Environmental Assessment – PART A

Life City Wollongong

Including Tertiary Teaching Referral Inpatient Hospital

Lot 4 DP 258635 Warwick Street; Lot 2 DP 534116 Nottingham Street

Lot 2 DP 249814 York Street; Lot 21 DP 1008877, Lot 2 DP 860917

Berkeley

Prepared for Delbest Pty Ltd

by TCG Planning

7 February 2013

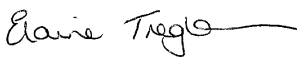
Unit 5
174 – 182 Gipps Road
PO Box 7163
Gwynneville, NSW
2500

T +61 2 4228 7833
F +61 2 4228 7844
E reception@tcgplanning.com.au

PLANNING
ENVIRONMENT
URBAN DESIGN

This report has been prepared for Delbest Pty Ltd in accordance with the scope of services provided by TCG Planning. This report should only be used only for the purpose for which it was expressly prepared and shall not be reproduced by any third party in part or full without the permission of TCG Planning.

We certify that the information contained in this Environmental Assessment is neither false nor misleading and based on information we take to be truthful and correct at the time of printing.

Document Status			Approved For Issue	
Version	Author	Reviewer	Signature	Date
Draft	Alexandra Long /Anna Grant / Nadine Page / Elaine Treglown	Elaine Treglown	Authorised	29/11/2012
Final	Elaine Treglown	Elaine Treglown	Authorised	30/11/2012
Adequacy Test Final	Elaine Treglown	Elaine Treglown		7/2/2013

Contents

Table Schedule

Figure Schedule

1 Executive Summary

Delbest Pty Ltd proposes to build a $383 million Hi Tech Holistic Cancer and Medical Hospital Facility – Life City, Wollongong, providing tertiary inpatient cancer treatments and a range of medical services in Berkeley, NSW. The project vision is to develop “Lifehouse - a tertiary cancer referral hospital with a holistic approach”, which is a unique model, based on the work of Prof. Chris O'Brien's AM. The facility is one that will service the growing regional population as well as providing a high quality medical resource which will be to a national and international standard. This Environmental Assessment has been prepared for Delbest Pty Ltd to accompany an application for a Concept Plan for the proposed hospital facility, which will be constructed in eight (8) stages.

The Environmental Assessment is submitted for consideration by the Department of Planning & Infrastructure following the receipt of Director General Requirements, MP10-0147, dated 26 October 2010, issued under the provisions of the Major Developments SEPP 2005 and Part 3A of the Environmental Planning & Assessment Act 1979. The proposal has been declared as a development that is captured under Schedule 1, Group 7, Clause 18 of State Environment Planning Projects 2005 (Major Projects), being a hospital development valued at more than $15 million. Therefore, the proposed development is a project to which (repealed) Part 3A of the Environmental Planning and Assessment (EPA) Act 1979 applies. In this regard, the Deputy Director-General of the (then) Department of Planning, as a delegate for the Minister for Planning, provided a clause 6(1) opinion dated 26 September 2010 confirming that the development is a project to which Part 3A of the Environmental Planning and Assessment Act 1979 applies (see Appendix 1) and granting authority to the submission of a Concept Plan under section 75M of the EPA Act, 1979. A Preliminary Environmental Assessment of the site was prepared and submitted to the Department of Planning in August 2010, with the Director-General issuing the requirements for the Environmental Assessment on 26 October, 2010 as referenced in Section 2 of this Environmental Assessment.

Site Context

The proposed Hi Tech Holistic Cancer and Medical Hospital facility development is to be established within the boundaries of Lot 4 DP 258635 Warwick Street, Lot 2 DP 534116 Nottingham Street and Lot 2 DP 249814 York Street, Berkeley. Access to the site will be provided from Warwick Street and also from Nolan Street through Council owned land identified as Lot 21 DP 1008877 and Lot 2 DP 860917. The subject site and surrounding context are described in detail in Section 3 of this Environmental Assessment.

Proposed Development

Delbest Pty Ltd proposes to establish Life City – Wollongong, a hi-tech holistic, tertiary teaching, referral hospital facility providing inpatient cancer treatments and medical services, as detailed in Section 4 of this Environmental Assessment. It will serve as a centre for excellence, as it will incorporate the best practises of modern medicine for the Illawarra region providing much needed treatment services for cancer inpatients. The facility, being a tertiary level cancer hospital, will be Australia's largest integrated holistic hi-tech medical healthcare facility with a unique and innovative approach to the treatment of cancer inpatients, whilst also providing a broad range of medical services.

It is also a vision of Delbest Pty Ltd, that Life City Wollongong will provide services to both young and old and bring the community of all ages together with much improved infrastructure and facilities that promotes healthier and more interactive life style. It will also become a major employer to the Illawarra, seeking to become the third biggest industry to the region behind the heavy industrial Port Kembla precinct, and the University of Wollongong.

The key components of the proposed development are noted as follows:

- A 320 bed hi-tech, tertiary teaching, referral, inpatient holistic cancer and medical hospital facility;
- A holistic health course for a range of healing therapies;
- Day surgery, medical centre, respite care centre and specialist rooms;
- Ancillary on site accommodation for patients, nurses, medical students and resident medical officers;
- A library, lecture theatre, auditorium and conference facilities which incorporates a 40 room hotel;
- Residential care facility and hostel with 167 beds to cater for Dementia care, high care and low care;
- Independent senior's living accommodation in the form of one, two and three bedroom apartments
- Wollongong Healthcare Technical High School including sports oval providing for approximately 350 students;
- Child care centre providing for 70 children;
- Ancillary carparking and associated services; and
- 70% of the site is to be landscaped including the regeneration of the local rainforest.

The concept plan is to be developed over the next 10 years. The proposal is staged to allow the concept to become operational in the short term and to ensure sufficient finance is available to fund construction. The proposed facility will be developed in eight (8) stages, as detailed in Table 1 below:

Table 1: Proposed Staging of the Facility

Description of Proposed Development	Stage
Medical Centre, Day surgery, Child Care Centre & Respite Care Centre Medical Centre & Day Surgery comprising; specialist rooms, childcare centre, respite care centre including initial structural works and landscaping.	1
Holistic Health Care Course Holistic health course including yoga, reiki, laughter therapy, meditation, auras, pranic healing and outdoor structures for these activities.	2
Serviced apartments Serviced apartments for attendants of patients and patients seeking outpatient services.	3
Ancillary accommodation & research, library, lecture theatre, auditorium complex Ancillary accommodation & research including library, lecture theatre, auditorium, research and development facility.	4
Hi Tech Holistic Cancer & Medical Hospital Hi-tech holistic, tertiary, referral, inpatient cancer and medical hospital including oncology and holistic, medical and rehabilitation, dementia and psychiatric wings.	5
Self Care Seniors Housing	6
Residential Care Facility & Hostel Residential care facility and hostel with 167 beds	7
Healthcare Technical High School Wollongong Healthcare Technical High School for 350 students including oval.	8
Roads	All
Landscape works and regeneration of rainforest	All

The maximum population resident on the subject site at any one time is estimated to be 505 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.

On completion, the proposed development, Life City – Wollongong, will provide for the sustainable rehabilitation of this currently vacant site and will provide a unique healthcare facility resulting in ongoing benefits to the Illawarra region.

The Environmental Planning and Assessment (EPA) Regulations require that an application provide an outline of the main alternatives considered. The alternatives to the proposed development which have been considered by the applicant are discussed within Section 5 of this Environmental Assessment comprise, together with justification for the development.

Statutory Framework

Section 6 of this Environmental Assessment details the national, state and regional statutory framework which relates to the proposal and includes consideration of the manner in which the proposal meets the requirements of State Environmental Planning Policy (Major Projects) 2005; State Environmental Planning Policy No. 55 (Remediation of Land); State Environmental Planning Policy (Infrastructure) 2007; State Environmental Planning Policy (Housing for Seniors of People with a Disability) 2004; State Environmental Planning Policy No. 65 (Design Quality of Residential Flat Development); and the Illawarra Regional Strategy. This section also assesses the proposal in relation to the Metropolitan Plan for Sydney 2036.

Section 7 of this Environmental Assessment details the local planning framework which relates to the proposal and includes consideration of the manner in which the proposal meets the requirements of Wollongong Local Environmental Plan 2009 and Wollongong Development Control Plan 2009.

The subject land lies within both the R2 Low Density residential zone and E3 Environmental Management zone of Wollongong Local Environmental Plan 2009. The uses which are proposed on the site are defined as hospital, medical centre, child care centre, respite care centre, seniors housing and school in accordance with the Dictionary contained in this LEP. Whilst a number of the proposed uses within on the site (and primarily within the E3 zone) are prohibited under WLEP 2009 and are not expressly permitted by State Environmental Planning Policy (infrastructure) 2007, the Director General may grant approval to the Concept Plan as the land is not an within an environmentally sensitive area of State significance or a sensitive coastal location. Further, the Director General has confirmed that the Concept Plan for Life City Wollongong – Hi Tech Holistic Cancer and Medical Hospital Facility falls within the provisions of a Major Project under Part 3A, with the Clause 6 declaration confirming that the development is captured by Schedule 1, Group 7 Clause 18 of SEPP (Major Development) 2005 being a hospital development valued at more than $15 million.

Environmental Assessment

The impact on the amenity of the environment and surrounding residents has been considered extensively in the preparation of the supporting documentation for this proposal, with the potential risks identified in Section 8 and the outcomes of the investigation contained in Section 9 of this Environmental Assessment and summarised below:

Geotechnical Assessment

A revised 'Preliminary Geotechnical Assessment' of the site has been carried out by Coffey Geotechnics (Ref: GEOTWOLL03229AC-AA dated 6 February 2013). This revised investigation was prepared following extensive discussions with the design engineers to determine most appropriate construction alternative to address site conditions.

The investigation of the site indicates the existence of uncontrolled filled in the northern to north-western portions of the site which will require remediation. Further, the preliminary landslide risk assessment confirms that the site contains a number of areas of moderate and high risk, where further investigations will be required to more accurately confirm the extent of the high risk area. Coffey advise that "provided that further engineering works and appropriately controlled construction works are carried out over the course of the development that is targeted at reducing the currently assessed risk level, then it is feasible to progress development within these higher risk areas of the site".

Contamination Assessment

A 'Phase 1 Preliminary Assessment' prepared by Clearsafe (Ref: 1357-01-LC) was undertaken, which revealed evidence of illegal dumping of asbestos materials and miscellaneous materials, an indicator of other possible contaminants. Asbestos contamination of the soil has been identified in certain site areas. This assessment recommends that a Phase 2 Detailed Site Assessment should be conducted to investigate the site for possible contamination prior to the commencement of work, based on the existence of fill material on the site, which includes asbestos and the history of agricultural uses on the land.

Further, acid sulphate soils exist on the site and hence an acid Sulphate Soil Investigation should be conducted to determine the level of soil contamination before works are undertaken.

Aboriginal and Non-Indigenous Heritage Assessment

An 'Aboriginal Heritage Assessment investigation' (dated Oct 2012) and 'Non–Indigenous Heritage Assessment' (dated Sept 2012) was carried out by Artefact Heritage which confirmed that the study area was found to contain a majority of low sensitivity landform units (steep slopes), area of ground disturbance and areas of thick vegetation which obscured ground surface visibility. No Aboriginal sites or areas of potential archaeological deposit (PAD) were identified nor were European heritage items located on the site or on surrounding lands. Accordingly, Artefact conclude that there is no requirement for further investigation of Aboriginal or European heritage before the project commences, as the site does not contain built heritage items, Aboriginal sites, areas of particular cultural significance or areas of archaeological potential.

Flora and Fauna Assessment

The Flora and Fauna Assessment prepared by Kevin Mills and Associates (dated 10 Nov 2012) found that only three vegetation communities occur on the subject site, none of these being naturally occurring. The communities include an area of Mixed Regrowth Forest/Woodland, an area of Wattle Forest/Woodland and area of Kikuyu Grassland. Whilst the development will result in the loss of an area of Mixed Regrowth Forest Woodland, this will be offset by the retention of the majority of the more significant area of Mixed Regrowth Forest/Woodland which occurs in the south-east of the site. There is a commitment to regenerate the area to native forest vegetation, which will be a positive outcome of the development.

Further, this loss will be offset through the retention and regeneration of an area of Wattle Forest Woodland located in the south and south-west of the site. A Vegetation Management Plan should be prepared for the regeneration areas. Kevin Mills concludes that it is not likely that there will be a significant impact under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 and hence referral to the Minister for assessment and approval is therefore not warranted.

A 'Landscape Master Plan' for the development has been prepared by Nicholas Bray Landscapes (Ref: 2012-10) to present the natural landscape as a central design element in the environmental success and public presentation of the healthcare facility. This plan incorporates low resource, recyclable, drought tolerant, plants and landscape materials and locally sourced endemic planting to create corridors which link areas of retained vegetation on site with adjacent ecological communities.

Bushfire Assessment

A 'Bushfire Protection Assessment' prepared by EcoLogical Australia (dated 29 Nov 2012) confirms that the proposal constitutes a Special Fire Protection Purpose (SFPP) development, which requires a higher standard of bushfire protection. Asset Protection Zones (APZ) of between 20 to 60m are therefore required which can be provided via managed land and a buildings setback within the property. The Life City development can accommodate the required Asset Protection Zones through building setbacks and removal/management of vegetation for Special Fire Protection Purpose (SFPP) development and will provide the required access arrangements and water supply for fire fighting purposes to meet the requirements of 'Planning for Bush Fire Protection' (Rural Fire service, 2006).

Environmental and Residential Impacts

The visual impact of the proposed development has been considered by Boss Design Pty Ltd through the preparation of photomontages from various vantage points surrounding the site and it has been determined that the topography of the site and surrounds assist to encompass the buildings and development as a whole, reducing the prominence of the buildings from a number of vantage points. The main vantage points of the site are long distance views from the west and south and shorter distance views of the Stage 5 (Hospital) and Stage 7 (Residential Care Facility) when travelling on the F6 Freeway in a northern direction. This is a result of the majority of development on the site being located on the north-west facing slopes, with only part of Stage 6 (Self Care Seniors Living) and Stage 7 (Residential Care Facility) to be located on the south-eastern facing slope. Hence, shorter distance views of such stages will be available from the surrounding residential estate to the south and south-west, whilst short distance views, primarily of the Stage 8 (Healthcare Technical High School) will be available from dwellings in Warwick Street.

Further, this Environmental Assessment, which is accompanied by overshadowing diagrams prepared by Boss Design, concludes that the development will not significantly impact on adjacent residents when considering residential amenity, streetscape impact overshadowing and privacy. Preliminary local wind climate analysis has been undertaken by Vim Sustainability which indicates that wind impacts are not expected to create any negative issues.

A 'Masterplan Acoustic Assessment' prepared by Acoustic Logic (Ref:20120837.1/0111A/RO/HP, dated 1 Nov.2012) has assessed the likely noise impacts of the proposed development on the site and surrounding

area. This assessment also addresses noise intrusion impacting upon the proposed development, with the existing noise sources identified as traffic flow on the adjacent F6 Freeway and traffic flow along Northcliffe Drive and Nolan Street, as well as general neighbourhood noise. The assessment confirms that existing properties surrounding the development would not be adversely impacted by the proposed development provided appropriate management and engineering control measures are implemented. Acoustic treatment will be required for components of the development to ensure compliance with the assessment criteria, due to the transfer of noise through windows and doors from the F6 Freeway. Based on the assessment, it is concluded that "the use of the site is capable of being fit for the purpose which it is intended provided appropriate management and engineering control measures are implemented".

Ecologically Sustainable Development

The 'ESD Report' prepared by Vim Sustainability (dated 26 Nov 2012) confirms that the Life City project has a commitment to providing a leading sustainable health community for the Wollongong and NSW regions. A range of sustainability initiatives may be incorporated within the project to provide overall resource efficiency including energy and water usage combined with a high level of internal comfort and maximised internal environment quality. In addition, renewable energy methodologies and suitable landscaping outcomes are to be implemented as appropriate.

Water Sensitive Urban Design

Stormwater runoff issues were considered by C&M Consulting Engineers within the 'Engineering Report' (Ref: Rev 2 PN00864.F01 Nov 2012). This report confirms that in principle, the proposed drainage system for the Concept Plan can achieve its main function of safe conveyancing through the site without any adverse impact on both site and downstream site. A 'Treatment Train' will be provided within the Life City development to provide effective water quality control measures, incorporating two or more measures which are most effective in reducing pollutant loadings. Further, Music Modelling confirms that in all instances the proposed water quality control measures will enable the reduction targets to be achieved for all key stormwater pollutants. Hence by implementing the proposed treatment measures within the proposed development there will be no detrimental effect on the quality of stormwater running from the site.

Built Form Outcomes

Life City Wollongong will provide environmentally sustainable, hi-tech holistic health care facilities which has been designed to encapsulate and provide a multi facetted health service, educational and recreational complex. Boss Design has addressed the impact of the proposed development on the urban context and confirm that: "The Life City Wollongong (LFW) 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". The built form is designed to complement the proposed use for the building and it maintains the predominant building alignments best expressed by the existing landscape and the contour of the land.

Traffic and Transport Analysis

The 'Traffic and Transport Assessment' prepared by GHD (dated Nov 2012) considers the existing and proposed traffic and parking conditions and the impact the proposed development is likely to have on the existing conditions in the surrounding road network. This report confirms that sight distances for the

proposed access road from Nolan Street will meet the 50m requirement specified in the Austroads Publication 'Guide to Traffic Engineering Practice, Part 5: Intersections at Grade' (2005). This intersection will also meet the safe intersection sight distance (SISD) requirement of 90m. The development will provide adequate parking to meet the requirements of Wollongong Development Control an 2009. Parking dimensions and aisle widths will meet Australian Standard AS2890.1:2004 Parking facilities, Part 1: Off-Street Car Parking. With respect to turning movements, a refuse vehicle and fire truck can be accommodated on site and the trucks would be able to exit the site in a forward direction. Further, GHD conclude that the Nolan Street/Life City access would operate satisfactory in the both the AM and PM peaks in 2021 but by 2031 this intersection will be near capacity. This intersection could be upgraded to a roundabout to reduce delays. The reminder of the intersections will operate satisfactorily in both the AM and PM peaks in 2021 and 2031.

Servicing Investigations

The 'Engineering Report' (Ref: PN00864.R01 Rev 2) which was prepared by C&M Engineering addresses the ability of the site to be serviced having regard to existing service capacity. This investigation, and a Feasibility Letter provided by Sydney Water on 1 November 2012, confirms that the proposed development has multiple D150 sewer mains from which extensions and or amplification would be required to service the site and is also capable of connection into the existing water supply system.

C&M Engineering in the 'Engineering Report' also advise that the site can also be connected to additional services such as electricity and gas.

Staging and Implications of the Development for Contributions and Infrastructure

The Life City project will be developed in eight (8) stages over a ten (10) year period. The proposed development will incorporate the construction of the primary access road from Nolan Street within Stage 1 and the provision of a private bus service for the seniors housing will ensure that infrastructure is provided at the required stage. Reclassification of Lot 21 DP 1008877 and Lot 2 DP 860917 to operational land can occur before the development proceeds, with Wollongong City Council raising no initial objections to the use and reclassification of this land. Demands on Wollongong City Council or regional assets, infrastructure and services are not anticipated, as the site is fully contained facility.

Section 10 of this Environmental Assessment considers whether there is justification for the development proceeding from an environmental, economic and social perspective. The assessment of each of these elements has concluded that subject to the implementation of a number of mitigation measures, the proposal would not result in significant adverse impacts on the biophysical environment.

The proposed concept will deliver significant local and regional economic benefits through the provision of infrastructure to assist the operation of the Health Department in the Illawarra Region. The proposal is an integral part of the development and operation of Delbest Pty Ltd Specialist treatment facilities network. The development will provide specialist treatment for cancer treatments and additional treatment in a range of disciplines, which will significantly improve the quality of healthcare in the region. The proposed development has been designed with regard to the need to reduce environmental impact. Mitigation

strategies have been developed to ensure that any adverse impact arising from the proposed development would be minimised.

Section 11 of this Environmental Assessment contains an outline of the proposed environmental management measures that are recommended for the proposed Life City Development. Specifically, this section contains a description of the measures that should be considered for implementation to avoid, minimise, mitigate, rehabilitate/remediate, monitor and/or offset the potential impacts of the project. These measures include further testing in relation to site stability, fill material and acid sulphate soils; the implementation of acoustic treatment to minimise impacts from the F6 Freeway; and the retention and regeneration of native vegetation in the south-eastern section of the site.

Conclusion

The primary purpose of the proposal is to provide a Hi-tech Holistic Cancer and medical hospital facility. This Environmental Assessment has assessed the proposed development against its potential environmental, social and economic impacts. The assessment concludes (Section 12) that with the implementation of a number of mitigation measures the proposal will result in acceptable environmental impacts and the site is therefore suitable for the proposed development.

The Life City Wollongong, concept plan has also been shown to be of potential economic and social benefit to the Illawarra Region. It will provide opportunities for employment and will have the ability to attract future specialist medical activities to the area. The social benefits are evident in the capital investment value, the provision of employment and in the provision of a service that is needed in the community and wider Illawarra region. Based on the manageable levels of environmental risk, and the economic and employment benefits to the Illawarra region, this Environmental Assessment concludes that the proposed 'Life City Wollongong' Concept Plan should be supported and granted approval.

2 Introduction

This section describes the background to the proposal, the nature of the proposed development, the major project application and the purpose and structure of this Environmental Assessment.

2.1 Purpose of the Environmental Assessment

This Environmental Assessment ('EA') has been prepared by TCG Planning on behalf of Delbest Pty Ltd. It presents the findings of an environmental evaluation which has been undertaken to establish potential impacts associated with the use of an existing vacant site as a Hi-tech Holistic Cancer and Medical Hospital facility at Berkeley, south of Wollongong.

The Environmental Assessment process is the mechanism by which development proposals are appraised in terms of environmental and socioeconomic criteria, in addition to technical considerations. The Environmental Assessment process defines the context of the proposed development and examines those issues considered to be relevant. This assessment considers the potential significant environmental effects of the proposal during occupation and use and proposes mitigation measures to prevent, reduce and offset significant adverse impacts on the environment. The aims of this Environmental Assessment are to:

- Identify all constraints affecting future development on the subject site;
- Assess the capability of the subject site to support the proposed development; and
- Demonstrate the economic, social and environmental attributes of the proposed development and consider the feasibility of the proposal based on existing and projected demographics data.

This Environmental Assessment has been prepared in accordance with the requirements of the Environmental Planning and Assessment Act, 1979 and the Environmental Planning and Assessment Regulation, 2000 together with the Director General's Requirements which were issued on 26 October 2010 by the Department of Planning & Infrastructure.

2.2 Background

Delbest Pty Ltd proposes to develop a world class Hi-tech Holistic Cancer & Medical Hospital Facility – 'Life City Wollongong' within Berkeley which will provide innovative health care treatment and a broader range of medical services to local, regional, national and international patients. This development is proposed to be developed on currently vacant land located at Berkeley in southern Wollongong.

This facility will be a tertiary level inpatient Cancer Hospital whilst also providing additional medical facilities such as Cardiology, Respiratory, Gastroenterology, Neurology, Endocrinology and Rehabilitation. A dedicated healthcare department will work in conjunction with these modalities to provide 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 innovative approach to treatment of cancer inpatients, whilst also providing a broad range of medical services.

The facility will contribute to the creation of jobs in the health sector and allied services during the operational phase and to jobs in the building sector during the construction phase, which will contribute to the economic development of the Illawarra region. It will also contribute to education and training, research and development and to skills development for a wide spectrum of residents in the area, where employment is a major concern in the present economic climate.

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

TCG Planning has commissioned a group of specialist consultants to assist with the preparation of this Environmental Assessment in accordance with the requirements of the Director General issued on 26 September 2010. Delbest Pty Ltd seeks approval for a Concept Plan which will enable the development to be completed in eight (8) stages.

2.3 Overview of Development

The key components of the proposed development are noted as follows:

- A 320 bed hi-tech, tertiary teaching, referral, inpatient holistic cancer and medical hospital facility;
- A holistic health course for a range of healing therapies;
- Day surgery, medical centre, respite care centre and specialist rooms;
- Ancillary on site accommodation for patients, nurses, medical students and resident medical officers;
- A library, lecture theatre, 340 seat auditorium and conference facilities which incorporates a 40 room hotel;
- Residential care facility and hostel with 167 beds to cater for dementia care, high care and low care;
- Independent senior's living accommodation in the form of 63 x one, two and three bedroom apartments;
- Wollongong Healthcare Technical High School including sports oval providing for approximately 350 students;
- Child care centre providing for 70 children;
- Ancillary carparking and associated services; and
- 70% of the site is to be landscaped including the regeneration of the local rainforest.

Life City Wollongong will be developed in eight (8) stages, which will comprise the following components, as detailed in Table 2 below:

Table 2: Proposed Staging of the Facility

Description of Proposed Development	Stage
Medical Centre, Day surgery, Child Care Centre & Respite Care Centre Medical Centre & Day Surgery comprising; specialist rooms, childcare centre, respite care centre including initial structural works and landscaping.	1
Holistic Health Care Course Holistic health course including yoga, reiki, laughter therapy, meditation, auras, pranic healing and outdoor structures for these activities.	2
Serviced apartments Serviced apartments for attendants of patients and patients seeking outpatient services.	3
Ancillary accommodation & research, library, lecture theatre, auditorium complex Ancillary accommodation & research including library, lecture theatre, auditorium, research and development facility.	4
Hi Tech Holistic Cancer & Medical Hospital Hi-tech holistic, tertiary, referral, inpatient cancer and medical hospital including oncology and holistic, medical and rehabilitation, dementia and psychiatric wings.	5
Self Care Seniors Housing	6
Residential Care Facility & Hostel Residential care facility and hostel with 167 beds	7
Healthcare Technical High School Wollongong Healthcare Technical High School for 350 students including oval.	8
Roads	All
Landscape works and regeneration of rainforest	All

The eight (8) stages within the development comprise approximately 61,899m^2 of floor area, and have the capacity to accommodate up to 330 patients and a maximum short and long term resident population of approximately 505 persons (including seniors and resident nurses and practitioners ancillary to the hospital), patient relatives and outpatients.

In total, Life City - Wollongong will generate up to 2,600 permanent jobs. The overall construction capital exceeds $383 million, as detailed within the Quantity Surveyors Report prepared by Gerald Wolff dated 22 November 2012, as contained in Appendix 6.

2.4 Cost of Development

The 'Certificate of Cost' prepared by Gerald Wolff in November 2012 confirms that the total development will have a value of approximately $383,639,100, with a total estimated cost for each stage as detailed in Table 3 below:

Table 3: Estimated Cost of Development (Certificate of Cost, Gerald Wolff)

Stage	Trade Description	Trade Total ($)
1	Stage 1-Medical Centre, Day Surgery, Child Care Centre & Respite Care Centre	36,794,950
2	Stage 2- Holistic Health Care Course	2,307,100
3	Stage 3- Serviced Apartments	21,981,400
4	Stage 4- Ancillary Accommodation & Research, Library, Lecture Theatre, Auditorium Complex	31,848,450
5	Stage 5- Holistic Cancer & Medical Hospital	156,686,800
6	Stage 6- Self Care Seniors Housing	54,876,150
7	Stage 7- Residential Care facility & Hostel	48,510,750
8	Stage 8- Healthcare Technical High School	30,633,500
	TOTAL	383,639,100

2.5 Assessment Process

An application was made to the (then) Department of Planning in August 2010 seeking the Minister's opinion as to whether a Concept Plan for Life City Wollongong, with a construction capital value of in excess of $300 million, would satisfy the definition of a hospital under State Environmental Planning Policy (Major Development) 2005. This application was submitted on the basis that the development was described within Schedule 1, Group 7, Clause 18 of State Environmental Planning Policy (Major Development) 2005, as a 'Hospital' development valued at more than $15 million.

On 26 September 2010 Richard Pearson, The Deputy Director General of Development Assessment and Systems Performance (as a delegate of the Minister for Planning) declared the Concept Plan proposal a Major Project under the provisions of SEPP (Major Development) 2005 (refer Appendix 1). Further, the Deputy Director General granted authority to the submission of a Concept Plan under section 75M of the EPA Act, 1979. The Director General's Requirements were subsequently issued for MP10-0147, on 26 October 2010, confirming the scope of the Environmental Assessment for the Concept Plan.

Part 3A of the Environmental Planning and Assessment Act, 1979 (EP&A Act) was repealed on 1 October 2011. However, 'Schedule 6A Transitional Arrangements – Repeal of Part 3A' of Environmental Planning and Assessment Act is applicable to the subject proposal, as the Director General's requirements were issued on 26 October 2010 within 2 years of the repeal date of Part 3A of the EP&A Act 1979. Therefore the proposal satisfies the requirements of Clause 2(1)(c) of Schedule 6A of the EP&A Act, which enables the lodgement of a transitional Part 3A project where the "environmental assessment requirements for approval to carry out the project, or for approval of a concept plan for the project, were last notified or adopted within 2 years before the relevant Part 3A repeal date (unless the environmental assessment is not duly submitted on or before 30 November 2012 or on or before such later day as the Director-General may allow by notice in writing to the proponent)".

At the date of repeal of Part 3A the Minister granted proponents until 1 October 2013 to lodge Environmental Assessments for Major Projects. However, in an endeavour to complete the assessment and determination of transitional Part 3A projects, the NSW State Government enacted an amendment to the EP&A Act on 24 August 2012 to require lodgement of an Environmental Assessment for a transitional Part 3A project by 30 November 2012. This Environmental Assessment is submitted in accordance with such requirements.

2.6 Director General's Requirements

The Director General's requirements were issued on 26 October 2010 to enable the Environmental Assessment (EA) to commence, following consultation with Wollongong City Council and Roads and Maritime Services (then known as Roads and Traffic Authority).

