stage 6 - RTA Traffic Generating Guidelines – Section 3.3.4 Housing for Aged and Disabled Low Rate

Ref. Stage 7 - No comparative data for this land use. Most will have already been included in the above traffic generation rates as would be already on-site. Assume 60 vehicle trips.

Ref. Stage 8 - No established data available.

4.2 Traffic Impact

This report is a preliminary assessment as to the ability of the surrounding road system to cater for the increase in traffic demand resulting from this development proposal. The main consideration is the likely impact on Nolan Street, which is a Major Collector Road in Council's Road Hierarchy.

The total trip generation for the proposal has been assessed as ranging from 119vph for Stage 1 to 670vph for Stage 8, being the final stage. In this regard, the total traffic generation from the site has been assigned to this road system as follows:

Projected Daily Traffic Volume Nolan Street (AADT)

Nolan St	Existing AADT	Increased AADT	Total AADT	*Proposed Hourly
North of site	5,590	4,020	9,610	△*(402vph)*
South of site	4,354	2,680	7,034	△*(268vph)*

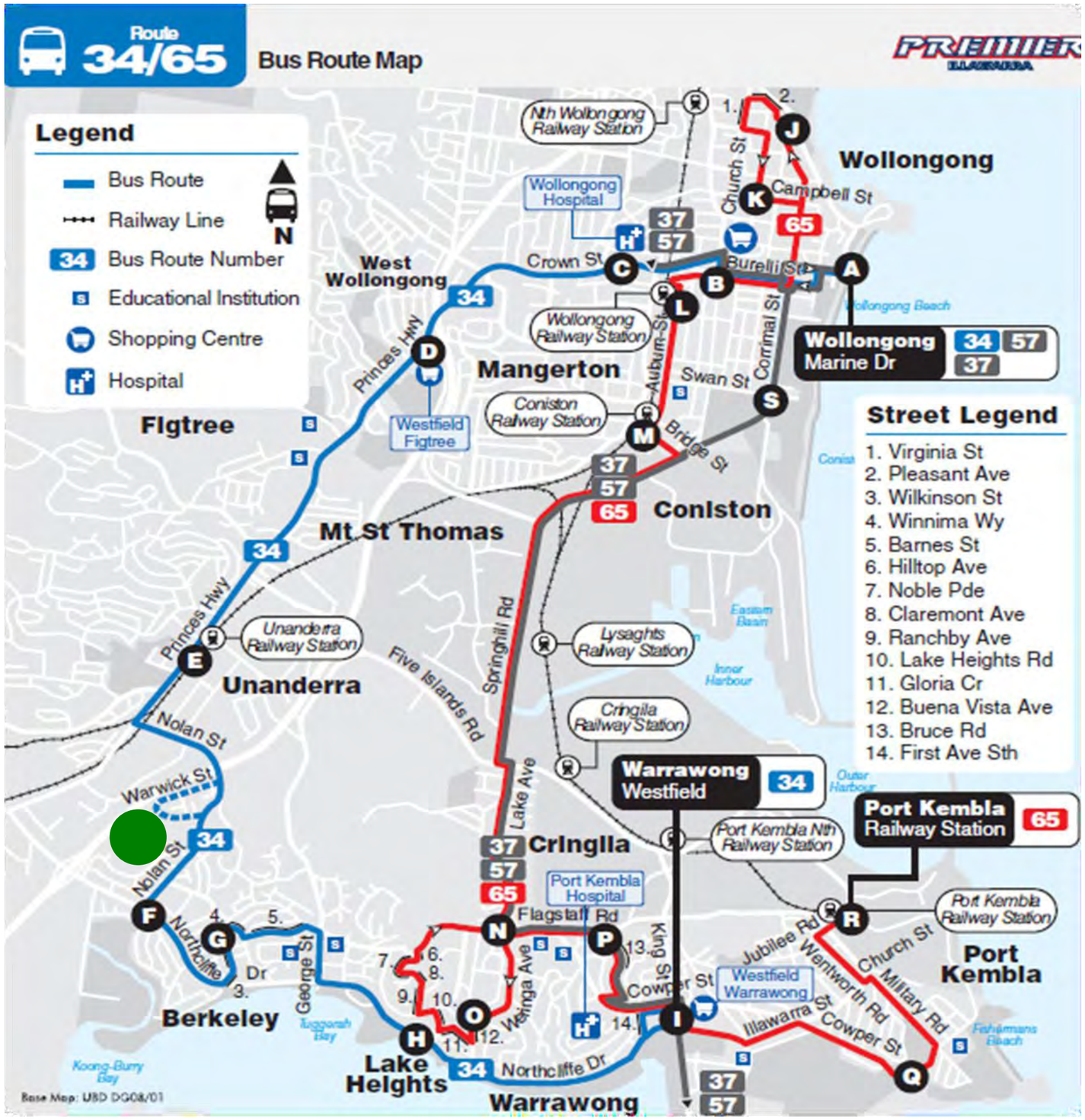
* The distribution of traffic has been assumed as 60% to and from the north and 40% to and from the south

△ Peak hourly volume x 10 = AADT

The above table indicates that with the increased traffic from the development proposal the volumes will still be within an acceptable range for a Major Collector Road (Distributor) which is expected to carry some 6,000 to 10,000 AADT. These figures (if divided by 10) will also show suitable peak hourly flows for this road system.

This assessment is only preliminary and any likely impact on both Warwick Street and Hopman Crescent and intersections along Nolan Street would need detailed assessment. The main access road to and from the site will be directly to Nolan Street through the existing Council reserve and would form a significant intersection at Nolan Street. Some form of traffic management may be considered necessary in the local road system of Warwick Street and Hopman Crescent to protect its residential identity.

It is concluded that the increased traffic flows from the development will be suitably assigned to the north and south directions and are within an acceptable volume range for a major collector road.



Site of proposed Wollongong Hitech Holistic Healthcare City

5.0 SUMMARY AND CONCLUSIONS

This report represents an initial assessment of the traffic implications resulting from a concept plan for the provision of a Holistic Health Care City at Warwick Street, Berkeley.

The main findings are:

- It is proposed to develop the Wollongong Hitech Holistic Health Care City on vacant land to the west of Warwick Street and Nolan Street, Berkeley on an eight stage basis.

- Access to the site will be via both Warwick Street and a proposed road connection through the Council reserve to Nolan Street. The latter connection will be the primary road to and from the site.

- Nolan Street is a Major Collector Road in Council's Road Hierarchy carrying traffic volumes that are presently at the lower end of the scale for such a road classification and hence spare capacity is available.

- The projected traffic movement to and from the development site to Nolan Street has been assessed as in the range of 670vph upon full development. When assigned to the road system the traffic generation will be 402 vph to and from the north and 268 vph to and from the south. This type of volume, although considerable, is within the acceptable volume limits of a road that is designated as a Main Collector Road.

- This is an initial traffic assessment which does not examine in detail any impact on nearby intersections or along adjoining local roads. Further work may be carried out in due course in this regard.

Bruce Conneeley
Director
0413845777

Appendix 5 - Flora and Fauna Assessment

Appendix 5 - Flora and Fauna Assessment

Contents

Figure 1. Location of the Subject Land.

1. Introduction

This report was commissioned by Boss Design of Ultimo on behalf of Dr M K Rashid, who is applying to the Minister for Planning under Part 3A of the *Environmental Planning and Assessment Act 1979* (NSW) for the development of a Total Health Care Facility at Berkeley in the City of Wollongong. The purpose of the report is to assess the impact of the proposed development on flora and fauna. The 'subject land' is the area shown on **Figure 1**; the whole site was the subject of this investigation.

The report contains:

i. a description of the vegetation and fauna habitat on the subject land;
ii. lists of the flora and fauna species observed;
iii. an assessment of the impact on flora and fauna under Part 3A of the *Environmental Planning and Assessment Act 1979* (NSW);
v. an assessment of the impact of flora and fauna under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth); and
vi. recommendations for impact mitigation.

The proposed development consists of:

Stage 1	Day Surgery & Specialist Rooms, Medical Centre Child Care Centre & Respite Care Centre
Stage 2	Seniors Living
Stage 3	Holistic Health Course (Yoga, Reiki, Laughter, Therapy, Meditation, Auras, Pranic Healing)
Stage 4	Hi-Tech Holistic Cancer & Medical Hospital Facility (Medical, Rehabilitation, Oncology, Dementia, Holistic and Psychiatry)
Stage 5	Serviced Apartment for Attendants of Patients and Patients Seeking Outpatients Services
Stage 6	Residential Care Facility and Hostel
Stage 7	Educational & Research; Library, Lecture Theatre and Auditorium Ancillary Accommodation for Doctors, Nurses and Students
Stage 8	Wollongong Healthcare Technical High Schools And the Oval

The Building Layout Plan prepared by Boss Design (Dec. 2009) shows where the various components of the development will be located on the site. Access to the facility will be from the east, via a road to be constructed through a reserve owned by Wollongong City Council. For further information on the development, refer to the Development Application prepared by Boss Design.

2. The Subject Land

2.1 Location

The subject land consists of Lot 4 DP 258635 Warwick Street, Lot 2 DP 534116 Nottingham Street and Lot 2 DP 249814 York Street at Berkeley, which have a combined total area of 16.78 hectares. The land is located on the Berkeley Hills to the north of Lake Illawarra. The Southern Freeway skirts the north-western boundary and there are high voltage power lines along the southern boundary. The north-eastern edge adjoins a residential area and there are paddocks and residential areas to the south.

2.2 Topography, Geology, Soil

The topography of the site consists of gentle to moderately steep slopes and a small area of flat land at the top of the hill, which is at 74 metres above sea level. There are no watercourses. The only water on the site is a small dam towards the bottom of a shallow drainage line. The underlying geology is Permian. The higher land is underlain by the Illawarra Coal Measures, while the slopes in the east and the southwest are underlain of the Dapto Latite Member of the Gerringong Volcanics.

2.3 Land Use History

Because of the presence of volcanic soils, the Berkeley Hills were originally covered by subtropical rainforest. Most of the rainforest on the Berkeley Hills was cleared in the early 1800s, for the establishment of farms, following a land grant to Mr Robert Jenkins in 1817 who "let the estate on clearing leases (as it was covered with timber) to assigned servants and others, and by degrees laid it into farms" (Mills & Jakeman 1995). Only tiny pockets of remnant rainforest regrowth still exist on the Berkeley Hills, although there is good quality rainforest nearby, on Hooka Island and Gooseberry Island in Lake Illawarra.

The subject land has had a long history of rural land use before coming into the ownership of the RTA prior to the construction of the Southern Freeway many years ago. The land has remained vacant and unused since being purchased by Dr Rashid from the RTA 22 years ago. The land is currently zoned 2(a) – Residential, covering the north-western part of the land, and 7(b) - Environmental Protection, covering the majority of the land.

3. Survey Method

3.1 Guidelines for Threatened Species Surveys and Assessment

Field survey techniques for threatened species and the amount of effort required are set out in guidelines published by the former Department of Environment and Conservation (DEC), now known as the Department of Environment and Climate Change (DECC); see *Threatened Species Survey and Assessment: Guidelines for Developments and Activities (Working Draft)* (DEC 2004), Chapter 5, Field Surveys.

The Guidelines promote "a consistent and systematic approach to the survey and assessment of threaten-ed biodiversity" (p.2-11) but acknowledge that "not all the survey methods . . . will be appropriate or necessary in all situations" (Guidelines, p.8-72). The Guidelines were consulted and taken into account when undertaking the surveys for this project. Note that the guidelines make it clear the "not all the survey methods detailed below will be appropriate or necessary in all situations, however adequate justification must be provided if appropriate survey methods are not applied."

3.2 Flora Survey Method

Date of Survey: A flora survey was undertaken on the subject land on 26th March 2010 and 1st April 2010. The weather was warm to hot on 26 March, followed by a cooler day on 1st April. There was substantial rain between the two dates.

Objectives: The objectives of the survey were to classify and describe the vegetation, to record as many as possible of the plant species present, to search for threatened plant species and to assess the potential for threatened plant species to occur in the study area. The survey was fairly thorough, so most of the species present are likely to have been detected; however, additional species can almost always be found during longer surveys and in different seasons.

Survey Design and Technique: In keeping with the Guidelines (op. cit.; DEC 2004), the survey technique combined multiple traverses of the study area with vegetation sampling on specific sites. The traverses were undertaken on foot, covering the full topographic range of the site, the full range of vegetation types (Mixed Regrowth Forest/Woodland, Wattle Forest/Woodland and Kikuyu Grassland) and areas of potential habitat for threatened plant species. The characteristic species were recorded, and notes were made on the structure and condition of the vegetation.

Vegetation sampling was undertaken as per the Guidelines for survey plots (plant quadrats). Vegetation sampling sites 20 metres by 20 metres (400 m^2) were established where the vegetation contained a high proportion of native species. A survey sheet was completed to record the following data: plot identification number, date of survey, plot size, plot location and GPS reading, land tenure, landform, geology and soil type, slope (flat, gentle, moderate, steep), aspect, altitude, the height and proportional coverage (%) of each layer or stratum (tree canopy, middle storey, shrub understorey, ground cover), the species present in each stratum and an abundance rating for each species. **Appendix 2** provides the completed survey sheet.

Vegetation Classification and Mapping: The vegetation on the subject land was classified using the structural classification system devised by Walker and Hopkins (1990). The vegetation classes within the system include closed forest (rainforest), open forest, woodland, open woodland, isolated trees, shrubland, heathland, grassland, sedgeland and fernland, etc. Following

classification, and with the aid of an aerial photograph, the vegetation types were marked directly onto the site plan.

Nomenclature: The plant species names in this report are the current names published by the National Herbarium of New South Wales in the *Flora of New South Wales* (Harden 1992-2002). Most of the common names are from the *Flora of New South Wales* (op. cit.), *Australian Plant Genera* by Baines (1981) and *Weeds of the South-east* by Richardson, Richardson and Shepherd (2006).

3.3 Fauna Survey Method

Date of Survey: A general fauna survey was undertaken on the subject land on 26th March 2010 and 1st April 2010. As stated in Section 3.2, the weather was warm to hot on 26 March and cooler on 1st April, and there was substantial rain between the two dates.

Objectives: The objectives of the fauna survey were to describe the fauna habitat, to record as many as possible of the fauna species present and to assess the potential for threatened fauna species to occur on the subject land. The survey results indicate which species were observed, but should not be regarded as a complete inventory of the species that would occur there, which could be obtained only by a long study spanning all seasons. For this reason, the survey results were supplemented by records from sites nearby with similar habitat.

Survey Design and Technique: The Guidelines (op. cit.; DEC 2004) were consulted to assist in determining what fauna survey techniques would be used and what survey effort would be expended during this study. All fauna species observed or heard during the survey were identified and recorded. Species were identified by direct observation and call-recognition, and a ground search was conducted for animal scats, tracks and diggings. Because there is no natural habitat on the subject land and no substantial treed area, no nocturnal surveys or trapping programs were undertaken.