The key project specific issues identified by the Director General for consideration and the relevant section within the Environmental Assessment are noted in Table 4 as follows:

Table 4: Summary of Director General's Requirements and Reference within the Environmental Assessment

Director General's Requirements	EA Reference
General Requirements	
(1) An Executive Summary	Section 1
(2) A thorough site analysis including site plans, aerial photographs and a description of the existing and surrounding development.	Section 3 and Appendix 24
(3) A thorough description of the proposed development.	Section 4
(4) An assessment of the key issues specified above and a table outlining how these key issues have been addressed.	Sections 8 & 9
(5) An assessment of the potential impacts of the project and a draft Statement of Commitments, outlining environmental management, mitigation and monitoring measures to be implemented to minimise any potential impacts of the project.	Sections 9, 10 & 11
(6) The plans and documents outlined below.	Attached
(7) A signed statement from the author of the EA certifying that the information is neither false nor misleading	Page 2
(8) A Quantity Surveyors Certificate of Cost to verify the capital investment value of the project (In accordance with the definition contained in the Major Development SEPP.	Appendix 6
(9) A conclusion justifying the project, taking into consideration the environmental impacts of the proposal, the suitability of the site and whether or not the project is in the public interest.	Section 12
Key Assessment Requirements	
(1) Relevant EPI's, policies and guidelines to be addressed • Objects of the EPA Act; • All relevant State Environmental Planning Policies; • NSW State Plan; • Illawarra Regional Strategy; • Wollongong Local Environmental Plan 1990; • Relevant Development Control Plans; and • Nature and extent of any non-compliance with relevant environmental planning instruments, plans and guidelines and justification for non compliance.	Sections 6 & 7
(2) Urban Design – Built Form • Height bulk and scale of the proposed development within the context of the locality, proposed precinct development and adjoining residential development; • Details of proposed open space and landscape areas; and • View analysis to identify potential impacts on the scenic quality of the area.	Section 9.2.7, Section 9.2.8, 9.2.12 and Appendix 23
(3) Environmental and Residential Amenity impacts • Impacts of the proposal on solar access, acoustic privacy, visual privacy, view loss and wind impacts (within the site and on surrounding development); and • Details of the measures to be implemented to achieve a high level of environmental and residential amenity.	Section 9.2.9
(4) Traffic, Transport and Access Provide a Transport and Accessibility Study prepared with reference to the Metropolitan Transport Plan – Connecting the City of Cities, the NSW State Plan, the NSW Planning Guidelines for walking and cycling, the Integrated Land Use and Transport policy package, the NSW Bike Plan and the RTA's Guide to Traffic Generating Development.	Appendix 9 and Section 9.2.13
(5) Biodiversity An assessment of the impacts on flora and fauna, including threatened species, populations and endangered ecological communities and their habitats and steps taken to mitigate any identified impacts to protect the environment and enhance the biodiversity conservation value of the site.	Appendix 12 and Section 9.2.4
(6) Bushfire Provide an assessment in accordance with the requirements of Planning for Bushfire Protection 2006 and identify the ongoing management arrangements for any asset protection zones required.	Appendix 10 and Section 9.2.5
(7) Staging Details regarding the staging of the proposed development including the extent of the area and works proposed for each stage and the predicted timing for each stage (and the implications for the delivery of infrastructure and services as required).	Section 9.2.15

Director General's Requirements	EA Section
(8) Ecologically Sustainable Development (ESD) Detail how the development will incorporate ESD principles in the design, construction and ongoing operation of the development including identifying appropriate infrastructure to support ESD initiatives.	Appendix 14 and Section 9.2.10
(9) Noise Provide an assessment of the potential operational and traffic noise impacts of the project.	Appendix 13 and Section 9.2.9
(10) Developer Contributions Address Council's Section 94 Contribution Plan and/or details of any Voluntary Planning Agreements.	Section 7.2.1 and 9.2.15
(11) Utilities In consultation with relevant agencies, the EA shall address the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure works.	Appendix 11 and Section 9.2.14
(12) Water Quality and Drainage • Provide details of any potential impact and any associated mitigation measures on the water quality of the catchment area the development is located in and any sensitive areas in the vicinity; • Drainage issues associated with the proposal including stormwater and drainage infrastructure; and • Preparation of an Integrated Water Management Plan which details any proposed alternative water supplies, proposed end uses of potable and non potable water, and water sensitive urban design measures.	Appendix 11 and Section 9.2.11
(13) Heritage conservation Impacts of the proposal on any Aboriginal or European heritage or archaeological items and measures to conserve these items and mitigate potential impacts including effective community consultation with Aboriginal communities.	Appendices 15 and 16 and Section 9.2.3
(14) Consultation Undertake an appropriate and justified level of consultation in accordance with the Departments Major Project Community Consultation Guidelines October 2007.	Appendix 18 and Section 2.8
Plans and Documents	
An existing survey plan	Appendix 20
A site analysis plan	Appendix 24
A locality/context plan	Figures 1A & 1B
Architectural drawings	Appendix 24
Stormwater concept plan	Appendix 22
Geotechnical report	Appendix 7
View Analysis	Appendix 23
Landscape plan	Appendix 21
Shadow diagrams	Appendix 24

2.7 Project Team

TCG Planning has engaged a project team on behalf of Delbest Pty Ltd to undertake the design and specialist investigations pertaining to the project. This team comprises:

- Town Planning – TCG Planning
- Architectural Design – Boss Design
- ESD Assessment – Vim Sustainability
- Aboriginal Heritage Assessment – Artefact Heritage
- Non Indigenous Heritage Assessment – Artefact Heritage
- Flora and Fauna Assessment – Kevin Mills & Associates Pty Ltd

- Bushfire – EcoLogical Australia
- Geotechnical Assessment – Coffey Geotechnics
- Contamination Assessment – Clearsafe Environmental Solutions
- Acoustic Assessment – Acoustic Logic Consultancy
- Engineering – C & M Consulting Engineers
- Traffic and Transport – GHD
- Landscape Masterplan- Nicholas Bray Landscapes
- Certificate of Cost – Gerald Wolff
- On site Effluent Management – True Water Australia

2.8 Consultation

The preparation of the Environmental Assessment has involved consultation with a number of government and non government organisations and interest groups. The consultation was undertaken to identify the views and concerns of interested/affected parties with respect to the likely environmental, infrastructure and amenity impacts of the proposed development.

Consultation has continued throughout the preparation of the Environmental Assessment and in particular consultation has taken place with the following agencies, groups and organisations:

- Department of Planning and Infrastructure;
- Wollongong City Council;
- NSW Department of Health – Illawarra Shoalhaven Local Health District;
- Department of Roads and Maritime Services;
- Sydney Water;
- Premier Illawarra – Bus Services;
- Illawarra Aboriginal Land Council; and
- National Native Title Tribunal

The consultation process has been instrumental in determining issues surrounding the proposed development and in shaping the design of the subject site. A comprehensive review of the issues raised through the consultation process is provided in the accompanying Consultation Report prepared by TCG Planning dated November 2012.

2.9 Accompanying Documentation

The architectural plans prepared by Boss Design accompany this Environmental Assessment. Table 5 below contains a list of the documents which comprise Parts 1, 2 and 3 of this Environmental Assessment.

Table 5: Accompanying Documentation

GENERAL DOCUMENTATION			
Title	Author	Dated	Document No
Site Analysis Contour Map	JRK Surveys	9/8/12	12-107P1
Concept Site Waste Management and Minimisation Plan.	TCG Planning	29/11/12	
Consultation Report	TCG Planning	29/11/12	
Preliminary Geotechnical Assessment	Coffey Geotechnics Pty Ltd.	6/2/12	GEOTWOLL03229AC-AA
Master Plan Acoustic Assessment	Acoustic Logic	1/11/12	Rev 1Document Ref-20120837.1/0111A/R1/HP
Non –Indigenous Heritage Assessment	Artefact Heritage	September 2012	
Aboriginal Heritage Assessment	Artefact Heritage	October 2012	
ESD Report	Vim Sustainability	26/11/12	
Traffic and Transport Assessment	GHD	November 2012	
Flora and Fauna Assessment	Kevin Mills and Associates	10/11/12	
Certificate of Cost	Gerald Wolff	November 2012	
Onsite Effluent Management Assessment	True Water Australia	November 2012	
Onsite Sewage Treatment and Wastewater Reuse Concept Proposal	True Water Australia	November 2012	
Bushfire Assessment	EcoLogical Australia	29 November 2012	Document Ref: 12GOSBUS-0065
Phase 1 Preliminary Environmental Assessment	Clearsafe Environmental Solutions	20/11/12	1357-01-LC
Engineering Report	C&M Consulting Engineers	7/2/13	PN00864.R01 Rev 3
Site Analysis	BOSS Design	November 2012	SA01-SA06
Landscape Design Principles	Nicholas Bray Landscapes		
Visual Analysis	TCG Planning	6 February 2013	

ARCHITECTURAL DRAWINGS			
Masterplanning and Staging			
Title	Dated	Drawing No.	Revision No.
Overall Concept Plan	November 2012	A_01	
Staging Plan	November 2012	A_03	
Master Plan	November 2012	A-01	
Master Plan Sections	November 2012	All Stages	
3D Aerial View	November 2012		
View Impact	November 2012		
Stage 1 Medical Centre			
Title	Dated	Drawing No.	Revision No.
Site Plan	November 2012	ST1_A_01	
Lower Ground Floor Plan	November 2012	ST1_B_01	
Upper Ground Floor Plan	November 2012	ST1_B_02	
First Floor Plan	November 2012	ST1_B_03	
Roof Plan	November 2012	ST1_B_04	
Elevations	November 2012	ST1_C_01	
Stage 2 Holistic Health Care Course			
Title	Dated	Drawing No.	Revision No.
Site Plan	November 2012	ST2_A_01	

Stage 3: Serviced Apartments			
Title	Dated	Drawing No.	Revision No.
Site Plan	November 2012	ST3_A_01	
Lower Ground Floor Plan	November 2012	ST3_B_01	
Ground Floor Plan	November 2012	ST3_B_02	
First Floor Plan	November 2012	ST3_B_04	
Second Floor Plan	November 2012	ST3_B_04	
Third Floor Plan	November 2012	ST3_B_05	
Roof Plan	November 2012	ST3_B_06	
Elevations	November 2012	ST3_C_01	
Stage 4: Ancillary Accommodation and Conference			
Title	Dated	Drawing No.	Revision No.
Site Plan	November 2012	ST4_A_01	
Lower Ground-2 Floor Plan	November 2012	ST4_B_01	
Lower Ground-1 Floor Plan	November 2012	ST4_B_02	
Ground Floor Plan	November 2012	ST4_B_03	
Roof Plan	November 2012	ST4_B_04	
Elevations	November 2012	ST4_C_01	
Stage 5: Hospital			
Title	Dated	Drawing No.	Revision No.
Site Plan	November 2012	ST5_A_01	
Lower Ground-04 Floor Plan	November 2012	ST5_B_01	
Lower Ground-03 Floor Plan	November 2012	ST5_B_0	
Lower Ground-02 Floor Plan	November 2012	ST5_B_03	
Lower Ground-01 Floor Plan	November 2012	ST5_B_04	
Ground Floor Plan	November 2012	ST5_B_05	
First Floor (Dementia) Plan	November 2012	ST5_B_06	
Roof Plan	November 2012	ST5_B_07	
Elevations	November 2012	ST5_C_01	
Stage 6: Senior Housing			
Title	Dated	Drawing No.	Revision No.
Site Plan	November 2012	ST6_A_01	
Lower Ground-2 Floor Plan	November 2012	ST6_B_01	
Lower Ground-1 Floor Plan	November 2012	ST6_B_02	
Ground Floor Plan	November 2012	ST6_B_03	
First Floor Plan	November 2012	ST6_B_04	
Second Floor Plan	November 2012	ST6_B_05	
Roof Plan	November 2012	ST6_B_06	
Elevations	November 2012	ST6_C_01	
Stage 7: Residential Care Facility			
Title	Dated	Drawing No.	Revision No.
Site Plan	November 2012	ST7_A_01	
Lower Ground-2 Floor Plan	November 2012	ST7_B_01	
Lower Ground-1 Floor Plan	November 2012	ST7_B_02	
Ground Floor Plan	November 2012	ST7_B_03	
First Floor Plan	November 2012	ST7_B_04	
Second Floor Plan	November 2012	ST7_B_05	
Third Floor Plan	November 2012	ST7_B_06	
Roof Terrace Plan	November 2012	ST7_B_07	
Roof Plan	November 2012	ST7_B_08	
Elevations	November 2012	ST7_C_01	
Stage 8: Healthcare Technical High School			
Title	Dated	Drawing No.	Revision No.
Site Plan	November 2012	ST8_A_01	
Lower Ground Floor Plan	November 2012	ST8_B_01	
Ground Floor Plan	November 2012	ST8_B_02	
First Floor Plan	November 2012	ST8_B_03	
Roof Plan	November 2012	ST8_B_04	
Elevations	November 2012	ST8_C_01	
Shadow Diagrams			
Shadow Diagrams	November 2012	Winter Solstice	
Shadow Diagrams	November 2012	Summer Solstice	
Shadow Diagrams	November 2012	Equinox Solstice	

ENGINEERING DRAWINGS			
Title	Dated	Drawing No.	Revision No.
General Arrangement Plan	21/11/12	00864_SK01	P1
Engineering Report	21/11/12	C& M Consulting Engineers (Ref: PN00864.RO1	Rev 3
Typical Road Sections Plan	21/11/12	00864_SK02	P1
Road Longitudinal Sections (1 of5)	21/11/12	00864_SK03	P1
Road Longitudinal Sections (2 of 5)	21/11/12	00864_SK04	P1
Road Longitudinal Sections (3 of 5)	21/11/12	00864_SK05	P1
Road Longitudinal Sections (4 of 5)	21/11/12	00864_SK06	P1
Preliminary Bulk Earthworks	21/11/12	00864_SK07	P1
Concept Stormwater Plan	21/11/12	00864_SK08	P1
Concept Stormwater Typical Sections	21/11/12	00864_SK09	P1
LANDSCAPE PLANS			
Title	Dated	Drawing No.	Revision No.
Landscape Master Plan	27/11/2012	L1	H
Landscape Analysis and Flows	27/11/2012	L2	H
S1 Medical Centre, Day Surgery, Respite Centre	27/11/2012	L3	H
Stage 1 Landscape Layout/Childcare Centre	27/11/2012	L4	H
Stage 8 Landscape Technical High School	27/11/2012	L5	H
Stage 4 Basement Car Park, Pond and Oval	27/11/2012	L6	H
Stage 2 and 6 Holistic Zone/ Seniors Living	27/11/2012	L7	H
Stage 7 Landscape	27/11/2012	L8	H
Stage 3 Serviced Apartments /S7 Elevation	27/11/2012	L9	H
Design Themes: Sculpture Elements	27/11/2012	L10	H
Design Themes: Mounds and Courtyards	27/11/2012	L11	H
Design Themes: Intimate Spaces	27/11/2012	L12	H
Design Themes: Passive S	27/11/2012	L13	H
LANDSCAPE DESIGN THEMES			
Title	Dated	Drawing No.	Revision No.
Design Themes: Large Spaces	27/11/2012	L14	H
Design Themes: Water Features	27/11/2012	L15	H
Design Themes :Themed Spaces	27/11/2012	L16	H
Design Themes: Healing Gardens	27/11/2012	L17	H
Design Themes: Healing Gardens	27/11/2012	L18	H

3 Site Context

Section 3 contains on outline of the subject site, its character and other land uses within the locality. Specifically, this section contains a description of the physical characteristics of the subject site, any land constraints that apply to the site and a description of the existing development immediately surrounding the subject site and within the locality.

3.1 Subject Site

The proposed 'Life City Wollongong' development is to be located at Lot 4 DP 258635 Warwick Street, Lot 2 DP 534116 Nottingham Street and Lot 2 DP 249814 York Street, Berkeley. The land is located within the Berkeley Hills to the north of Lake Illawarra, as shown in Figure 1(A, B and C). The land is irregular in shape and has a total area of 16.78 hectares. The site has a history of rural land use, prior to the construction of the adjacent F6 Freeway, however has remained vacant since the purchase of the land by Delbest from the (then) Roads and Traffic Authority approximately 22 years ago. There is evidence of fill located on the site, together with a number of informal trail bike tracks.

The subject site is partially cleared with pockets of vegetated areas. The dominant vegetation communities occurring on the subject site predominantly constitute Mixed Regrowth Forest/Woodland, concentrated in the north-east of the site and continuing onto the adjoining property; Wattle Forest/Woodland, in scattered occurrences mainly to the south and east and continuing onto adjoining properties; and Kikuyu grassland, which covers the majority of the site, occurring on the cleared land and as an understorey to the Wattle Forest/Woodland. Overall, the majority of the vegetation on the site has been introduced, with native species being somewhat isolated to the south-eastern part of the property. The soil landscape on the site is underlain by two different soil types being the Gwynneville and Berkeley soil types.

The site features gentle sloping open cleared areas toward the northern portion of the site, leading to higher ridge lines along the south-east which experience extensive southerly views (refer Figures 3 and 4). This small area of relatively level land at the top of the hill is located at R.L 74, with this ridgeline wrapping around a central valley. The steeper sloping portions of the site are located over the side slopes of the ridge and valley in the central portion of the site (refer Figure 2). The land within approximately 100m of the slope of the ridge has slopes of between 10 and 20 degrees, whilst the lower slopes and floor of the valley have slopes of between 3 and 8 degrees. To the south-west, the site area slopes moderately towards the residences of York Street and Nottingham Street. To the north of the site, there is also a significant drop in elevation due to the presence of the cut from the F6 Freeway. A marshy area is located midway down the sideslopes of the central valley areas which is possibly the location of an old farm dam.

Lot 4 DP 258635 and Lot 2 DP 249814 are bounded by the F6 Freeway to the north, which is the major arterial route providing access between the South Coast, Wollongong and Sydney, however there is no access directly to this freeway from the subject site. Lot 4 DP 258635 is currently accessed via a cul de sac from Warwick Street (refer Figures 6, 8 & 9). A 24m wide transmission line easement traverses both Lot 2 DP 249184 and Lot 2 DP 534116. These two smaller lots do not feature direct street frontage to the street and each contain two transmission towers for high voltage power lines (refer Figure 5).

Figure 1A: Locality / Context Plan

★ Nearby community facilities

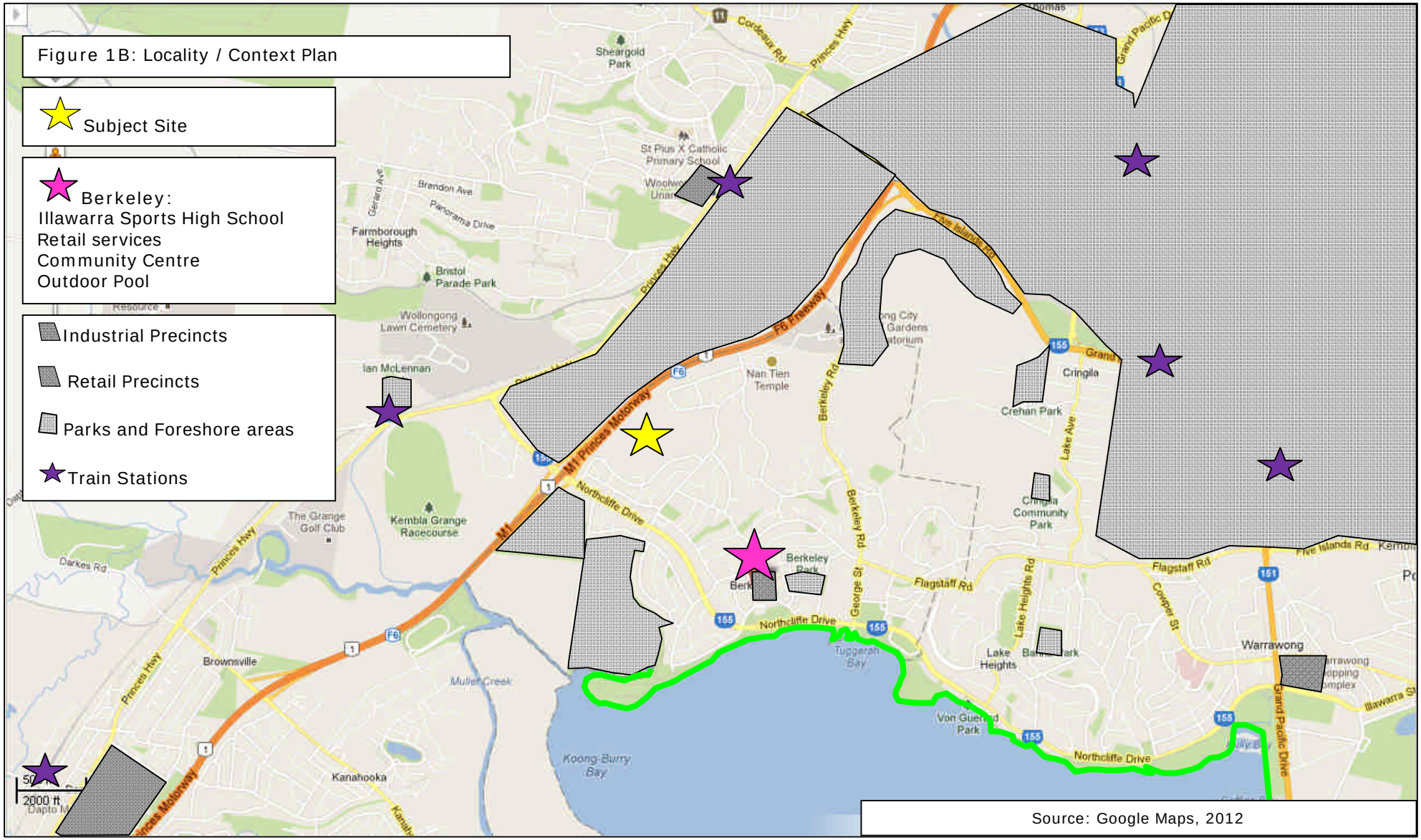
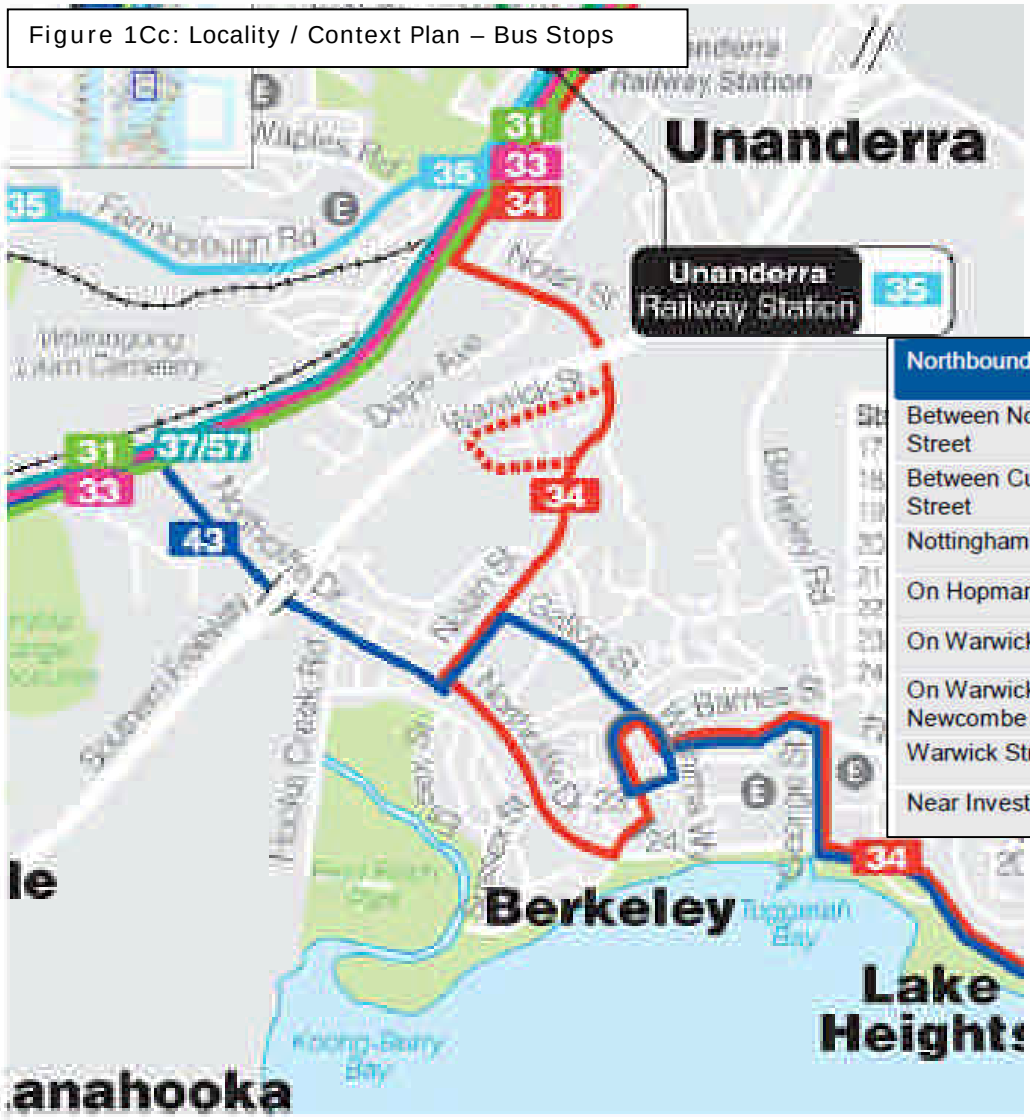


Figure 1B: Locality / Context Plan
Subject Site
Berkeley:
Illawarra Sports High School
Retail services
Community Centre
Outdoor Pool
Industrial Precincts
Retail Precincts
Parks and Foreshore areas
Train Stations
Source: Google Maps, 2012
Sheargold Park
St Pius X Catholic Primary School
Brendon Ave
Panorama Drive
Farmborough Heights
Bristol Parade Park
Wollongong Lawn Cemetery
Ian McLennan
Nan Tien Temple
Crehan Park
Cringila
Cringila Community Park
Berkeley Park
Kembla Grange Racecourse
The Grange Golf Club
Brownsville
Mullet Creek
Kanahooka
Koong Burry Bay
Tuggerah Bay
Lake Heights
Warrawong
Princes Hwy
M1 Princes Motorway
F6 Freeway
Northcliffe Drive
Flagstaff Rd
Berkeley Rd
Lake Ave
Lake Heights Rd
George St
Cowper St
Five Islands Rd
Grand Pacific Drive
Illawarra St
Darkes Rd
Cordeaux Rd
2000 ft

Figure 1Cc: Locality / Context Plan – Bus Stops



Northbound (Along Nolan Street)	Southbound (Along Nolan Street)
Between Northcliffe to Cumberland Street	Near Investigator Drive
Between Cumberland Street to Gallop Street	On Warwick Street near Hunt Place
Nottingham Street to Norfolk Street	On Hopman Cres – near Newcombe Street
On Hopman Cres – near Warwick Street	Between Gallop Street and Suffolk Street
On Warwick St – near Newcombe Street	Between Kelly Street and Gallop Street
On Warwick between Hunt and Newcombe St	
Warwick Street to Nolan Bridge	
Near Investigator Drive	

Bus Stop Locations on Nolan Street (including Warwick St Loop)

Source: GHD Traffic and Transport Assessment, November 2012, referenced *http://www.premierillawarra.com.au/networkmap.html*

Figure 2: Central area of site

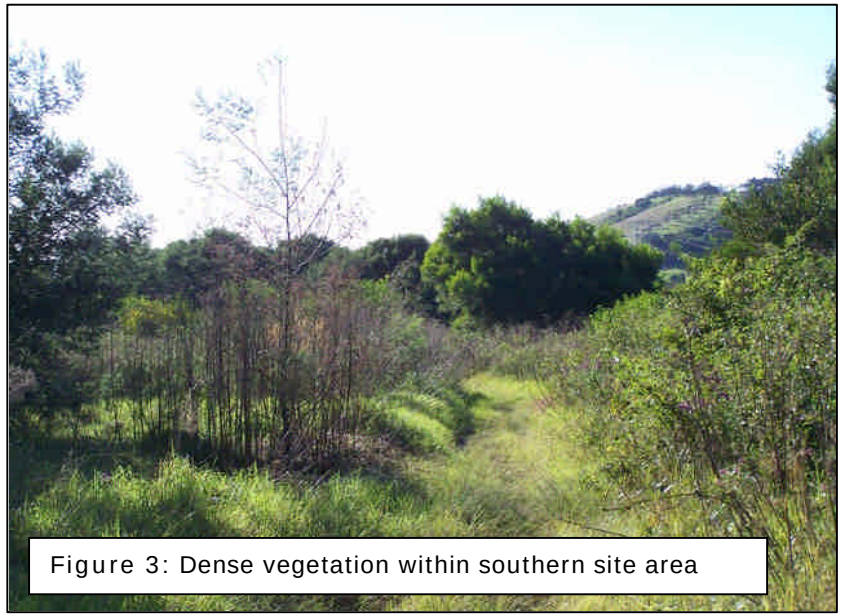


Figure 3: Dense vegetation within southern site area

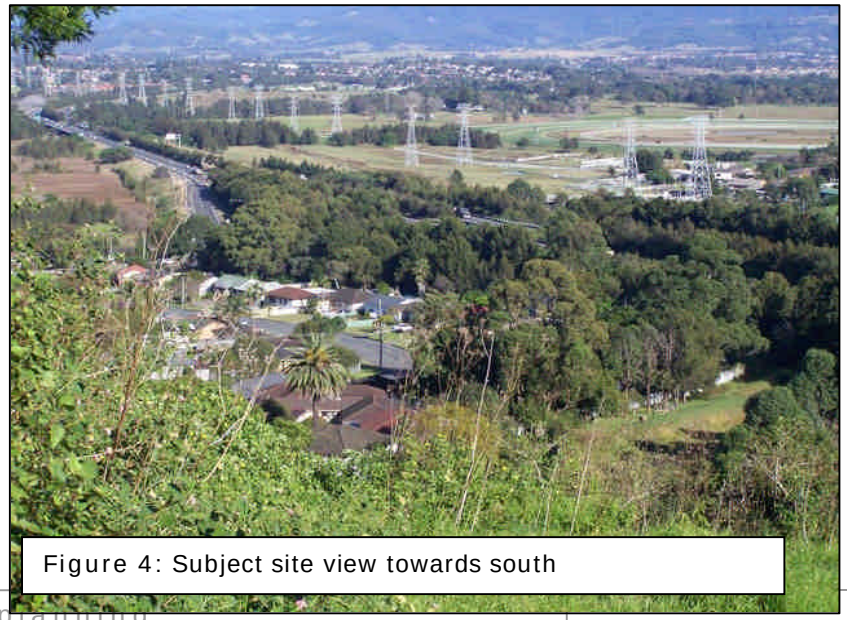


Figure 4: Subject site view towards south

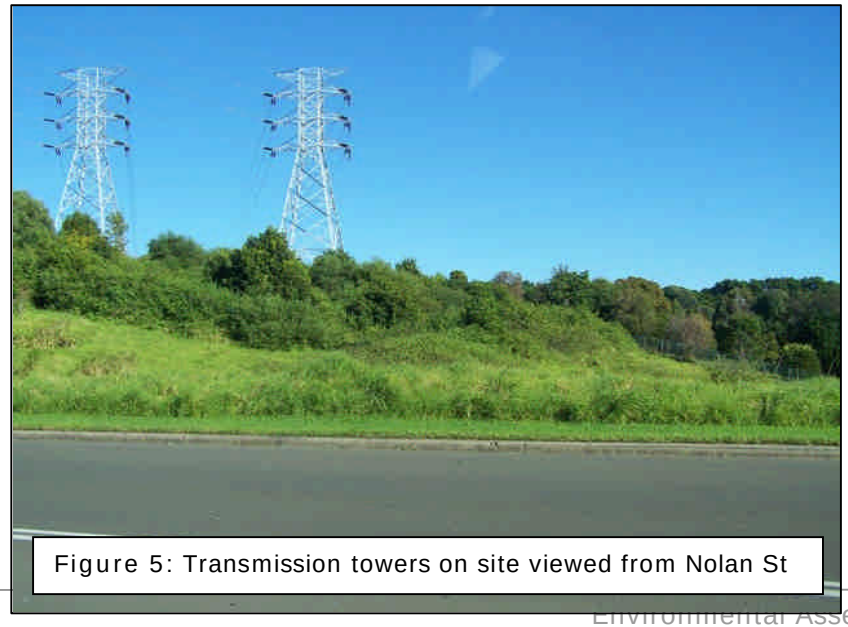


Figure 5: Transmission towers on site viewed from Nolan St

Figure 6: Site entry at Warwick Street view to south

Figure 7: Rear fence of adjoining residential properties of Hopman Crescent

Figure 8: View toward Warwick Street site entry and current gated entrance

Figure 9: View from Warwick Street site entry toward west

Figure 10: Aerial view of subject site

Figure 11: Residential development along Hopman Cres

Figure12: View of Warwick Street from the site entrance

Figure 13: Residential development along Nottingham St, the transmission lines on the subject site in the background

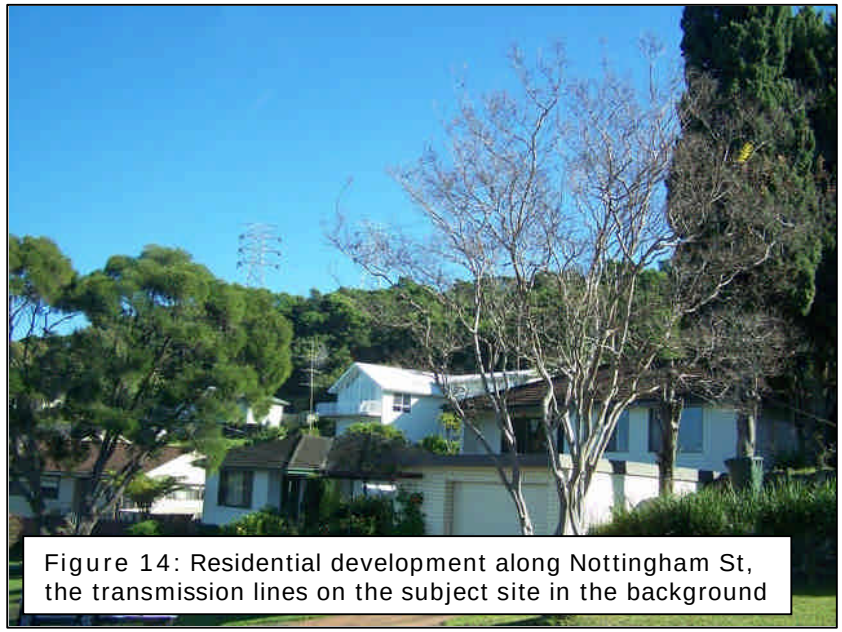


Figure 14: Residential development along Nottingham St, the transmission lines on the subject site in the background

3.2 Section 149(5) Certificates

The subject site is zoned R2 Low Density Residential and E3 Environmental Management under Wollongong Local Environmental Plan 2009 (WLEP 2009). Section 149(2) and (5) Certificates issued by Council for Lot 4 DP 258635 (Certificate Number 201204237), Lot 2 DP 534116 (Certificate Number 201204237) and Lot 2 DP 249814 (Certificate Number 201204238) indicate the following constraints on the land:

Lot 4 DP 258635

- Bushfire prone
- Uncategorised flood risk

Lot 2 DP 534116

- Bushfire prone
- Uncategorised flood risk

Lot 2 DP 249814

- Bushfire prone
- Uncategorised flood risk
- Acid Sulphate Soils (Class 3, 4 or 5 have been mapped) Council's mapping indicates that the site contains Class 5 Acid Sulphate Soils.

3.3 Surrounding Development

The subject site is located to the south of the existing residential area of Berkeley approximately 10km south of the Wollongong CBD (refer Figure 10). Specifically, Lot 4 DP 258635 is situated directly behind residential lots with immediate frontage to Warwick Street and Hopman Crescent. The smaller allotments, being Lot 2 DP 534116 and Lot 2 DP 249184, are located to the rear of battleaxe lots which do not have direct frontage to York Street, Nottingham Street or Nolan Street.

Residential development is situated to the north, east, and south with residential development in this location predominantly consisting of detached single storey brick and fibro dwellings (refer Figures 11-14). The F6 Freeway, which is a four lane arterial road, lies immediately to the north of the site. There is no direct access to the F6 Freeway, with the northern and southern entry and exit ramps to this road located to the south of the site leading from Northcliffe Drive via Nolan Street.

On the northern side of the F6 Freeway lies the Unanderra industrial estate. The Nan Tien (Buddhist) Temple is situated further to the north-east, on the eastern side of the F6 Freeway, beyond the existing residential development, as shown in Figure 1A. Approximately 1km to the south-east lies the northern shores of Lake Illawarra and lake foreshore areas. To the south, beyond Northcliffe Drive numerous outdoor recreation areas are situated, including the Berkeley netball courts and Macedonia Park (refer Figure 1B).

Approximately 300 metres to the south-east of the site, on the opposite side of the F6 freeway, is low-density residential development in the suburb of Berkeley. There is also low-density residential development approximately 600 metres to the east of the site. The topography of the area screens the proposal from non-industrial development to the south and east, as well as from much of the development to the north.

4 Project Description

Section 4 describes the development proposal in detail. Specifically, this section describes the proposed development and staging of the subject site and provides a detailed description of the proposed hi-tech holistic cancer and medical hospital facility.

4.1 Project Components and Staging Overview

The current development application pertains to a Concept Plan for Life City Wollongong which comprises the following components, to be constructed within eight (8) stages, as listed in Table 6 (over page). Figure 15 (over page) shows the Life City Concept Plan and the location of the stages within the proposed development.

4.2 Project Detail

The total project includes an extensive range of hospital and medical care services, research and educational facilities and accommodation for practitioners, students and residents in a number of buildings contained in eight stages on the site as detailed in Table 6. The development of each precinct will include the provision of the required infrastructure including services, roads, carparking and landscaping.

Stage 1 of the development will comprise the construction of the two access roads to the site from Warwick Street and Nolan Street. The Nolan Street access will be constructed over land which is in the ownership of Wollongong City Council. Correspondence from Wayne Douglass, Council's Property Services Manager dated 21 March 2011 confirms that "no objection is offered to this access road being incorporated into a concept plan for this development. However, this letter does not infer any approval by Council to either the development application nor approval to reclassify the site to enable the road to be constructed. These matters will be considered by Council on merit upon receipt of the Development Application." A copy of correspondence from Wayne Douglas of Council dated 21 March 2011 is contained as Appendix 2. It is further noted that Council's has granted its consent to the lodgement of this development application for the Concept Plan. Reclassification of the land can occur prior to the development proceeding.

A summary of the stages and the components to be provided within each stage is detailed in sections 4.3.1 to 4.3.8 below.

Table 6: Proposed Staging and Development Data of the Facility

Description of Proposed Development	Stage	Total Site Area (m^2)	Building Footprint Area (m^2)	Gross Floor Area (m^2)	Landscape area (m^2)	No. Storeys	No. Beds/ Persons	No. Parking Spaces
Medical Centre, Day surgery, Child Care Centre & Respite Care Centre Medical Centre & Day Surgery comprising; specialist rooms, childcare centre, respite care centre including initial structural works, landscaping and access.	1	21,337.49	2,693.71	4,248.70	14,092.60	Medical Centre - 3 Child Care Centre - 1	Child Care Centre - 70 children	Medical centre and day surgery – 154 Child Care - 27
Holistic Health Care Course Holistic health course including yoga, reiki, laughter therapy, meditation, auras, pranic healing and outdoor structures for these activities.	2	10,246.00	N/A	N/A	10,246.00	N/A	N/A	N/A
Serviced apartments Serviced apartments for attendants of patients and patients seeking outpatient services.	3	6,550.93	1,606.00	5,699.85	2,670.60	4 plus one basement	63 apartments: A: 11 x 3 bed (110.6m2) B: 44 x 2 bed (78.6m2) C:6 x 3 bed (175.0m2) D: 2 x 2 bed (95.0m2)	61
Ancillary accommodation & research, library, lecture theatre, auditorium complex Ancillary accommodation & research including library, lecture theatre, auditorium, research and development facility.	4	8,751.55	2,592.00	4,122,43	4,990.60	2 plus one basement	Auditorium: 340 seats Conference:976m^2 Restaurant: 290m^2 Hotel: 40 rooms	92
Hi Tech Holistic Cancer & Medical Hospital Hi-tech holistic, tertiary, referral, inpatient cancer and medical hospital including oncology and holistic, medical and rehabilitation, dementia and psychiatric wings.	5	13,572.96	5,354.00	24,880.63	14,092.60	5 plus 4 basement	320 beds	290
Self Care Seniors Housing	6	50,436.02	5,075.00	9,067.12	36,996.70	3	86 units: 36 x 1 bed + study 38 x 2 bed 12 x 3 bed	86
Residential Care Facility & Hostel Residential care facility and hostel	7	38,844.64	3,408.00	8,813.11	14,092.60	4 plus 2 basement	167 beds	60
Healthcare Technical High School Wollongong Healthcare Technical High School for 350 students including oval.	8	19,114.41	3,054.00	5,057.70	15,190.50	2	350 students	50
Total		168,854.70	23,782.71	61,889.54	112,372.90			820

Figure 15: Life City Concept Plan

4.3 Project Stages

4.3.1 Stage 1 – Medical Centre, Day Surgery, Respite Centre and Child Care Centre

Stage 1 of the project will comprise the works as shown in Figure 16 and detailed in Table 7 below.

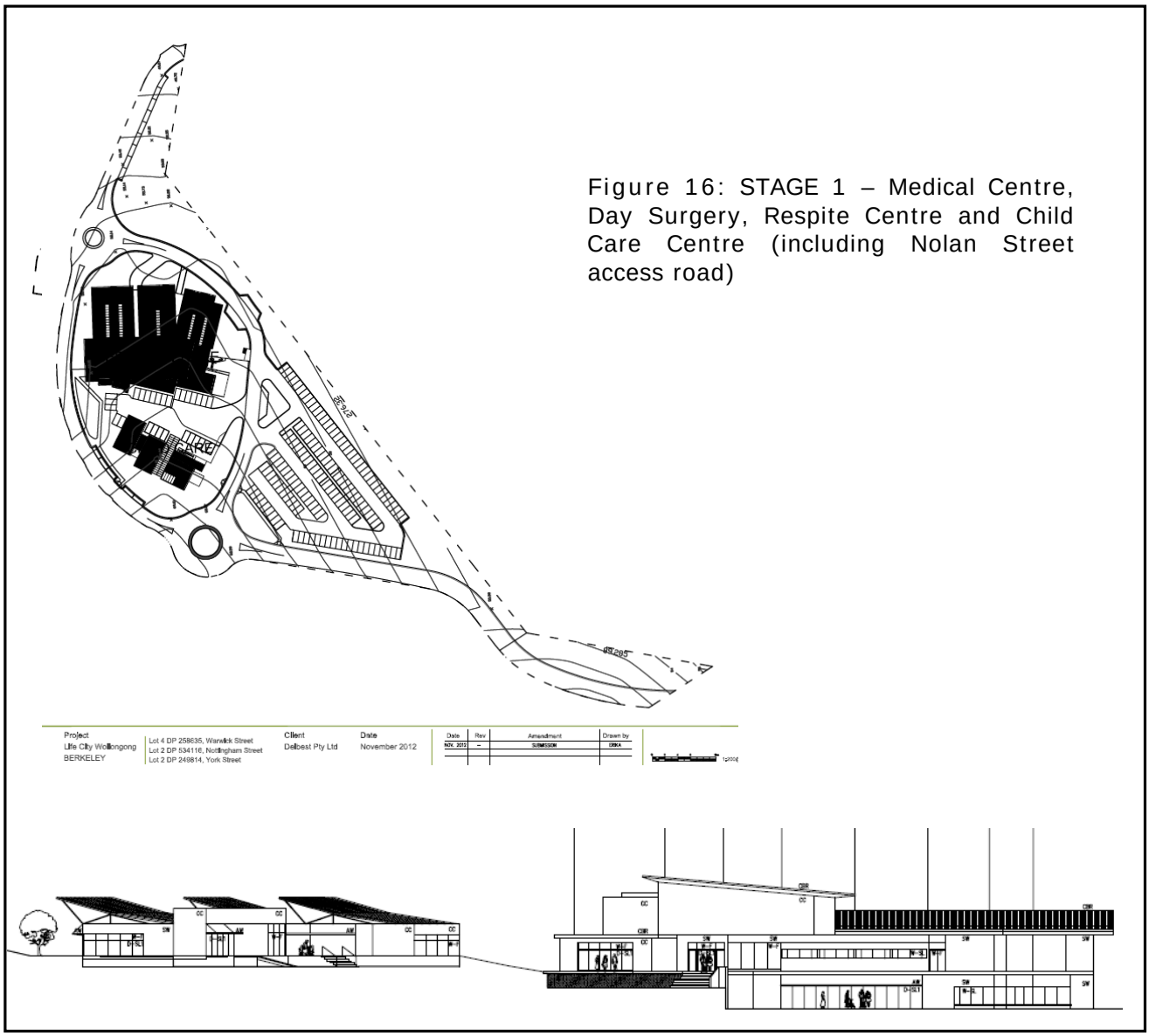


Figure 16: STAGE 1 – Medical Centre, Day Surgery, Respite Centre and Child Care Centre (including Nolan Street access road)

Table 7: Stage 1 –Day Surgery & Specialist Rooms

Stage 1 –Day Surgery & Specialist Rooms	Data
Total Site Area	21,337.49m^2
Building Footprint Area	2,693.71m^2
Building Gross floor area (inc Child Care Centre)	4,248.70m^2
Landscaped Area	14,092.60m^2
Number of storeys	Medical Centre - 3 storeys Child Care Centre – 1 storey
Number of car parking spaces	Medical centre/day surgery – 154 Child Care – 27 spaces

Stage 1 of the proposed development consists of the completion of the Day Surgery and Specialist Rooms, Medical Centre, Respite Care Centre and Child Care Centre including an outdoor car parking area on the eastern portion of the site, as well as the two access roads from Warwick Street and Nolan Street. The Child Care Centre is a separate single storey building to the three storey Medical Centre / Day Surgery / Respite Care Centre. Components of the Medical Centre will include but not be limited to:

- Family Health care services;
- Physiotherapy and Allied Health Care Services;
- Dentist;
- Optometrist;
- Complimentary and Cosmetic Health Care;
- Preventative Health Care;
- Community Health;
- Radiology;
- Pathology;
- Nuclear Medicine;
- Associated services including a convenience retail premises, coffee shop and post office.

Lower Ground Floor

The Medical Centre / Day Care Centre incorporates a respite care centre in the lower ground floor which includes five (5) bedrooms, a craft room, activities room, and kitchen. Also situated on the lower ground floor is a rehabilitation pool and convenience store.

Upper Ground Floor

This floor accommodates the medical centre and retail uses. The upper ground floor level includes a number of consulting rooms, retail spaces; X-ray, MRI, Pathology and Radiology rooms, staff rooms and amenities. This floor also provides waiting area for patients and their carers.

First Floor

This floor accommodates the Day Surgery which includes 4 theatre rooms, recovery beds and pre consultation areas. Rooms are also provided for medical staff, as well as discharge and admission area.

Child Care Centre

The child care centre is a separate building and is proposed to accommodate seventy (70) children and provide long day care and some occasional care for children associated with patients. It is proposed that the child care centre will be a single storey structure.

The Medical Centre / Day Surgery will be open 8am to 8pm, 7 days a week.

Figure 16A: Stage 1 photomontage

4.3.2 Stage 2- Holistic Health Care Course

Stage 2 of the project will comprise the works as shown in Figure 17 and detailed in Table 8 below.

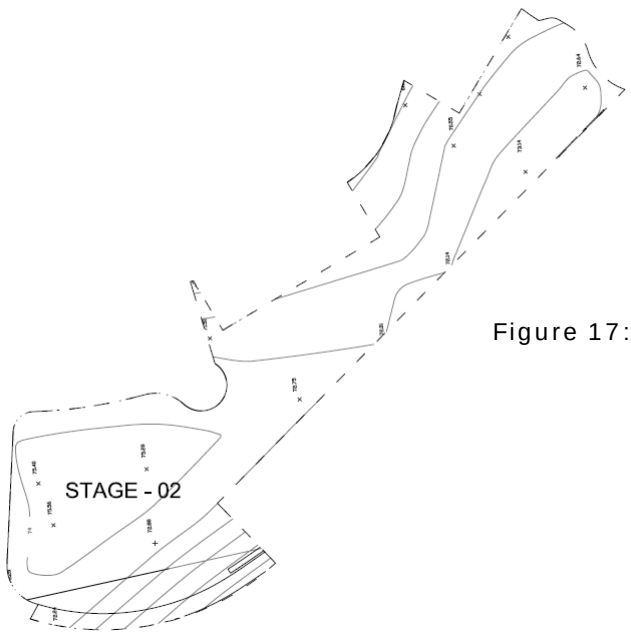


Figure 17: Stage 2 Holistic Health Care Course

Table 8: Stage 1 –Holistic Health Care Course

Stage 2 –Holistic Health Care Course	Data
Total Site Area	10,246.70m^2
Building Footprint Area	N/A
Building Gross floor area	N/A
Landscaped Area	10,246.70m^2
Number of storey's	N/A
Number of car parking spaces	N/A

Stage 2 of the proposal comprises a central open space between the two high points on the subject site that will contain a holistic health course. The holistic health course is to be integrated into the scenic landscaping of the higher green portion of the site. Both organised group and casual group use of this site is envisaged. The course will have outdoor facilities for, but not limited to:

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

4.3.3 Stage 3 – Serviced Apartments

Stage 3 of the project will comprise the works as shown in Figure 18 and detailed in Table 9 below.

Table 9: Stage 3 – Serviced Apartments

Stage 3 – Serviced Apartments	Data
Total Site Area	6,550.93m^2
Building Footprint Area	1,606.00m^2
Building Gross floor area	5,699.85m^2
Landscaped Area	2,670.6m^2
Number of storeys	4 storey +1 basement
Number of car parking spaces	61

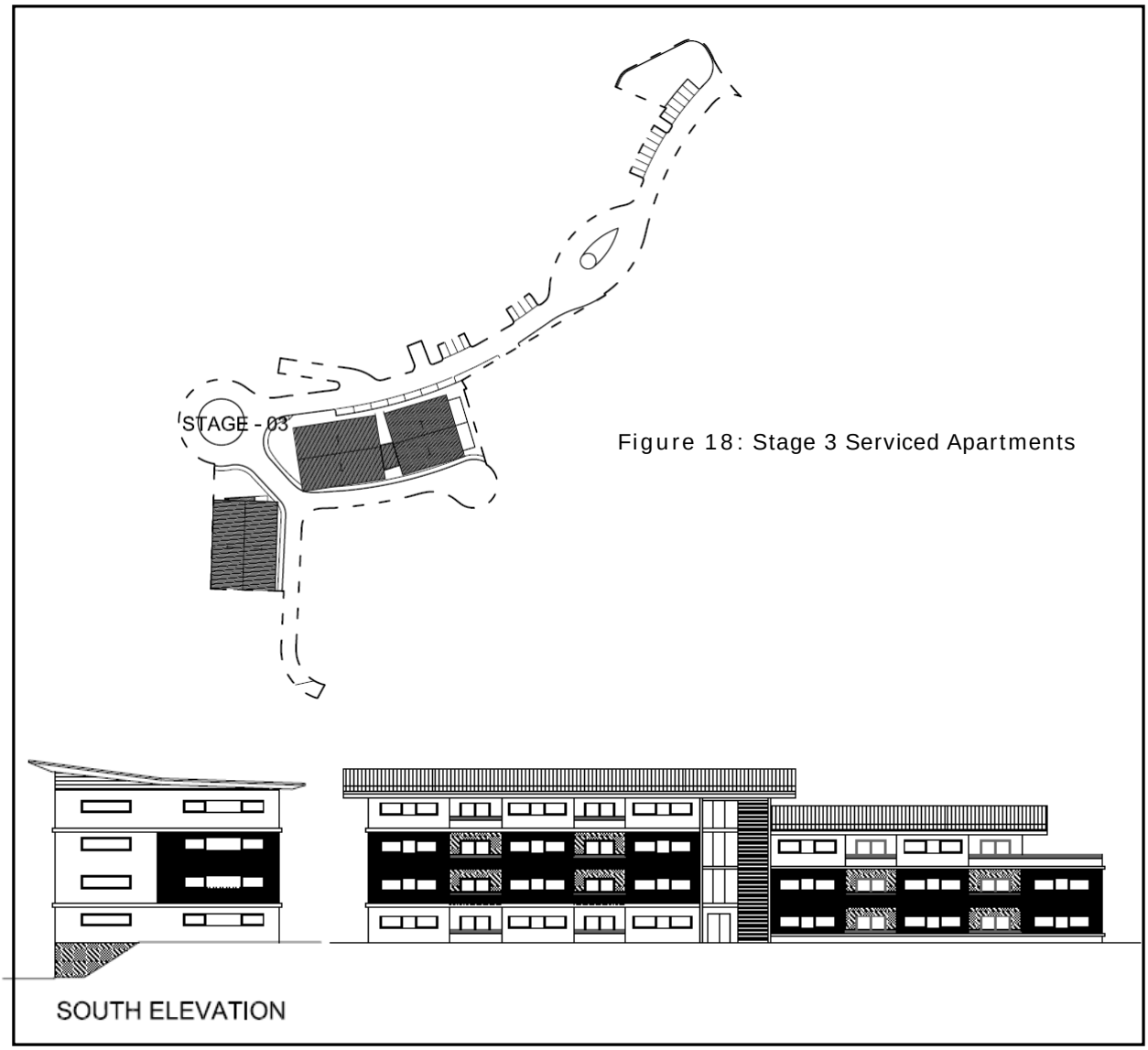


Figure 18: Stage 3 Serviced Apartments

It is proposed that a total of 63 apartments will be provided for patient relatives, outpatients as well as on site accommodation for staff, such as visiting medical practitioners. The accommodation is limited to people associated with the overall function of Life City - Wollongong for a short, medium or longer term timeframe.

Life City incorporates a 'Medi-Motel' design, whereby patients visiting both the Day Surgery and the Hospital are offered extended stay to support treatments and procedures, in the accommodation facilities on site, in particular the serviced apartments. The concept of Life City is to provide this holistic care service, acknowledging that patients have often travelled for the purposes of treatment, or require numerous treatments over a number of days. The accommodation provided on site at Life City provides an accommodation service for both patients and carers during treatments and procedures.

The 63 dwellings are to comprise the following:

- 17 dwellings – 3 bedrooms;
- 46 dwellings – 2 bedrooms

Sixty one (61) car parking spaces are provided, of which the majority will be situated within a cut into the sloping hill to the south east.

Figure 18A: Stage 3 photomontage

4.3.4 Stage 4 – Ancillary Accommodation and Research Lecture Theatre Auditorium Complex

Stage 4 of the project will comprise the works as shown in Figure 19 and detailed in Table 10 below.

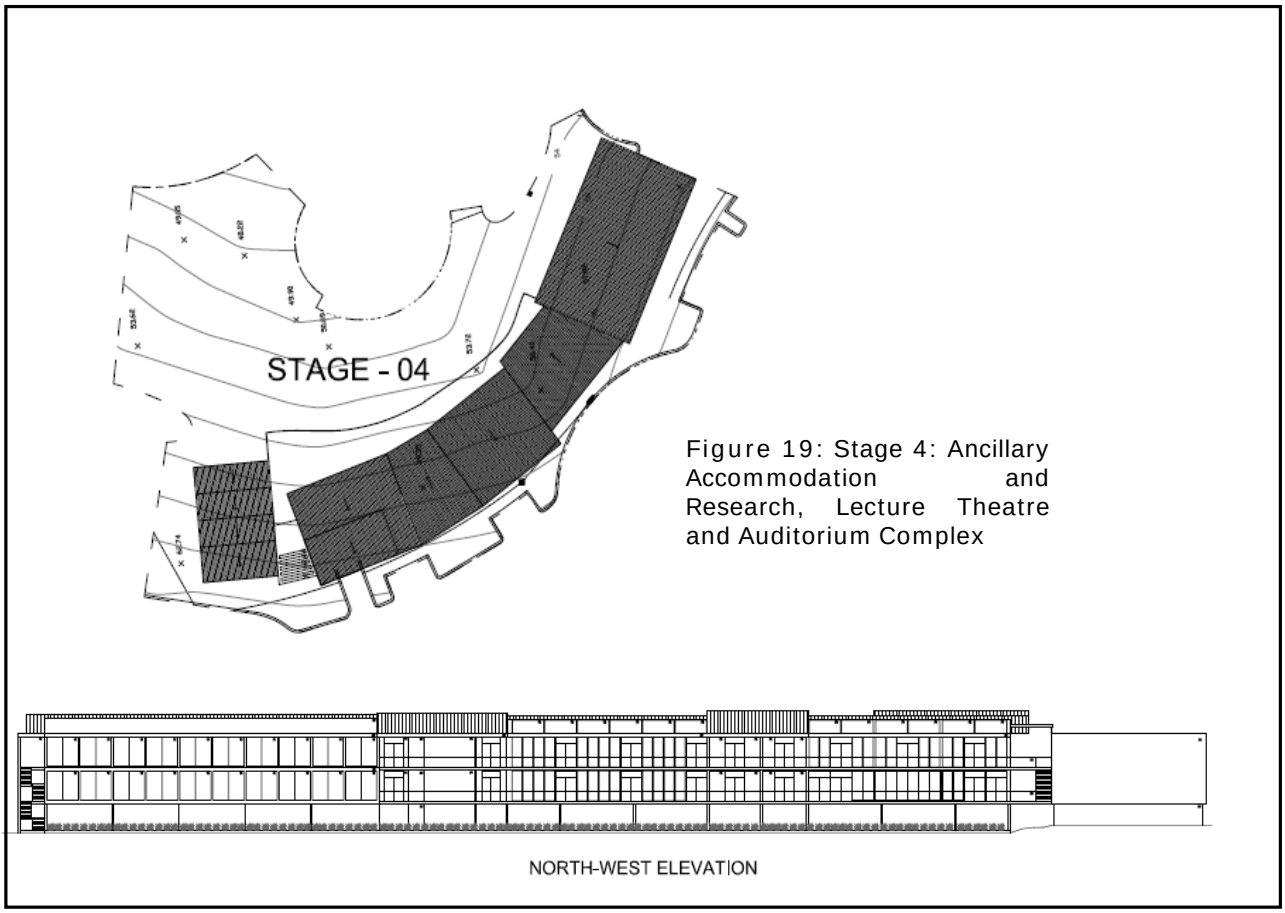


Figure 19: Stage 4: Ancillary Accommodation and Research, Lecture Theatre and Auditorium Complex

Stage 4 will provide a central facility for healthcare learning and development. The development will include graduate, Master and PhD collaboration with Wollongong Graduate School of Medicine and the Department of Health Informatics. These facilities will also be accessible to doctors, nurses, healthcare professionals and medicals students. Landscaping works are also incorporated within this precinct.

This building will provide a 40 bed hotel facility, a 340 seat auditorium, library, laboratory, amenities, 15 conference rooms (976m^2); a restaurant; and basement and outdoor car parking.