Nomenclature: The fauna species names in this report are based on the Australian Museum's *The Mammals of Australia* (Strahan 1995), *Australian Bats* (Churchill 1998), *The Taxonomy and Species of Birds of Australia and its Territories* (Christidis & Boles 2008) and *Reptiles and Amphibians of Australia* (Cogger 1992).

Figure 2. Vegetation Map for the Subject Land.

4. Flora

4.1 Description of the Vegetation

Three vegetation communities occur on the subject land, none of these are natural: (i) Mixed Regrowth Forest/Woodland, (ii) Wattle Forest/Woodland and (iii) Kikuyu Grassland. These communities are summarised in **Table 1** and described below; **Figure 2** shows the extent of each community on the subject land.

There are no large or old trees anywhere on the site, so the vegetation is regrowth rather than remnant from the original rainforest that once grew across the Berkeley Hills (Mills & Jakeman 1995). Most of the trees appear to be quite young.

Table 1
Vegetation communities on the subject land

Vegetation community	Key species	Distribution
1. Mixed Regrowth Forest/ Woodland	*Commersonia fraseri*, *Acacia mearnsii* plus many rainforest species, a s well as the adjoining property. many exotic species.	In the northeast, and continuing onto
2. Wattle Forest/Woodland	*Acacia mearnsii* **Lantana camara* **Pennisetum clandestinum*	Scattered occurrences, mainly to the south and east, and continuing onto adjoining properties
3. Kikuyu Grassland	**Pennisetum clandestinum* **Chloris gayana* *Imperata cylindrica*	Covers most of the site, occurring on cleared land and as an understorey to the Wattle Forest/Woodland.

* Exotic species

1. Mixed Regrowth Forest / Woodland
Commersonia fraseri - Acacia mearnsii - rainforest species

Occurrence: The Mixed Regrowth Forest/Woodland on the subject land occurs on the north-eastern part of the site and extends eastwards onto the adjoining land owned by Council; see Figure 2.

Description: The community is composed of small, native and exotic trees and dense to moderately dense thickets of Lantana Lantana camara, which is a rampant weed species. Native plant species are common within this patch of vegetation, unlike the Wattle Forest/Woodland (described below) which occurs elsewhere on the site.

A survey plot was established within a typical stand this community; the survey results have been provided in Appendix 2. Most of the natives are species usually associated with rainforest. Common tree species include Whalebone Tree Streblus brunonianus, Brush Kurrajong Commersonia fraseri, Guioa Guioa semiglauca, Sweet Pittosporum Pittosporum undulatum and Black Wattle Acacia mearnsii.

Vines and creepers are particularly abundant, including Cockspur Thorn Maclura cochinchinensi, Common Milk Vine Marsdenia rostrata and Wonga Vine Pandroea pandorana. Smaller pants are often common, including Pastel Flower Pseuderantheum variabile, Kidney Weed Dichondra repens and Weeping Grass Microlaena stipoides.

2. Wattle Forest/Woodland
Acacia mearnsii - Lantana camara* - Pennisetum clandestinum*

Occurrence: Wattle Forest/Woodland is scattered across the land, particularly in the south and west, and continuing onto some adjoining land.

Description: This is a forest or woodland formation dominated by the small native tree Black Wattle Acacia mearnsii. There are few if any other trees present, the understorey is largely the same as the following grassland community or is composed of thickets of Lantana Lantana camara. The areas burnt in 2009 contain dense weedy growth and a few natives.

3. Kikuyu Grassland
Pennisetum clandestinum* - Chloris gayana* - Imperata cylindrica

Occurrence: Covers most of the study area, and is often an understorey to the Wattle Forest/Woodland.

Description: This is an exotic grassland dominated by Kikuyu Grass Pennisetum clandestinum, with patches of another exotic, Rhodes Grass Chloris gayana. Following a fire in November 2009, some patches of the native Blady Grass Imperata cylindrica have appeared. Other species in the grassland are exotic (introduced) plants, including Paspalum Paspalum dilatatum, Purple-top Verbena spp., Paddy's Lucerne Sida rhombifolia, Fireweed Senecio madagascariensis, and many other herbaceous weeds.

4.2 Plant Species recorded on the Subject Land

Native Species

The native plant species recorded in the study area have been listed alphabetically below, in **Table 2**, and under family name in **Appendix 1**. The area supports at least 68 native species, many of these species are 'rainforest species'.

Table 2
Native plant species recorded n the subject land

Taxonomic name	Common name
Acacia binervata	Two-veined Hickory
Acacia longifolia	Golden Wattle
Acacia maidenii	Maiden's Wattle
Acacia mearnsii	Black Wattle
Adiantum formosum	Giant Maidenhair
Amyema congener	Mistletoe
Breynia oblongifolia	Coffee Bush
Carex appressa	Tall Sedge
Carex longebrachiata	Bergalia Tussock
Cayratia clematidea	Slender Grape
Celastrus australis	Staff Vine
Centella asiatica	Indian Pennywort
Citriobatus pauciflorus	Orange Thorn
Clerodendrum tomentosum	Hairy Clerodendrum
Commelina cyanea	Wandering Sailor
Commersonia fraseri	Brush Kurrajong
Convolvulus erubescens	Australian Bindweed
Cymbopogon refractus	Barb-wire grass
Cynodon dactylon	Couch Grass
Cyperus difformis	Dirty Dora
Dianella longifolia	SmoothFlax-lily
Dichondra repens	Kidney Weed
Einadia hastata	Berry Saltbush
Elaeodendron australe	Red Olive-plum
Eucalyptus tereticornis	Forest Red Gum
Euchiton involucratus	Common Cudweed
Eustrephus latifolius	Wombat Berry
Exocarpos cupressiformis	Native Cherry
Geitonoplesium cymosum	Scrambling Lily
Geranium solanderi	Native Geranium
Glycine clandestina	Twining Glycine
Glycine tabacina	Vanilla glycine
Guioa semiglauca	Guioa
Gymnostachys anceps	Settler's Flax
Hibiscus heterophyllus	Native Hibiscus
Hibiscus trionum	Bladder Ketmia
Imperata cylindrica	Blady Grass
Legnephora moorei	Round-leaf Vine
Lilium formosanum	Formosa Lily
Lomandra longifolia	Spiny-headed Mat-rush
Maclura cochinchinensis	Cockspur Thorn
Marsdenia rostrata	Common Milk Vine
Melicope micrococca	White Euodia
Microlaena stipoides	Weeping Grass
Muehlenbeckia gracillima	Slender Lignum
Myrsine howittiana	Brush Muttonwood
Myrsine variabilis	Muttonwood
Oplismenus hirtellus	Basket-grass
Oxalis sp.	Wood Sorrel
Pandorea pandorana	Wonga Vine
Pellaea falcata	Sickle Fern
Pittosporum revolutum	Rough-fruit Pittosporum
Pittosporum undulatum	Sweet Pittosporum
Plectranthus parviflorus	Cockspur Flower
Portulaca oleracea	Purslane
Pseuderanthemum variabile	Pastel Flower
Rubus parvifolius	Native Rasberry
Rumex brownii	Swamp Dock
Senecio hispidulus	Rough Fireweed
Senecio linearifolius	Fireweed Groundsel
Smilax australis	Austral Sarsaparilla
Spirodela sp.	Duckweed
Streblus brunonianus	Whalebone Tree
Themeda australis	Kangaroo Grass
Trema tomentosa var. *viridis*	Native Peach
Trophis scandens	Burny Vine
Typha orientalis	Cumbungi
Viola hederacea	Native Violet

Exotic (Planted) Species

Several trees have been planted at the backs of houses along the northern edge of the subject land; these species are listed in **Table 3**. Most of the species occur naturally in the region, but not on this site.

Table 3
Planted species recorded in the study area

Taxonomic name	Common name
Banksia integrifolia	Coast Banksia
Casuarina cunninghamiana	River Oak
Casuarina glauca	Swamp Oak
Eucalyptus paniculata	Grey Ironbark
Eucalyptus sp.	Gum Tree
Melaleuca armillaris	Bracelet Honey-myrtle
Melaleuca styphelioides	Prickly-leaved Paperbark

Exotic (Naturalised) Species

The exotic, naturalised plant species are listed in **Table 4**; that table contains the names of 87 species, well above the number of indigenous species recorded. Almost all of the subject land is dominated by exotic plants, usually almost entirely at the exclusion of indigenous plants.

Table 4
Exotic plant species recorded on the subject land

Taxonomic name	Common name
Acetosa sagittata	Rambling Dock
Ageratina adenophora	Crofton Weed
Ageratina riparia	Mist Flower
Anagallis arvensis	Blue Pimpernel
Andropogon virginicus	Whiskey Grass
Anredera cordifolia	Madeira Vine
Araujia hortorum	Moth Vine
Asparagus aethiopicus	Asparagus Fern
Asparagus plumosus	Climbing Asparagus Fern
Aster subulatus	Bushy Starwort
Axonopus fissifolius	Carpet Grass
Baccharis halimifolia	Groundsel Bush
Bidens pilosa	Cobbler's Pegs
Bromus cartharticus	Prairie Grass
Chenopodium album	Fat Hen
Chloris gayana	Rhodes Grass
Chrysanthemoides monilifera	Bitou Bush
Cinnamomum camphora	Camphor Laurel
Cirsium vulgare	Spear Thistle
Clivia miniata	Clivia
Conyza bonariensis	Tall Fleabane
Cotoneaster sp.	Cotoneaster
Crassula arborescens	Silver Jade Plant
Cyperus rotundus	Nutgrass
Dactylis glomerata	Cocksfoot
Datura stromonium	Common Thornapple
Delairea odorata	Cape Ivy
Echinochloa crus-galli	Barnyard Grass
Ehrharta erecta	Panic Veldt Grass
Eleusine indica	Crowsfoot Grass
Eragrostis curvula	African Lovegrass
Erythrina x *sykesii*	Coral Tree
Ficus carica	Fig
Ficus hillii	Hill's Fig
Foeniculum vulgare	Fennell
Gamochaeta americana	American Cudweed
Gomphocarpus fruticosus	Narrow-leaved Cotton Bush
Grevillea robusta	Silky Oak Grevillea
Hakea salicifolia	Willow-leaved Hakea
Hypochaeris radicata	Flatweed
Jasminum azoricum	Jasmine
Lantana camara	Lantana
Leptospermum petersonii	Lemon-scented Teatree
Ligustrum lucidum	Large-leaved Privet
Ligustrum sinense	Small-leaved Privet
Lilium formosanum	Formosan lily
Lonicera japonica	Honeysuckle
Ludwigia peploides	Water Primrose
Melilotus sp.	Melilot
Melinis repens	Red Natal Grass
Modiola caroliniana	Red-flowered Mallow
Morus nigra	Mulberry
Ochna serrulata	Mickey Mouse Plant
Olea europaea subsp. *cuspidata*	African Olive
Paspalum dilatatum	Paspalum
Passiflora subpeltata	White Passion-flower
Pennisetum clandestinum	Kikuyu Grass
Phytolacca octandra	Inkweed
Plantago lanceolata	Ribbed Plantain
Plumbago auriculata	Plumbago
Polygala virgata	Broom Milkwort
Psoralea pinnata	Butterfly bush
Pyracantha sp.	Fire Thorn
Pyrus communis	Pear
Ranunculus repens	Creeping Buttercup
Rubus fruticosus sp. agg.	Blackberry
Rumex crispus	Curled Dock
Schinus terebinthifolia	Broad-leaved Pepper
Senecio madagascariensis	Fireweed
Senna pendula var. *glabrata*	Winter Senna
Setaria sp.	Pigeon Grass
Sida rhombifolia	Paddy's Lucerne
Solanum americanum	Glossy Nightshade
Solanum linnaeanum	Apple-of-Sodom
Solanum mauritianum	Wild Tobacco Bush
Sonchus oleraceus	Common Sowthistle
Sporobolus fertilis	Giant Parramatta Grass
Sporobolus indicus	Parramatta Grass
Stenotaphrum secundatum	Buffalo Grass
Tagetes minuta	Stinking Roger
Taraxacum officinale	Dandelion
Trifolium pratense	Red Clover
Trifolium repens	White Clover
Verbena bonariensis	Purpletop
Verbena rigida	Veined Verbena
Vicia sativa	Vetch
Xanthium occidentale	Noogoora Burr

Noxious and Environmental Weeds

Noxious weeds are listed for the Wollongong local government area under the *Noxious Weeds Act 1993.* In addition to noxious weeds, other naturalised species are widely recognised as "environmental weeds". These are exotic plants that highly detrimental to native vegetation and habitats because of their invasive nature. Those species found on the subject land and identified in these weed categories are listed in **Table 5**.

Table 5
Noxious and environmental weeds recorded on the subject land

Taxonomic Name	Common Name	Noxious Category[1]
Noxious Weeds		
Baccharis halimifolia	Groundsel Bush	3
Chrysanthemoides monilifera	Bitou Bush	4
Eragrostis curvula	African Lovegrass	4
Sporobolus fertilis	Giant Parramatta Grass	3
Lantana camara	Lantana	4
Rubus fruticosus sp. agg.	Blackberry	4
Environmental Weeds		
Acetosa sagittata	Rambling Dock	
Ageratina adenophora	Crofton Weed	
Ageratina riparia	Mist Flower	
Andropogon virginicus	Whiskey Grass	
Anredera cordifolia	Madeira Vine	
Araujia hortorum	Moth Vine	
Asparagus aethiopicus	Asparagus Fern	
Asparagus plumosus	Climbing Asparagus Fern	
Chloris gayana	Rhodes Grass	
Delairea odorata	Cape Ivy	
Foeniculum vulgare	Fennell	
Olea europaea subsp. *cuspidata*	African Olive	
Passiflora subpeltata	White Passion-flower	
Senna pendula var. *glabrata*	Winter Senna	

1. See Appendix 3 for explanation of noxious weed categories.

5. Fauna

5.1 Description of Fauna Habitat

The fauna habitat in the study area consists of patches of small trees, as described for communities 1 and 2 above, and exotic, ungrazed grassland. None of the trees contain hollows as they are too small. The only wet area is a small dam on the far north-western side of the site near the freeway. There are no rock outcrops on the site.

5.2 Fauna Species recorded on the Subject Land

The fauna species recorded on the subject land have been listed below, in **Table 6**. A relatively small number of vertebrate species was recorded, no doubt because of the highly modified and unnatural habitats present in the area. No doubt other species occur there; the probability of occurrence of threatened species is assessed in **Section 6**.