Table 10: Stage 4 Ancillary Accommodation, Educational & Research Facility

Stage 4 Ancillary Accommodation and Educational & Research Facility	Data
Total Site Area	8,751.55m^2
Building Footprint Area	2,592.00m^2
Building Gross floor area	4,122.43m^2
Landscaped Area	4,990.6m^2
Number of storeys	2 storey + 1 lower
Number of car parking spaces	92

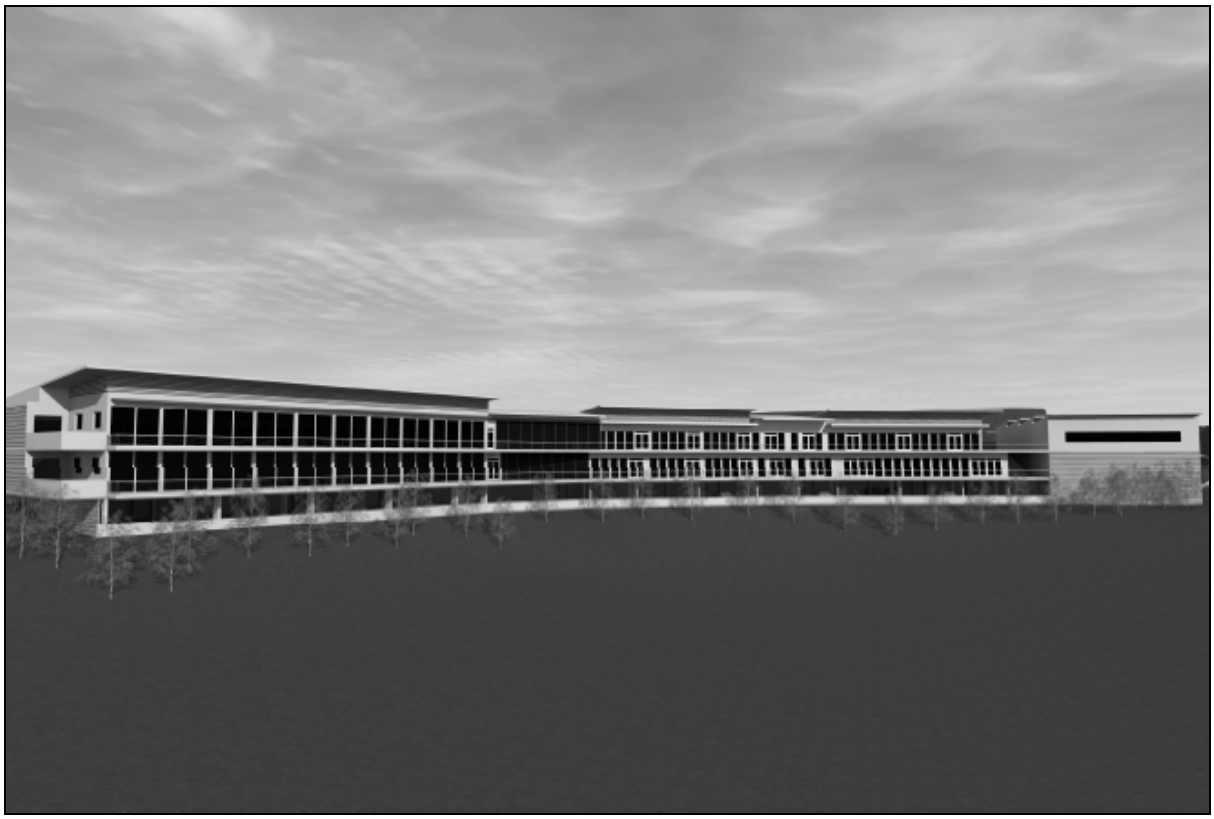


Figure 19A: Stage 4 photomontage

4.3.5 Stage 5 – Hi-Tech Holistic Cancer and Medical Hospital Facility

Stage 5 of the project will comprise the works as shown in Figure 20 and detailed in Table 11 below.

Table 11: Stage 5 Hi-tech Holistic Cancer & Medical Hospital Facility

Stage 5 Hi-tech Holistic Cancer & Medical Hospital Facility	Data
Total Site Area	13,572.96m^2
Building Footprint Area	5,354.00m^2
Building Gross floor area	24,880.63m^2
Landscaped Area	14,092.60m^2
Number of storeys	5 storey + 4 lower
Number of car parking spaces	290

Tertiary Teaching Inpatient Referral Hospital Facility

The director of Delbest, Dr M.K Rashid has been appointed as a Clinical Lecturer at the University of Wollongong Graduate School of Medicine and has a close working relationship for the School, particularly supporting higher degree research students. The Life City Hospital will serve as a teaching hospital in association with the University of Wollongong, similar to the existing arrangement with Centre Health, Shellharbour. Patients are admitted to the hospital upon referral from other health and medical institutions for the treatments available as there are no operating theatres within the hospital facility.

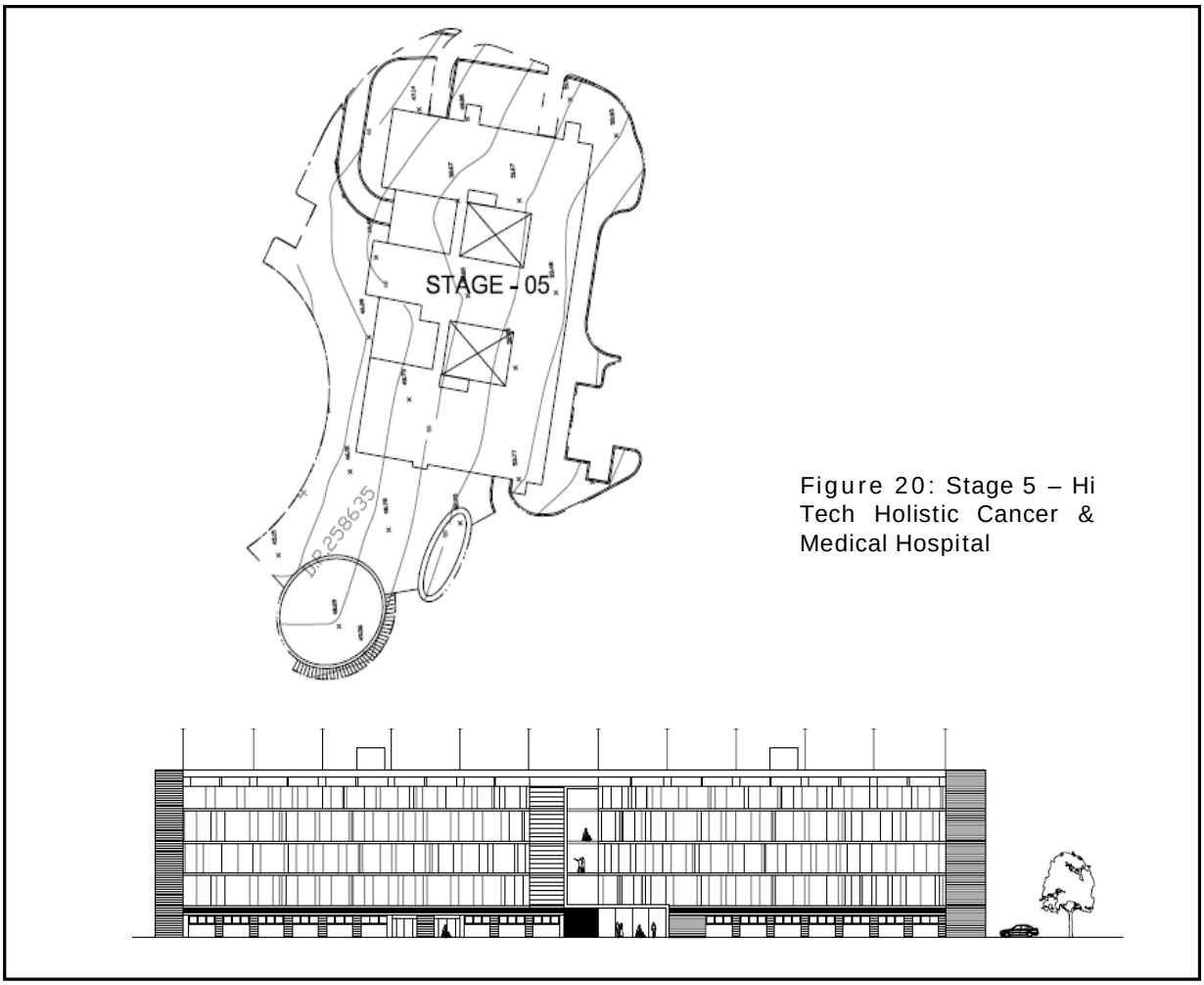


Figure 20: Stage 5 – Hi Tech Holistic Cancer & Medical Hospital

The University of Wollongong has confirmed its support for the project in correspondence from Professor Don Iverson, the Pro Vice Chancellor (Health) dated 24 November 2012 (refer Appendix 4) which confirms that "the University of Wollongong is supportive of projects that are expected to improve access to a range of health care services for the residents of the Illawarra and Shoalhaven regions……the University is especially supportive of projects that offer services that complement those offered by the ISLHD. In addition, given the University's educational and research missions, we support projects that are committed to providing health student placements and facilitating health research". NSW Health (Illawarra Shoalhaven Local Heath District) in its correspondence dated 19 November 2012 (refer Appendix 2) has also confirmed that it "welcomes the expansion of privately funded and operated health services in the region that complement the publicly funded and managed services provided by ISLHD".

Stage 5 comprises the completion of a 320 bed tertiary teaching referral hi-tech holistic cancer and medical hospital facility. The key component of the subject site it will comprise facilities for a broad range of holistic treatments including the following;

- Oncology and Holistic wing – 80 beds, clinics, staff facilities, associated facilities;
- Medical wing – 80 beds and associated facilities;
- Rehabilitation wing – 80 beds pool and spa, gymnasium, physiotherapy and associated facilities;
- Psychiatric and Dementia wing – 80 beds and associated facilities.

The Hospital will be open 24 hours a day, 365 days of the year. Each of the levels within the building will contain the following:

- Lower Ground – 04 (Car Park):
  Car Parking
- Lower Ground – 03 (Car Park):
  Car Parking, waste compactor, loading area, garbage room.
- Lower Ground – 02:
  Car Parking, service area and plant rooms, mortuary, hydrotherapy, radiation treatment (including 2 linear accelerators), physiotherapy and oncology.
- Lower Ground – 01:
  Car Parking, offices, kitchen, plant rooms, store rooms, laundry, CCSD and ancillary services.
- Ground Floor:
  Emergency / ambulance department, admissions unit including retail spaces and waiting areas, day treatment.
- First Floor:
  Dementia ward
- Second Floor:
  Rehabilitation ward
- Third Floor:
  Medical ward including intensive care unit
- Fourth Floor:
  Oncology

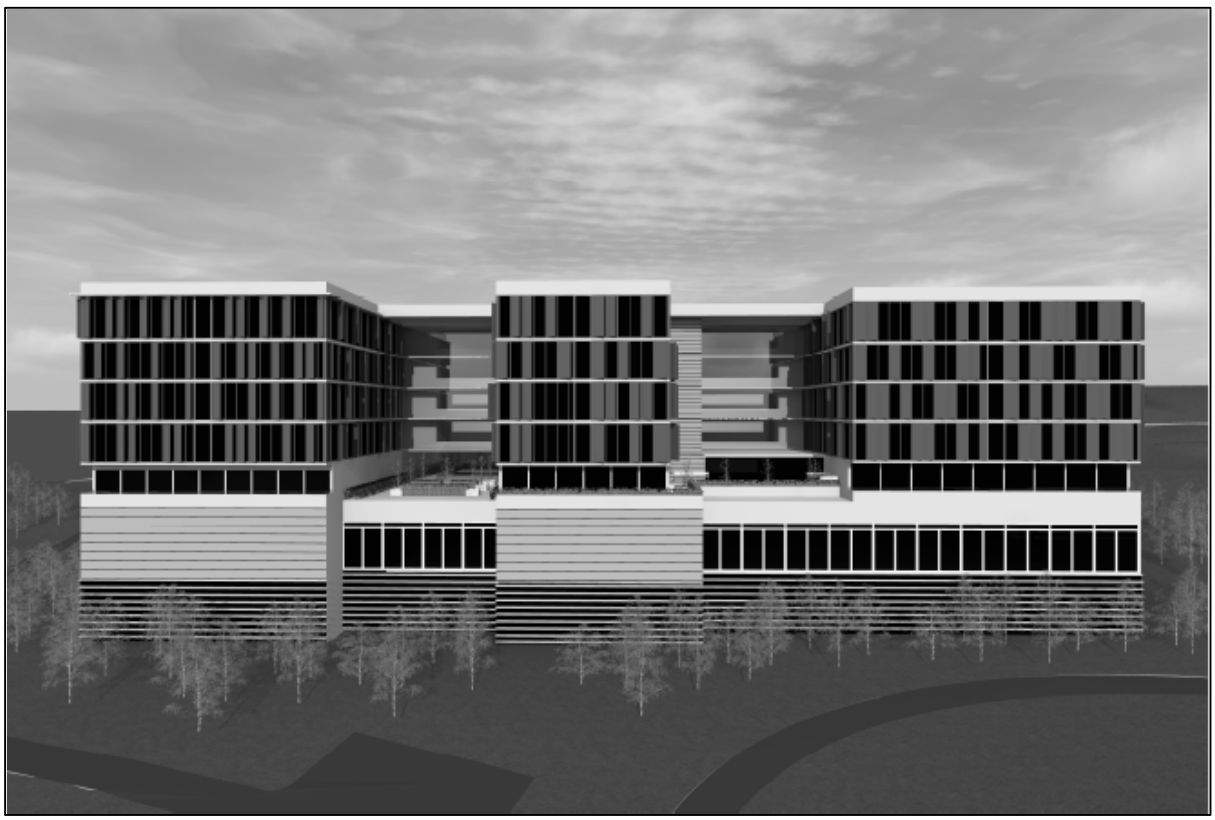


Figure 20A: Stage 5- Photomontage

4.3.6 Stage 6 - Self Care Seniors Housing

Stage 6 of the project will comprise the works as shown in Figure 21 and detailed in Table 12 below.

Table 12: Stage 6 Self Care Seniors Housing

Stage 6 – Independent Self Care Seniors Housing	Data
Total Site Area	50,436.02m^2
Building Footprint Area	5,075.00m^2
Building Gross floor area	9,067.12m^2
Landscaped Area	36,996.70m^2
Number of storeys	3 storeys
Number of car parking spaces	86

Stage 6 contains 86 independent living units for seniors which will comprise:

- 36 x 1 bed + study
- 38 x 2 bed
- 12 x 3 bed

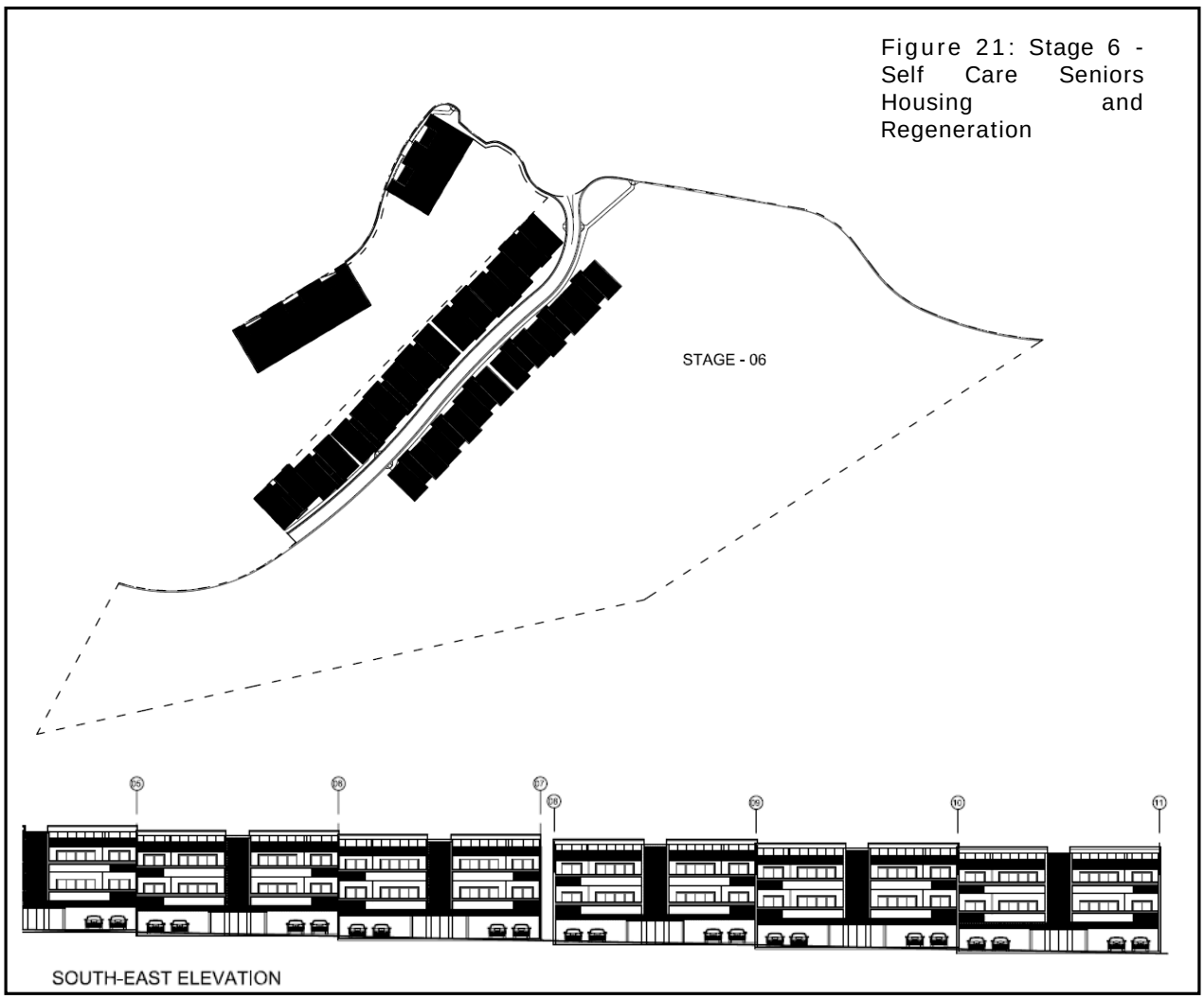


Figure 21: Stage 6 - Self Care Seniors Housing and Regeneration

Figure 21A: Stage 6 - Photomontage

4.3.7 Stage 7 – Residential Care Facility and Hostel

Stage 7 of the project will comprise the works as shown in Figure 22 and detailed in Table 13 below.

Table 13: Stage 7 – Residential Care Facility and Hostel

Stage 6 – Residential Care Facility and Hostel	Data
Total Site Area	38,844.64m^2
Building Footprint Area	3,408.00m^2
Building Gross floor area	8,813.11m^2
Landscaped Area	14,092.6 m^2
Number of storeys	4 storey plus 2 basement
Number of car parking spaces	60

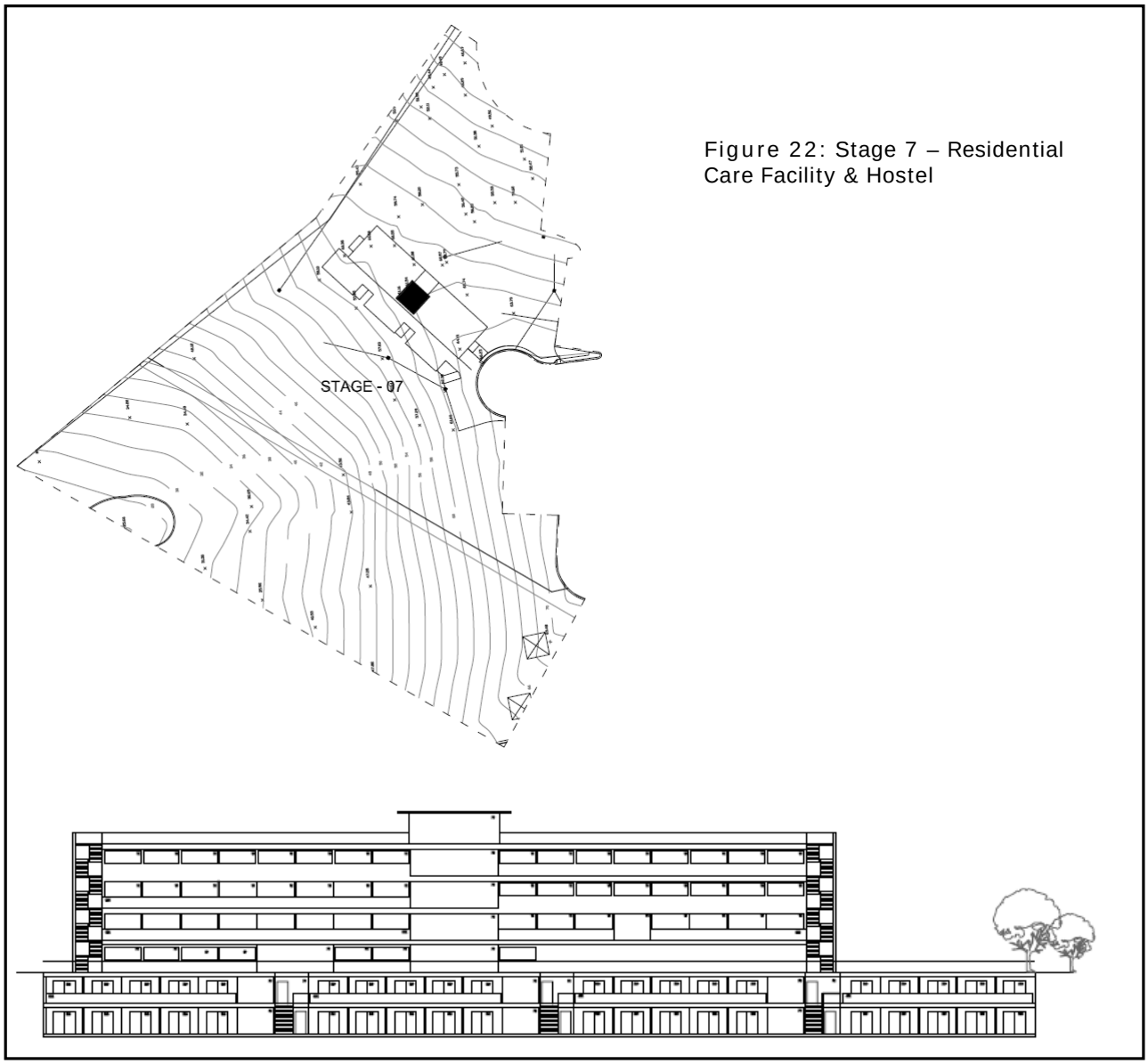


Figure 22: Stage 7 – Residential Care Facility & Hostel

Stage 7 consists of the residential care and hostel components of the proposal providing a total of 167 beds across 156 rooms.

The Residential care facility and hostel is to comprise of the following elements:

- Residential Care facility – comprising 30 beds for dementia, 82 beds for low care, 28 beds for high care;
- Hostel facility comprising 27 beds;
- Lounge rooms;
- Common rooms;
- Amenities/staff facilities;
- Gym / spa; and
- Service areas including commercial kitchen and laundry.

Figure 22A: Stage 7 – Photomontage

4.3.8 Stage 8 – Wollongong Health Care Technical High School

Stage 8 of the project will comprise the works as shown in Figure 23 and detailed in Table 14 below.

Table 14: Stage 8 – Wollongong Healthcare Technical High School

Stage 6 – Residential Care Facility and Hostel	Data
Total Site Area	19,114.41m^2
Building Footprint Area	3,054.00m^2
Building Gross floor area	5,057.70m^2
Landscaped Area	15,190.50m^2
Number of storeys	2 storey
Number of car parking spaces	50

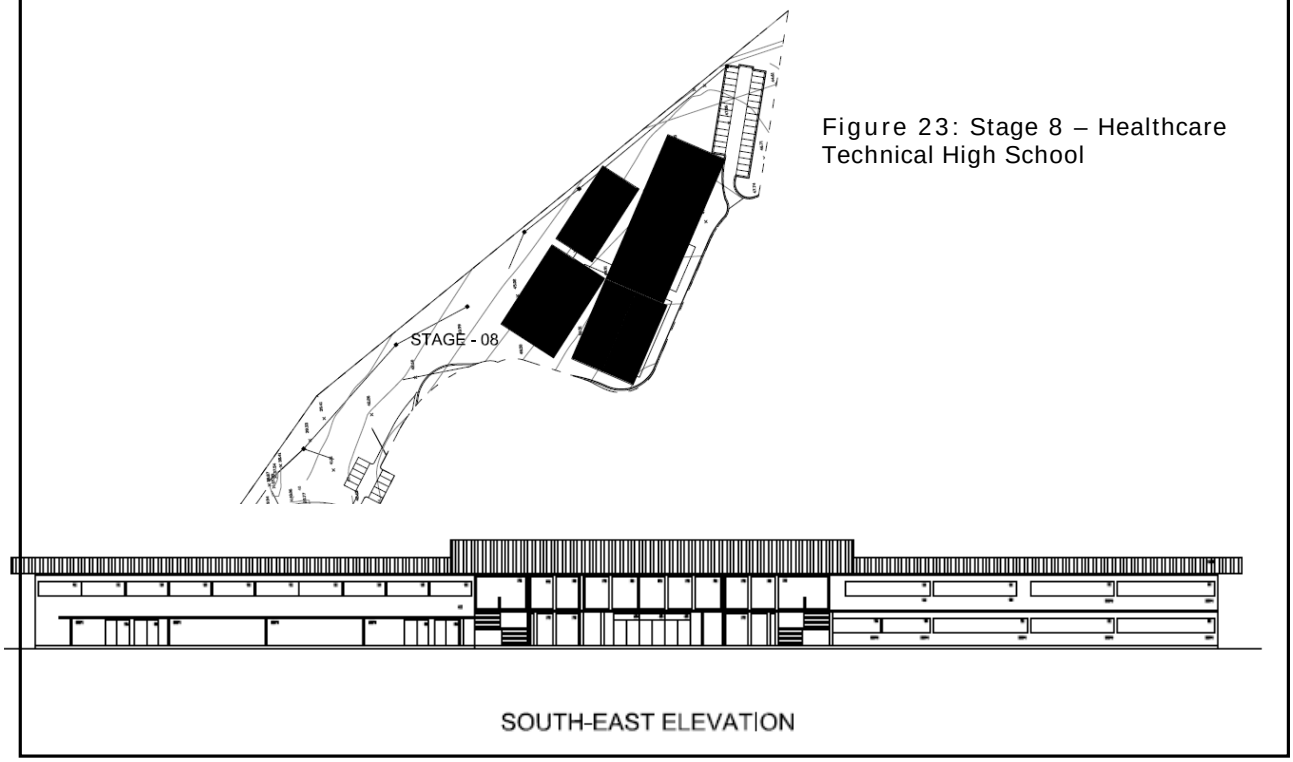


Figure 23: Stage 8 – Healthcare Technical High School

Stage 8 of the Life City project incorporates a specialist High School. This high school will cater for years 7 to 12, for approximately 350 - 360 students, and will function as a specialised health high school for the purpose of teaching and learning targeted toward health and medical practice. The health education based selective school will comprise the following elements:

- 12 classrooms;
- 4 laboratories;
- Outdoor common areas including an oval;
- Library;
- Outdoor spaces including an oval;
- Work spaces;
- Sports hall;
- Café / dining facilities; and
- Administration offices and amenities.

Figure 23A: Stage 8 - Photomontage

5 Project Need and Alternatives

Section 5 contains a discussion of the need for the project and consideration of alternatives to satisfy the requirements of the Director General.

5.1 Need for the Proposed Development

In Australia, approximately 459,000 people were diagnosed with new cases of cancer in the 2000. According to the Australian Bureau of Statistics (ABS) cancer is the second largest cause of death in Australia. 29% of total deaths were attributed to cancer, 19% of the disease burden, and 30% of years of life lost due to premature mortality in 1996 (Hiller J.E & Freak-Poli Rosanne "Trends in cancer mortality during the 20th century in Australia", Australian Health Review, November 2007, Vol 31 No 4). One in three Australians will develop cancer at some point in their lives.

NSW Health, Illawarra Shoalhaven Local Health District "Working Together Building Healthy Futures – The Illawarra Shoalhaven Local Health District Health Care Services Plan 2012-2022" (the 'Services Plan') dated October 2012 identifies the areas which NSW Health needs to focus on to create a sustainable and integrated service system. While this is a report surrounding the public health system, there are some overarching issues across both public and private health services of relevance to the Life City project. One of these overarching issues is that the demand for aged care, medical, surgical and cancer services will continue to increase, driven by a range of factors, including our ageing population. It is recognised in the Services Plan that there is a range of aged and space constrained facilities requiring ongoing maintenance and continual upgrades where funding is required. Shellharbour Hospital was recognised as a priority due to the infrastructure footprint not keeping pace with the growth in population and their health needs. Life City Wollongong will be well placed to serve this growing population, through the provision of a range of services, including aged care facilities and further health infrastructure accessible to the growing southern Illawarra and Shellharbour areas.

Currently in the Illawarra, there are two linear accelerators, and a third under development at Wollongong Hospital. There is one under construction at the Shoalhaven Cancer Care Centre. Life City proposes an additional two linear accelerators, therefore significantly increasing the number of linear accelerators available in the Illawarra.

The following section is principally an excerpt from the Preliminary Assessment prepared by Aberline & Associates (in italics), which contained a detailed description of the need for the development. Where necessary, this has been updated to reflect the current situation in 2012 (in standard text):

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 (now known as the Illawarra Shoalhaven Local Health District).

The following nine public health-care facilities (hospitals) are located in the Illawarra Region:

- 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 and is 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.
- Wollongong Day Surgery – Recently submitted a development application for expanded facility proposed on two adjoining allotments and will comprise a five storey building that will adjoin the existing facility and will include 2 additional operating theatres, 9 additional beds pre operation, including IVF, 12 beds post operation, and 12 chairs post operation.
- 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 inpatient 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 71 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.

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.
- Wollongong Private Hospital was approved by Wollongong City Council on 18 April 2011. The development is to be located at the western end of Crown Street and will contain 154 beds, an operating theatre, general practice, diagnostics, clinical and allied health tenancies and specialist health consulting suites. This development has not proceeded at the date of preparing this Environmental Assessment.
- Proposed Illawarra International Health Precinct – This project as part of the proposed Dapto West release area was granted Part 3A approval whereby 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. This development has not proceeded at the date of preparing this Environmental Assessment.
- Proposed concept for a health and medical precinct containing a 180 bed private hospital by the University of Wollongong. This development has not proceeded at the date of preparing this Environmental Assessment.

There are a number of medical centres within the region, however a nearby 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.

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%."

The following table is a Summary of Health Services in South Eastern Sydney and the Illawarra (SESIAHS) which is provided from the 'South Eastern Sydney Illawarra Health Annual Report 2004-2005' (Table 15) which is the latest Annual Report providing comparative statistics regarding comparisons between health services within each region. The table demonstrates that the Illawarra has the lowest rate of General Practitioners per 1000 population proportion in 2004 / 2005. Life City will significantly contribute further to the availability of General Practitioners serving the local Illawarra population, providing much needed specialist care. An additional 320 beds are also to be provided within the tertiary teaching referral hospital which will boost the beds per 1000 population ratio.