Table 6
Fauna species recorded on/near the subject land

Common name	Taxonomic name
Mammals	
Fox*	*Vulpes vulpes*
Birds	
Australian Raven	*Corvus coronoides*
Brown Goshawk	*Accipiter fasciatus*
Common Myna*	*Sturnus tristis*
Eastern Spinebill	*Acanthorhynchus tenuirostris*
Eastern Whipbird	*Psophodes olivaceus*
European Goldfinch*	*Carduelis carduelis*
Golden Whistler	*Pachycephala pectoralis*
Golden-headed Cisticola	*Cisticola exilis*
Grey Butcherbird	*Cracticus torquatus*
Grey Fantail	*Rhipidura fuliginosa*
House Sparrow*	*Passer domesticus*
Laughing Kookaburra	*Dacelo novaeguineae*
Lewin's Honeyeater	*Meliphaga lewinii*
Little Wattlebird	*Anthochaera chrysoptera*
New Holland Honeyeater	*Phylidonyris novaehollandiae*
Rainbow Lorikeet	*Trichoglossus haematodus*
Red-browed Finch	*Neochmia temporalis*
Red-whiskered Bulbul*	*Pycnonotus jocosus*
Silvereye	*Zosterops lateralis*
Spotted Dove*	*Streptopelia chinensis*
Superb Fairy-wren	*Malurus cyaneus*
Welcome Swallow	*Hirundo neoxena*
White-browed Scrubwren	*Sericornis frontalis*
White-plumed Honeyeater	*Lichenostomus penicillatus*
Yellow Thornbill	*Acanthiza nana*
Yellow-tailed Black-Cockatoo	*Calyptorhynchus funereus*
Reptiles	
Delicate Skink	*Lampropholis delicata*
Red-bellied Black Snake	*Pseudechis porphyriacus*

*Introduced species.

6.Threatened Species, Populations and Communities

6.1 Introduction

Threatened species, populations and communities in New South Wales are listed on schedules attached to the NSW *Threatened Species Conservation Act 1995* (TSC Act), the NSW *Fisheries Management Act 1994* (FM Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Under the TSC and FM Acts they are classified as "endangered", "vulnerable", "critically endangered" or "presumed extinct". Under the EPBC Act, threatened species and communities are classified as "extinct", "critically endangered", "endangered", "vulnerable" or "conservation dependent". The EPBC Act also lists "protected migratory species".

The "Threatened Species Assessment Guidelines; the Assessment of Significance", prepared by the Department of Environment and Climate Change (DECC 2007), state that the applicant/proponent should develop a list of threatened species, populations and ecological communities that may be affected directly or indirectly by the proposed action, development or activity" [and that] "adequate reasons must be provided to show how the list was derived" (p.2, para.6). In order to develop such a list, the consultant searched the NSW Wildlife Atlas (DECC) for threatened species previously recorded in the local area, i.e. within a 10 kilometre grid square centred on the study area.

6.2 Threatened Species

Threatened species previously recorded in the local area have been listed below, in **Table 7**, with the exception of coastal and marine species for which there is obviously no habitat on the subject land. **Table 7** contains an assessment of the potential for each threatened species to occur on the site or utilise the habitats there. In this regard, consideration was given to determining the extent to which the subject land satisfies the habitat requirements and preferences of the species in question. The frequency of previous records in the NSW Wildlife Atlas was also taken into account.

No threatened species were recorded on the subject land; however, a few could occur there from time to time, e.g. the Grey-headed Flying-fox, as indicated in **Table 7**. Any occurrences would, however, be fleeting and incidental; these very wide-ranging species are not likely to have a close affinity with this small area of potential habitat when there are vast areas of good quality habitat throughout the region.

Table 7

List of threatened species for the local area (Source: NSW Wildlife Atlas)

Species	TSC Act[+]	EPBC Act[+]	Habitat Requirements/Preferences, etc.	Potential to occur in the study area (High / Medium / Low)
Plants				
Eastern Flame Pea *Chorizema parviflorum*	E	-	*Chorizema parviflorum* is an erect or upright shrub that grows to a height of about 50cm. It occurs in heath, woodland and forest on heavy soils in coastal NSW and Queensland. The NSW Scientific Committee listed the population in the Wollongong and Shellharbour local government areas (LGAs) as an endangered population because it is the last known population in the Illawarra area. The Final Determination notes that there are two other isolated occurrences on the south coast and remnant populations of the species to the west and southwest of Sydney.	Low. The species was not recorded during the survey. The habitat on the site is not suitable.
White-flowered Wax Plant *Cynanchum elegans*	E	E	*Cynanchum elegans* is a twiner that usually grows along the dry edge of subtropical rainforest and in thickets of Lantana on the edge of rainforest. It occurs on the volcanic lowlands from Berry to Farmborough Heights.	Low. This species was not recorded on the development site; although some areas Could not be reaches because of the dense Lantana. It seems unlikely that the species would not occur in such areas.
Square Raspwort *Haloragis exalata* ssp. *exalata* var. *exalata*	V	V	This species usually occurs on the edge of rainforest and on damp and protected sites near watercourses. It is rare in the Illawarra, where it occurs in only five locations - at Coalcliff, Coledale, Stanwell Park, Gooseberry Island in Lake Illawarra and Berry.	Low. The species was not recorded and the habitat is too degraded.
Solanum celatum Night-shade	E	-	This shrub species occurs in clearings within rainforest and in wet sclerophyll forest from Wollong-ong to South Nowra and Bungonia. The NSW Scientific Committee's Final Determination states that most records are old and that only one plant was found during a recent survey of six known site; the plant was found in Macquarie Pass National Park.	Low. The habitat is not suitable and the species is extremely rare.
Illawarra Zieria *Zieria granulata*	E	E	*Zieria granulata* occurs in subtropical rainforest, dry woodland and paperbark scrub on rock outcrops on the dry volcanic lowlands of the Kiama and Shellharbour LGAs. It grows along paddock fences and on dry-stone walls.	Low. The species as not recorded during the survey. Occurrences in the Wollongong LGA are rare.
Mammals				
Eastern Bentwing Bat *Miniopterus schreibersii oceanensis*	V	-	Eastern Bentwing Bats occur in a wide range of habitats, such as rainforest, eucalypt forest, woodland and grassland. They fly just above or through the tree canopy foraging for moths, but closer to the ground more open areas. The species is cave-dwelling, so the bats usually roost in caves and under rock overhangs. They also roost in built structures, such as mine tunnels, build-ings and culverts. Eastern Bentwing Bats breed and raise their young in caves, so natural caves free of disturbance and degradation are essential.	Low. The probability of such a wide ranging species occurring on such a small site must be low. There is no roosting habitat.
Eastern False Pipistrelle *Falsistrellus tasmaniensis*	V	-	Eastern False Pipistrelles prefer moist forest habitat containing trees taller than 20 metres. They fly through the tree canopy or just above, feeding on flying insects such as moths, and beetles, weevils and ants. They roost in tree hollows, and sometimes under tree bark and in buildings.	Low. The habitat along the route is not very suitable, being patchy dry regrowth.
Grey-headed Flying-fox *Pteropus poliocephalus*	V	V	Grey-headed Flying-foxes occur in rainforest, mangroves, paperbark forest, eucalypt forest, woodland, orchards and gardens. They are highly mobile, have a large territory, and often travel long distances at night to feed. Their diet consists of fleshy fruit and blossom. In summer, large numbers of flying-foxes congregate in camps to breed and rear their young. The camps are in moist locations with a dense tree canopy. They exhibit a strong fidelity to their camp sites, but the same camp is not necessarily used every year.	Moderate. Flying-foxes could forage in the trees. However, any occurrences in this marginal habitat would be fleeting.
Koala *Phascolarctos cinereus*	V	-	Koalas occur in eucalypt forest and woodland containing their preferred feed tree species, i.e. *Eucalyptus tereticornis*, *E. microcorys*, *E. punctata*, *E. viminalis*, *E. camaldulensis*, *E. albens, E. haemastoma*, *E. signata*, *E. populnea* and *E. robusta*. Where Koalas occur, one or more of these species is often dominant or prominent. Because so much native vegetation in NSW has been cleared, Koalas now occur in marginal habitat.	Low. Koalas are now almost certainly extinct in the local area.
Large-eared Pied Bat *Chalinolobus dwyeri*	V	V	Large-eared Pied Bats inhabit dry open forest and woodland, where they forage for insects. They roost in caves, crevices and old mines, usually near the entrance.	Low. Most of the site has been cleared, little foraging habitat is available, and there are no potential roost sites.

Spotted-tailed Quoll *Dasyurus maculatus*	V	V	Quolls live in a wide variety of habitats, e.g. rainforest, eucalypt forest, woodland and coastal heath. Their diet consists of medium sized mammals, birds, small mammals and carrion. They have a large home range, 1287-1452 ha for males and 614-1067 ha for females (Edgar & Belcher 1995). Dens are in hollow logs, tree hollows, caves and crevices. Usually terrestrial.	Low. Given the highly developed character of the locality, the species is unlikely to occur there.
Birds				
Australasian Bittern *Botaurus poiciloptilus*	V	-	Australasian Bitterns inhabit fresh and brackish wetlands. They forage in still, shallow water to a depth of 30cm, in wet tussocky paddocks, and in broad areas of dense reed beds on the edge of lagoons, swamps and slow rivers. They favour permanent freshwater wetlands dominated by sedges, rushes, reeds or tall grass.	Low. There is no suitable habitat on the site for this species. It has been recorded in the local area on only one previous occasion.
Black Bittern *Ixobrychus flavicollis*	V	-	Black Bitterns forage on the edge of permanent wetlands, rivers and creeks fringed by dense vegetation. Along the coast, they also occur in estuaries and within the tidal zone of rivers and creeks. The vegetation ranges from rank grassland, shrubland, woodland, dry or wet eucalypt forest, rainforest, vine thickets and mangroves, sometimes only a narrow fringe.	Low, but it could conceivably occur along the saltwater drainage channel or nearby, in Mullet Creek, from time to time.
Black-necked Stork *Ephippiorhynchus asiaticus*	E	-	Black-necked Storks inhabit lagoons, swamps, estuarine mudflats and mangrove swamps. They also occur on dry floodplains, among irrigated crops, and in open grassy woodlands. They feed in shallow water.	Low. There is no suitable habitat on the site.
Freckled Duck *Stictonetta naevosa*	V	-	Freckled Ducks occur in densely vegetated freshwater wetlands, especially large swamps dominated by Cumbungi *Typha orientalis*. They avoid large, open expanses of water.\	Low. There is no suitable habitat on the site.
Gang-gang Cockatoo *Callocephalon fimbriatum*	V	-	Gang-gang Cockatoos mainly occur in eucalypt forest, where they feed on eucalypt fruit and wattle seed. They nest in large old trees with hollows. The species is nomadic, with some seasonal movements, as well, as the cockatoos wander over wide areas in response to the seasonal availability of food.	Low. There is no suitable habitat on the site.
Glossy Black-Cockatoo *Calyptorhynchus lathami*	V	-	Glossy Black-Cockatoos live in mature eucalypt forest and woodland containing stands of cone-bearing Black She-oak *Allocasuarina littoralis* trees, which are their primary source of food. They prefer mature forest, because only mature forest contains tall old eucalypts with hollows for nesting and casuarina fruit in sufficient quantities to sustain whole populations. Glossy Black-Cockatoos are nomadic and sedentary in behaviour. Their movements are mostly local, as they roam from one foraging area to another in a district.	Low. There is no suitable habitat on the site.
Masked Owl *Tyto novaehollandiae*	V	-	Masked Owls inhabit forest and woodland. They hunt along the edge of the forest and roost in dense trees in gullies. Their diet consists mainly of small and medium sized terrestrial mammals, at least two thirds of which are captured on the ground (Debus & Rose 1994). Masked Owls require tree hollows for breeding. They have a large territory of 500-1000ha.	Low. There is no suitable habitat on the site.
Osprey *Pandion haliaetus*	V	-	Ospreys occur in coastal wetlands and along the lower reaches of rivers, and in mangrove swamps and on bays, beaches, cliffs and rock platforms. They are drawn to wide expanses of open water (fresh, brackish or saline) for fishing. They nest in tall dead trees.	Low. There is no suitable habitat on the site.
Painted Honeyeater *Grantiella picta*	V	-	Painted Honeyeaters occur on the inland slopes of the Great Dividing Range in NSW, Victoria and southern Queensland. During winter, they are more likely to occur in the northern part of their range. They are nomadic and occur in low densities across their range. Painted Honey-eaters usually inhabit Boree, Brigalow and Box-Gum Woodlands and Box-Ironbark Forests, where they feed on the fruit of mistletoes (mainly the genus *Amyema*) growing on woodland eucalypts and acacias.	Low. Painted Honeyeaters are not likely to occur in the Wollongong area.
Powerful Owl *Ninox strenua*	V	-	Powerful Owls prefer tall moist open eucalypt forest on hilly terrain, often with a rainforest component, but they also occur in drier forest types, woodland and urban bushland. They roost in the dense forest canopy or substorey, often in gullies; groups of Turpentines are ideal. They prefer mature forest and/or uneven-aged forest; "old growth" forest more than 70 years old is best. A pair of Powerful Owls has a large territory, of 400-600 ha (Davey 1993) to 800-1,000 ha (Schodde & Mason 1980).	Low. There is no suitable habitat on the site.

Sooty Owl *Tyto tenebricosa*	V	-	Sooty Owls inhabit rainforest and tall wet eucalypt forest, preferably "old growth" forest with a dense understorey and emergent tall eucalypts along creeks and in gullies. Tree hollows for nesting and roosting are essential. Sooty Owls have a large home range, e.g. 600-800 ha (Milledge, Palmer & Nelson 1991) or 200-800 hectares (Schodde & Mason 1980). The size of the home range would be influenced by the quality of the habitat and the abundance of prey, particularly arboreal mammals, but also small terrestrial mammals and birds.	Low. There is no suitable habitat on the site.
Square-tailed Kite *Lophoictinia isura*	V	-	Square-tailed Kites occur in forest and woodland in coastal and subcoastal regions. They prefer a structurally diverse landscape with a good supply of small birds for prey and large trees in undisturbed forest for nesting. Square-tailed Kites migrate to south-eastern NSW in summer. Each pair ranges widely over a large territory.	Low. Square-tailed Kites probably occurs in the general area from time to time, but are not likely to particularly use the habitats on the site.
Swift Parrot *Lathamus bicolour*	E	E	Swift Parrots occur in south-eastern Australia and breed only in Tasmania. They occur on the mainland in winter, outside the breeding period, in winter-flowering eucalypts such as Red Iron-bark *Eucalyptus sideroxylon*, Yellow Gum *E. leucoxylon*, White Box *E. albens* and Swamp Gum *E. ovata* (Brown 1989). They also occur in fertile forest habitat containing Woollybutt *E. longifolia* and, along the coast, Coast Banksia *Banksia integrifolia*.	Low. There is no suitable habitat on the site.
Turquoise Parrot *Neophema pulchella*	V	-	Turquoise Parrots inhabit "woodlands, open forest and timbered grasslands on mountain slopes, ridges and along watercourses", favouring "the edges of woodland adjoining open grassland, or timbered ridges and tree-lined creeks that traverse farmland" (Forshaw 1981). They forage on the ground for seed, usually in pairs or small groups. After breeding, they disperse from the woodlands into more open country.	Low. There is no habitat to attract this species to the site.
Frogs				
Green and Golden Bell Frog *Litoria aurea*	E	V	Green and Golden Bell Frogs occur in freshwater streams, swamps, lagoons, dams, soaks and ponds, preferably those containing bullrushes and spikerushes. However, they sometimes occur on highly disturbed sites, e.g. disused industrial sites, brick pits and landfill areas. Their optimum habitat is an unshaded body of water that is free of predatory fish, with a grassy area nearby and daytime shelter sites, such as vegetation and/or rocks.	Low. There is no suitable habitat on the site.
Reptiles				
None				

+ V = vulnerable, E = endangered, - = not listed.

Except for an occasional visit, the probability of occurrence of threatened species of plant or animal is considered to be low; no threatened species would be resident on the subject land.

6.3 Threatened Populations

***Chorizema parviflorum* in the Wollongong and Shellharbour LGAs**

Chorizema parviflorum occurs in heathland and sclerophyll woodland and forest in coastal New South Wales and Queensland. The population of this species in the Wollongong and Shellharbour LGAs is the last known population in the Illawarra area. The population extends from Wongawilli to Yallah and Albion Park. A single-plant occurrence in remnant bushland near Austinmer has apparently disappeared. This species was not found on the site at Berkeley; the habitat there is not consistent with the known habitat of the species elsewhere in the region.

***Lespedeza juncea* subsp. *sericea* population in the Wollongong LGA**

Lespedeza juncea subsp. *sericea* occurs in woodland and grassland on the coast, tablelands and western slopes of New South Wales, as well as in Queensland and Victoria. An isolated population occurs to the south of Dapto. This species was not found on the site; the only local occurrence is at west Dapto, several kilometres away from Berkeley.

6.4 Threatened Communities

The native species concentrated in community 1 are mostly associated with Illawarra Subtropical Rainforest. However, that 'community' has neither the structure of a rainforest nor a dominance of rainforest plant species in terms of cover.

6.5 Migratory Species

The EPBC Act allows for the listing of internationally protected migratory species, i.e. species listed under the Japan - Australia Migratory Bird Agreement (JAMBA), the China - Australia Migratory Bird Agreement (CAMBA) and the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).

Many internationally protected migratory species occur in the Wollongong area. Some of these species would occur in the study area from time to time, such as native ducks and diurnal birds of prey. There is no important habitat on the subject land for such species and the habitat there does not support an ecologically important proportion of a population of such species.

7. Impact on Flora and Fauna

7.1 Assessment under Part 3A

Guidelines for Threatened Species Assessment
Guidelines that identify matters relevant to the assessment of potential impact on threatened species, populations or ecological communities of proposed development under Part 3A of the *Environmental Planning and Assessment Act 1979* (NSW) have been prepared by the Department of Environment and Conservation (now Department of Environment and Climate Change) and the Department of Primary Industries (DEC July 2005).

The *Guidelines for Threatened Species Assessment* identify the following objectives in regard to conserving threatened species, etc.:

1 "Maintain or improve biodiversity values (i.e. there is no net impact on threatened species or native vegetation).
2 Conserve biological diversity and promote ecologically sustainable development.
3 Protect areas of high conservation value (including areas of critical habitat).
4 Prevent the extinction of threatened species.
5 Protect the long-term viability of local populations of a species, population nor ecological community.
6 Protect aspects of the environment that are matters of national environmental significance."

Note that matters of national environmental significance (NES) are those matters listed under the *Environment Protection & Biodiversity Conversation Act 1999* (Commonwealth); these matters are not listed under state legislation, although there is considerable overlap in the species and communities that area listed.

The *Guidelines* outline a broad five-step process for assessing impacts on threatened species. Note that 'threatened species' refers here to species, populations and communities listed as threatened under the *Threatened Species Conservation Act 1995* (NSW) or the *Fisheries Management Act 1994* (NSW).

As this project is being assessed under Part 3A of the *EP&A* Act, this investigation and report follow the *Guidelines* where relevant.

<u>Step 1 – Preliminary Assessment</u>
"The main purpose of a preliminary assessment is to determine the likelihood of the study area and subject site supporting threatened species" (*Guidelines*, page 2). As noted in the *Guidelines*, this step is primarily a 'desktop' study, using existing information, literature and data bases to identify relevant threatened species. The *Guidelines* state that the following matters should be included in the preliminary assessment:

- a description of the location and nature of the proposed development;
- a description of dominant vegetation types;'
- a description of habitat features;
- a list of threatened species that are known or likely to occur within the study area;
- an assessment of which of the threatened species that are known or likely to occur are likely to be directly or indirectly affected by the proposal provides a list of factors for consideration in identifying adverse impacts. This list is not necessarily exhaustive and is not development-specific." (*Guidelines*, page 3)

<u>Step 2 – Field Survey and Assessment</u>
As noted in the *Guidelines*, "the required intensity and extent of survey will vary greatly depending upon the species likely to be present, size of the development area, the level of biological and habitat diversity on the site, and the type and complexity of vegetation on the site." (*Guidelines*, page 3)

The *Guidelines* point out the need "to ensure that a reliable assessment of the presence or absence of threatened species can be made" (*Guidelines*, page 3). It is also noted that consideration needs to be given to the relevance of climatic or seasonal conditions for the target species.

Where relevant, the survey methods set out in the document titled *Threatened Species Survey & Assessment: Guidelines for Developments and Activities* (DECC 2004) should be followed. As noted above, the level of the survey will very much depend upon site conditions.

The outcome of Step 2 should be that adequate field surveys are undertaken for all target species identified in Step 1 such that confident statements can be made regarding the potential for the presence of the species on the subject site. In some instances, the precautionary principle should be adopted and the presence of a species assumed for the purposes of impact assessment.

<u>Step 3 – Evaluation of Impact</u>
This step involves identifying the potential magnitude and extent of the impact, if any, the development will have on each of the target species.

The *Guidelines* suggest that "impacts will be more significant if:

- areas of high conservation value are affected;
- individual animals and/or plants and/or subpopulations that are likely to be affected by the proposal play an important role in maintaining the long-term viability of the species, population or ecological community;
- habitat features that are likely to be affected by the proposal play an important role in maintaining the long-term viability of the species, population or ecological community;
- the duration of impacts are long-term;
- the impacts are permanent and irreversible." (*Guidelines* page 4)

<u>Step 4 – Avoid, mitigate and then offset</u>
Where there is a potential to impact on threatened species, this should be addressed through, firstly, avoiding the impact; this may mean making some changes to the proposed development. If avoidance is not possible, then some form of mitigation may be required. Finally, if neither avoidance nor mitigation are possible, then some form of offset or compensation will be required. This could entail the rehabilitation of similar habitat nearby.

Step 5 – Key thresholds

The *Guidelines* state that "the development application needs to contain a justification of the preferred option based on:

- whether or not the proposal, including actions to avoid or mitigate impacts or compensate to prevent unavoidable impacts will maintain or improve biodiversity values.
- whether or not the proposal is likely to reduce the long-term viability of a local population of the species, population or ecological community.
- whether or not the proposal is likely to accelerate the extinction of the species, population or ecological community or place it at risk of extinction.
- whether or not the proposal will adversely affect critical habitat." (*Guidelines* page 4)

Appendix 3 to the *Guidelines* contains more detail for identifying potential impacts on threatened species.

The assessment process under the *TSC Act 1995* commonly known as the 'seven part test' is not used for Part 3A matters. The matters to be considered in the assessment of a Part 3A development are determined by the Minister for Planning for each development.

The following discussion addresses the five steps as set out above from the Part 3A *Guidelines*.

Step 1 – Preliminary Assessment

The *Guidelines* state that certain matters should be included in the preliminary assessment. These are primarily concerned with descriptions of the development, the vegetation types, habitats, the threatened species known and likely to occur in the area and those threatened species that may be impacted by the proposed development. Descriptions of the Project Site and its environment are provided in this report at **Sections 2, 4 and 5**. For detailed descriptions of the proposed development, reference should be made to the other documents accompanying this application. **Section 3** describes the survey methods employed in the study.

Step 2 – Field Survey and Assessment

Field surveys were undertaken on the subject land on 26 March and 1 April 2010. These surveys included general flora and fauna surveys of the entire property, where all species were identified and documented, including plant communities and habitats; see **Sections 4 and 5** of this report. The assessment of the survey results, particularly in regard to the presence of threatened species, etc. are provided in **Section 6**. All known or potential threatened species and communities are discussed in that section.

Step 3 – Evaluation of Impact

The impact of the proposed development is assessed under several key headings below.

Impact upon vegetation cover generally

The vast majority of the vegetation on the property is exotic (introduced). The native species are largely concentrated in the north-eastern part of the land. A recommendation of this study, and which has been incorporated into the design of the proposal, is to retain the north-eastern corner of the property as an open space area where rainforest regeneration will be undertaken. That area was chosen because:

- it contains most of the native plants on the site;
- it is already starting to regenerate native vegetation, albeit amongst abundant weed growth;
- it is a separate catchment to the development;
- it is on Permian volcanic rock, rather than the sedimentary rock on most of the site;
- it is contiguous with the bushland on the adjoining council land.

There will be some loss of native vegetation; this will be offset by regenerating native vegetation in the area described above.

It is also a recommendation of this study that at some local native species be incorporated into the landscaping of the remainder of eh site. The local flora offers abundant choices for attractive plants, from trees to herbs.

Impact on threatened species

The assessment found that there will be no impact on threatened species. No species are expected to be resident on eh land; such species may visit occasionally. Regeneration of the rainforest will assist local fauna, including threatened species.

Impact on the identified wildlife corridor

The land is on the western end of the Berkeley Hills, a low range of hills that support scattered patches of remnant native vegetation. Although not contiguous, these patches can act as 'stepping stones' for fauna movement. The regeneration of rainforest in the area identified in this study will assist fauna to move through the area.

Impact on threatened communities

The endangered ecological community known as Illawarra Subtropical Rainforest once covered all of the Berkeley Hills, particularly the volcanic soils. Remnants occur here and there and there is some regrowth of the constituent species on the study area. The main area supporting these species is identified in this report and it will be incorporated into an open space area for rainforest regeneration. The impact on the listed community is considered to be negligible and to be a positive open n the long term.

Step 4 – Avoid, mitigate and then offset

Completion upon consideration of the Director-General's Requirements.

Step 5 – Key thresholds

Completion upon consideration of the Director-General's Requirements.

The justifications in the *Guidelines* are addressed below.

whether or not the proposal, including actions to avoid or mitigate impacts or compensate to prevent unavoidable impacts will maintain or improve biodiversity values.

The

whether or not the proposal is likely to reduce the long-term viability of a local population of the species, population or ecological community.

The

whether or not the proposal is likely to accelerate the extinction of the species, population or ecological community or place it at risk of extinction.

The

whether or not the proposal will adversely affect critical habitat.

There is no critical habitat declared for any species in the Wollongong area.

7.2 Environment Protection and Biodiversity Conservation Act

The impact of a proposed action on matters of national environmental significance is assessed under the provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Matters of national environmental significance are World Heritage properties, National Heritage places, wetlands of international importance (RAMSAR wetlands), threatened species and ecological communities listed under the EPBC Act, migratory species listed under the EPBC Act, Commonwealth marine environment, Great Barrier Reef Marne Park and nuclear actions (including uranium mining). An "action" is a project, a development, an undertaking, an activity or a series of activities, and an alteration of any of the above. An action can be on Commonwealth land, State land council land, private land, or water.

Approval is required from the Commonwealth Environment Minister for an action that is likely to have a significant impact on a matter of national environmental significance; these are called "controlled actions". A proposed action is a "controlled action" if:

- is likely to have a significant impact on a matter of national environmental significance,
- is likely to have a significant impact on the environment of Commonwealth land,
- is to be undertaken on Commonwealth land and is likely to have a significant impact on the environment anywhere, and
- is an action to be taken by the Commonwealth that is likely to have a significant impact on the environment anywhere.

Only the Commonwealth can advise definitively whether a proposed action is a controlled action; however, the Department of the Environment and Heritage's *Significant Impact Guidelines: Matters of National Environmental Significance* (DEH May 2006) help proponents to decide whether an action is likely be a controlled action that should be referred to the Minister for assessment and approval.

Assessment under the EPBC Act

The following questions in the *Significant Impact Guidelines* (DEH May 2006) must be addressed when deciding whether or not to refer a proposed action to the Commonwealth Minister for the Environment:

1. Are there any matters of national environmental significance located in the area of the proposed action (noting that 'the area of the proposed action' is broader than the immediate location where the action is undertaken; consider also whether there are any matters of national environmental significance adjacent to or downstream from the immediate location that may potentially be impacted)?

Response: No matters of national environmental significance are known to be located in the area of the proposed action. The Grey-headed Flying-fox, which is a nationally threatened species and some listed migratory species, are the only matters of national environmental significance expected to occur on the subject land; these species only occasionally occur on the site.

2. Considering the proposed action at its broadest scope (that is, considering all stages and components of the action, and all related activities and infrastructure), is there potential for impacts, including indirect impacts, on matters of national environmental significance?

Response: Considering the proposed action at its broadest scope, the proposed development is not likely to have a direct or indirect impact on Grey-headed Flying-foxes or migratory species.

3. Are there any proposed measures to avoid or reduce impacts on matters of national environmental significance (and if so, is the effectiveness of these measures certain enough to reduce the level of impact below the 'significant impact' threshold)?

Response: The proposed development is not likely to have an impact on Grey-headed Flying-foxes, migratory species or on any other matter of national environmental significance.

4. Are any impacts of the proposed action on matters of national environmental significance likely to be significant impacts (important, notable, or of consequence, having regard to their context or intensity)?

Response: The proposed development is not likely to have a significant impact on Grey-headed Flying-foxes, migratory

species or on any other matter of national environmental significance.

An action must be referred to the Commonwealth Minister if the action has, will have, or is likely to have a significant impact on matters of national environmental significance. In addition to setting out "significant impact criteria" for the various matters of national environmental significance, e.g. endangered species, vulnerable species, endangered ecological communities and listed migratory species, the *Guidelines* provide the following important definitions.

"A *significant impact* is an impact which is important, notable, or of consequence, having regard to its context or intensity. Whether or not an action is likely to have a significant impact depends upon the sensitivity, value, and quality of the environment which is impacted, and upon the intensity, duration, magnitude and geographic extent of the impacts. You should consider all of these factors when determining whether an action is likely to have a significant impact on matters of national environmental significance."

"To be *likely*, it is not necessary for a significant impact to have a greater then 50% chance of happening, it is sufficient if a significant impact on the environment is a real or not remote chance or possibility."

"*Population*, in relation to critically endangered, endangered or vulnerable, threatened species, means:

- a geographically distinct regional population, or collection of local populations; or
- a regional population, or collection of local populations occurring within a particular bioregion."

"An *important population* is a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are:

- key source populations either for breeding or dispersal,
- populations that are necessary for maintaining genetic diversity, and/or
- populations that are near the limit of the species' range.

"*Habitat critical to the survival of a species or ecological community*" refers to areas that are necessary:

- for activities such as foraging, breeding, roosting, or dispersal;
- for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators);
- to maintain genetic diversity and long term evolutionary development, or
- for the reintroduction of populations or recovery of the species or ecological community."

Such habitat may be, but is not limited to: habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the Register of Critical Habitat maintained by the Minister under the EPBC Act.

The Grey-headed Flying-fox is the only nationally listed threatened species expected to occur on the site. The impact of the proposals on the Grey-headed Flying-fox has been assessed below by applying the significant impact criteria for vulnerable species. The impact on listed migratory species has also been assessed below, by applying the significant impact criteria for migratory species.