Table 15: Summary of Health Services in South Eastern Sydney and Illawarra Area

Health Service	Eastern	St George	Sutherland	Illawarra	Shoalhaven	SESIAHS
Proportion of Population	30.7%	19.4%	18.6%	23.6%	7.6%	100%
Proportion of Area (approx)	4%	3%	9%	24%	60%	100%
Public Hospitals	6	2	1	6	3	18
Beds per 1,000 Population	4.37	2.59	1.45	2.76	2.33	2.94
Number of Acute hospitals	5	1	0	1	0	7
Private Hospitals/Facilities	6	3	2	6	1	18
GPs per1,000 Popn Proportion	1.71	1.14	1.0	.85	1.03	1.21
Primary/Community Health:						
Number of Centres	14	14	6	71	23	128
Workforce (FTE)	144.9	61.8	151.0	248.6	80.4	686.7

Source: South Eastern Sydney Illawarra Health Annual Report 2004-2005 (Table 1.1)

5.2 Project Justification

The key justifications for the development of Life City – Wollongong, include:

- The Illawarra and South Coast Regions have an undersupply of hospital beds;
- Both regions have bed occupancy levels that indicate hospital overcrowding;
- Hospital bed licensing will be deregulated removing the existing bed cap and allowing increased participation in the health system by private organisations;
- The existing burden on the public system will be relieved and future growth accommodated without the need to provide extensive new public infrastructure;
- The proposal will capture many of the existing Illawarra and South Coast residents leaving the region for treatment elsewhere;
- Specialist treatment in the demand areas of cancer treatments will significantly improve the quality of healthcare in the region;
- The Illawarra has the lowest number of General Practitioners compared to Shoalhaven, Sutherland, St George and the Eastern District (refer Table 15 above).
- The facility will attract and retain general and specialist practitioners and provide ongoing opportunities for graduates in medicine from the University;
- The proposal will provide a healthcare facility that is not currently provided in a holistic form on a dedicated site anywhere in Australia;
- This Environmental Assessment demonstrates the suitability of the site for the proposed development; and
- Operationally the development is sustainable from both the environmental and healthcare perspectives.

In addition:

- The proposed aged care housing will support the growing national and local ageing population;

- Support to the University of Wollongong and education sector to provide teaching services and a specialist health school to the region;
- The facility will provide a public-private health facility; and
- The facility will also specialist cancer treatment care which provides additional support services for carers and patients with a holistic approach;

Support for the project has been provided by a range of educational institutions, government agencies and health care providers, with correspondence from such organisations contained in Appendix 4. This includes correspondence from:

§ Professor Don Iverson, the pro Vice Chancellor (Health) of the University of Wollongong who supports the project which will offer student health placements, facilitate health research and increase access to health care services.

§ Associate Professor R. Ramakrishna of the Graduate School of Medicine of the University of Wollongong who supports the opportunities the facility will provide for medical students and which will provide cutting edge therapies, adding value to health services in the region.

§ NSW Heath (Illawarra and Shoalhaven Local Heath District) which welcomes the expansion of privately funded and operated heath services which will complement publicly funded and managed services, particularly for residents of regional and rural areas.

§ Medicare Local which supports the development of a facility which can meet the holistic needs of patients in the region particularly as the total resident population is estimated to grow by 9.7% by 2021 to 421,830, with 25% of the population living in rural areas and 17.6% aged 65 years and over.

§ International health and medical investors who have expressed interest in the Life City Wollongong project, in particular, Aspen Medical Canada Inc and KFM Holdings SDN BHD, based in Malaysia. Both of these companies have particular interest in integrated and holistic wellness and medical facilities.

The following section is principally an excerpt from the Preliminary Assessment prepared by Aberline & Associates (in italics). Where necessary, this has been updated to reflect the current situation in 2012 (in standard type):

“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 Temple as well as our Shellharbour Hi-Tech Health Care City Project.

The overall public benefits include:

- 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;
- 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. ”

The proposed concept will deliver significant local and regional economic benefits through the provision of infrastructure to improve the operation of health services facilities in the Illawarra Region. The proposal is an integral part of the operations of the Delbest Pty Ltd specialist treatment facilities network, which includes Centre Health Complex Shellharbour.

Should the proposal not proceed the most obvious effects would be a resultant loss of a facility which has the ability to broaden the availability of specialist medical services to the Illawarra region. In addition to the loss of services in the health sector, if the development does not proceed there will be a resultant loss of economic and social benefits to the NSW economy, particularly as the facility is to provide over 2600 jobs to the local region.

5.3 Alternative Development Options

Alternative Option 1 – No Development

This option would see the subject site remain in its current undeveloped site, with the majority of the land retaining an E3 Environmental Management zone, despite this Environmental Assessment confirming that redevelopment of this land in an environmental sensitive manner is feasible. The subject site is currently vegetated with limited native vegetation, a high level of exotic species and abundant weed growth. The range of landuses which are permissible within the E3 zone (in the absence of consideration as a Major Project) are limited and, as the current zonings do not provide for acquisition, it is unlikely that the site would be viably development. Hence, it is unlikely that there is a viable solution to the restoration of native bushland and hence restoration, in the event that the Life City project does not proceed.

The proposal will be instrumental to the efficient operation of treatment services within the Illawarra. In economic and social terms, the “do nothing” approach is not considered to be an acceptable option as it would result in failure to provide the necessary treatment facility for the Illawarra region and beyond.

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 most likely result in a reduced development footprint and density with consequent reduction of environmental impacts, including reduced traffic generation, reduced resource usage and retention of the E3 Environmental Management zone site in a relatively undeveloped state.

However, 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 not be included within the reduced building footprint available, thus undermining the overall concept. This option would prejudice the economic and functional viability of the project and may result in a consequent loss of, or reduction in, the ability to fund both environmental initiatives and public infrastructure. A further outcome would be the loss of economic benefits (reduced employment, viability to restore the natural environment and investment etc.) for the community.

Alternative Option 3 – A larger 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 the development footprint and density with consequent intensification of environmental impacts. However, it is questionable whether the Illawarra region, with a population of 288,101 (profile ID, Wollongong, Shellharbour and Kiama LGA's) could sustain this scale of health facility and whether the site would be suitable from an environmental, visual, traffic and environmental amenity perspective.

Alterative Option 4 – A Varied Site Layout

The Concept Plan for the site has principally been guided by the contours of the land, view corridors, relationship to adjacent properties and the siting of the buildings in positions overlooking open space or vegetated areas. The Concept Plan for the site has evolved since the preparation of the Preliminary Assessment, with a number of modifications to this plan occurring to address issues which have been identified during preparation of the Environmental Assessment. The Concept Plan which was submitted at the Preliminary Assessment Stage is contained in Figure 24 below. Whilst consistent principles have been adopted within the revised Concept Plan, a number of refinements have been incorporated in the revised site layout including:

§ Relocation of the Stage 4 Ancillary Accommodation and Research Facility to a position adjacent to the internal access road. This will eliminate the need for a further road to access this building and will increase the size of the undeveloped area of land adjacent to the F6 Freeway. Further, relocation of this building to a position which has greater separation from the Freeway will reduce the extent of interface with this potentially noise generating source.

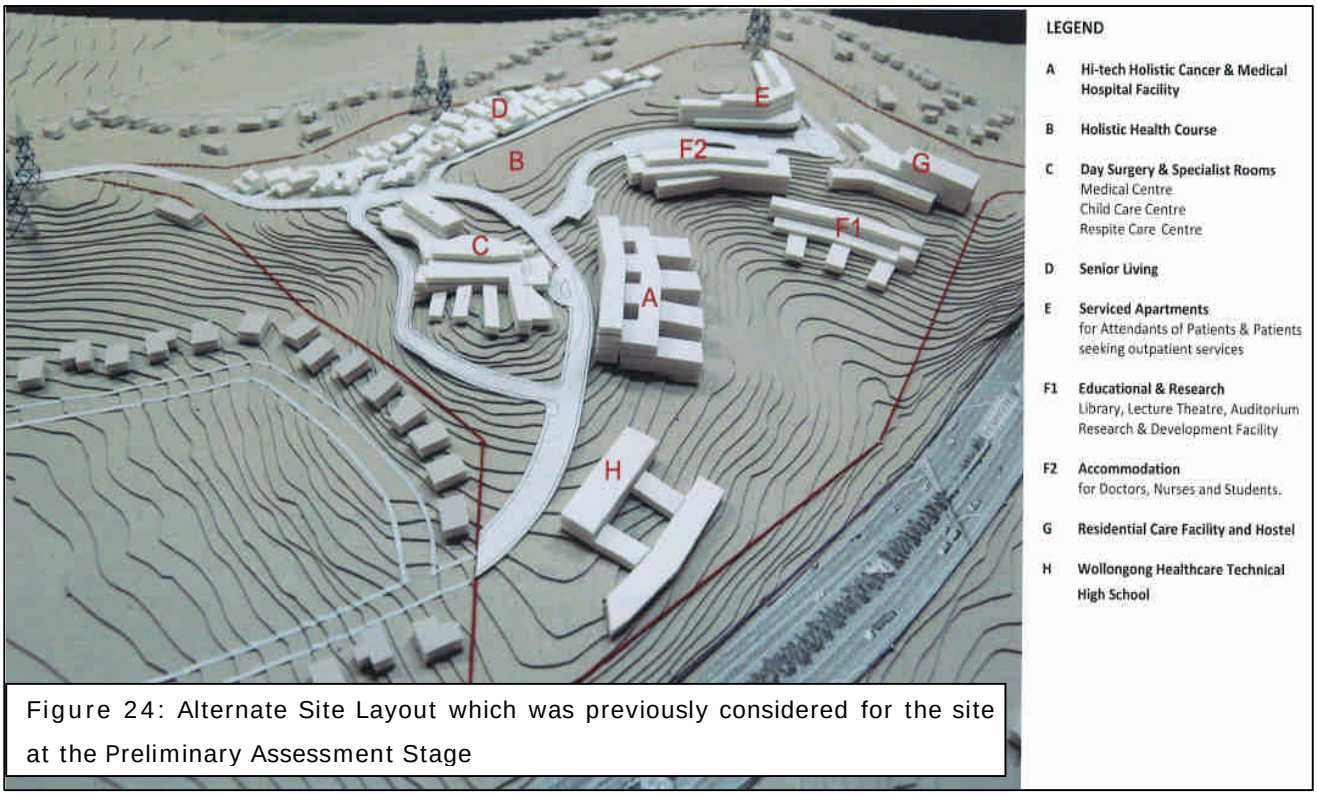


Figure 24: Alternate Site Layout which was previously considered for the site at the Preliminary Assessment Stage

§ A reduction in the footprint of the Stage 6 Self Care Seniors Housing, which has reduced the impact of the development on the south-eastern vegetation, identified as having a level of significance. The Self Care Seniors Housing has been relocated to a position on either side of a single access road, which will reduce the number of roads required to access this housing. This has also resulted in the retention of a greater area of vegetation, and has increased the separation to adjacent residential dwellings.

§ Provision of a link road (between Stages 3 and 6), primarily for bushfire purposes but also to provide for a more functional road arrangement.

§ The provision of two smaller buildings for the Stage 3 Serviced Apartments, rather than the one larger structure which was previously proposed. This has reduced the scale and visual impact of this building, when viewed from York Street and will also increase the separation from adjacent dwellings.

<u>The Preferred Alternative - Life City – Wollongong, Berkeley</u>

The Berkeley site was selected because it satisfied the client's operational requirements as well as being able to accommodate the environmental footprint of the development. The key benefits of the site as the preferred location are:

§ Proximity to current and emerging markets;

§ Access to transport networks, including the F6 Freeway, leading directly to Sydney in the north and Nowra and the NSW South Coast;

§ The development consolidates Delbest Pty Ltd existing presence as a significant treatment provider within the Illawarra region;

§ Low amenity impacts including noise, air quality and visual impacts with regard to sensitive neighbouring uses;

- Low environmental impacts associated with the proposed development with regard to the extent of site disturbance and impact on flora and fauna and other site features;
- The site is capable of being serviced by existing infrastructure, with augmentation to accommodate the proposed development; and
- The proposed development, in terms of location, siting and design is considered to meet the requirements with regard to economic, environmental and social matters.

6 State and Regional Statutory Planning Framework

The following section provides the state and regional planning and legislative framework for the proposed development. The purpose of this section is to outline the approval process and identify the applicable state planning policies, regional plans and other legislative requirements that relate to the proposed development.

6.1 State Legislation

6.1.1 Environmental Planning and Assessment Act 1979 – Clause 5 Objectives

The EP & A Act and accompanying Regulation provide the framework for environmental planning in NSW and include provisions to ensure that proposals which have the potential to impact the environment are subject to detailed assessment, and to provide opportunity for public involvement. The objectives of this Act as contained in Clause 5 are:

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

Relevance to proposed development:

The proposed development is consistent with the nominated objectives of the Act and is considered capable of fulfilling the statutory requirements. It is considered that the proposed development would not result in any negative impact in this regard and that the proposed development is in line with the State's planning requirements. This Environmental Assessment confirms that the proposed development can be undertaken in a manner which will not adversely impact on natural resources but will promote the economic use of the land in a manner which will provide an improved level of facilities for residents of the Illawarra.

6.1.2 Environmental Planning and Assessment Act, 1979

Part 3A of the EPA Act was repealed on 1 October 2011. However, 'Schedule 6A Transitional Arrangements – Repeal of Part 3A' of Environmental Planning and Assessment Act (EP&A Act 1979) is applicable to the subject proposal, as the Director General issued requirements were issued on 26 October 2010 within 2 years of the repeal date of Part 3A of the EP&A Act 1979. Therefore, the proposal satisfies the requirements of section 2(1)(c) of Schedule 6A of the EP&A Act, which specifies that transitional Part 3A projects includes those projects:

> "...For which environmental assessment requirements for approval to carry out the project, or for approval of a concept plan for the project, were last notified or adopted within 2 years before the relevant Part 3A repeal date (unless the environmental assessment is not duly submitted on or before 30 November 2012 or on or before such later day as the Director-General may allow by notice in writing to the proponent),"

At the date of repeal of Part 3A the Minister granted proponents until 1 October 2013 to lodge Environmental Assessments for Major Projects. However, in an endeavour to complete the assessment and determination of transitional Part 3A projects, the NSW State Government enacted an amendment to the EP&A Act on 24 August 2012 to require lodgement of an Environmental Assessment for a transitional Part 3A Project by 30 November 2012.

The Director General's Requirements for the Life City project were issued on 26 October 2010 and correspondence from the Acting Director of Government Land and Special Projects (of the Department of Planning) confirmed that the requirements would expire if the Environmental Assessment was not submitted for the project within 2 years of this date. However section 2(3) of Schedule 6A of the EP&A Act confirms that the Director General's requirements will not expire at this time (as the development is captured as a transitional Part 3A Project). This section states:

(3) If the environmental assessment requirements referred to in subclause (1) (c) are expressed to expire at a particular time, those requirements continue and do not expire at that time.

Section (3)(1) of Schedule 6A confirms that Part 3A of the EP&A Act "continues to apply to an in respect of a Part 3A transitional project".

Section 3B details the provisions which apply to development which has been the subject of a concept plan approval under Part 3A:

3B Provisions applying with respect to approval of concept plans

(1) This clause applies to development (other than an approved project) for which a concept plan has been approved under Part 3A, before or after the repeal of Part 3A, and so applies whether or not the project or any stage of the project is or was a transitional Part 3A project.

(2) <u>After the repeal of Part 3A, the following provisions apply (despite anything to the contrary in section 75P (2)) if approval to carry out any development to which this clause applies is subject to Part 4 or 5 of the Act:</u>

(a) if Part 4 applies to the carrying out of the development, the development is taken to be development that may be carried out with development consent under Part 4 (despite anything to the contrary in an environmental planning instrument),

(b) if Part 5 applies to the carrying out of the development, the development is taken to be development that may be carried out without development consent under Part 4 (despite anything to the contrary in an environmental planning instrument),

(c) any development standard that is within the terms of the approval of the concept plan has effect,

(d) a consent authority must not grant consent under Part 4 for the development unless it is satisfied that the development is generally consistent with the terms of the approval of the concept plan,

(e) a consent authority may grant consent under Part 4 for the development without complying with any requirement under any environmental planning instrument relating to a master plan,

(f) the provisions of any environmental planning instrument or any development control plan do not have effect to the extent to which they are inconsistent with the terms of the approval of the concept plan,

(g) any order or direction made under section 75P (2) when the concept plan was approved continues to have effect.

This clause confirms that following approval of a concept plan under Part 3A, if Part 4 applies to the carrying out of development, the development is taken to be permitted with consent, despite anything to the contrary in an environmental planning instrument. Further, any development standards which are within the terms of the approval of the concept plan have effect and the provisions of an environmental planning instrument or development control plan which are not consistent with the concept plan will not have effect in any later application.

6.1.3 Environmental Planning and Assessment Regulation, 2000

Part 1A of the Environmental Planning and Assessment Regulation, 2000 applies to transitional Part 3A projects and provides the legislative provisions which apply to the approval of concept plans. Specifically, clause 8N specifies that approval for a project application may not be granted for any project (or part of a project) that is located in an environmentally sensitive area of State significance or a sensitive coastal location if the project is prohibited by an environmental planning instrument that would ordinarily apply to the project. Clause 8N specifies that:

(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.

The subject site at Berkeley is not located within a sensitive coastal location. Further, State Environmental Planning Policy (Major Development) 2005 indicates that an "environmentally sensitive area of State significance" includes "land identified in an environmental planning instrument as being of high Aboriginal cultural significance or high biodiversity significance". In this regard it is noted that the site is zoned part R2 Low Density Residential and part E3 Environmental Management under Wollongong Local Environmental Plan 2009 (WLEP 2009) and hence within the E3 Environmental Management zone, the proposed development is prohibited.

However, whilst Wollongong LEP 2009 identifies areas of natural sensitivity on the site, this land is not identified within WLEP 2009 or within the flora and fauna investigations undertaken by Kevin Mills (Ref: Flora and Fauna Assessment November 2012) as having high biodiversity significance and is therefore not captured as "environmentally sensitive land of State significance". Where a site contains an area of natural resource sensitivity Clause 7.2 of WLEP 2009 only requires consideration of the impact of development on such lands, but does not expressly prevent the development of such land. This clause states:

"7.2 Natural resource sensitivity—biodiversity

(1) The objective of this clause is to protect, maintain or improve the diversity and condition of the native vegetation and habitat, including:

(a) protecting biological diversity of native flora and fauna, and

(b) protecting the ecological processes necessary for their continued existence, and

(c) encouraging the recovery of threatened species, communities, populations and their habitats.

(2) This clause applies to land that is identified as "Natural resource sensitivity—biodiversity" on the Natural Resource Sensitivity—Biodiversity Map.

(3) Development consent must not be granted for development on land to which this clause applies unless the consent authority has considered the impact of the development on:

(a) native terrestrial flora and fauna and its habitat, and

(b) native aquatic flora and fauna and its habitat, and

(c) the ecological role of the land, waterways, riparian land or wetland, and

(d) threatened species, communities, populations and their habitats.

(4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development is consistent with the objectives of this clause and:

(a) the development is designed, sited and managed to avoid potential adverse environmental impact, or

(b) if a potential adverse environmental impact cannot be avoided, the development:

(i) is designed and sited so as to have minimum adverse environmental impact, and

(ii) incorporates effective measures so as to have minimal adverse environmental impact, and

(iii) mitigates any residual adverse environmental impact through the restoration of any existing disturbed or modified area on the site.

Hence, it is not considered that the provisions of clause 8N apply to the proposed development and accordingly the Director General's requirements were issued for the development on 26 October 2010.

6.1.4 Threatened Species Conservation Act 1995

It is noted that the site is identified in Wollongong Local Environmental Plan 2009 as falling within the provisions of Natural resource sensitivity—biodiversity and hence flora and fauna investigations were carried out. A 'Flora and Fauna Assessment' (Appendix 12) was conducted by Kevin Mills and Associates in November 2012 (Ref 10/11). This report confirms that the assessment process under the Threatened Species Conservation Act, 1995 which is commonly referred to as the 'seven part test' is not used in the determination of Part 3A matters, with the assessment of such matters to be determined by the Minister for Planning. The report addresses the five steps identified within the Guidelines for Threatened Species Assessment, which apply to an application under Part 3A of the EPA Act, 1979 and which were prepared by the Department of Environment and Climate Change and the Department of Primary Industries in July 2005.

This assessment confirms that:

- The site has poor biodiversity values, with the vast majority of vegetation on the site being exotic (introduced). The native species are largely concentrated in the south-eastern corner of the land. This area is to be retained and revegetated;
- There will be no impact on threatened species as no species are expected to be resident on the land, although some species may visit the site occasionally;
- The endangered ecological community known as Illawarra Subtropical Rainforest occurs here and there on the site and there is some constituent regrowth within the study area, however the main area supporting these species will be retained and revegetated.

It was concluded 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." The proposed development will therefore not impact on threatened/endangered species, communities and/or habitat.

6.1.5 Protection of the Environment Operations Act 1997

The Protection of the Environment Operation Act 1997 (POEO Act) prohibits any person from causing pollution of waters, or air and provides penalties for air, water and noise pollution offences. Section 48 of the POEO Act requires a person to obtain an Environment Protection License (EPL) from the Department of Environment and Heritage before carrying out any of the premises based activities

described in Schedule 1 of the Act. The proposed Life City Wollongong – Hi-tech Holistic Cancer and Medical development is not a scheduled activity.

Relevance to proposed development:

The general provisions of the POEO Act in relation to pollution of the environment will apply throughout the proposed operations on the site such as the need to consider general requirements during the proposed operations in relation to the control of environmental issues such as noise, dust, emissions and any run-off which may be discharged from the site.

6.1.6 Contaminated Land Management Act 1997

The general object of the Contaminated Land Management Act, 1997 is to establish a process for investigating and (where appropriate) remediating land that is significantly contaminated and requires remediation. Under the Act (and also under the provisions of State Environmental Planning Policy No. 55 – Remediation of Land) it is necessary to establish if the proposed is to be developed on land which has been declared or found to be contaminated.

Relevance to proposed development:

The 149 certificate as issued by Council noted that Council has not been advised that the land is contaminated. However, given the scope of the proposed development and existing vacant nature of the site, a Stage 1 preliminary investigation has been undertaken to satisfy the provisions of State Environmental Planning Policy No. 55 – Remediation of Land. The investigation which was prepared by Clearsafe titled 'Preliminary Environmental Assessment (Phase 1', File Reference 1357-01-LC) accompanies this EA and is attached at Appendix 8.

6.1.7 Dangerous Goods (Road and Rail Transport) Act 2008

The Dangerous Goods (Road and Rail Transport) Act 2008 and associated Dangerous Goods (Road and Rail Transport) Regulations 2009 establish a process for regulating the transport of dangerous goods by road and rail in order to promote public safety and protect property and the environment.

Relevance to proposed development:

In the event that any goods which are transported to the hospital are classified as potentially hazardous and/or potentially dangerous goods Delbest Pty Ltd will ensure that its waste transport contractor/operator(s) are fully and appropriately licensed to transport the proposed waste materials (clinical waste) to and from the subject site prior to and following processing.

6.1.8 Roads Act 1993

The Roads Act 1993 provides for a number of issues including the establishment of procedures for opening and closing public roads, acquisition of land for roadways in addition to regulating the carrying out of various activities on public roads including roadwork and road widening operations.

Relevance to proposed development:

No closure of public roads would be required in order to gain access to the subject site. However, within Stage 1 of the development a new access road will be required to be constructed over Council's land identified as Lot 21 DP 1008877 and Lot 2 DP 860917 to connect with existing vehicular access from

Nolan Street. This road will be in the form of a private access road and hence will not be subject to the requirements of the Roads Act, 1993. However, any works within the road reserve at the point of connection with ether Warwick Street or Nolan Avenue will be addressed within the respective development application for works pertaining to the respective stage.

6.1.9 Local Government Act, 1993

A new access road/driveway will be required to be constructed over Council's land identified as Lot 21 DP 1008877 and Lot 2 DP 860917 to connect with existing vehicular access from Nolan Street. Council, as owner of this land has granted approval to the lodgement of a development application which incorporates this access. Council has advised that this land is currently classified as community land under the Local Government Act (refer Appendix 2) and will require reclassification to operational land to accommodate the required access. It is feasible for this reclassification to occur prior to the commencement of works for the subject development.

6.1.10 Water Management Act 2000

The Water Management Act 2000 replaced the provisions of the Rivers and Foreshores Improvement Act 1948 coming into effect from February 2008. The Water Management Act provides for the protection of river and lakeside land in NSW and aims to provide for the sustainable management of the water sources throughout NSW.

The Water Management Act provides for the granting of various licenses and approvals, including for the use of water and water supply works. Generally speaking the following approvals may be required under the Water Management Act:

- a water access licence – which entitles the holder to a share of available water in a river or aquifer (groundwater body);
- water use approval – which authorises use of water on land for a particular purpose at a particular location; or
- water management works approval – which authorise construction and use of water supply works such as bores, pumps, dams and channels.

<u>Relevance to proposed development:</u>

The proposed development will not impact on Lake Illawarra (to the east of the site). It is also anticipated that the proposed operations would have no impact on the quality of water to be discharged from the site as a whole, subject to the incorporation of the proposed treatment measures as referenced within the 'Engineering Report' prepared by C&M Consulting Engineers dated November 2012. Therefore, in consideration of the above, it is unlikely that the proposed development would require a licence under the Water Management Act.

6.2 State Environmental Planning Policies

6.2.1 State Environmental Planning Policy (Major Development) 2005

Schedule 1 of State Environmental Planning Policy (Major Development), which was formerly known as SEPP (Major Projects) 2005, lists the types of development that are regarded as a state significant development. The Environmental Assessment is submitted for consideration by the Department of Planning & Infrastructure following the issue of Director General Requirements, MP10-0147, dated 26 October 2010, issued under the provisions of the Major Developments SEPP 2005 and Part 3A of the Environmental Planning & Assessment Act 1979. The proposal has been identified as a development that is captured under Schedule 1, Group 7, Clause 18 of State Environment Planning Projects 2005 (Major Projects), being a hospital development valued at more than $15 million. The proposed development was captured by Clause 18 Schedule 1, which listed the following development as being state significant development:

Group 7 Health and public service facilities: 18 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.

Therefore the proposed development is a project to which (repealed) Part 3A of the Environmental Planning and Assessment (EPA) Act 1979 applies. In this regard, the Deputy Director-General of the (then) Department of Planning, as a delegate for the Minister for Planning, provided an a clause 6(1) opinion dated 26 September 2010 confirming that the development is a project to which Part 3A of the Environmental Planning and Assessment Act 1979 applies (see Appendix 1) and granting authority to the submission of a Concept Plan under section 75M of the EPA Act, 1979.

6.2.2 State Environmental Planning Policy (State and Regional Development) 2011

Part 3A was repealed on 1 October 2011 however Clause 2A of State Environmental Planning Policy (State and Regional Development) 2011 provides guidance as to development which was previously

declared as a project to which Part 3A of the EPA Act applied. Specifically, clause 2A of the SEPP (State and regional Development) confirms:

"2A Application of Policy—transitional Part 3A projects

(1) On the repeal of Part 3A of the Act, this Policy is subject to Schedule 6A to the Act.

Note. Schedule 6A of the Act sets out those projects which will continue as Part 3A projects (transitional Part 3A projects) and revokes the declaration of any other Part 3A project.

(2) The repeal of clauses 6–6C and Schedules 1, 2 and 5 of this Policy, and the other amendments made to this Policy, by the State Environmental Planning Policy (State and Regional Development) 2011 do not affect any of the following:

(a) the declaration under this Policy of a project as a project or a critical infrastructure project under Part 3A, if that project is a transitional Part 3A project,

(b) any certificate in force under clause 6C immediately before that repeal."

Hence, Schedule 6A of the Environmental Planning and Assessment act, 1979 addresses transitional Part 3A projects. The relevance of the provisions of Schedule 6A of the EPA Act is addressed in Section 6.1.2 of this Environmental Assessment, above.

6.2.3 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 commenced on 1 January 2008 and contains specific planning provisions and development controls for 25 types of infrastructure works or facilities. The 'Infrastructure SEPP' aims to facilitate the effective delivery of infrastructure across the state.

Division 10 of the SEPP (Infrastructure) 2007 relates to Health Services Facilities to which the SEPP would apply. However, while the proposal is included within such definition of a 'health service facility', the site is not located in one of the prescribed zones, and therefore, this Division of the SEPP does not apply.

The 'Infrastructure SEPP' replaces twenty (20) State Environmental Planning Policies (SEPPs), including SEPP 11 – Traffic Generating Developments. The planning provisions previously in SEPP 11 have been updated and carried over into the Infrastructure SEPP. Clause 104 of the Infrastructure SEPP outlines the planning requirements for traffic generating development listed in Schedule 3 of the SEPP. As previously with SEPP 11, if development is proposed that meets the traffic generating criteria in Schedule 3, Roads and Maritime Services (RMS) must be consulted. In accordance with Clause 104 of the Infrastructure SEPP, the proposal falls under Schedule 3 being a:

Hospital – 200 beds with site access to any road; or 100 beds with Size or capacity—site with access to classified road or to road that connects to classified road (if access within 90m of connection, measured along alignment of connecting road)

OR

Any other purpose, with 200 or more vehicles

The proposal requires referral to the RMS for its consideration as it comprises a hospital with in excess of 200 beds having access to any road.

Clause 104(3) of SEPP (Infrastructure) 2007states the following:

(3) Before determining a development application for development to which this clause applies, the consent authority must:

(a) give written notice of the application to the RTA within 7 days after the application is made, and

(b) take into consideration:

(i) any submission that the RTA provides in response to that notice within 21 days after the notice was given (unless, before the 21 days have passed, the RTA advises that it will not be making a submission), and

(ii) the accessibility of the site concerned, including:

(A) the efficiency of movement of people and freight to and from the site and the extent of multi-purpose trips, and

(B) the potential to minimise the need for travel by car and to maximise movement of freight in containers or bulk freight by rail, and

(iii) any potential traffic safety, road congestion or parking implications of the development.

The RTA (now RMS) provided comments that were appended to the Director-General's requirements prior to the preparation of this Environmental Assessment (refer Appendix 1), and required consideration of a range of issues including:

- The preparation of a traffic impact study, with reference to Table 2.1 of the RTA Guide to Traffic Generating Developments;
- Justification for determining traffic generation rates for each component of the proposal, particularly further justification given for the seniors living component;
- Sensitivity analysis undertaken on the traffic generation of the site in mode splits are not achieved and remain the status quo of the surrounding area given that the predicted traffic generation brings Nolan Street (and potentially the surrounding network) close to capacity accordingly to the preliminary analysis;
- Network modelling to identify the distribution of traffic to / from the development;
- SIDRA analysis of junctions;
- Intersection modelling using SIDRA at am and pm peak volumes, existing traffic volumes without and without development and the 10 year projected volumes, with electronic copies provided to the RTA;
- Identification of suitable infrastructure to ameliorate any traffic impacts and safety impacts including identification of pedestrian, cyclists and public transport infrastructure and appropriate staging;
- Details of the environmental impacts of any roadworks within the Environmental Assessment, to negate the need for a separate "Review of Environmental Factors".