Significant Impact Criteria for Vulnerable Species
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

- lead to a long-term decrease in the size of an important population of a species;
- reduce the area of occupancy of an important population;
- fragment an existing important population into two or more populations;
- adversely affect habitat critical to the survival of a species;
- disrupt the breeding cycle of an important population;
- modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;
- result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat;
- introduce disease that may cause the species to decline; or
- interfere substantially with the recovery of the species.

Impact of the Proposed Action on Grey-headed Flying-foxes
The proposed development is not likely to have a significant impact on Grey-headed Flying-foxes. The site is not known or expected to support an "important population" of Grey-headed Flying-foxes, as defined above, and the development involves clearing only a relatively small area of potential foraging habitat for the species, not breeding habitat. There are vast areas of similar foraging habitat in the local area and throughout the district.

Significant Impact Criteria for Listed Migratory Species
An action is likely to have a significant impact on a migratory species if there is a real chance or possibility that it will:

- substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species;
- result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species; or
- seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.

An area of "important habitat" for a migratory species is:

- habitat utilised by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species; and/or
- habitat that is of critical importance to the species at particular life-cycle stages; and/or
- habitat utilised by a migratory species which is at the limit of the species range; and/or
- habitat within an area where the species is declining.

Listed migratory species cover a broad range of species with different life cycles and population sizes. An "ecologically significant proportion" of a population therefore varies from species to species.

In relation to migratory species, "population" means the entire population or any geographically separate part of the population of any species or lower taxon of wild animals, a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries including Australia.

Impact of the Proposed Development on Listed Migratory Species
The proposed development is not likely to have a significant impact on listed migratory species. There is no "important habitat" on the site for such species and the habitat on of the site is not likely to support an "ecologically important proportion" of a population of such species.

Conclusion, EPBC Act
In our opinion, the proposed development is not likely to have a significant impact on matters of national environmental significance listed under the *Environment Protection and Biodiversity Conservation Act*. Referral to the Commonwealth Minister for the Environment for assessment and approval is therefore not warranted. The proposed development is not likely to constitute a "controlled action" because is it not "likely to have a significant impact on a matter of national environmental significance".

8. Conclusion

The proposed development is not likely to have a significant impact on flora and fauna, including species, populations and communities listed under the NSW *Threatened Species Conservation Act 1995* and the NSW *Fisheries Management Act 1994*. Nor is there likely to be a significant impact under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*; referral to the Minister for assessment and approval are therefore not warranted.

The vegetation delineated as Community 1 on **Figure 2** has some value as habitat for native flora and fauna. Retention of a significant part of this area, as recommended above, along with a commitment to eventually regenerate the area to native rainforest vegetation will be a positive outcome of the development. The area that we have identified as the most appropriate for retention and rehabilitation as rainforest is shown on the development plans.

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Appendix 1
List of Plant Species by Family

Pteridophyta (Ferns)
Adiantaceae
Adiantum formosum — Giant Maidenhair

Sinopteridaceae
Pellaea falcata — Sickle Fern

Angiospermae (Flowering Plants)
Acanthaceae
Pseuderanthemum variabile — Pastel Flower

Amaryllidaceae
**Clivia miniata* — Clivia

Anacardiaceae
**Schinus terebinthifolia* — Broad-leaved Pepper

Apiaceae
Centella asiatica — Indian Pennywort
**Foeniculum vulgare* — Fennell

Apocynaceae
Marsdenia rostrata — Common Milk Vine

Araceae
Gymnostachys anceps — Settler's Flax

Asclepiadaceae
**Araujia hortorum* — Moth Vine
**Gomphocarpus fruticosus* — Narrow-leaved Cotton Bush

Asparagaceae
**Asparagus plumosus* — Climbing Asparagus Fern
**Asparagus aethiopicus* — Asparagus Fern

Asteraceae
Euchiton involucratus — Common Cudweed
Senecio hispidulus — Rough Fireweed
Senecio linearifolius — Fireweed Groundsel
**Ageratina adenophora* — Crofton Weed
**Ageratina riparia* — Mist Flower
**Aster subulatus* — Bushy Starwort
**Baccharis halimifolia* — Groundsel Bush
**Bidens pilosa* — Cobbler's Pegs
**Chrysanthemoides monilifera* — Bitou Bush
**Cirsium vulgare* — Spear Thistle
**Conyza bonariensis* — Tall Fleabane
**Delairea odorata* — Cape Ivy
**Gamochaeta americana* — American Cudweed
**Hypochaeris radicata* — Flatweed
**Senecio madagascariensis* — Fireweed
**Sonchus oleraceus* — Common Sowthistle
**Tagetes minuta* — Stinking Roger
**Taraxacum officinale* — Dandelion
**Xanthium spinosum* — Bathurst Burr

Basellaceae
**Anredera cordifolia* — Madeira Vine

Bignoniaceae
Pandorea pandorana — Wonga Vine

Caprifoliaceae
**Lonicera japonica* — Honeysuckle

Casuarinaceae
**Casuarina cunninghamiana* — River Oak (planted)
**Casuarina glauca* — Swamp Oak (planted)

Celastraceae
Celastrus australis — Staff Vine
Elaeodendron australe — Red Olive-plum

Chenopodiaceae
Einadia hastata — Berry Saltbush
**Chenopodium album* — Fat Hen

Commelinaceae
Commelina cyanea — Wandering Sailor

Convolvulaceae
Convolvulus erubescens — Australian Bindweed
Dichondra repens — Kidney Weed

Crassulaceae
**Crassula arborescens* — Silver Jade Plant

Cyperaceae
Carex appressa — Tall Sedge
Carex longebrachiata — Bergalia Tussock
Cyperus difformis — Dirty Dora
**Cyperus rotundus* — Nutgrass

Euphorbiaceae
Breynia oblongifolia — Coffee Bush

Fabaceae
Caesalpinioideae (subfamily)
**Senna pendula* var. *glabrata* — Winter Senna

Faboideae (subfamily)
Glycine clandestina — Twining Glycine
Glycine tabacina — Glycine
**Erythrina* x *sykesii* — Coral Tree
**Melilotus* sp. — Melilot
**Psoralea pinnata* — Butterfly Bush
**Trifolium repens* — White Clover
**Trifolium pratense* — Red Clover
**Vicia sativa* — Vetch

Mimosoideae (subfamily)
Acacia binervata — Two-veined Hickory
Acacia longifolia — Golden Wattle
Acacia maidenii — Maiden's Wattle
Acacia mearnsii — Black Wattle

Moraceae
**Morus nigra* — Mulberry

Geraniaceae
Geranium solanderi — Native Geranium

Hemerocallidaceae
Geitonoplesium cymosum — Scrambling Lily

Lamiaceae
Clerodendrum tomentosum — Hairy Clerodendrum
Plectranthus parviflorus — Cockspur Flower

Lauraceae	
**Cinnamomum camphora*	Camphor Laurel
Lemnaceae	
Spirodela sp.	Duckweed
Liliaceae	
**Lilium formosanum*	Formosa Lily
Lomandraceae	
Lomandra longifolia	Spiny-headed Mat-rush
Loranthaceae	
Amyema congener	Mistletoe
Malvaceae	
Hibiscus heterophyllus	Native Hibiscus
Hibiscus trionum	Bladder Ketmia
**Modiola caroliniana*	Red-flowered Mallow
**Sida rhombifolia*	Paddy's Lucerne
Menispermaceae	
Legnephora moorei	Round-leaf Vine
Moraceae	
Maclura cochinchinensis	Cockspur Thorn
Trophis scandens	Burny Vine
Streblus brunonianus	Whalebone Tree
**Ficus carica*	Fig
**Ficus hillii*	Hill's Fig
Myrsinaceae	
Myrsine howittiana	Brush Muttonwood
Myrsine variabilis	Muttonwood
Myrtaceae	
Eucalyptus tereticornis	Forest Red Gum
**Eucalyptus paniculata*	Grey Ironbark (planted)
**Eucalyptus* sp.	GumTree (planted)
**Leptospermum petersonii*	Lemon-scented Teatree (planted)
**Melaleuca armillaris*	Bracelet Honey-Myrtle (planted)
**Melaleuca styphelioides*	Prickly-leaved Paperbark
Ochnaceae	
**Ochna serrulata*	Mickey Mouse Plant
Oleaceae	
**Jasminum azoricum*	Jasmine
**Ligustrum lucidum*	Large-leaved Privet
**Ligustrum sinense*	Small-leaved Privet
**Olea europaea* subsp.*cuspidata*	African Olive
Onagraceae	
**Ludwigia peploides*	Water Primrose
Oxalidaceae	
Oxalis sp.	Wood Sorrel
Passifloraceae	
**Passiflora subpeltata*	White Passion-flower
Philesiaceae	
Eustrephus latifolius	Wombat Berry
Phormiaceae	
Dianella longifolia	Smooth Flax-lily
Phytolaccaceae	
**Phytolacca octandra*	Inkweed
Pittosporaceae	
Citriobatus pauciflorus	Orange Thorn
Pittosporum revolutum	Rough-fruit Pittosporum
Pittosporum undulatum	Sweet Pittosporum
Plantaginaceae	
**Plantago lanceolata*	Ribbed Plantain
Plumbaginaceae	
**Plumbago auriculata*	Plumbago
Poaceae	
Cymbopogon refractus	Barbwire Grass
Cynodon dactylon	Couch Grass
Imperata cylindrica	Blady Grass
Microlaena stipoides	Weeping Grass
Oplismenus hirtellus	Basket-grass
**Sporobolus fertilis*	Giant Parramatta Grass
Themeda australis	Kangaroo Grass
**Andropogon virginicus*	Whiskey Grass
**Axonopus fissifolius*	Carpet Grass
**Bromus cartharticus*	Prairie Grass
**Chloris gayana*	Rhodes Grass
**Dactylis glomerata*	Cocksfoot
**Echinochloa crus-galli*	Barnyard Grass
**Ehrharta erecta*	Panic Veldt Grass
**Eleusine indica*	Crowsfoot Grass
**Eragrostis curvula*	African Lovegrass
**Melinis repens*	Red Natal Grass
**Paspalum dilatatum*	Paspalum
**Pennisetum clandestinum*	Kikuyu Grass
**Setaria* sp.	Pigeon Grass
** Sporobolus indicus*	Parramatta Grass
**Stenotaphrum secundatum*	Buffalo Grass
Polygalaceae	
Polygala virgata	Broom Milkwort
Polygonaceae	
Muehlenbeckia gracillima	Slender Lignum
Rumex brownii	Swamp Dock
**Acetosa sagittata*	Rambling Dock
**Rumex crispus*	Curled Dock
Portulacaceae	
Portulaca oleracea	Purslane
Primulaceae	
**Anagallis arvensis*	Blue Pimpernel
Proteaceae	
**Banksia integrifolia*	Coast Banksia (planted)
**Grevillea robusta*	Silky Oak Grevillea
**Hakea salicifolia*	Willow-leaved Hakea
Ranunculaceae	
**Ranunculus repens*	Creeping Buttercup
Rosaceae	
Rubus parvifolius	Native Rasberry
**Cotoneaster* sp.	Cotoneaster
**Pyracantha* sp.	Fire Thorn
**Pyrus communis*	Pear
**Rubus fruticosus* sp. agg.	Blackberry

Rutaceae	
Melicope micrococca	White Euodia
Santalaceae	
Exocarpos cupressiformis	Native Cherry
Sapindaceae	
Guioa semiglauca	Guioa
Smilacaceae	
Smilax australis	Austral Sarsaparilla
Solanaceae	
**Datura stromonium*	Common thornapple
**Solanum americanum*	Glossy Nightshade
**Solanum linnaeanum*	Apple-of-Sodom
**Solanum mauritianum*	Wild Tobacco Bush
Sterculiaceae	
Commersonia fraseri	Brush Kurrajong
Typhaceae	
Typha orientalis	Cumbungi
Ulmaceae	
Trema tomentosa var. *viridis*	Native Peach
Verbenaceae	
**Lantana camara*	Lantana
**Verbena bonariensis*	Purpletop
**Verbena rigida*	Veined Verbena
Violaceae	
Viola hederacea	Native Violet
Vitaceae	
Cayratia clematidea	Slender Grape

Appendix 2
Vegetation Survey Sheet

Survey Sheet - Vegetation Plot		**Plot Size:** 20m x 20m	**Kevin Mills & Associates**
Location: Berkeley Hills		**Plot No.:** B1	**Photo:** No
			Recorder: Kevin Mills
Date: 26/03/20	**Vegetation Community:** Wattle Regrowth		
GPS (centre): 0301780 6183611 (WGS84)		**Soil:**	
Land Tenure: Freehold	**Alt:**	**Geology:**	
Slope: Flat	**Aspect:** North	**Topography:**	
Species Cover: 1:<5% (uncommon); 2:<5% (common), 3:5-25%; 4:25-50%; 5:50-75%; 6:75-100%.			

Natives		**Exotics**	
Acacia maidenii	4	*Lantana camara*	5
Commersonia fraseri	5	*Delairea odorata*	3
Oplismenus hirtellus	3	*Passiflora subpeltata*	2
Trema tomentosa var. *viridis*	1	*Bidens pilosa*	1
Microlaena stipoides	2	*Senna pendula* var. *glabrata*	1
Glycine clandestina	1	*Araujia hortorum*	1
Carex longebrachiata	1	*Andropogon virginicus*	1
Maclura cochinchinensis	2	*Rubus fruticosus* sp. agg.	1
Geitonoplesium cymosum	1	*Solanum americanum*	1
Streblus brunonianus	2	*Sida rhombifolia*	1
Guioa semiglauca	2	*Senecio madagascariensis*	1
Pseuderanthemum variabile	2		
Citriobatus pauciflorus	1		
Marsdenia rostrata	3		
Trophis scandens	1		
Celastrus australis	1		
Clerodendrum tomentosum	1		
Dichondra repens	1		
Pandorea pandorana	1		
Gymnostachys anceps	1		
Commelina cyanea	1		
Melicope micrococca	1		
Breynia oblongifolia	1		
Einadia hastata	1		

Appendix 3
Control Classes for Noxious Weed Species

Weed control classes

(1) The following weed control classes may be applied to a plant by a weed control order:
  (a) Class 1, State Prohibited Weeds,
  (b) Class 2, Regionally Prohibited Weeds,
  (c) Class 3, Regionally Controlled Weeds,
  (d) Class 4, Locally Controlled Weeds,
  (e) Class 5, Restricted Plants.

(2) The characteristics of each class are as follows:
  (a) Class 1 noxious weeds are plants that pose a potentially serious threat to primary production or the environment and are not present in the State or are present only to a limited extent.
  (b) Class 2 noxious weeds are plants that pose a potentially serious threat to primary production or the environment of a region to which the order applies and are not present in the region or are present only to a limited extent.
  (c) Class 3 noxious weeds are plants that pose a serious threat to primary production or the environment of an area to which the order applies, are not widely distributed in the area and are likely to spread in the area or to another area.
  (d) Class 4 noxious weeds are plants that pose a threat to primary production, the environment or human health, are widely distributed in an area to which the order applies and are likely to spread in the area or to another area.
  (e) Class 5 noxious weeds are plants that are likely, by their sale or the sale of their seeds or movement within the State or an area of the State, to spread in the State or outside the State.

(3) A noxious weed that is classified as a Class 1, 2 or 5 noxious weed is referred to in this Act as a *notifiable weed*.

(4) Legal Requirements
Class 1. The plant must be eradicated from the land and the land must be kept free of the plant.
Class 2. The plant must be eradicated from the land and the land must be kept free of the plant.
Class 3. The plant must be fully and continuously suppressed and destroyed.
Class 4. The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority.
Class 4*. The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority an the plant may not be sold, propagated or knowingly distributed.
Class 5. The requirements in the *Noxious Weeds Act* for a notifiable weed must be complied with.

Appendix 4
Final Determination for Illawarra Subtropical Rainforest

Threatened Species Conservation Act 1995
NSW Scientific Committee

The Scientific Committee, established by the Threatened Species Conservation Act, has made a Final Determination to list the Illawarra Subtropical Rainforest in the Sydney Basin Bioregion as an ENDANGERED ECOLOGICAL COMMUNITY in Part 3 of Schedule 1 of the Act. The listing of endangered ecological communities is provided for by Part 2 of the Act.
The Scientific Committee has found that:

1. Illawarra Subtropical Rainforest is the name given to the ecological community on high nutrient soils in the Illawarra area within the Sydney Basin Bioregion and is characterised by the following assemblage of species.

Adiantum formosum
Alphitonia excelsa
Brachychiton acerifolius
Cayratia clematidea
Cissus antarctica
Dendrocnide excelsa
Diploglottis australis
Ehretia acuminata
Guioa semiglauca
Legnephora moorei
Malaisia scandens
Piper novaehollandiae
Podocarpus elatus
Streblus brunonianus
Wilkiea huegliana
Alectryon subcinereus
Baloghia inophylla
Cassine australis
Celastrus australis
Citriobatus pauciflorus
Diospyros pentamera
Doodia aspera
Ficus spp.
Hibiscus heterophyllus
Maclura cochinchinensis
Pennantia cunninghamii
Planchonella australis
Scolopia braunii
Toona ciliata

2. The total species list of the community is considerably larger than that given above, with many species present in only one or two sites or in very small quantity. The species composition of a site will be influenced by the size of the site, recent rainfall or drought condition and by its disturbance (including fire) history. The number of species, and the above ground relative abundance of species will change with time since fire, and may also change in response to changes in fire regime (including changes in fire frequency). At any one time, above ground individuals of some species may be absent, but the species may be represented below ground in the soil seed banks or as dormant structures such as bulbs, corms, rhizomes, rootstocks or lignotubers. The list of species given above is of vascular plant species, the community also includes micro-organisms, fungi, cryptogamic plants and a diverse fauna, both vertebrate and invertebrate. These components of the community are poorly documented.

3. Illawarra Subtropical Rainforest has been recorded from the local government areas of Wollongong City, Shellharbour City, Shoalhaven City and Kiama Municipality (within the Sydney Basin Bioregion) and may occur elsewhere in the Bioregion.

4. Illawarra Subtropical Rainforest includes Subtropical Rainforest (Type 1), Moist Subtropical Rainforest (Type 2) and Dry Subtropical Rainforest (Type 3) of Mills, K & Jakeman, J. (1995 *Rainforests of the Illawarra District* (Coachwood Publishing, Jamberoo). (The classification of Mills & Jakeman was developed specifically for the Illawarra - in a broader context much of the community recognised here would fall within dry forest (suballiance 23) in Floyd, A. G. (1990). *Australian rainforests in New South Wales* (Vols 1 and 2, Surrey Beatty and Sons, Chipping Norton). Although rainforest canopies are generally closed, in highly disturbed stands the canopy may be irregular and open. Canopy height varies considerably, and structurally some stands are scrub.

5. Characteristic tree species in the Illawarra Subtropical Rainforest are *Baloghia inophylla, Brachychiton acerifolius, Dendrocnide excelsa, Diploglottis australis, Ficus* spp., *Pennantia cunninghamii* and *Toona ciliata.* Stands may have species of *Eucalyptus*, *Syncarpia* and *Acacia* as emergents or incorporated into the dense canopy.

6. Illawarra Subtropical Rainforest occurred mainly on the coastal Permian volcanics, but can occur on a range of geological substrates, mainly between Albion Park and Gerringong (termed the Illawarra Brush by Mills and Jakeman 1995) and north of Lake Illawarra on the Berkeley Hills (termed the Berkeley Brush by Mills & Jakeman 1995). The Illawarra Brush and Berkeley Brush originally covered about 13 600 ha and made up about 60% of the rainforest of the Illawarra area. Outlying occurrences of Illawarra Subtropical Rainforest also occur south to the Shoalhaven River and westwards into Kangaroo Valley, where areas of Permian volcanic soils occur. The community generally occurs on the coastal plain and escarpment foothills, rarely extending onto the upper escarpment slopes.

7. Illawarra Subtropical Rainforest provides habitat for the tree *Daphnandra* sp. C Illawarra, and in some drier stands the endangered vine *Cynanchum elegans*. The shrub *Zieria granulata* may grow near stands of Illawarra Subtropical Rainforest and in regrowth stands (K. Mills pers. comm.).

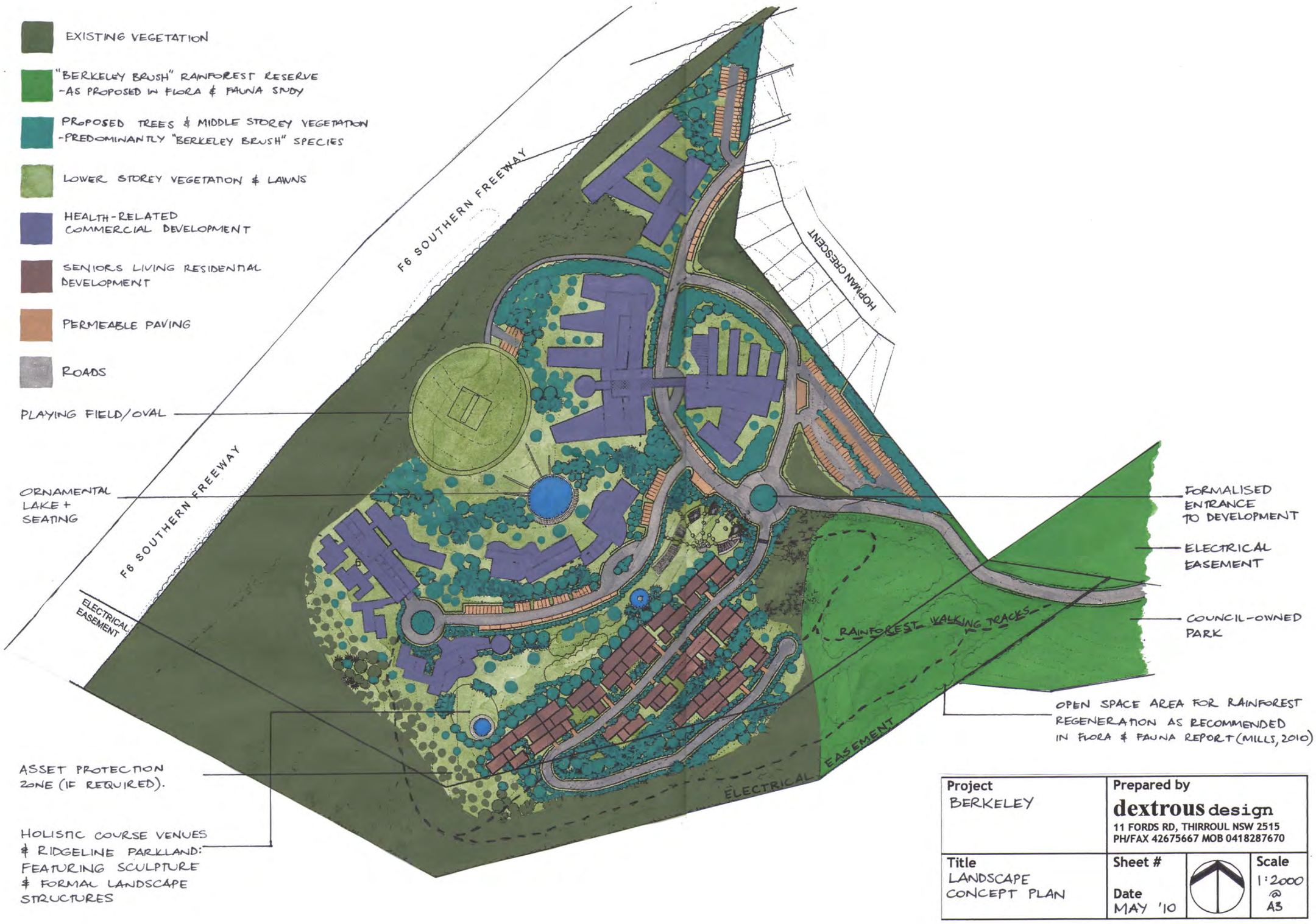
8. Small areas of Illawarra Subtropical Rainforest occur in Budderoo National Park, Macquarie Pass National Park, Morton National Park, Cambewarra Range Nature Reserve, Devils Glen Nature Reserve and Rodway Nature Reserve.

9. Large areas of Illawarra Subtropical Rainforest have been cleared for agriculture. Only about 3400 ha remains with about 13% of this (440 ha) in reserved areas (Mills & Jakeman 1995, L. Mitchell pers. comm). Illawarra Subtropical Rainforest occurs mainly on private land and is inadequately protected. Compared with warm temperate rainforest it is under-represented in conservation reserves.

10. Remnants are small and fragmented and their long term viability is threatened. Weed invasion is a major threat and invasive exotic species include *Lantana camara, Araujia sericiflera, Ageratina riparia, Ageratina adenophora, Delairea odorata, Senna pendula* var *glabra, Senna septemtrionalis, Tradescantia fluminensis, Cinnamomum camphora, Olea europea* subsp. *africana, Hedychium gardnerianum, Ligustrum lucidum, Ligustrum sinense, Passiflora subpeltata* and *Solanum mauritianum*. Other threats include further clearing, quarrying, grazing, inappropriate fire regimes, rubbish dumping and hobby farm developments.

11. In view of the above the Scientific Committee is of the opinion that Illawarra Subtropical Rainforest in the Sydney Basin Bioregion is likely to become extinct in nature in NSW unless the circumstances and factors threatening its survival or evolutionary development cease to operate.

Appendix 6 – Landscape



Project	Prepared by		
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Title LANDSCAPE CONCEPT PLAN	Sheet # Date MAY '10		Scale 1:2000 @ A3

Appendix 6 – Landscape

Eco Landscape Concept Overview

The proposed development, on one of the locally iconic ancient volcanic Berkeley Hills, will take full advantage of its uniquely scenic location. The site overlooks Lake Illawarra to the south and east, has eastern views beyond Nan Tien Temple to the ocean, and to the north and west, the dramatic Illawarra Escarpment and Mt Kembla dominate the skyline.

The development will showcase eco-landscape design; that is, ecologically-friendly design soloutions which meet the ecological and aesthetic objectives of Zone E3 Environmental Management. Incorporation into the design of Flora and Fauna Consultant Kevin Mill's proposal to retain the north-eastern corner of the property as an open space area where rainforest regeneration will be undertaken, along with connection and amelioration of other biodiversity areas identified by Wollongong City Council, will both enhance ecological values of the site as well as minimising its visual impact from many locations surrounding the site.

The site will be approximately 70% open space, with buildings and infrastructure 'engraved' into the landscape, rather than dominating it. Where development would otherwise not be screened by the topography of the site, existing freeway sound walls, and existing areas of dense vegetation, indigenous vegetation will be increased to screen visible built forms from surrounding areas.

The landscape concept for the site is designed to provide active and passive recreational opportunities both for the development's residents and clients, as well as for the wider community. Readily accessible open space is a key theme, with the restorative qualities of the natural environment perfectly complementing the holistic health practices to be undertaken on site.

Water-Sensitive Urban Design (WSUD) sets the context for, and content of, much of the landscape design for this development. Design solutions that integrate best practice sustainable urban water management within the urban form will be incorporated into the detailed design of the proposed development.

Fig 1. The site

Landscape features

- Formal design treatment of roundabout and surrounds conveys a sense of "arrival" to development entrance
- Sculptural structures and formal water feature on hilltop create key focal spaces
- Open parkland on the lightly treed hilltop provides scenic passive recreation as well as venues for holistic courses
- Strategic tree planting on hilltop creates visual corridors to frame and capture both site features and surrounding landform features- lake, ocean, escarpment
- Residential courtyards provide intimate spaces for residents
- Centrally-located ornamental lake and playing field surrounded by large spreading shade trees provide passive and active recreation opportunities for both visitors and residents
- Feature plantings of bush tucker and bush medicine species
- Herb and vegetable garden for nursing home kitchen- also provides school students with horticultural and culinary educational opportunities
- Walking tracks through natural bushland on the eastern and southern slopes give site access to visitors and residents alike
- Additional dense forest planting will screen and soften both the visual and sound impact both from within and outside the development

WSUD Landscape features

WSUD techniques and technologies such as:

- Grass or vegetated swales (as an alternative to conventional kerb and guttering)
- Bioretention systems e.g. raingardens
- Constructed wetlands
- Rainwater tank
- Porous paving: on carparks, road edges, cycleways, driveways and footpaths
- Infiltration systems
- Excess harvested stormwater to irrigate gardens and recreational areas

Fig. 3 Bioretention planting

-will manage stormwater flow and quality so that there will be no significant increase in the volume of stormwater discharging into adjacent streams, nor will there be a reduction in water quality in these systems as a result of this proposal.

Fig. 4 Swale

Streetscape and built form

Planting strategies:

- Planting of indigenous deciduous tree species between residential blocks to regulate solar access
- Trees and shrubs to direct cooling breezes into buildings, along with significant plantings to buffer higher density development, and to create windbreaks in more exposed areas.
- Significant plantings in deep soil zones between buildings to provide for effective visual separation, as well as framing and softening the scale of the buildings. In particular, the residential area near the ridge line to be heavily planted on all sides, to minimise its impact on the view of the site from surrounding areas.
- Indigenous tree-lined avenues to enhance movement around the site while also providing shaded areas outside buildings for passive recreation, hence reducing ambient temperatures
- Grass or vegetated swales and raingardens on roadsides and around hardscape
- Planting of indigenous evergreen tree species around and within car parks to provide shade and reduce ambient temperatures.

Fig 5. Constructed wetland and forest

Plant species

The indigenous plant species of this site are associated with the endangered Illawarra Dry Subtropical Rainforest complex, also known as "Berkeley Brush".

To encourage the regeneration of, and education about the Berkeley Brush, preference will be given to these species. In accordance with Kevin Mills' Flora and Fauna Study recommendation, plantings of grasses, ferns, shrubs, trees and riparian plants in public areas on the site will use, wherever possible, species of local provenance. (See species list below). .Along with measures to protect remnant bushland on the site, conservation of Berkeley Brush will assist Wollongong City Council to achieve its LGA-wide Biodiversity and Native Vegetation strategies.