GHD has addressed these requirements in the Traffic Impact and Accessibility Assessment (Ref: Traffic and Transport Assessment November 2012, 21/21878). The Traffic Impact and Accessibility Assessment also addresses issues pertaining to the accessibility of the subject site, including transport of people and freight to and from the site and potential traffic safety, road congestion or parking implications. The Traffic and Accessibility report is attached at Appendix 9 and further discussion is addressed in section 9 of this Environmental Assessment.

6.2.4 State Environmental Planning Policy No. 33 – Hazardous and Offensive Development

State Environmental Planning Policy No.33 – Hazardous and Offensive Development requires the consent authority to consider whether a proposal is a potentially hazardous or a potentially offensive industry or a hazardous storage establishment. In doing so, the consent authority must give careful consideration to the specific characteristics and circumstances of the development, its location and the way in which the proposed activity is to be carried out.

Relevance to proposed development:

The SEPP provides requirements with respect to hazardous industries, offensive industries, hazardous storage establishments and offensive storage establishments. The proposed development will not involve the undertaking of industrial processes, however will involve the storage of goods associated with the operations of a medical facility and hence the provisions of this SEPP relating to potentially hazardous or offensive storage facilities have been considered.

Clause 3 defines “potentially hazardous industry” and “potentially offensive industry” being:

"potentially hazardous industry" means a development for the purposes of any industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would pose a significant risk in relation to the locality:

(a) to human health, life or property, or
(b) to the biophysical environment,

and includes a hazardous industry and a hazardous storage establishment.

"potentially offensive industry" means a development for the purposes of an industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would emit a polluting discharge (including for example, noise) in a manner which would have a significant adverse impact in the locality or on the existing or likely future development on other land, and includes an offensive industry and an offensive storage establishment.

Clause 4 includes other relevant definitions:

"hazardous industry" means a development for the purposes of an industry which, when the development is in operation and when all measures proposed to reduce or minimise its impact on the locality have been employed (including, for example, measures to isolate the development from existing or likely future development on other land in the locality), would pose a significant risk in relation to the locality:

(a) to human health, life or property, or
(b) to the biophysical environment.

"hazardous storage establishment" means any establishment where goods, materials or products are stored which, when in operation and when all measures proposed to reduce or minimise its impact on the locality have been employed (including, for example, measures to isolate the establishment from existing or likely future development on the other land in the locality), would pose a significant risk in relation to the locality:

(a) to human health, life or property, or
(b) to the biophysical environment.

"offensive industry" means a development for the purposes of an industry which, when the development is in operation and when all measures proposed to reduce or minimise its impact on the locality have been employed (including, for example, measures to isolate the development from existing or likely future development on other land in the locality), would emit a polluting discharge (including, for example, noise) in a manner which would have a significant adverse impact in the locality or on the existing or likely future development on other land in the locality.

"offensive storage establishment" means any establishment where goods, materials or products are stored which, when in operation and when all measures proposed to reduce or minimise its impact on the locality have been employed (including, for example, measures to isolate the establishment from existing or likely future development on other land in the locality), would emit a polluting discharge (including, for example, noise) in a manner which would have a significant adverse impact in the locality or on the existing or likely future development on other land in the locality.
"the Act" means the Environmental Planning and Assessment Act 1979 .

The proposed day surgery and hospital facilities will require the storage of a range of goods and products for medical and oncology purposes. However, it is noted that the storage of goods associated with medial uses will be strictly controlled to address health and safety requirements and would are not likely to constitute storage of a type or quantity which would emit a polluting discharge or pose a significant risk in the locality.

6.2.5 State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55)

State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55) provides a state wide planning approach to the remediation of contaminated land. SEPP 55 aims to promote the remediation of contaminated land for the purposed of reducing the risk of harm to human health or any other aspect of the environment by specifying when consent is or is not required for remediation work, by specifying certain considerations that are relevant in rezoning or changing the use of land and by requiring that remediation work meets certain standards and notification requirements.

Clause 7 of SEPP 55 requires a consent authority to consider whether land is contaminated before consenting to development of that land. If so, the consent authority must be satisfied that the land is suitable in its contaminated state for the proposed development, or that it will be remediated so that it becomes suitable for the proposed development.

Relevance to proposed development:

An initial search of Wollongong City Council records has not revealed any development approvals that have proceeded to construction on the subject site. Furthermore, contamination has not been identified as a problem by the Department of Planning in the Director-General's requirements nor in Council's 149(5) certificates as issued by Council. However, having regard to the sensitive nature of the intended use a

Preliminary Contamination Assessment has been conducted by Clearsafe. This Preliminary Phase 1 Assessment confirms that the site has a history of agricultural activities which may be associated with potential contamination. Furthermore, there is evidence of illegal dumping which includes asbestos materials and possible other contaminants. Asbestos contaminated soils were identified on areas on the site, and is recommended that a Phase 2 Detailed Site Assessment be conducted to further investigate contamination. This Phase 2 assessment could be feasibly conducted prior to the commencement of works on the site.

6.2.6 State Environmental Planning Policy 65 (Design Quality of Residential Flat Development)

The Environmental Planning and Assessment Amendment (SEPP 65) Regulation 2002 and State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development were gazetted on 26 July 2002. The SEPP applies to residential flat buildings, being developments comprising three or more storeys and having four or more self-contained dwellings. Under the provisions of SEPP 65 –Design Quality of Residential Flat Development flat building is defined as:

"residential flat building" means a building that comprises or includes:
(a) 3 or more storeys (not including levels below ground level provided for car parking or storage, or both, that protrude less than 1.2 metres above ground level), and
(b) 4 or more self-contained dwellings (whether or not the building includes uses for other purposes, such as shops),

but does not include a Class 1a building or a Class 1b building under the Building Code of Australia.
Note: Class 1a and Class 1b buildings are commonly referred to as "town houses" or "villas" where the dwelling units are side by side, rather than on top of each other.

Accordingly the provisions of the SEPP apply to the Stage 6 Self Care Seniors Housing, which is three (3) storeys in height and contains 86 units.

A Design Verification Statement which certifies that the building has been designed by a registered architect and achieves the design quality principles set out in Part 2 of SEPP 65, which has been prepared by Boss Design, also accompanies this development application (Appendix 5).

The Environmental Planning and Assessment Regulations 2000 provide that where the SEPP applies, the Statement of Environmental Effects must include additional information pertaining to the design, site context, surrounding development, built form and materials of development. A preliminary assessment of this proposal has been carried out with respect to this SEPP to ensure that the proposal falls within the parameters of the existing legislation. It is noted that the submitted application is a concept design, and detailed documentation of the Stage 6 design has not been completed. However Table 16 below provides an indication of adherence with the 'Rules of Thumb' of the Residential Flat Design Code (Department of Planning, 2002), as required by Clause 30(2)(c) of the SEPP.

Boss Design (the Architect for the project) has also responded to the ten (10) design quality principles with respect to the Stage 6 (Self Care Seniors Housing) component of the proposed development, which is a requirement for consideration within the SEPP (Clause 30(2)(b) for development applications. This detailed response is provided in Part 1.4 of the Architectural Plans accompanying the application. This Section of the Environmental Assessment summarises the Architect's response to the ten (10) design quality principles, and where relevant, provides additional comment on the proposal with respect to the principles:

Principle 1: Context

Good design responds and contributes to its context. Context can be defined as the key natural and built features of an area. Responding to context involves identifying the desirable elements of a location current character or, in the case of precincts undergoing a transition, the desired future character as stated in planning and design policies. New buildings will thereby contribute to the quality and identity of the area.

Summary/Excerpt of Architect's Response: "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 Temple, the southern freeway, some Electricity Transmission Infrastructure and some scattered low density housing. The residential component…is designed to sit within the existing landscape, responding to view and the context and offers wide range of living standards to cater for both long and short term visitors."

Principle 2: Scale

Good design provides an appropriate scale in terms of the bulk and height that suits the scale of the street and the surrounding buildings. Establishing an appropriate scale requires a considered response to the scale of existing development. In precincts undergoing a transition, proposed bulk and height needs to achieve the scale identified for the desired future character of the area.

Summary/Excerpt of Architect's Response: "The residential buildings are sympathetic to the scale and views governed by the existing site conditions. It is designed with consideration for articulation to lessen and soften the impact of the multistory (buildings) on the undeveloped site. The proposed residential buildings are higher in comparison to (the) rest of the dwelling houses in the surrounding but it has no impact to the adjoining neighbours due to distance. Furthermore, the impact to the streetscape within the complex and the overall site will be minimized by articulation with the balconies, and the use of difference cladding material which effectively reduces the bulk further."

The scale of the Stage 6 Self Care Seniors Housing, while larger than existing surrounding development, will integrate with the range of scales of built form comprising the overall Life City development.

Principle 3: Built Form

Good design achieves an appropriate built form for a site and the buildings purpose, in terms of building alignments, proportions, building type and the manipulation of building elements. Appropriate built form defines the public domain, contributes to the character of streetscapes and parks, including their views and vistas, and provides internal amenity and outlook.

Summary/Excerpt of Architect's Response: "The built form is designed to compliment the proposed use of the building and it maintains the predominant building alignments best expressed by the existing landscape and the contour of the land. The proposed development creates an attractive and safe apartment (building) with private driveways and easy access into the individual units. The built form strives to set a higher benchmark to the rest of the development in the area, by ensuring the building responds to orientation, view corridor and the surrounding site characteristics. In particular, built form for the taller buildings are carefully designed to introduce the horizontal division between the base, the main body and the top part of the building by the choice in different materials, expression of the building and the selection of the cladding material. Further relief has been provided in the external building envelope with generous balconies to each unit which creates horizontal expression in the building façade, creating rhythm in the elevation. These outdoor spaces are sheltered from the sun and privacy via louvers and screens that further provide character to the built form."

Principle 4: Density

Good design has a density appropriate for a site and its context, in terms of floor space yields (or number of units or residents). Appropriate densities are sustainable and consistent with the existing density in an area or, in precincts undergoing a transition, are consistent with the stated desired future density. Sustainable densities respond to the regional context, availability of infrastructure, public transport, community facilities and environmental quality.

Summary/Excerpt of Architect's Response: "The increased development footprint and density....is minimised by positioning of the building that sits well within the existing contours."

Comment: The density of the Stage 6 Seniors, while exceeding that of the existing surrounding development, will be appropriate within the context of the newly established density and built forms of the integrated Life City site. The proposed development will sit comfortably within the site and complies with Council's minimum requirements in relation to landscaping and off-street parking.

Principle 5: Resource, energy and water efficiency

Good design makes efficient use of natural resources, energy and water throughout its full life cycle, including construction. Sustainability is integral to the design process. Aspects include demolition of existing structures, recycling of materials, selection of appropriate and sustainable materials, adaptability and reuse of buildings, layouts and built form, passive solar design principles, efficient appliances and mechanical services, soil zones for vegetation and reuse of water.

Summary/Excerpt of Architect's Response: The proposed Life City development will set a high standard for green development including:

- energy efficiency measures (including photovoltaic arrays to provide non-emergency electricity, solar energy for lighting of outdoor areas, extensive use of sun shading devices – the northern and western elevations include sliding pivoting sun screening panels fixed vertically to balconies and windows, reducing need for mechanical ventilation for heating and cooling);
- innovative water conservation strategies (including full stormwater storage and reuse including in common landscape area);
- waste reduction, sustainable construction techniques and use of low embodied energy building materials; and
- use of indigenous landscaping.

Principle 6: Landscape

Good design recognises that together landscape and buildings operate as an integrated and sustainable system, resulting in greater aesthetic quality and amenity for both occupants and the adjoining public domain. Landscape design builds on the existing site's natural and cultural features in responsible and creative ways. It enhances the developments natural environmental performance by co-ordinating water and soil management, solar access, micro-climate, tree canopy and habitat values. It contributes to the positive image and contextual fit of development through respect for streetscape and neighbourhood character, or desired future character. Landscape design should optimise useability, privacy and social opportunity, equitable access and respect for neighbours amenity, and provide for practical establishment and long term management.

Summary/Excerpt of Architect's Response: The natural landscape is a central design element in the environmental success and public presentation of the facility and the natural environment as a broad development theme will reflect the site's local context and significance. The landscaping of the senior's housing will be integrated with the overall comprehensive and detailed landscape masterplan which has been designed in response to the prevailing site conditions, constraints and future capacity. The landscape design will include locally sourced endemic planting including street and amenity trees, linking existing vegetation on the site and will also include appropriate low fuel species within fire safety zone setbacks.

Principle 7: Amenity

Good design provides amenity through the physical, spatial and environmental quality of a development. Optimising amenity requires appropriate room dimensions and shapes, access to sunlight, natural ventilation, visual and acoustic privacy, storage, indoor and outdoor space, efficient layouts and service areas, outlook and ease of access for all age groups and degrees of mobility.

Summary/Excerpt of Architect's Response: The residential buildings within Life City will have natural light and ventilation, well-designed internal apartment spaces, balconies and landscaped surroundings for the residents to enjoy, together with the amenities of the site including health care facilities, cycle tracks, bus service providing access to residents within and outside of the site.

Principle 8: Safety and security

Good design optimises safety and security, both internal to the development and for the public domain. This is achieved by maximising overlooking of public and communal spaces while maintaining internal privacy, avoiding dark and non-visible areas, maximising activity on streets, providing clear, safe access points, providing quality public spaces that cater for desired recreational uses, providing lighting appropriate to the location and desired activities, and clear definition between public and private spaces.

Summary/Excerpt of Architect's Response: The safety of the entire Life City site has been well considered, with both entry points and the pedestrian and vehicular road network to be well secured and controlled. The residents will be separated from the busier medical centre and hospital by a designated loop road around the central garden. The streets are visible as they are elevated and will be well lit at night to ensure the safety of the residents.

Principle 9: Social dimensions

Good design responds to the social context and needs of the local community in terms of lifestyles, affordability, and access to social facilities. New developments should optimise the provision of housing to suit the social mix and needs in the neighbourhood or, in the case of precincts undergoing transition, provide for the desired future community.

Summary/Excerpt of Architect's Response: The Seniors Living self care apartments will contribute to the social mix of the Life City development, which will offer a range of accommodation types that caters for a different mix and type of people, ranging from short term visitors, patient, employees and long term residents (the latter being the self care senior's living buildings).

Principle 10: Aesthetics

Quality aesthetics require the appropriate composition of building elements, textures, materials and colours and reflect the use, internal design and structure of the development. Aesthetics should respond to the environment and context, particularly to desirable elements of the existing streetscape or, in precincts undergoing transition, contribute to the desired future character of the area.

Summary/Excerpt of Architect's Response: The proposal provides an aesthetic combination of materials, colours and composition of the architectural elements. The development reflects and builds on the prevailing aesthetic quality of the area and is designed to compliment the existing character of the area, while contributing to the creation of a future character for the site and locale, being a multi-use Life City development. The self care senior's living buildings will integrate with the aesthetics and design of the other buildings in the Life City site.

SEPP 65 applies to the Stage 6 Seniors Living self care component of the proposed development, and as demonstrated above, is considered to adequately address the SEPP's requirements. The senior's living self care apartments will significantly enhance the contribution of this development within Berkeley environment, as well as making a significant contribution to the integrity of the local residential area. All the above nominated principles have been considered and where feasible, incorporated within the proposed innovative design. The proposal is generally in accordance with the above requirements.

In addition to considering the ten (10) quality design principles, the development has also been designed having regard to the 'Rules of Thumb' contained in the Residential Flat Design Code (Planning, NSW 2002). A summary of the manner in which the proposed development considers such guidelines is contained in Table 16 below:

Table 16: Residential Flat Design Code - Table of Compliance with 'Rules of Thumb'

Standards/Controls		Comment	Compliance
Part 1 – Local Context (Primary Development Controls)			
Building	Max 18m (glass line to glass line) Freestanding buildings may have a building depth greater than 18m if it can be demonstrated how satisfactory daylight and natural ventilation are achieved	Building depth across the shorter axis varies between approx 7.0m to 8.5m. The configuration of the buildings ensures that the units within each building meet the daylight and natural ventilation requirements.	Complies

Standards/Controls		Comment	Compliance
Building Separation	Suggested dimensions within a development, for internal courtyards and between adjoining sites are: § Up to four storeys/12m - 12m between habitable rooms/balconies - 9m between habitable rooms/balconies and non-habitable rooms - 6m between non-habitable rooms	A separation distance of approx 13m to 20m is provided between the northern section of self care units (adjacent to Stage 3) and the central section of units (adjacent to the southern loop road). Between the central and southern buildings (which front the southern loop road) a separation distance of approximately 6.5 to 7.0m is provided. This is below the 12m which is typically recommended however it is noted that the fall of the land between the unit blocks reduces the extent of overlooking between buildings. Further, the guidelines can be readily met by relocating the central building in a northern direction (towards Stage 3) without impacting on vegetation cover. A minimum 112m setback is provided between the detached residences in Nottingham Street and the proposed self care housing.	Refer comment Complies
Part 2 – Site Design			
Deep Soil Zone	The rule of thumb is that a minimum of 25% of the open space of a site should be a deep soil zone, more is desirable.	The minimum of 25 percent of open space area which should be retained as deep soil zone has more than been achieved on this site, with substantial areas of the land designated for vegetation regeneration or passive or active open space. Landscaping has been a major driving factor behind the site design, with building footprints minimised to provide the maximum feasible area of undeveloped land. A total of 112,372m^2 of the site is provided as landscaped area, which equates to 66% of the 168,854m^2 site area. Furthermore, roof gardens have also been provided in the hospital and residential care facility.	Complies
Open Space	The rule of thumb is for between 25-30% of the site area to be communal open space. The minimum recommended area of private open space for each apartment at ground level or similar space on a structure is 25m^2, minimum preferred dimension is 4m		
Pedestrian Access	Barrier free access to at least 20% of dwellings.	Barrier free access has been provided for more than 20% of the dwellings. All units will have access to a lobby servicing two units at each level.	Complies
Vehicle access	Generally limit the width of driveways to a maximum of 6 metres. Locate vehicle entries away from main pedestrian entries and on secondary street frontages.	The road servicing the self care apartments does not directly service the other stages of the development and is a private road. Hence, this road is not defined as a primary street frontage.	Complies
Part 3 – Building Design			
Apartment Layout	Apartment sizes: Studio: min 38.5m^2 1 bed: min 63.4m^2 (single aspect) 2 bed: min 80m^2 (corner) 3 bed: min area 124m^2 Rule of thumb for Affordable Housing: 1 bed: min 50m^2 (single aspect) 2 bed: min 70m^2 (corner) 3 bed: min 95m^2	The development contains a mix of single aspect and cross-over dwellings that vary from one bedroom plus study to three bedroom apartments. Variety in size and living options is available to cater for different demands of users. The senior housing consists of: 1 Bedroom + study: 73 m^2 (+15.75 m2 balcony) 2 Bedrooms: 82 m^2 and 101 m^2 (+15.78 m^2 balcony) 3 Bedrooms: 146.5 m^2 (+22.72 m^2 balcony)	Complies

Standards/Controls		Comment	Compliance
	Single-aspect apartments should be limited in depth to 8m from a window. Back of a kitchen should be no more than 8m from a window. Buildings not meeting the minimum standards listed above must demonstrate how satisfactory day lighting and natural ventilation can be achieved.	All spaces within the units are a maximum of 8m from a window.	Complies
	Providing open space in the form of a balcony, a terrace, a courtyard or a garden for every apartment. Locating main living areas adjacent to main private open space.	Every apartment is provided with private open space in the form of either a courtyard or balcony. All of the private open spaces are accessed via the main living area.	Complies Complies
Apartment Mix	To provide a diversity of apartment types, which cater for different household requirements now and in the future. To maintain equitable access to new housing by cultural and socio-economic groups.	The proposal includes a 36 x one bedroom and study units; 38 x 2 bedroom units and 12 x 3 bedroom units.	Complies
Balconies	Provide primary balconies with a minimum depth of 2m. Developments that seek to vary from the minimum standards must demonstrate negative impacts from noise, wind can not be mitigated with design solutions.	The primary portion of each balcony will be provided with a minimum depth of 2.0m.	Complies
Ceiling Heights	Minimum 2.7m for habitable rooms, 2.4 for non-habitable rooms	Ceiling heights from finished floor level to ceiling are all a minimum of 2.7 m throughout the development.	Complies
Flexibility	To encourage housing designs which meet the broadest range of the occupants' needs as possible. To promote 'long life loose fit' buildings, which can accommodate whole or partial change of use. To encourage adaptive re-use.	The proposal includes an appropriate mix of dwellings in terms of area and number of bedrooms and also provides accommodation to cater for the growing number of elderly within the adjoining community.	Complies
Ground Floor Apartments	Optimise the number of ground floor apartments with separate entries and consider requiring an appropriate percentage of accessible units. This relates to the desired streetscape and topography of the site. Provide ground floor apartments with access to private open space, preferably as a terrace or garden.	Adaptable units will be confirmed in conjunction with detailed design work for the Stage 6 development. Ground floor apartments are equipped with front/independent access and gardens areas as well as a front terrace. Ground floor apartments have a minimum of $25m^2$ of private open space with front and rear yard areas and the minimum dimension in one direction is 6m.	Adaptable units to be provided and confirmed at Stage 6. Complies
Internal Circulation	In general, where units are arranged off a double loaded corridor, the number of units accessible from a single core/corridor should be limited to eight.	Six (6) apartments are serviced by each lift within the development.	Complies

Standards/Controls		Comment	Compliance
Storage	Studio apartments – 6m³ One bedroom apartments – 6m³ Two bedroom apartments – 8m³ Three plus bedroom apartments – 10m³	Accessible storage facilities have been provided in the form of study rooms and wardrobe space at apartment entrances. Additional storage areas can be provided adjacent to the lower level carparking, if required.	Can be compliant
Acoustic Privacy	Unit arrangement to avoid noise transmission	Within the apartment building, where possible, living dining areas have been located adjacent to each other or adjacent to lobby areas, while quieter areas such as bedrooms have also been located adjacent to each other to avoid noise transmission.	Complies
Daylight Access	Living rooms and private open spaces for at least 70% of apartments should receive a minimum of three hours direct sunlight between 9am and 3pm in mid winter. In dense urban areas a minimum of 2 hours may be acceptable. Limit the number of single aspect apartments with a southerly aspect to a maximum of 10% of total units proposed.	Apartment layout for the seniors housing provides for living rooms opening onto exterior balconies and with units having a north-western orientation to ensure that at least 70% of apartments receive a minimum of three hours direct sunlight in mid winter. There are no single aspect southern facing apartments.	Complies
Natural Ventilation	60% of residential units should be naturally cross ventilated. 25% of kitchens within a development should have access to natural ventilation	All units in the development are naturally cross ventilated due to the elongated nature of the buildings. The majority of kitchens (ie greater than 25%) have access to natural ventilation.	Complies Complies

6.2.7 State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004

State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 ('Seniors Living SEPP') aims to encourage the provision of housing (including residential care facilities) that will increase the supply and diversity of residences to meet the needs of seniors or people with a disability. It also seeks to make efficient use of existing infrastructure and services and ensure that seniors housing is of good design.

Consideration has been given to the application of the Seniors Living SEPP in relation to the Stage 6 (Self Care Seniors Housing) and Stage 7 (Residential Care Facility and Hostel) of the proposed Life City Wollongong development. The manner in which the proposed self care housing, residential care facility and hostel will address the provisions of the SEPP, at the concept plan stage, is discussed below:

Clause 4(1) (Land to which this policy applies) confirms that the policy applies to "land that is zoned primarily for urban purposes or land that adjoins land zoned primarily for urban purposes but only if:

(a) development for the purpose of any of the following is permitted on the land:

(i) dwelling-houses,

(ii) residential flat buildings,

(iii) hospitals,

(iv) development of a kind identified in respect of land zoned as special uses, including (but not limited to) churches, convents, educational establishments, schools and seminaries, or

(b) the land is being used for the purposes of an existing registered club.

The Stage 6 Seniors Self care Housing and Stage 7 Residential Care Facility are to be sited on land which is zoned E3 Environmental Management. Within the E3 Environmental Management zone, residential flat buildings, hospitals and dwellings houses (due to the site area requirements under clause 4.2A), are not permitted under WLEP 2009 and hence senior's housing is also not permitted under Clause 4(1).

Further, under the provisions of clause 4(6) the Seniors Living SEPP does not apply to land which is described in Schedule 1 (Environmentally sensitive land) of the SEPP. Schedule 1 references environmentally sensitive land as land which is described as "critical habitat" or "environmental protection". The land which contains the seniors housing for Life City is predominantly zoned E3 Environmental Management and hence this land would arguably be classed as 'environmental protection' land, being land described in Schedule 1 on which senior's housing is not permitted under the SEPP. However, it is noted that the seniors housing will form an integral part of this medical and educational precinct and will provide for permanent residential accommodation for seniors through various stages of health commencing with independent living, assisted care and full time care. Further, the seniors housing will promote integration of young and elderly within the complex through the ability for seniors to be actively engaged as volunteers within the medical and educational facilities. In acknowledgement of the close linkages which exist between the seniors housing and the medical facility, the Director General has issued a clause 6 declaration for the concept plan, which will allows for the approval of all components of the Life City development.

Despite the Seniors Living SEPP not technically being applicable to the proposed development, the key provisions of the SEPP are addressed for the Seniors Living component of Life City facility (Stages 6 and 7) in the following manner:

Part 2 Site Related Requirements

- Clause 26 'Location to Access and Facilities' will be addressed as a private mini-bus servicing the Seniors Living Facility (both residential care facility and hostel and self care accommodation) will enable direct access for residents from both the residential care facility and hostel main entry, and from the access road(s) of the self care accommodation, to within 400m of the range of the required facilities within a range of commercial centres in the locality. The provision of a private bus service with direct access from suitable access pathways from the various parts of the site will therefore achieve compliance with the gradient requirements of the SEPP.
- Clause 27 'Bushfire Prone Land': The site partly contains bushfire prone land and listed considerations of Clause 27 have been addressed and as identified in Section 9.2.5 of this Environmental Assessment, the requirements of Planning for Bushfire Protection can be complied with in respect to the Seniors Living component of the Life City development.

§ Clause 28 'Water and Sewer': the site can be adequately serviced by water and sewerage infrastructure as demonstrated in Section 9.2.11 of this Environmental Assessment.

§ Clause 29 'Site Compatibility criteria': as demonstrated elsewhere in this report, the Life City proposal is compatible with surrounding land uses, including with the natural environment, existing and approved uses in the vicinity and will have adequate services and infrastructure to meet the demands of the proposal. In addition, the proposal is not likely to have any major adverse impacts subject to the implementation of the mitigation measures listed in Section 11 of this Environmental Assessment.

Division 2 Design Principles

The proposed Seniors Living component of the Life City development has been designed having regard to the design principles set out in Clauses 33-39 of the SEPP as demonstrated elsewhere in this report for the Life City development as referenced below:

Neighbourhood Amenity and Streetscape: refer Section 9.2.7

Visual and Acoustic Privacy: refer Section 9.2.9

Solar access and design for climate: refer Section 9.2.9

Stormwater: refer Section 9.2.11

Crime Prevention: refer Section 7.3.8

Accessibility: refer Section 9.2.13

Waste Management: refer Appendix 19

Development Standards to be complied with

Clause 40: The minimum site size and frontage requirements have been met. While the buildings exceed 8 metres in height, the visual and other amenity impacts of the seniors housing is considered to be satisfactory, as demonstrated in Section 9.2.6 of this report.

A management plan detailing the operations of the self care housing, residential care facility and hostel can be provided prior to Stages 6 and 7 proceeding, which will further address detailed aspects of the SEPP requirements.

6.3 State Policies and Guidelines

6.3.1 NSW 2021: A Plan to Make NSW Number 1

'NSW 2021: A Plan to Make NSW Number 1" (www.2021.nsw.gov.au) replaces the previous 'State Plan' and is a ten year plan to guide the State's policy and budget and decision-making. The Plan sets out goals to deliver on community priorities. While directed at the priorities for public sector delivery, the Life City development will be a substantial private sector development that includes a hospital and medical care services, research and educational facilities and accommodation. The development will assist in addressing the following key overarching strategies and related goals by reducing pressure on the public sector for such facilities:

Strategy 1: Rebuild the Economy

§ improve the performance of the NSW economy (Goal 1);

§ drive economic growth in regional NSW (Goal 3);

Strategy 2: Return Quality Services

- keep people healthy and out of hospital (Goal 11);
- Provide world class clinical services with timely access and effective infrastructure (Goal 12);
- Improve education and learning outcomes for all students (Goal 15);

Strategy 3: Renovate Infrastructure

- Built liveable centres (Goal 20);

Strategy 4: Strengthen our Local Environment and Communities

- Protect Our Natural Environment (Goal 22);
- Increase opportunities for seniors in NSW to fully participate in community life (Goal 25); and
- Ensure NSW is ready to deal with major emergencies and natural disasters (Goal 28).

6.3.2 Metropolitan Plan for Sydney 2036

The NSW Department of Planning and Infrastructure published the Sydney Metropolitan Plan in December 2010 to assist in guiding Sydney's growth towards the year 2036, focusing on areas such as transport, housing, economic growth and employment and sustainable cities. This plan was developed through extensive collaboration between state and local government, the community and stakeholders and seeks to move Sydney from a single centered city to a more connected city, with many centres and an integrated transport network.

The Illawarra is identified as a regional city, with the Strategy defining such as a city acting as a capital for its region. The plan seeks to encompass the Illawarra as one of Sydney's regional cities and to provide increased work and housing opportunities within this region. The NSW government has a strong strategic interest in the success of regional cities such as the Illawarra, with the plan seeking to embrace 'connectivity' between Sydney's city centres and regional cities.

The proposed Life City complex will strengthen the Illawarra's ability to operate as an independent identity in the health services arena, by reducing the need for residents to access more specialist heath services in the Sydney region. In addition, the facility will act as an attractor for national and international patients who seek holistic preventative health care treatment. This will assist in meeting an intended target for the Strategy which seeks to ensure that Sydney is globally competitive and remains "strong, efficient and internationally competitive". The Healthcare Technical High School will act as an attractor for students and their families, with this facility understood to be the only secondary education facility which will cater specifically to secondary medical students.

The development will also be sited on land located in an existing urban centre, thereby strengthening the ability of the Illawarra and the Sydney Metropolitan area to act as a compact connected centre, without increased demand for physical expansion of public transport services and expanded road networks.