From Kevin Mills' Flora and Fauna report: "The land is on the western end of the Berkeley Hills, a low range of hills that support scattered patches of remnant native vegetation. Although not contiguous, these patches can act as 'stepping stones' for fauna movement. The regeneration of rainforest in the area identified in this study will assist fauna to move through the area."

"The Grey-headed Flying-fox, which is a nationally threatened species and some listed migratory species, are the only matters of national environmental significance expected to occur on the subject land; these species only occasionally occur on the site."

The proposed increase in area, and amelioration of indigenous vegetation associated with this development will provide greater foraging and habitat opportunities for the above-mentioned nationally threatened species.

Built area to include tree species such as:

Illawarra Flame (*Brachychiton acerifolius*)

Red Cedar (*Toona ciliata*)

White-Topped Box (*Eucalyptus quadrangulata*

Plum Pine (*Podocarpus elatus*)

Forest Red Gum (*Eucalyptus tereticornis*)

White Cedar (*Melia azedarach*)

Moreton Bay Fig (*Ficus macrophylla*)

Brush Cherry (*Syzigium australe*)

Port Jackson Fig (*Ficus rubignosa*)

Small-Leaved Lillypilly (*Acmena smithii*)

Pink-tipped Bottlebrush (*Callistemon salignus*)

Blackwood (*Acacia melanoxylon*)

Grey Myrtle (*Backhousia citriodora*)

Two-Veined Hickory (*Acacia binervata)*

Prickly-leaved Paperbark *(Melaleuca styphelioides)*

and under-storey species such as:

Giant Maidenhair *Adiantum formosum*

Scrambling Lily *Geitonoplesium cymosum*

Sickle Fern *Pellaea falcata*

Cockspur Flower *Plectranthus parviflorus*

Indian Pennywort *Centella asiatica*

Spiny-headed Mat-rush *Lomandra*

Wonga Wonga Vine *Pandorea pandorana*

Smooth Flax-lily *Dianella longifolia*

Berry Saltbush *Einadia hastata*

Orange Thorn *Citriobatus pauciflorus*

Wandering Sailor *Commelina cyanea*

Weeping Grass *Microlaena stipoides*

Australian Bindweed *Convolvulus erubescens*

Basket-grass *Oplismenus hirtellus*

Kidney Weed *Dichondra repens*

Kangaroo Grass *Themeda australis*

Tall Sedge *Carex appressa*

Slender Lignum *Muehlenbeckia gracillima*

Twining Glycine *Glycine clandestina*

Native Raspberry *Rubus parvifolius*

Glycine *Glycine tabacina*

Austral Sarsaparilla *Smilax australis*

Native Geranium *Geranium solanderi*

Native Violet *Viola hederacea*

Staging

The implementation of the landscape plan will be staged as follows:

Stage 1: Landscaping and tree-planting around carpark and primary healthcare centre centre; boundary screening; major tree planting for Precinct 3

Stage 2: Bush regeneration of Rainforest reserve in south-east corner; street tree planting; screening and landscaping of residences, including courtyards

Stage 3: Tree planting and soft landscaping; holistic course construction

Stage 4: Landscaping and tree-planting around carpark and hospital; boundary screening of entrance road; wetland rehabilitation

Stage 5: Landscaping and tree-planting around short-term accommodation facility, bush regeneration

Stage 6: Landscaping and tree-planting around residential care facility and hostel, bush regeneration

Stage 7: Landscaping and tree-planting around nurses' quarters and library; lake and amphitheatre

Stage 8: Oval; landscaping and tree-planting around secondary school, carpark and oval boundary screening

Weed reduction and bush regeneration will be undertaken on a catchment-by-catchment basis, coinciding with installation of infrastructure in each catchment.

Fiona Armstrong

Dextrous Design

May 2010

To Retain and proliferate existing natural systems, vegetation and natural features.

To Creatively Reuse waste by-products, salvaged plants and construction materials.

To Recycle our waste materials and promote the use of products created from recycled waste.

Appendix 7 – The Proponent

One-stop care a reality

A GP's ambitious health-care dream comes to fruition this week, writes **JULIAN MURPHY**

RECEIVING proper health care can be a time consuming and tiring process.

Depending on their ailment, a patient may find themselves trekking from general practitioner to out-of-town specialist and back again.

But such frustrating experiences could become a thing of the past, with more integrated health service centres opening each year.

One of these facilities, the Centre Health Complex in Shellharbour, will be officially opened this week as part of the region's Innovation Showcase.

When it is fully operational, the centre will provide comprehensive primary health care under one roof.

Combining family health care with preventive and specialist care, the complex offers services ranging from dental care and optometry to physiotherapy.

The complex is a one-stop centre for any health need short of a hospital visit.

Also included on site are associated services such as a convenience store, chemist, coffee shop, post office and a financial and legal advice centre.

The ambitious project is the brainchild of general practitioner Dr Mohamad Rashid.

The Indian-born doctor has harboured a dream to develop a medical complex offering the full range of health services since he arrived in the Illawarra in 1973.

"For a long time I have thought how cost-efficient and effective it would be to have everything from general practitioners to rehabilitation to specialist doctors to alternative medicine to pharmaceuticals, all grouped together," he said.

"Single practices force people to go from place to place, and sometimes they even have to travel up to Sydney or further."

Dr Rashid, who has run practices in Unanderra and Shellharbour, began researching the idea in the early 1990s.

"I and some other doctors travelled to many parts of the world and looked at the most effective ways of providing community-based, primary health care.

"We think we have combined the best of many of these elements in developing the centre."

Information technology will play a vital role at the new facility.

Integrated approach: Illawarra GP Dr Mohamad Rashid will fulfil a dream when his one-stop health care centre opens in Shellharbour this week. The Centre Health Complex will combine family health care with preventive and specialist care. Picture: DAVE TEASE

Not only will every arm of the centre be connected to a network system, the complex will be linked to other services throughout the country and the rest of the world.

"We are very keen to establish a global network of health professionals who can help each other and exchange advice," Dr Rashid said.

"We will also be encouraging doctors from abroad to visit the centre, which will benefit travel and tourism."

The facility has already developed strong links in the Indian subcontinent and is hoping to expand into South-East Asia.

Closer to home, the centre will be collaborating with the new Graduate School of Medicine at the University of Wollongong.

Dr Rashid said the long-term plan was to use adjoining land to build the world's first high-tech health care city to provide all services.

Capital for the project has come from local and overseas investors.

Health help: Floorplan of Shellharbour's Centre Health Complex.

Range of services

- **Diagnostic**
  - pathology, radiology
  - nuclear, neurology
  - cardiology, respiratory
  - gastroenterology
- **Rehabilitation**
  - physiotherapy
  - occupational therapy
  - hydrotherapy
  - exercise therapy
  - psychological
  - corporate
- **Aged Care/Disabled**
  - information and services
  - technical aids
- **Associated Services**
  - post office, convenience store, cafe, travel, financial and legal services

Appendix 7 – The Proponent

Dr. Mohamad Khalid Rashid

CAREER OBJECTIVES:

To build a successful Intergrated Health Care for the benefit of the community that has all the primary medical and health care needs of the individuals, all under the one roof and commercializes the product to achieve economic growth.

To project the image of Australia, particularly the Illawarra Region on an international level, as a centre of Intergrated Healthcare and a source of advance Medical Technology.

EDUCATIONAL BACKGROUND:

TERTIAL QUALIFICATION

1969.	M.B.B.S – Delhi University
1971.	Diploma in Chest Diseases – Delhi University
1972.	M.D. Thesis, Epilepsy
2009.	Clinical Lecturer, Graduate School of Medicine – University of Wollongong
2010.	Clinical Lecturer, Graduate School of Medicine – University of Wollongong

EXPERIENCE & ACHEIVEMENTS

1970-1971	Medical Research Officer, Indian Council Medical Research
1972-1973	Registrar in Neurology, G.B. Pant Hospital, New Delhi
1973-1974	Senior Resident, Wollongong Hospital
1975-1976	Registrar, Wollongong Hospital
1976-2010	General Practice, Berkeley, Unanderra & Shellharbour
1999.	Development of Centre Health Complex, Barrack Heights
2000.	Development of Shellharbour Health Complex
2006.	Australian Innovation Participant
2008.	Australian Innovation Participant
2009 & 2010	Industry Partner for Masters Degree in Healthcare Informatics with University of Wollongong
2009 & 2010	Industry Partner for PHd Degree in Healthcare Informatics with University of Wollongong

INTERESTS:

INTERGRATED HEALTH CARE

Rehabilitation

Innovative Primary Medical Care

Extensive overseas Travel

NEWSPAPER ARTICLES

Multi-million dollar medical centre a go

WITHIN three years a $50 million primary level care medical complex will be operating at Barrack Heights after getting the go ahead from Shellharbour City Council.

The Kafico Medical Complex to be built at Captain Cook Drive was approved at last week's ordinary meeting.

The centre, developed by general practitioner Dr Mohamad Khalid Rashid, will be situated on the corner of Captain Cook Drive and Phillips and Gipps Crescents, next to Shellharbour Private Hospital and across the road from an ambulance station.

The location proved ideal for Dr Rashid who has been planning the dream medical complex for years.

Mr Rashid, who operates a joint practice with his wife Anjum at Shellharbour Square and Unanderra, was extremely happy with Council's approval.

"I was very happy when it came through because everyone liked the idea and its benefits."

Originally from India and with a tradition of doctors in the family, Dr Rashid told the *Lake Times* the development was a dream come true which he had when he first arrived in the Illawarra in 1973.

"This is my dream, I have wanted to do something unique and provide the best health services to the local community and for people overseas.

"It will put the name of Shellharbour around the world."

The centre will be home to about 12 general practitioners, including the Rashids.

It will feature a specialist 24-hour medical centre, 39-room motel, conference facility, child care centre, hydrotherapy pool and rehabilitation centre and retail shops.

Services from a dentist, dietitian, pathology, optometrist, audiologist, podiatrist, chiropractor, cosmetic surgery, x-ray, ultra sound and CT scan providers will also be based there.

The first stage of the project begins next month, creating about 50 jobs.

Construction will begin on the 16 medical consulting rooms, rehabilitation centre with physiotherapy facilities and hydrotherapy pool.

The initial work, expected to be completed by December, also includes extending the existing

Continued Page 2

• *Dr Mohamad Rashid is thrilled his dream multi-million dollar medical centre will become a reality. He is pictured on the site of the Barrack Heights Market Shopping Centre which will soon be transformed into a medical complex.*

ShellHarbourFest 2000 a WOW

• *Story & pictures see page 18.*

More for those with less

By **Simon Forbes**

THE Sixth Annual Illawarra Innovation Showcase served as the perfect backdrop for the official opening of Stage 1 of the Centre Health Complex at Barrack Heights, by Member for the Illawarra Marianne Saliba on Friday. The Centre Health Complex, which is the brainchild of local GP Dr. Mohamad Rashid, is an integrated Primary Health Care and Health Informatics Facility, designed to provide comprehensive healthcare services in a 'one-stop-shop' including primary health care, radiography, nuclear medicine, pathology, dental, optometry, laser clinic, sleep clinic, cosmetic health services, legal and financial health and pharmedics. There is even a coffee shop, a post office, a supermarket, a travel agent and a bottle shop as part of the Centre's facilities. Dr. Rashid said the Centre boasts a highly sophisticated technology core.

"We use technology to provide virtual clinics, remote diagnostics and teleconferencing facilities to local, regional and global remote communities where access to high quality medical services and/or professional advice for medical practitioners has previously been unavailable," Dr. Rashid said.

"We are attempting to overcome the Inverse Law, which dictates that those who need the most get the least.

"Our aim has been to create a comprehensive health care delivery model which can be implemented in third world countries."

It has taken Dr Rashid more than 15 years to bring the Centre to fruition.

Michelle Greig, Chair of the Illawarra Innovation Showcase Steering Committee commended Dr Rashid on having the passion to pursue his vision and bring it to reality.

"Dr Rashid has spent years involved in extensive research, studying other health care models in Australia and overseas, collaborating with the World Health Organisation, encouraging the participation of investors and then building the Centre, integrating technology and making it operational," she said.

"The Illawarra has long been forging a reputation for innovation in many fields and it is exciting to see integrated healthcare delivery added to that list."

The benefits of the Centre also spread into the wider community according Mayor of Shellharbour, Cr David Hamilton.

• Dr Mohamad Rashid with Member for Illawarra, Marianne Saliba, Shellharbour Mayor, David Hamilton, Deputy Mayor, Michelle Greig – and fellow medical colleague, Dr Rashid.

"The GP and specialist services available at the centre will help reduce the burden on hospital emergency departments for patients with problems not requiring hospitalisation," said Cr. Hamilton.

"This will become even more evident when the Centre becomes a 24/7 operation in two or three years time." Those present at the launch were treated to a demonstration of some of the Centre's capabilities by way of a teleconference with GPs in rural NSW and overseas. Ms Saliba said the new complex was the first stage in Centre Health Australia's development of Shellharbour as the world's first hi-tech primary healthcare city.

"When Stage 2 of the complex is complete, the Informatics Centre will include a virtual clinic capable of providing training for GPs from around the world, bringing enormous community benefit to some of the world's poorest areas and a unique service to GPs not otherwise able to access this training.

"In addition, the Centre will help deliver economic and tourism benefits to Shellharbour and the rest of the Illawarra." The Centre Health Complex is located at 9-25 Captain cook Drive, Barrack Heights. For information about services and hours of operation, call 4295 99.

NEWSPAPER ARTICLES

NEWSPAPER ARTICLES

INNOVATION SHOWCASE INNOVATION SHOWCASE

GP reveals revolutionary health vision

By GREG ELLIS

MEDICINE has run in the family for more than a century for Mohamad Rashid who arrived in Australia from Delhi in 1973 to take up a position at Wollongong Hospital.

When he arrived, Dr Rashid had a dream to change the delivery of primary health care into an integrated facility more accessible to the community.

He returned to India in 1974 and married Anjum who came back to Australia with him and took a position at the hospital.

Dr Rashid moved into general practice at Unanderra in 1975 and later opened another practice at Shellharbour, the first in Shellharbour Square.

The couple's two sons, who were born at Wollongong Hospital, have also become doctors.

One has secured a fellowship in Vancouver and the other, studying for a PhD in cardiology, is working at Royal Prince Alfred Hospital in Sydney.

In the boardroom at Dr Mohamad Rashid's Shellharbour Healthcare City complex at Barrack Heights you will notice historical books including one by his great-grandfather Abdul Ghani in 1898.

Among the first qualified doctors in India, his medical progeny span five generations.

Despite that heritage, Dr Rashid said his heart was in the Illawarra. He had long planned two revolutionary projects in Shellharbour and Wollongong.

On Wednesday he will launch stages two and three of the Shellharbour Healthcare City health complex which could be completed within two years.

But he will also present some insights into his innovative Wollongong Lifestyle City concept, which he could begin in the next two to three years.

Plans are yet to be finalised and a development application lodged.

"I've been wanting to do something for Wollongong," he said. "This is the thing I have been planning for years and years."

The Wollongong development will build on the plans of Shellharbour Healthcare City which opened its first stageduring the Innovation Showcase in 2006.

It includes family health care, preventive health care, GPs, dentists, chemists, optometrists, specialist health care, cosmetic and complementary health care.

The whole centre is adjoined by informatics, education and training facilities.

There is even a computer bank where people can make their own appointments. And there's pathology, a post office, convenience store and coffee shop.

The centre regularly attracts medical students from the University of Wollongong and groups of high school students interested in how the health-care industry works.

The second stage will include aged care, child care and community health facilities.

The third stage, to be built around the same time next to Shellharbour Private Hospital, will essentially be a rehabilitation facility.

Its focus will be on regenerative medicine.

Dr Rashid said the only facility in the world like it was in Germany.

"We are talking to some neurosurgeons and cardiologists and there is nothing like it in the Illawarra at the moment," he said.

The fourth stage will be a conferencing and function facility above the existing car park between stages one and two.

Every time he goes to the council with his vision he talks 10 years ahead and the goal for stage four is a hospital where elderly residents can constantly be monitored to aid ongoing research.

Dr Rashid said the first stage was always the most difficult because that required bringing everything together.

Before planning the Shellharbour facility Dr Rashid spent 15 years hopscotching around the world looking for best practices in primary health.

"Primary health is essentially anything before hospital," he said. "It is the backbone of healthcare."

Around the world big new hospitals were being erected but Dr Rashid said primary health was disorganised. He planned to change all that in the Illawarra and create one of the better primary health systems in the world.

When Dr Rashid went through all the research one thing stood out - people who needed the most tended to get the least.

And the best way to overcome that was integrating everything.

His innovative integrated healthcare concept for Shellharbour Healthcare City combined a range of products and services.

There are products such as family health care, preventive health care, specialist health care and cosmetic and complimentary health care. And there are services such as diagnostic services, relation services, aged care and disability services.

Dr Rashid said all could be joined by informatics linking integration with information.

"When it is all joined together it becomes global community health," he said.

Doctors around the world could visit Australia to see how integrated primary health-care worked and share information with a Wollongong doctor online when they returned home.

Dr Rashid plans to take what he's achieving at Shellharbour to a whole new level, with what he says is an holistic high-tech leisure and lifestyle city, on a site near the Nan Tien Temple at Unanderra.

It would bring a new era in health-care travel and tourism to the Illawarra. The Wollongong and Shellharbour facilities would be linked by comprehensive Informatics departments.

And Dr Rashid envisioned large numbers of visiting medical practitioners.

He said many in Australia just could not appreciate the sheer numbers of doctors in a country such as India who would be interested in coming to expand their knowledge.

The Wollongong Lifestyle City complex will have a community health centre with an integrated community primary health centre, an aged-care facility with high-tech elderly living (a hospital without walls) and a nursing home/hostel, leisure and recreational facility with large hotel, large conferencing facilities including two 300-seat auditoriums and teaching facilities, pool and tennis courts, an amphitheatre, an eco-friendly senior living facility with clean, green residential units. The centre will cater for holistic eco-living, with an art and religion integrated gallery, renewable energy/fuel transport and an holistic course similar to a golf course, but with fairways for yoga, reiki, laughter therapy, meditation and pranic healing.

There would also be an eco-meditation hut, herb garden, cycleway, children's playground and community facilities.

"What I want to do is put Wollongong on the map of the world," Dr Rashid said.

The Wollongong Lifestyle City will be built in three parts.

Stage one is an integrated educational, recreational and lifestyle community with a cultural and environmental area.

"Health and tourism will be the beneficiaries that will help economic development of the Illawarra ...," he said.

Dr Rashid believed it would attract medical, nursing, tourism and hospitality workers from around Australia, and the world, who were interested in practical training to go with their studies.

The community area will feature a futuristic giant flower like a Clean Green Monument of Wollongong (see cover) to demonstrate links between the environment and lifestyle.

The community health facility will connect primary care with aged care but in separate buildings.

And the cultural area includes the art gallery and amphitheatre.

Many of the facilities have views of the Illawarra Escarpment and the Lake Illawarra.

"Why are we doing it? For a better today and a brighter tomorrow," Dr Rashid said.

The overall aim is to give people good health care today but a glimpse of what the lifestyle of tomorrow should be.

And that involved bringing the community together and not about tucking elderly people away out of sight.

"From child care to nursing care there is something there for everybody," Dr Rashid said.

He also wants to use the centre to create connections for Wollongong people living around the world.

Quality lifestyle: (above left) Part of Wollongong Lifestyle City's independent senior living village. Above right: Wollongong Lifestyle City's Integrated Leisure and Recreation Centre with hotel and conferencing facilities in the foreground, senior living village to the left, Integrated Community and Primary Health Centre back left and giant flowerlike Clean Green Monument at the rear and sections of the Holistic Course and Community facility on the right.

advertiser news

A one-stop centre for health care

By NATHAN SIMPSON

A centre which provides comprehensive health care services under one roof has been developed by Illawarra GP Dr Mohamad Rashid at Barrack Heights.

The Centre Health Complex is an integrated primary health care and health informatics facility and is the brainchild of Dr Rashid.

Located along Captain Cook Dr, it was officially opened last week as part of the Illawarra Innovation Showcase.

Dr Rashid said he had blended health care models examined in Australia and overseas with research by the World Health Organisation to develop the Centre Health Complex.

''The aim of the complex is to provide comprehensive health care services under one roof,'' he said.

''This includes primary health care, diagnostics, allied health, health care informatics, virtual clinics, and local, regional and global community health care with access to GPs, specialists and remote diagnostic services.

''The services will alleviate the burden on hospital emergency departments for less urgent patients with less complex health problems, particularly once the complex becomes a 24-hour operation in two to three years time.

''The complex will contribute to decreasing hospital waiting times and to the provision of community based expert primary medical care for patients.

''The centre uses technology to provide comprehensive health care via teleconferencing to rural and remote communities where access to high quality medical services or professional advice for medical practitioners has previously been unavailable.

''We are attempting to overcome the inverse law which dictates that those who need the most get the least.'

Dr Rashid said regular visits by overseas doctors, for integrated primary health training at the centre, would also bring tourism to Shellharbour.

Illawarra GP Dr Mohamad Rashid with some of the equipment in his newly-opened Centre Health Complex at Barrack Heights.
Picture: SYLVIA LIBER

NEWSPAPER ARTICLES

One-stop medical shop on the way

By NATHAN SIMPSON

A $50 million one-stop medical complex offering a full range of health services under one roof is now a reality following the start of stage one of the Kafico Medical Complex at Barrack Heights last month.

The complex, located next door to Shellharbour Private Hospital, is set to house all health services, from general practitioners to rehabilitation, to specialist doctors and alternative medicines and pharmaceuticals.

Shellharbour Private Hospital director of nursing manager Jo McGoldrick said the new centre would become a welcome addition to the hospital which already specialised in medical and surgical procedures.

Stage one, scheduled for completion by December, will consist of primary health care, including 10 consultation rooms, a rehabilitation centre and a therapy pool.

Stage two will come complete with a specialist centre and a childcare facility, while the third and final stage will involve construction of a conference centre and motel for visiting delegates and patients' families.

Capital for the project has been raised through both local and overseas investors.

The complex has always been a dream of Illawarra general practitioner Dr Mohamad Rashid since he arrived from India in 1973. He said he planned to offer positions at the centre to local GPs who would enjoy the improved conditions.

Shellharbour Private Hospital director of nursing manager Jo McGoldrick attends to patient Patricia Dingwell of Mt Ousley.

"To give quality medical care you need to have an integrated practice," Dr Rashid said.

"Single practices will not last. People don't have time to go from place to place."

In the meantime, patients would continue to receive the best possible care at Shellharbour Private Hospital, according to Mrs McGoldrick.

"Our aim is to provide quality health care services which meet individual needs and ensures optimum outcomes for each of our patients," she said.

The hospital has provided quality health care to its patients for more than 30 years. It is a fully accredited facility which provides services such as operating theatres, recovery unit, surgical services, medical services, discharge planning, radiology, pathology and physiotherapy.

Shellharbour Private Hospital and the soon-to-be-constructed Kafico Medical Complex are both located at Captain Cook Dr, Barrack Heights.

mercury news

Health city in second stage

By GREG ELLIS

THE second and third stages of the Shellharbour Healthcare City development at Barrack Heights were launched this week as part of the 2008 Illawarra Innovation Showcase.

Dr Mohamad Rashid said work on the next two stages of his visionary five-stage development was expected to start soon and should be completed within two years.

Stage one, now known as the Centre Health Complex, was launched during the Innovation Showcase in 2006 and operates as a one-stop primary health care facility, with family and preventative health care, GPs, dentists, a chemist, an optometrist, a podiatrist, a pathologist and cosmetic and complementary health care facilities.

The centre, which is home to a post office, convenience store and coffee shop, also includes informatics, and education and training facilities that have attracted interest from around the world.

Dr Rashid said the second stage would be located on the north-eastern corner of the Centre Health Complex and would include aged care, child care and community health facilities.

Stage three will be built next to Shellharbour Private Hospital and will operate as a rehabilitation facility, with a focus on regenerative medicine.

It will also provide specialist mental health services, a neurology and cardiology centre.

Stage four is a few years away and will operate as a conferencing and function facility.

Shellharbour council Deputy Mayor, Michele Greig, described Dr Rashid as "a man with a vision and a passion".

His goal is to create a leading primary health care and training centre that will eventually be linked to Wollongong Lifestyle City, and the world, through the informatics department located in stage one.

Dr Rashid, along with Dr Naveed Shaukat, also provided some insight into his innovative Wollongong Lifestyle City concept, which could start within two years on a large site near Nan Tien Temple.

The development will feature a hotel boasting two conference rooms and extensive meeting, training and lecture facilities aimed at doctors, nurses and medical practitioners from around the world.

It would also provide practical training opportunities for TAFE and university students studying tourism and hospitality.

Dr Rashid has owned the land for more than 10 years.

The Wollongong Lifestyle City complex will also have a community health centre and an aged-care facility with a high-tech elderly living and a nursing home.

Not giving up: Radio identity Alan Jones expects to make a full recovery from prostate cancer and return to his influential Sydney-based talkback program as quickly as possible.

Jones battling prostate cancer

By KATHERINE FIELD

BROADCASTER Alan Jones has prostate cancer but says he has no plans to give up radio.

"We don't do dying around here. We just try and make the most of living," Jones said after revealing his illness yesterday.

The 67-year-old was diagnosed with cancer in May but kept it secret until this week.

He says he has good prospects of a full recovery following surgery in about two weeks, and will remain on air until the eve of the operation at Sydney's St Vincent's Hospital.

Describing the condition as an "interruption", Jones said he only expected to be off air for a few weeks.

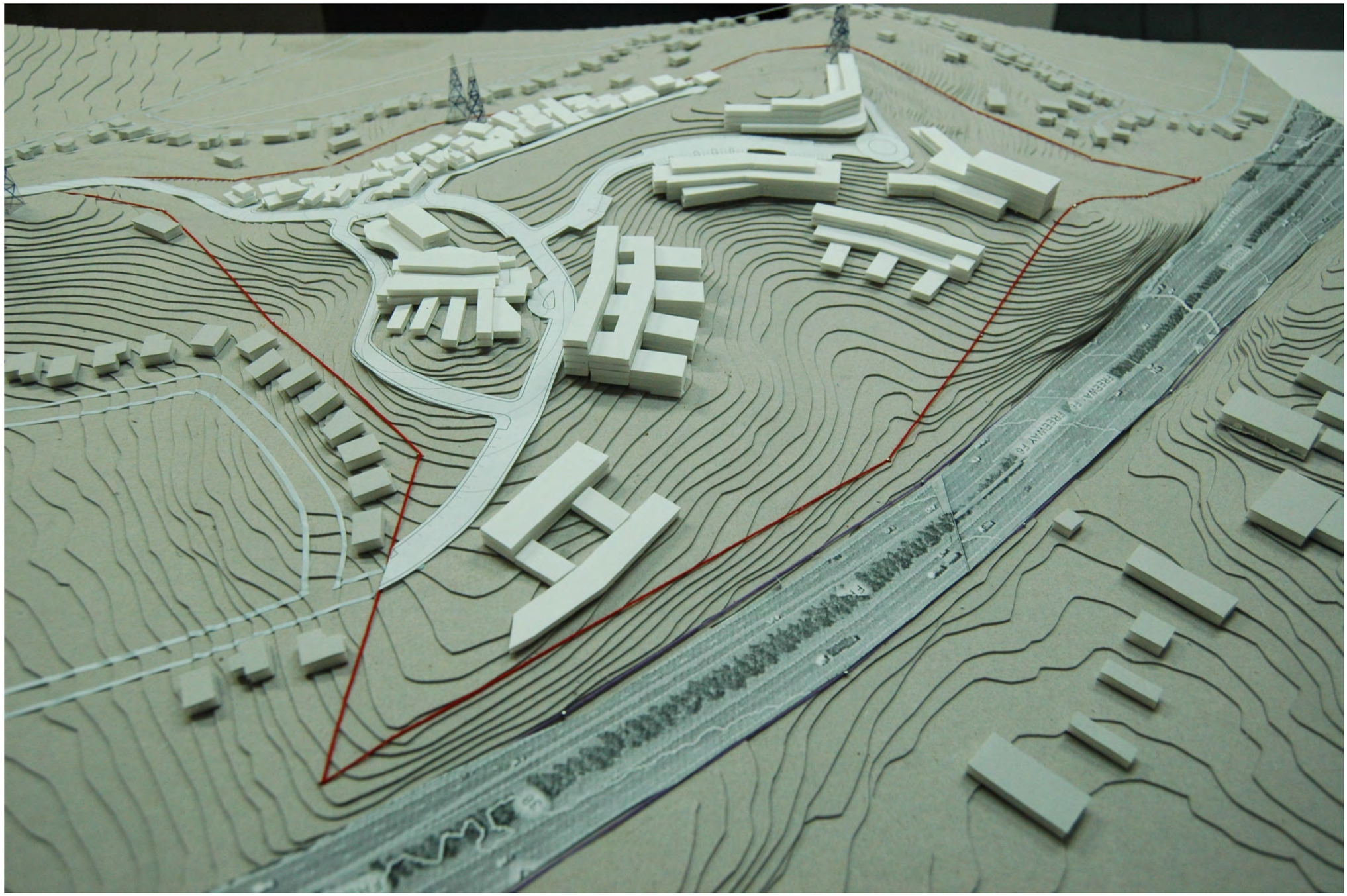
"Of course I will be returning to air, I've got to make a quid. I've got to keep myself off struggle street," he said.

"The prospect of full recovery is very significant.

"On the other hand, I'm smart enough to know you are dealing with cancer and that's something that other people have had to deal with, so I'm not the Lone Ranger there."

The influential radio host and former Wallabies rugby coach found out about his illness after a biopsy in May, but only told friends, family and colleagues on Tuesday because he did not want to cause concern.

Teary colleagues watched as Jones announced the news at the studios of Radio 2GB.



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Wollongong Hitech Holistic Healthcare City