The facility will also meet the intended outcomes of the Metropolitan Strategy through its ability to provide employment both at the construction stage of the facility and during the long term operations of all stages. The Strategy estimates that by 2036 "Sydney's growth will require 760,000 more jobs" and confirms that there will be a need to provide a broader mix of jobs. The Life City project can assist in meeting job targets within the Illawarra region by providing approximately 2600 jobs in the construction

industry, medical, educational, hospitality and support fields and aims to become one of the largest employers in the Illawarra. The Life City development will help assist in fulfilling a goal of the Metropolitan Strategy which is to "promote development of education, research and development (R&D) clusters around TAFEs, universities and health infrastructure in accessible centre's to promote skills development, capacity for innovation and lifelong community learning."

The Strategy identifies that by 2036, 1 in 6 people in Sydney will be aged 65 or more and the trend for single person households is expected to increase by 69%. Hence the Strategy plans for 770,000 additional homes with a range of housing types, sizes and affordability levels for a growing and ageing population. The inclusion of the self care and residential care facility within the Life City development will assist in meeting the needs of the elderly within the community in a location which will be well serviced by medical facilities and where residents can access the broader range of services offered within the Illawarra region.

The Life City proposal will also meet the intended strategic direction of targeting development around existing and planned transport capacity due to its siting on land with ease of access to the F6 Freeway, which provides a direct link to the Sydney region to the north and broader Illawarra and South Coast region to the south. Direct access to the F6 Freeway is not required (with two alternate points of access available), thus ensuring that the capacity of this existing regional road is not impacted. Opportunities for utilization of the existing public transport (bus service) will be available, and where necessary, this will be augmented with a private bus services for seniors residing on the site.

The proposed Life City development will also not adversely impact on Sydney's rural and resource lands, with the land currently vacant and having minimal ability to be used for resource based purposes due to its proximity to adjacent residential uses and its size. The development will also adhere to the intended outcomes with respect to the natural environment by incorporating regeneration of vegetation on the site and incorporating environmentally sustainable development opportunities.

Further, the development will promote social inclusion for all ages and will encourage interaction of people at all stages of the life cycle thereby meeting the Strategy's intended targets for equity, livability and social inclusion.

6.4 Federal Legislation

The following section provides an overview of the relevance of listed federal legislation with regards to the proposed development.

6.4.1 National Greenhouse and Energy Reporting Act 2007

In September 2007 the National Greenhouse and Energy Reporting Act 2007 (the NGER Act) came into effect. The NGER Act establishes a national framework for corporations to report greenhouse gas emissions (GHG-e) and energy consumption and production.

The NGER Act requires mandatory registration and reporting for corporations with energy production, energy consumption or GHG-e above specific threshold values. The proposed development is looking to

transfer the clinical waste and incinerate offsite and quarantine radioactive waste used for radiology, of which the quantity that is proposed to be held onsite will be minimal. Therefore, the proposed development will not impact on the overall GHG-e for the site.

6.4.2 National Environment Protection Measures

National Environment Protection Measures (NEPMs) outline national objectives for protecting or managing particular aspects of the environment. The following NEPMs are currently in existence:

- air toxins;
- ambient air quality;
- assessment of site contamination;
- diesel vehicle emissions;
- movement of controlled waste between States and Territories;
- national pollutant inventory; and
- used packaging materials.

The assessment of NEPMs does not apply to the proposed development.

6.4.3 Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) requires the approval of the Commonwealth Minister for Environment Protection, Heritage and the Arts for actions that may have a significant impact on matters of National Environmental Significance (NES). Approval from the Commonwealth Minister is in addition to any approvals under NSW legislation.

The EPBC Act also provides for the identification, conservation and protection of places of national heritage significance and provides for the management of Commonwealth heritage places and establishes the Australian Heritage Council.

The EPBC Act lists seven matters of NES which must be addressed when assessing the impacts of a proposal. A search of the EPBC Protected Matters database has been undertaken in respect of the proposal. A summary of how the proposal may impact on the matters of NES is provided below:

Table 17: Implications of Life City Development on Matters of NES

Matter of NES	Comments
World Heritage Properties	There are no world heritage properties proximate to the proposed development, or that would potentially be affected by the proposed development.
National Heritage Properties	There are no national heritage properties in the vicinity of the proposed project, or that would potentially be affected by the proposal.
Wetlands of International Importance	There are no RAMSAR Wetlands located in the immediate vicinity of the subject site therefore the proposed development would not impact on wetlands of international importance
Commonwealth Listed Threatened Species and Communities	The proposed development is not expected to impact upon any known threatened species.

Matter of NES	Comments
Commonwealth Listed Migratory Species	The proposal is not expected to have an impact on any listed migratory species.
Nuclear Action	The proposed development would not involve nuclear action as defined under EPBC Act 1999.
Commonwealth Marine Areas	There are no Commonwealth marine areas proximate to the proposed development, or that would potentially be affected by the proposed development.
Commonwealth Land	The subject site is not Commonwealth land, nor would Commonwealth land likely be affected by the proposed development.

Given that the proposed development would not have a significant impact on matters of NES or on Commonwealth Land, the requirements of the EPBC Act are not triggered and approval from the Commonwealth Minister for Environment Protection, Heritage and the Arts is not required. This is confirmed by the outcomes of the 'Flora and Fauna Assessment' prepared by Kevin Mills and Associates in November 2012 which concludes that "the proposed development is not likely to constitute a 'controlled action' because it is not likely to have a significant impact on a matter of national environmental significance". Hence, it is not likely that there will be a significant impact under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 and therefore Kevin Mills concludes that "referral to the Minister for assessment and approval are therefore not warranted."

6.5 Regional Planning Strategies

6.5.1 Illawarra Regional Plan No. 1

Clause 4 of IREP No.1 states the IREP No. 1 applies to "land, declared to be a region by the Minister under section 4 (6) of the Act, being all land within the Cities of Shellharbour, Shoalhaven and Wollongong and the Municipality of Kiama. This plan does not apply to the land to which the Jervis Bay Regional Environmental Plan 1996 applies."

However, Clause 1.8(2) of Wollongong Local Environmental Plan 2009 states:

> All local environmental plans and deemed environmental planning instruments applying to the land to which this Plan applies and to other land cease to apply to the land to which this Plan applies.

Therefore IREP No. 1 no longer applies to the Wollongong LGA to which the WLEP 2009 applies, and hence does not apply to the subject site.

6.5.2 Illawarra Regional Strategy

The Illawarra Regional Strategy 2006 - 2031 applies to the Wollongong, Shellharbour and Kiama Local Government Areas as a guide to allowing "economic growth, generate local job and housing opportunities and attracting fresh investment". The population at the time of publication was 280,000 which was forecast to increase by 47,600 and providing an additional 30,000 new jobs by 2031. West Dapto urban release area is expected to provide 19,350 new dwellings, while increased densities surrounding the CBD and other major town centres is also expected to provide additional housing.

The primary purpose of the Regional Strategy is to ensure that adequate land is available and appropriately located to sustainably accommodate the projected housing and employment needs of the Region's population over the next 25 years. The Regional Strategy aims to:

- Ensure an adequate supply of land strategically located to support economic growth and the capacity for an additional 30,000 new jobs.
- Provide 38,000 new dwellings by 2031 to cater for the region's growing population and changing demographics.
- Protect high value environments including coastal lakes, estuaries, aquifers, threatened species, vegetation communities and habitat corridors by ensuring that new urban development minimises impacts on these important areas and their catchments.
- Prevent development in places constrained by coastal processes, flooding, wetlands, important primary industry resources and significant scenic and cultural landscapes.

Numerous challenges were identified, including the need to attract economic opportunities while protecting the unique coastal environment. An analysis of the age structure of the current population and the expected structure in 2031 clearly indicates an ageing population whereby the population aged over 60 years old will significantly increase from proportion of current levels. One of the challenges facing in the region in regard to population and housing is to deliver appropriate housing with quality urban design. Housing forecasts include providing 14,800 medium density terraces and villas, including housing for the aged.

The Strategy also recognises the importance of ensuring suitable serviced employment land is provide to provide future economic and labour force requirements including further diversification of the economy. Approximately 270 hectares of employment lands need to be secured and protected to accommodate the required 30,000 jobs for the region. The Strategy recognises that Wollongong LGA has a significant amount of employment land; a large portion of this land may not be suitable for development due to various constraints. Employment growth is encouraged not only by protecting key employment lands from inappropriate development, but also by providing new employment land in appropriate locations. Councils are called to encourage the clustering of synergistic land uses and fast tracking approvals including medical and health development.

The health care sector including hospitals, medical centres, clinics and aged care facilities is considered a major employment generator for the region and is expected to grow to the meet the regions changing needs. Therefore, provision of employment lands for the health sector is vital for the region.

The subject site contains biodiversity lands, and it is a challenge presented in the Strategy to improve protection and enhancement of natural environments, including significant biodiversity corridors. One of the visions of the Strategy is to encourage development and growth which minimises impact on the Region's natural and cultural assets including the escarpment, the land and rural land resources. The Strategy is to support the maintenance and enhancement of the region's biodiversity. Whilst the site does contain vegetation, detailed ground truthing has confirmed that there is limited naturally occurring

vegetation on the site and the land does not contain endangered ecological communities. Revegetation works within the site will assist in meeting the desired outcomes of the Regional Strategy.

The Strategy also addresses natural hazards, including flooding. As the site is identified as an uncategorised flood risk, consideration of flood impacts has been provided by C&M Engineering in and 'Engineering Report' (Ref: PN00864.R01 Rev 3) dated February 2013 and contained in Appendix 11. Section 5.2.3 Preliminary Drainage Investigation states "Given the topography of the site, it is unlikely the site is in any affectation from flooding other than from the local runoff, which will be safely mitigated".

Waste, energy and water management are also addressed in the strategy where it is encouraged that efficient use, conservation and security of available water and energy is undertaken. A Sustainability Assessment supports this proposal and is attached at Appendix 14.

Life City Wollongong will supply additional health, education and living opportunities to the Illawarra region and beyond and is well located to serve a broad increasing population base.

7 Local Planning Framework

The following section provides the local planning and legislative framework for the proposed development. The purpose of this section is to outline the approval process and identify the applicable local planning controls that relate to the proposed development. This includes relevant local environmental plans and development control plans including Wollongong Local Environmental Plan 2009.

7.1 Wollongong Local Environmental Plan 2009

7.1.1 WLEP 2009 Objectives

The subject site is located within the Wollongong local government area (LGA) and the principle environmental planning instrument applying to the site is Wollongong Local Environmental Plan 2009 (WLEP 2009). The aims of the plan are noted as follows:

(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.

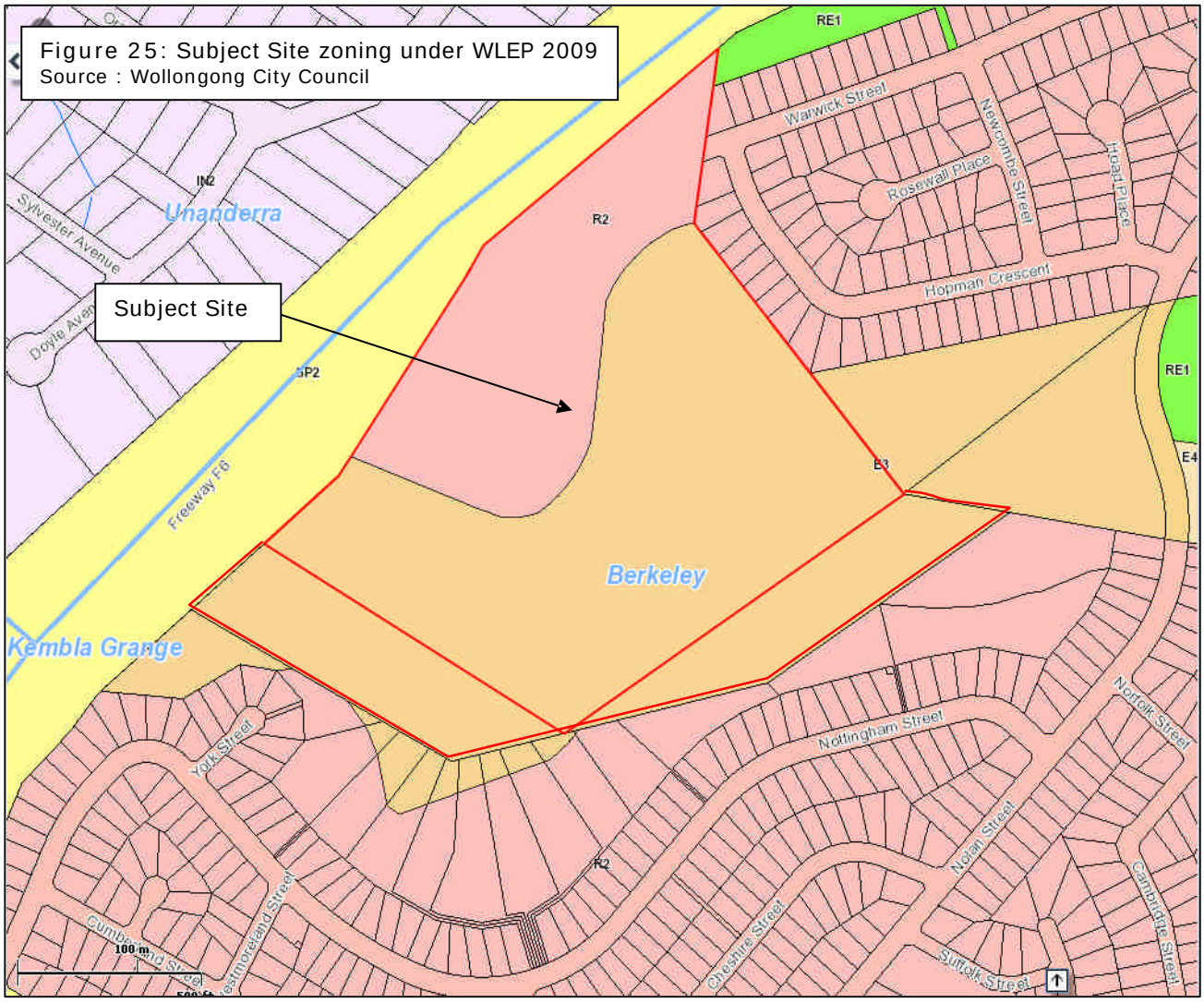
The proposal will provide for expanded employment, medical and business opportunities in a location with a high degree of accessibility to residents of the Wollongong and Shellharbour LGAs and beyond, in compliance with objective (b). Through the incorporation of both independent living units and a residential care facility for seniors the development will provide increased diversity in housing choice for senior residents. The provision of an expanded range of medical and educational facilities within the Illawarra will provide for the social well-being of residents, thereby addressing Objective (d).

The specialist subconsultant investigations which have been undertaken have concluded that the development will not significantly impact on native vegetation and fauna species (Objective e), Aboriginal heritage (Objective f) and that the constraints of the land can be managed to accommodate the proposed development or that the development can be modified to address the constraints (Objective g). Further,

the site can be adequately serviced by infrastructure or provided with an on-site sewerage treatment plan which can accommodate the proposed development, in compliance with Objective (g). The subject development, whilst being visually apparent is located on a site which is bounded by residential development and the F6 Freeway and does not immediately adjoin Lake Illawarra or the coastline, nor is it located within the Illawarra Escarpment and will therefore not impact on significant landscapes, in compliance with Objective (h).

7.1.2 Site Zoning and Permissible Uses

The site is zoned R2 Low Density Residential and E3 Environmental Management under Wollongong Local Environmental Plan 2009, as shown in Figure 25 below.



WLEP 2009 outlines the objectives and land use table for the R2 Low Density Residential zone, which predominantly applies to the land adjacent to the F6 Freeway and Warwick Street in the north-western portion of the site:

R2 Low Density Residential

1 Objectives of 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.

2 Permitted without consent

Home occupations

3 Permitted with consent

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; Home-based child care; 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; Respite day care centres; Roads; Semi-detached dwellings; Seniors housing; Shop top housing; Signage; Veterinary hospitals

4 Prohibited

Any development not specified in item 2 or 3

The proposed Life City' development will satisfy the second objective of the R2 Low Density Residential zone by providing a range of facilities which will cater for the day to day social, educational, health and community needs of residents in the area. The seniors housing will meet the first objective of the R2 Low Density Residential zone by providing for the housing needs of elderly within the community (both in an independent setting and in a higher care scenario). The floor space ratio of the development, when considered over the total development site, is comparable to the maximum 0.5:1 floor space ratio which is permissible on adjacent R2 zoned lands containing detached housing within Berkeley.

WLEP 2009 also outlines the objectives and land use table for the E3 Environmental Management zone, which applies to the southern and north-eastern portions of the site:

Zone E3 Environmental Management

1 Objectives of 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.

2 Permitted without consent

Home occupations

3 Permitted with consent

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

4 Prohibited

Industries; Multi dwelling housing; Residential flat buildings; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3

Section 9.2.6 of this Environmental Assessment contains a discussion of the manner in which the proposed development will meet the objectives of the E3 Environmental Management zone.

The proposed development contains a number of uses as defined by Wollongong LEP 2009, which includes, namely:

- hospital
- medical centre
- child care centre
- respite day care centre
- seniors housing
- residential care facility
- educational establishment
- school
- recreation facility (outdoor)
- environmental protection works

The various elements and their permissibility with respect to WLEP 2009 are noted as follows, and as confirmed by the Site Analysis prepared by Boss Design (refer Appendix 24):

Table 18: Land use Definitions and Site Zoning

Stage	Use	Use Definition (WLEP)	Zone
1	Medical Centre, Day Surgery, Child Care Centre & Respite Care Centre	Hospital (health services facility) Medical Centre Child Care Centre Respite Care Centre	E3 Environmental Management
2	Holistic Health Care Course	Recreation Facility (outdoor)	E3 Environmental Management
3	Serviced Apartments	Hospital	E3 Environmental Management
4	Ancillary Accommodation & Research, Library, Lecture Theatre, Auditorium Complex	Hospital	R2 Low Density Residential (predominantly)
5	Holistic Cancer & Medical Hospital	Hospital	R2 Low Density Residential
6	Self Care Seniors Housing	Seniors Housing	E3 Environmental Management
7	Residential Care Facility & Hostel	Residential care facility and hostel (seniors housing)	E3 Environmental Management
8	Healthcare Technical High School	School (educational establishment)	R2 Low Density Residential
	Native vegetation regeneration	Environmental Protection works	E3 Environmental Management

The definitions for each of the uses as contained within the Dictionary of WLEP 2009 are as follows:

health services facility means a building or place used 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 any of the following:

(a) a medical centre,
(b) community health service facilities,
(c) health consulting rooms,
(d) patient transport facilities, including helipads and ambulance facilities,
(e) hospital.

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 counseling 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, kiosks, restaurants or cafes or take-away food and drink premises,
(e) patient transport facilities, including helipads, ambulance facilities and car parking,
(f) educational purposes or any other health-related use,
(g) research purposes (whether or not carried out by hospital staff or health care workers or for commercial purposes),
(h) chapels,
(i) hospices,
(j) mortuaries.

Note. Hospitals are a type of health services facility—see the definition of that term in this Dictionary.

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

Note. Medical centres are a type of health services facility—see the definition of that term in this Dictionary.

respite day care centre means a building or place that is used for the care of seniors or people who have a disability and that does not provide overnight accommodation for people other than those related to the owner or operator of the centre.

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 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.

school means a government school or non-government school within the meaning of the *Education Act 1990*.

Note. Schools are a type of educational establishment—see the definition of that term in this Dictionary.

seniors housing means a building or place that is:

(a) a residential care facility, or

(b) a hostel within the meaning of clause 12 of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004, or

(c) a group of self-contained dwellings, or

(d) a combination of any of the buildings or places referred to in paragraphs (a)–(c),

(a) 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 building or place or in the provision of services to persons living in the building or place, but does not include a hospital.

Note. Seniors housing is a type of residential accommodation—see the definition of that term in this Dictionary.

residential care facility means accommodation for seniors 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, but does not include a dwelling, hostel, hospital or psychiatric facility.

Note. Residential care facilities are a type of seniors housing—see the definition of that term in this Dictionary.

recreation facility (outdoor) means a building or place (other than a recreation area) used predominantly for outdoor recreation, whether or not operated for the purposes of gain, including a golf course, golf driving range, mini-golf centre, tennis court, paint-ball centre, lawn bowling green, outdoor swimming pool, equestrian centre, skate board ramp, go-kart track, rifle range, water-ski centre or any other building or place of a like character used for outdoor recreation (including any ancillary buildings), but does not include an entertainment facility or a recreation facility (major).

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, but does not include coastal protection works.

The proposed development contains a number of activities that are ordinarily permitted with consent in some land use zones and prohibited in others under Wollongong LEP 2009. Specifically, within the R2 Low Density Residential zone the Stage 5 Holistic Cancer & Medical Hospital (defined as a hospital) and Stage 4 (Ancillary Accommodation & Research, Library, Lecture Theatre, Auditorium Complex), being ancillary facilities which also captured by the definition of 'hospital', are permitted with consent.

Further, whilst schools (and educational establishments) are not listed as a permissible use within the R2 Low Density Residential zone under WLEP 2009, Clause 28(1) of State Environmental Planning Policy (infrastructure) 2007 confirms that "development for the purpose of educational establishments may be carried out by any person with consent on land in a prescribed zone". A prescribed zone includes the R2 Low Density Residential zone. Hence the Stage 8 Healthcare Technical High School (school) is also permitted with consent within the R2 Low Density Residential zone.

Within the E3 Environmental Management zone, the proposed uses are prohibited. However, the Director General has confirmed that the Concept Plan for Life City Wollongong – Hi Tech Holistic Cancer and Medical Hospital Facility falls within the provisions of a Major Project under Part 3A, with the Clause 6 declaration confirming that the development is captured by Schedule 1, Group 7 Clause 18 of SEPP (Major Development) 2005 being a hospital development valued at more than $15 million. The Minister may grant approval to the proposed development as a State Significant project as the project addresses the requirements of clause 8N of the Environmental Planning and Assessment Regulation, 2000 as it is not located within an environmentally sensitive area of state significance nor a sensitive coastal location, as discussed in Section 6.1.3 of this Environmental Assessment.

Further, Section 3B (which details the provisions which apply to development which has been the subject of a concept plan approval under Part 3A) confirms that following approval of a concept plan under Part 3A, if Part 4 applies to the carrying out of development, the development is taken to be permitted with consent, despite anything to the contrary in an environmental planning instrument.

7.1.3 Other Relevant Clauses – WLEP 2009

Clause 4.3: Height of Buildings of WLEP 2009 states that the height of a building on any land is not to exceed the maximum height shown on the land of the Height of Buildings Map. For the subject site, the Height of Buildings Map allows a maximum building height of 9m. The proposed development heights are noted as follows:

Table 18A: Proposed Building Heights

Description	Stage	No. of Storeys	Max Overall Elevation / RL (m)	Overall Building Height
Medical Centre / Day Surgery / Respite Care Centre	1	3	70.50	12.59m
Child Care Centre		1	68.40	5.4m
Holistic Health Course	2	N/A	N/A	N/A
Serviced Apartments	3	4 (+1 lower)	82.54 (north and west elevation) 82.04 (south and east elevation)	15.00m
Ancillary accommodation & research, library, lecture theatre, auditorium complex	4	2 (+1 lower)	69.84	12.33m
Hi Tech Holistic Cancer & Medical Hospital	5	5 (+4 lower)	76.75	30.55m
Self Care Seniors Housing	6	3	4 separate buildings: • 70.10 (south east elevation); • 79.31 (south east elevation • 73.31 (north-west elevation)	11.892m
Residential Care Facility & Hostel	7	4 (+2 lower)	83.00	21.00m
Healthcare Technical High School	8	2	60.70 (roof top)	11.70m

The proposal contains a range of building designs and heights, to provide a complex with a varying built form. Whilst the proposed development will have building heights which exceed the permissible 9.0m specified in Wollongong Local Environmental Plan 2009, the buildings on the site have adequate separation from adjacent residential uses to minimize the impacts of overshadowing, overlooking and noise.

Clause 4.4: Floor Space Ratio states that the maximum floor space ratio (FSR) for a building on any land is not to exceed the floor space ratio shown for the land on the Floor Space Ratio Map, which for the

subject site (R2 Low Density Residential zone only applies) allows a maximum FSR of 0.5:1. The subject site has a site area of 168,700m^2 (16.87ha), whilst the development has a gross floor area of 61,899.54m^2. The proposal, which has a proposed FSR of 0.367:1, as shown in table 18B below:

Table 18B: Proposed Gross Floor Area Calculations

STAGE NO	DESCRIPTION	Level	Area (Sq.m)
1	Medical Centre, Day surgery, Child Care Centre & Respite Care Centre	201	903.33
		202	2137.24
		203	1208.13
		GFA	4248.7
2	Holistic Health Care Course	-	-
		GFA	0
3	Serviced apartments	201	1244.51
		202	1242.96
		203	1235.14
		204	1138.62
		205	838.62
		GFA	5699.85
4	Ancillary accommodation & research, library, lecture theatre, auditorium complex	201	0
		202	2312.00
		203	1810.43
		GFA	4122.43
5	Hi Tech Holistic Cancer & Medical Hospital	201	0
		202	0
		203	2867.41
		204	2192.28
		205	5193.82
		206	3656.78
		207	3656.78
		208	3656.78
		209	3656.78
		GFA	24880.63
6	Self Care Seniors Housing	201	1099.2
		202	1378.86
		203	1022.8
		204	2586.93
		205	2979.33
		GFA	9067.12
7	Residential Care Facility & Hostel	201	1255.89
		202	2673.06
		203	1207.04
		204	1207.04
		205	1207.04
		206	1207.04
		207	56.00
		GFA	8813.11
8	Healthcare Technical High School	201	2181.3
		202	1870.25
		203	1016.15
		GFA	5067.7
		TOTAL GFA	61,899.54m^2
		SITE AREA	168,700 m^2
		FSR	0.367:1

Table 18B confirms the gross floor areas of each component of the development, which have been calculated in accordance with the definition of gross floor area contained in Wollongong LEP 2009 being:

> gross floor area means the sum of the floor area of each floor of a building measured from the internal face of external walls, or from the internal face of walls separating the building from any other building, measured at a height of 1.4 metres above the floor, and includes:

(a) the area of a mezzanine, and
(b) habitable rooms in a basement or an attic, and
(c) any shop, auditorium, cinema, and the like, in a basement or attic,
but excludes:
(d) any area for common vertical circulation, such as lifts and stairs, and
(e) any basement:
(i) storage, and
(ii) vehicular access, loading areas, garbage and services, and
(f) plant rooms, lift towers and other areas used exclusively for mechanical services or ducting, and
(g) car parking to meet any requirements of the consent authority (including access to that car parking), and
(h) any space used for the loading or unloading of goods (including access to it), and
(i) terraces and balconies with outer walls less than 1.4 metres high, and
(j) voids above a floor at the level of a storey or storey above.

Clause 5.6 Architectural Roof Features

The objectives of this clause are noted as follows:

(a) to provide a built skyline that does not adversely impact on the natural landscape, view corridors or surrounding land, and
(b) to specify what part of a building may exceed the height limits.

This clause states:

(2) Development that includes an architectural roof feature that exceeds, or causes a building to exceed, the height limits set by clause 4.3 may be carried out, but only with development consent.
(3) Development consent must not be granted to any such development unless the consent authority is satisfied that:
(a) the architectural roof feature:
(i) comprises a decorative element on the uppermost portion of a building, and
(ii) is not an advertising structure, and
(iii) does not include floor space area and is not reasonably capable of modification to include floor space area, and
(iv) will cause minimal overshadowing, and
(b) any building identification signage or equipment for servicing the building (such as plant, lift motor rooms, fire stairs and the like) contained in or supported by the roof feature is fully integrated into the design of the roof feature."

The proposed development does not contain any specific architectural roof features and hence this clause does not apply.

Clause 5.9 Preservation of Trees or Vegetation

The objectives of this clause are noted as follows:

"to preserve the amenity of the area, including biodiversity values, through the preservation of trees and other vegetation."

The proposal does require a number of trees to be removed, however as noted in the 'Flora and Fauna Assessment' prepared by Kevin Mills (Appendix 12) the majority of vegetation on the site is exotic. An area of vegetation in the south-eastern corner of the site, which contains a number of naturally occurring species, will be retained and regenerated to maintain biodiversity values.

Clause 5.10 Heritage Conservation

Heritage items and heritage conservation areas are listed and described in Schedule 5 of WLEP 2009. The objectives of clause 5.10, which relates to heritage conservation, are noted as follows:

(1) The objectives of this clause are as follows:
  (a) to conserve the environmental heritage of Wollongong,
  (b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,
  (c) to conserve archaeological sites,
  (d) to conserve Aboriginal objects and Aboriginal places of heritage significance

Clause 5.10(2) specifies the consent requirements for land containing a heritage item. In this regard Council's property information records indicate that the subject site does not contain any heritage listed buildings, nor is it situated within a heritage conservation zone. A 'Non- Indigenous Heritage Assessment' prepared by Artefact Heritage in September 2012 also confirms that, following heritage register searches, background historical research and a field survey, no built heritage items were identified within the study area or in its vicinity. Further, the non-indigenous archaeological potential was assessed as low.

Accordingly the provisions of clause 5.10(2) do not apply to the proposed development.

Clause 7.1 Public Utility Infrastructure

The objective of this clause is "to ensure that sufficient infrastructure is available to service development".

The site can be serviced by all required utility services subject to augmentation of services as detailed in the 'Engineering Report' prepared by C&M Consulting dated February 2013; the 'Sydney Water Feasibility' letter dated 1 November 2012 (refer Appendix 11); and the 'Onsite Effluent Management Assessment' prepared by True Water Australia dated November (refer Appendix 17).

The proposal is consistent with the requirements of this provision.

Clause 7.2 Natural Resource Sensitivity - Biodiversity

The objective of this clause is to "protect, maintain or improve the diversity and condition of the native vegetation and habitat, including:

(a) protecting biological diversity of native flora and fauna, and
(b) protecting the ecological processes necessary for their continued existence, and
(c) encouraging the recovery of threatened species, communities, populations and their habitat

Clause 7.2(2) confirms that this clause applies to land that is identified as "Natural resource sensitivity—biodiversity" on the "Natural Resource Sensitivity—Biodiversity Map". Council has adopted maps as part of WLEP 2009 which identifies environmentally sensitive land within the LGA. The subject site has been identified within the nominated Biodiversity Maps and comprises a partial sensitive landscape or vegetation community. Figure 26 below indicates that the subject site contains a number of areas of natural resource sensitivity located in the south-eastern portion of the site where the land is to be revegetated; in the north-eastern portion of the site which contains the Stage 1 medical centre and day

Surgery; in the north-western portion of the site which is to be landscaped; and in the south-western corner of the site which is to principally be re-vegetated but which will contain a small section of the Stage 3 Serviced Apartments. The majority of such areas will primarily be retained and re-vegetated, with the exception of the north-eastern areas of biodiversity where vegetation removal is required to facilitate the development of the Stage 1 Medical Centre and Day Surgery.

Figure 26: Extract of WLEP 2009 Natural Resource Sensitivity—Biodiversity Map showing location of areas of mapped biodiversity on the subject site

Council is required to consider the impact of any development proposed on this land against a number of criteria prior to the granting of any consent. Specifically Clause 7.2 of WLEP 2009 states that:

(3) Development consent must not be granted for development on land to which this clause applies unless the consent authority has considered the impact of the development on:

(a) native terrestrial flora and fauna and its habitat, and

(b) native aquatic flora and fauna and its habitat, and

(c) the ecological role of the land, waterways, riparian land or wetland, and

(d) threatened species, communities, populations and their habitats.

(4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development is consistent with the objectives of this clause and:

(a) the development is designed, sited and managed to avoid potential adverse environmental impact, or

(b) if a potential adverse environmental impact cannot be avoided, the development:

(i) is designed and sited so as to have minimum adverse environmental impact, and

(ii) incorporates effective measures so as to have minimal adverse environmental impact, and

(iii) mitigates any residual adverse environmental impact through the restoration of any existing disturbed or modified area on the site.

It should also be noted that Section 5 of the Environmental Planning and Assessment Act 1979 outlines the objects of the Act, inclusive of the desire "to encourage the proper management, development and conservation of natural and artificial resources…for the purpose of promoting the social and economic welfare of the community and a better environment" [s5(a)(i)] and "ecologically sustainable development" [s59(a)(vii)]. 'Ecologically sustainable development' has the meaning defined in the Protection of the Environment Administration Act 1991 including the principles of:

- Precautionary principle.
- Intergenerational equity.
- Conservation of biological diversity and ecological integrity.
- Improved valuation and pricing of environmental resources.

The site is currently vacant and has largely been cleared of vegetation. The 'Flora and Fauna Assessment' conducted by Kevin Mills and Associates in November 2012 (Ref: 10/11/12) has confirmed that the proposed development will not impact on threatened/endangered species, communities and/or habitat. The study found that only three vegetation communities occur on the subject site being Mixed Regrowth Forest/Woodland, Wattle Forest/Woodland and Kikuyu grassland. The report concluded that "the vast majority of the vegetation on the property is exotic (introduced). The native species are largely concentrated in the south-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 south-eastern corner of the property as an open space areas where rainforest regeneration will be undertaken (page 17 Impact upon vegetation cover generally)."

This mitigating measure will ensure that Mixed Regrowth Forest Woodland which has some value as habitat for native flora and will incorporated into the open space area for regeneration purposes.

The natural environment is a key asset that makes the Illawarra area a highly valued place to live and it is critical to local amenity. Effective management of environmental assets is one of the key components of achieving ecologically sustainable development and is therefore a fundamental philosophy required in developing land in the region. The flora fauna investigations confirm that the areas of biodiversity which are located on the site are not of high significance and the incorporation of mitigating measures will ensure that the vegetation with highest conservation value is preserved.

The proposal is therefore consistent with the objective and provisions of clause 7.2 of WLEP 2009 as appropriate measures can be implemented to minimize adverse environmental impacts.

Clause 7.3 Flood Planning Area

The objectives of this clause are noted as follows:

"(a) to maintain the existing flood regime and flow conveyance capacity,

(b) to enable evacuation from land to which this clause applies,

(c) to avoid significant adverse impacts on flood behaviour,

(d) to avoid significant effects on the environment that would cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses,

(e) to limit uses to those compatible with flow conveyance function and flood hazard."

The site falls within the designated Uncategorised Flood Risk Precinct. The Uncategorised Flood Risk Precinct is where risk of damages is low for most land uses and most land uses would be unrestricted within this precinct. No specific controls have been identified requiring to be incorporated within the design development of the proposed development. C&M Engineers have addressed flooding, concluding in their Engineering Report dated February 2013 that "Given the topography of the site, it is unlikely the site is in any affectation from flooding other than from the local runoff, which will be safely mitigated".

The proposal is consistent with the objectives of this provision.

Clause 7.5 Acid Sulphate Soils

The objective of this clause is "to ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage."

A portion of Lot 2 DP 249814 has been mapped as Class 5 Acid Sulphate soils, however the other two allotments are not identified in Council's mapping as containing mapped Acid Sulphate Soils. The site is not located within 500m of any Class 1, 2, 3 of 4 land. Clause 7.5(3) requires the preparation of an Acid Sulphate Soils Management Plan for works on Class 5 land within 500m of adjacent Class 1, 2, 3 or 4 land that is below 5m AHD and on which the watertable is likely to be lowered below 1m AHD on adjacent Class 1, 2, 3 or 4 land. The 'Preliminary Environmental Assessment (Phase 1)' carried out by Clearsafe in November 2012 (Ref: 1367-01-LC) recommended "Acid Sulphate Soils have mapped on Site under Clause 7.5 of the Wollongong Local Environmental Plan 2009. This is limited to the lot 4 York Street area of the Site. An acid Sulphate Soil Investigation should be conducted to determine the level of soil contamination before works are undertaken that will impact on the area."

Clause 7.6 Earthworks

Clause 7.6 provides the approval requirements associated with earthworks. The objective of this clause is "to ensure that earthworks will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land."

Clause 7.6(2) specifies that development consent will be required for the earthworks, as they do not comprise exempt development or are of a minor nature. Hence, the proposed earthworks form part of the current application. This clause requires consideration of:

(3) (a) the likely disruption of, or any detrimental effect on, existing drainage patterns and soil stability in the locality,

(b) the effect of the proposed development on the likely future use or redevelopment of the land,

(c) the quality of the fill or of the soil to be excavated, or both,

(d) the effect of the proposed development on the existing and likely amenity of adjoining properties,

(e) the source of any fill material or the destination of any excavated material,

(f) the likelihood of disturbing Aboriginal objects or other relics,

(g) proximity to and potential for adverse impacts on any watercourse, drinking water catchment or environmentally sensitive area

The proposed development will involve excavation works associated with the roadworks, building construction and ancillary works. The 'Engineering Report' prepared by C&M Consulting Engineers (dated February 2013 (Ref: PN00864.R01 Rev 3), which is contained in Appendix 11, confirms that based on the preliminary grading of roads, a maximum cut of up to 6m and fill of up to 3m is proposed, excluding excavations for buildings. The extent of cut and fill is also diagrammatically represented within the 'Preliminary Bulk Earthworks Plan' prepared by C&M Engineers (Ref: 00864_SK07 rev P1 dated 24.9.12) Battered earth and retaining wall structures are proposed to support buildings and roads, with the use of retaining walls to be limited where possible. Where a higher level of retaining is required, high walls will be limited by combining low retaining walls with landscaped batters.

The majority of cut and fill within the site is setback significantly from adjoining residential properties, due to the site being bounded to the north-west by the F6 freeway and the south-west and south-east by the transmission line easement. To the north-east the site adjoins residential dwellings. Adjacent to such dwellings the level of cut and fill associated with the main access road into the site ((Road 1) is limited as shown on Plan 00864_Sk07, with an increased level of cut associated with the development of the medical centre and day surgery. Further detailed design of any retaining structures and battering will occur prior to the commencement of the development to ensure that the height of retaining structures is minimised and battering in conjunction with landscaping is used where possible.

It is further noted that the proposed cut and fill on the site will not impact on Aboriginal objects or relics and will not adversely impact watercourses. A number of measures to manage potential impacts associated with erosion and sedimentation and water quality will be addressed at the proposed construction phase of the development.

Accordingly, the proposal is consistent with the objectives and requirements of this clause.

Clause 7.14 Minimum site width

Clause 7.14 (Minimum Site Width) of WLEP 2009 specifies the minimum site width which is applicable to the development of multi unit housing and residential flat buildings.

(1) Development consent must not be granted for development for the purposes of multi dwelling housing unless the site area on which the development is to be carried out has a dimension of at least 18 metres.

(2) Development consent must not be granted for development for the purposes of a residential flat building unless the site area on which the development is to be carried out has a dimension of at least 24 metres

This clause does not apply to the range of uses which are proposed on the site, and specifically the 'seniors housing'.

7.2 Other Local Plans and Policies

7.2.1 Wollongong Section 94A Development Contributions Plan (2011)

Section 94A of the Environmental Planning and Assessment Act 1979 (NSW) (EPAA), provides for a fixed development consent levy. Clause 1 of section 94A states that as a condition of a development consent a consent authority, may impose "a requirement that the applicant pay a levy of the percentage, authorised by a contributions plan, of the proposed cost of carrying out the development."

The purpose of the section 94A levy is to assist Council in providing and maintaining high quality, diverse public facilities to meet the needs and expectations of the residential community of Wollongong City. As stated in the EPA& A, 1979 the monetary contribution is "to be applied towards the provision, extension or augmentation of public amenities or public services (or towards recouping the cost of their provision, extension or augmentation)," [s94 (a) (3)].This levy applies to all land within the Wollongong City Council local government area (excluding Stages 1 & 2 of the West Dapto Urban Release).

As outlined in the Wollongong Section 94A Development Contributions Plan (2011) the levy will be calculated as 1% of the value of the development, where the value exceeds $200,000.

However, Council may allow for partial or full exemptions for development privately funded community infrastructure, which includes private hospitals. The proposed development, Life City Wollongong will contain privately funded community facilities which includes a privately funded hospital, medical centre and day surgery, education and research facilities. As such an exemption from the required contributions is requested. Council's Development Contribution's Plan states:

It is noted that Council may allow for the following exemptions (partial or full):
h. An application on behalf of the Council for community infrastructure, such as but not limited to libraries, community facilities, child care facilities, recreational areas, recreational facilities or car parks.
i. An application on behalf of the NSW Government for public infrastructure, such as but not limited to hospitals, police stations, fire stations; education facilities and public transport infrastructure.
j. An application for privately funded community infrastructure, such as but not limited to education facilities, universities, and private hospitals

7.3 Development Control Plans

7.3.1 Wollongong Development Control Plan 2009

Wollongong Development Control Plan 2009 (WDCP 2009) contains Council's standards for development with the Wollongong local government area and is applicable to the proposed development. This proposal is in accordance with all relevant general aims and objectives of this plan in particular:

c) To ensure that development contributes to the quality of the natural and built environments.

d) To encourage development that contributes to the quality of the public domain.

e) To ensure future development responds positively to the qualities of the site and the character of the surrounding locality.

f) To encourage the provision of development that is accessible and adaptable to meet the existing and future needs of all residents, including people with a disability.

g) To ensure development is of a high design standard and energy efficient.

h) To ensure new development is consistent with the desired future character for the area.

i) To ensure the threat of bushfire is assessed.

j) To protect areas of high scenic and aesthetic value.

k) To ensure new development contributes to the safe and liveable environments.

The proposed redevelopment of the subject vacant site at Berkeley including the provision of state of the art hospital and medical facilities will incorporate a hi tech health facility, which will provide a significantly expanded choice of health and related educational facilities in the Illawarra region and will encourage a more sustainable use of the subject site. Hence, the proposal is consistent with the above nominated key objectives of WDCP 2009.

A number of sections contained with WDCP 2009 are of relevance to the proposed Concept Plan. The following compliance tables summarise the manner in which the Concept Plan will address the primary numerical requirements of the relevant chapters of this DCP.

7.3.2 Chapter B1: Residential Development

"This chapter applies to all residential zoned land" and therefore, as part of the site is zoned R2 Low Density Residential Development this chapter applies to the proposal. The following table includes limited relevant controls to the concept proposal.

WDCP Requirements		Proposed	Compliance
Section 4: Design Requirements			
4.1 Number of Storeys	The maximum building height is: R2 – 9m; 2 storeys The number of storeys acceptable will be dependant on the surrounding development, the future desired character of the area, the impact that the proposed development has on solar access, privacy, visual amenity and overshadowing.	Stage 1: 3 storeys 12.59m Stage 3: 4 (+1 lower) storeys 15.00m Stage 4: 2 storeys 12.33m Stage 5: 5 storeys 30.55m Stage 6:	Does not comply – variation sought

WDCP Requirements		Proposed	Compliance
		2 storeys 11.892m Stage 7: 4 storeys 21.00m Stage 8: 2 storeys 11.70m	
4.2 Front Setbacks	Front setback:6m	The relevant front setbacks include: Stage 8: Setback of Stage 8 Healthcare Technical High School to Warwick Street entry, Eastern boundary: approximately 18m	Complies
4.3 Side and Rear Setbacks	Side and rear setback: Walls exceeding 7m in height to be setback 3m	The relevant side setbacks include: Stage 8: Setback of Stage 8 Healthcare Technical High School to side boundary of north western boundary (ie. to F6 Freeway): Approximately 3.5m (wall height approx. 6m) Stage 1: Side setback of Day Surgery to eastern boundary: Approximately 18m	Complies Complies
4.4 Landscaped Area	At least 20% of the land must be provide as landscaped area At least 50% of the landscaped area must be located behind the building line	Total site area = 168,854m^2 Total landscaped area = 112372m^2 Total landscape % area = 66.54% Due to the nature of the site area, site shape and the nature of the overall site proposal, more than 50% of the landscaping area will be behind the front building line to Warwick Street. However, from the freeway frontage where there is no direct site access, there is an appropriately significant amount of landscaped area	Complies
4.5 Private Open space	24m^2 area of private open space must be directly accessible from the living areas of each proposed dwelling and a minimum width of 4m and be no steeper than 1:50 Private open space must be defined through the use of planting, fencing or landscape features. Private open space areas must not extend forward of the front building line by greater than 900mm	Private Open space is relevant to the independent senior's living units of Stage 6. These will be designed in accordance with SEPP 65 Design Quality of Residential Flat Development and the 'Seniors Living' SEPP.	Refer to comment
4. 6 Solar Access	Shadow diagrams will be required for hourly intervals between 9am and 3pm on the 21st of June. Windows to living rooms of adjoining dwellings must receive at least 3 hours of continuous sunlight between 9:00am and 3.00pm on June 21	Shadow Diagrams provided by Boss Design demonstrate there is no overshadowing of the Life City building upon any dwellings on adjacent residential sites	Complies

WDCP Requirements		Proposed	Compliance
4.7 Building Character and Form	The design of the development must have particular regard to the topography of the site to minimise the extent of cut and fill associated with dwelling construction. Large bulky forms are to be avoided, particularly in visible locations. New Dwelling-houses within established residential areas should be sympathetic with the existing character of the immediate locality. All residential buildings must be designed with building frontages and entries clearly addressing street frontage. The appearance of blank walls or walls with only utility windows on the front elevation will not be permitted.	Boss Design confirm that: "The built form is designed to complement the proposed use for the building and it maintains the predominant building alignments best expressed by the existing landscape and the contour of the land. The proposed development created an attractive and safe apartment with private driveways and easy access into the individual units. The built form strives to set a higher bench mark to the rest of the development in the area, by ensuring that the building responds to the orientation, view corridor and the surrounding site characteristics. In particular, built form for the taller buildings are carefully designed to introduce the horizontal division between the base, the main body and the top part of the building by the choice in different material, expression of the building and the selection of the cladding material." Although LCW introduces different scale and form from the rest of the surrounding built forms in the community, the proposed residential amenities and the expression of the proposed built form will set very high bench mar, not only for the community but for the whole of the region as well."	Refer comment
4.13 Services	Water, sewerage, gas, underground electricity and telephone are to be provided to the proposed development by the developer Developments must be connect to a reticulated sewerage scheme Where the reticulated scheme is not available, an on-site sewage management system will be required in accordance with Part E. A section 68 approval will also be required under the Local Government Act 1993.	A Feasibility Letter provided by Sydney Water confirms that connections points for water and sewerage is available subject to extensions and or amplification. The proposal also incorporates an onsite sewerage system which provides an alternative servicing option for on site irrigation reuse from Stage 3, Stage 4, Stage 6, Stage 7 (refer to Onsite Effluent Management report provided by True Water Australia)	Complies
4.15 View Sharing	The visual impact assessment should include consideration of views likely to be affected; what part of the property views are obtained from; the extent of the potential view loss impact and the reasonableness of the proposal causing the potential view loss impact. View sharing measures shall be considered including: - The provision of a corridor 3m wide of 25% of the site width or combined with the adjacent site;	Refer to Appendix 23 of Environmental Assessment and Section 1.2 Architectural Principles of Boss Design Architectural Document. Significant setbacks and separation has been provided. Buildings have been appropriately located and articulated to encourage view sharing.	Complies

WDCP Requirements		Proposed	Compliance
	- Appropriate placement of the building on the site; - Articulation with the building design; - Careful selection of roof forms and slope; - Placement of vents, air conditioning etc in locations which will not restrict views.		

7.3.3 Chapter C5: Child Care Centres

Chapter C5 of WDCP 2009 contains controls relevant to the development of child care centres and hence is applicable to the Stage 1 development.

WDCP Requirements		Proposed	Compliance
Section 7: Design Requirements			
Design Requirements 7.1 Maximum capacity of Centre and Staffing Levels	In non residential zones, Council may accept a maximum capacity greater than 49 children The maximum, in accordance with DoCS is 90 children: No more than 30 under 2 years No more than 60 between 2 and 6 years	The child care centre is proposed to cater for 70 children. The child care centre will be located in the R2 Low Density Residential zone.	Complies
Design Requirements 7.2 Location and Site Selection	To ensure child care centres are located upon sites of high environmental quality only, in order to minimise any potential adverse health and safety risks to young children and staff. Not within 500m of a service station, industry or warehouse facility involving dangerous goods, extractive industries, agriculture, waste transfer depot or landfill site, or 400m from high voltage electricity lines (ie 33kilovolts or more) 8. Child care centres are prohibited within 150m radius or any existing or approved medical clinic of facility providing drug treatment	The centre will be located within 400m of transmission lines on the site, being approximately 250m. The site is also located within 500m of an industrial area, however, this is not a heavy industrial area which does not include hazardous or extractive industries. The child care centre is located within 150m of a medical day surgery and hospital, however, will be complimentary to such a facility.	Variation sought to transmission line setback requirement.
Design Requirements 7.3 Building Design, Appearance and Neighbourhood Character	To ensure child care centres are designed compatible with existing or future planned character of the surrounding locality in terms of siting, scale, building form, height and external appearance. 1. To comply with height and FSR of WLEP 2009. 2 A maximum cut and fill of 1m 3. Minimum site area of 800m^2 5. Maximum two storey height limit, should only be single storey	The child care centre will be single storey in height and complement the design and character of the overall Life City precinct.	Complies

WDCP Requirements		Proposed	Compliance
Design Requirements 7.6 Car Parking, Access and Pedestrian Safety	A car parking and traffic assessment impact assessment study must accompany any Development Application for a new child care centre	A 'Traffic and Transport Assessment' has been prepared by GHD dated November 2012.	Complies
Design Requirements 7.13 Visual and Acoustic Privacy	To ensure that child care centres are designed and operated so that the privacy and amenity of surrounding properties is maintained and protected from overlooking/noise.	Refer to architectural plans prepared by Boss Design Architects which accompany the application.	Complies

7.3.4 Chapter E1: Access for People with a Disability

Chapter E1 contains Council's requirements for the provision of equitable access for people with a disability in the built environment.

WDCP Requirements		Proposed	Compliance
Section 3: Design Requirements			
Design Requirements	1. Access and facilities for people with a disability must be provided in accordance with the requirements of the DDA, BCA and the relevant Australian Standards stated in Section 2.4.	Buildings will be designed appropriately for disabled access	Compliance tested for each proposal staging

7.3.5 Chapter E10: Aboriginal Heritage

Chapter E10 contains an outline of the requirements for development on a known or potential Aboriginal site containing objects or a place of significance.

WDCP Requirements		Proposed	Compliance
Section 4: General Requirements			
	Preparation of Aboriginal Archaeological and Cultural Heritage Assessment	Refer to Aboriginal Heritage Assessment prepared by Artefact dated October 2012 (Appendix 15). The proposal is in accordance with Council's requirements.	Complies

7.3.6 Chapter E11: Heritage Conservation

Chapter E11 contains guidelines for the design and assessment of development proposals on land containing or in the vicinity of an item of environmental heritage or a conservation area.

WDCP Requirements		Proposed	Compliance
Section 4: General Requirements			
	Preparation of Heritage Impact Assessment Report.	Refer to Non Indigenous Heritage Assessment prepared by Artefact dated September 2012 (Appendix 16). The proposal is in accordance with Council's requirements.	Complies

7.3.7 Chapter E16: Bush Fire Management

Chapter E16 contains Council's requirements for development on land classified as bushfire prone.

WDCP Requirements		Proposed	Compliance
Section 3:			
	Section 149 Planning certificate to confirm property is classified as bush fire prone land.	The land is recorded in Council's records as bushfire prone land. Refer to Bushfire Assessment Report prepared by EcoLogical Australia.	Complies

7.3.8 Chapter E2: CPTED

Chapter E2 outlines Council's objectives and general requirements of Crime Prevention Through Environmental Design and seeks to promote the creation of safer places through environmental design in the planning, design and management of development.

The safety and security of staff, visitors and residents to the site has been integrated into the planning and design of the new facility. The development has been designed to comply with relevant standards.
In particular, the proposed development has been designed with regard to the principles of Crime Prevention Through Environmental Design. The design responds to crime reduction and prevention issues through the use of the four principles for CPTED which include surveillance, access control, territorial reinforcement and space management.

These principles are addressed below:

- Surveillance – The site adjoins an existing residential precinct, which will provide for passive surveillance of main access points. Security outside of working hours will provide continued surveillance of the site during the construction phase. The 24 hour operations of the hospital and the presence of short and long term residential tenants on the site will provide for 24 hour passive surveillance. Effective use of lighting will also be incorporated within the design of the site. Car parking areas will be well lit at night and are located adjacent to the complex providing convenient access and natural surveillance.

- Access control – All visitors to the site will be required to report to administration/reception on arrival. Security lighting will be provided in key locations and will be sufficient for good visibility at night.

- Territorial reinforcement - The site will include pedestrian and bicycle pathways accessing the site from surrounding streets – this network of access prevents the site being fenced off – and will put more emphasis on CCTV surveillance. Areas around large rainwater tanks etc will be fenced off to reduce areas of concealment.

- Space management – The development's design and internal layout have considered potential safety problems such as locations for entrapment. Landscaped areas will be designed to ensure that vegetation will not obstruct lines of sight and will be maintained to a good standard.

WDCP Requirements		Proposed	Compliance
Section 3: General Issues			
3.1 Lighting	1) c) Light heavily used spaces such as car parks etc. e) Consideration to light pollution and energy use. 3)b) Place lighting to take into account vegetation , current and future form to avoid light blocking. f) Avoid glare by not placing any unshielded lighting at eye level.	Appropriate lighting will be utilised throughout the site, including within basement parking areas and will be detailed at the Construction Certificate stage.	Will be designed to comply
3.3 Signage	3) All signage must be in compliance with AS1742.10 (1998) Manual of Uniform Traffic control devices – Pedestrian Control and Protection and AS1428.1 (1998) Design for access and Mobility – General Requirements for Access.	Signage will be designed to comply with AS1742.10 and AS1428.1	Will be designed to comply
3.2 Natural Surveillance an Sightlines & 3.4 Building design	1) a) Avoid blind, sharp corners especially on pathways, stairs, corridors. b) Avoid sudden change of grade on pathways. f) Avoid medium height vegetation concentrated top to bottom foliage. Plants 1 – 1.2m high are good for surveillance. 4) a) Ensure windows of activity rooms overlook pedestrian areas. 5) Encourage mix use developments to facilitate day and night use of public spaces. 1)a) Ensure entrances to buildings are clearly defined, secure, well lit and face the street. f) Locate lifts within secure entrances and incorporate graffiti and vandal resistant measures. 4)a) Locate delivery hatches, loading and storage areas where they do not assist in gaining entry to the building and are well lit and can be locked after hours. 8)d) Avoid large expanses of car parks. g) locate disabled parking in highly visible and accessible areas h) Minimize number of entry and exit points.	Boss Design confirm that: "The safety and the security within the complex is carefully thought through. The main entry to the complex is from Nolan Street and the secondary entry to the complex is from Warwick Street. Both entry points are very well secured and controlled. The pedestrian and vehicular road network within the site is also very well controlled to provide safe environment where the traffic movement is contained and separated between the areas. The residents in the complex are separated from the busy traffic generated by the medical centre and the hospital, into safer and quieter area with designated street looping around the central garden within the site. These streets are very visible due to their high location and will be well lit at night to ensure the safety of the residents."	Complies
3.5 Landscaping	Shrubbery and low level planting must be selected for footpaths that does not exceed 1m in height; Avoid planting taller growing plants and trees in area that screen doorways and windows.	Low level planting will be provided adjacent to building entrances as well as the front boundary to maintain open visibility.	Will be designed to comply

7.3.9 Chapter E3 Car Parking, Access, Serving and Loading Facilities

Chapter E3 contains Council's general requirements for the assessment and maintenance of traffic impacts and the layout of parking associated with development proposals and hence is relevant to the subject development.

WDCP Requirements		Proposed	Compliance
Section 6: Traffic Impact Assessment and Public Transport Studies			
A Traffic and Parking Implications Report has been prepared by GHD Ref 21/21878 dated November 2012			Complies
Section 7: Parking Demand and Servicing Requirements			
7.1 Car Parking, Motor Cycle, Bicycle requirements and delivery / serving vehicle requirements	(1) Car parking requirements are outlined in Schedule 1 of Chapter E (2) All parking and bicycle facilities must be fully provided on site. (3) Where a formula in Schedule 1 results in a fraction, numbers are to be rounded up to the nearest whole number. Schedule 1 - Hospitals <u>CARS:</u> 1 car parking space per medical practitioner plus 1 car parking space plus 2 employee plus 1 car parking space per 2 beds. <u>BICYCLES</u> 1 bicycle space per 5 car spaces <u>MOTORCYCLES</u> 1 motor cycle space per 25 car spaces <u>SERVICING:</u> Large rigid vehicle	Car parking has been addressed in accordance with Chapter E3 of WDCP 2009. Where requirements could be not obtained in the DCP, the RMS Guide to Traffic Generating Developments 2002 has been used. Refer to Traffic and Transport Assessment prepared by GHD dated November 2012 for an assessment of car parking compliance. The report concludes: "a total of 820 car parking spaces in total would be provided within this development, which exceeds the required 810 car parking spaces required under WDCP 2009".	Complies
7.2 Disabled Access and Parking	1. Disabled access and parking facilities are contained in Schedule 2. Schedule 2 1 car parking space for every 100 car parking spaces or part thereof. Plus: in accordance with Chapter D13 of the DCP, Clause 4.4(f), 1% of the required parking spaces are to be for disabled access.	Disabled car parking spaces will be provided for each stage in accordance with Australian Standards.	Disabled parking spaces will be provided to comply.
7.3 Bicycle parking / storage facilities	1. Provision of bicycle parking for a particular use shall be in accordance with Schedule 1	Bicycle parking will be incorporated for future more detailed stage plans	Refer to comment

WDCP Requirements		Proposed	Compliance
7.4 Waiver or Reduction of parking spaces	Council has the discretion to waive or reduce the minimum number of car spaces required if justified, and considering relevant DCP criteria. A 10 to 20% reduction may apply if near public transport and a public car park.	Refer to "Assessment of Traffic and Parking Implications" prepared by GHD and Associates dated November 2012. The report concludes: "a total of 820 car parking spaces in total would be provide within this development, which exceeds the required 810 car parking spaces required under WDCP 2009".	Complies
7.5 Car Parking Credits for existing development	Carparking credits for existing development will only be considered where supported by written evidence.	N/A	N/A
7.6 Car Parking Layout and Design	1. The parking dimensions, internal circulation, aisle widths, kerb splay corners, head clearance heights, ramp widths and grades of the car parking areas are to be in conformity with the current relevant Australian Standard. 2. a) Vehicles must be able to enter and leave the site in a forward direction. 5. Pedestrian and vehicular entrances are to be separated.	The Traffic and Parking Report also confirms that "auto turn assessments show that an ambulance can access the hospital and than a refuse truck trug / rigid vehicle can access the site along the proposed internal access roads" and "the proposed car parking spaces and vehicular access arrangements will be designed in accordance with AS 2890.1:2004 Parking Facilities Part 1: Off-street Car Parking.	Complies
7.7 Basement Car Parking	1. A min 2.4m headroom height shall be provided. 2. If waste collection vehicles will be entering the basement, the basement needs to be designed with the appropriate height and manoeuvring space to allow vehicles to exit in a forward manner.	A number of basement car parks are provided for each stage. Basement heights will be a minimum of 3m.	Complies
Section 8: Vehicular Access			
8.1 General	1. Access to off-street parking areas must comply with Council's Standard Vehicle Entrance Designs, with any works within the footpath and road reserve subject to a section 138 Roads Act 1993 approval. 2. Sight distances to be used for assessment and determination of a suitable driveway location shall be obtained from Australian Standard AS2890.1 (2004) for car use and Australian Standard AS2890.2 (2002) for any access to be used by a commercial vehicle. 3. Driveway grades, vehicular ramp width/grades and passing bays must be in accordance with AS 2890.1.	The Traffic and Parking Report also confirms that "auto turn assessments show that an ambulance can access the hospital and than a refuse truck trug / rigid vehicle can access the site along the proposed internal access roads" and "the proposed car parking spaces and vehicular access arrangements will be designed in accordance with AS 2890.1:2004 Parking Facilities Part 1: Off-street Car Parking The Traffic and Parking Report also confirms that the proposed access arrangements meet the sight distance requirements for both ASD and SISD.	Complies

WDCP Requirements		Proposed	Compliance
	4. Generally, direct access to arterial or sub-arterial roads will not be permitted, except where no legal alternative access is available.		
9.1 General	Schedule 1 identifies the requirement of a large rigid vehicle for the servicing of the proposed development. The dimensions of the loading area for a large rigid vehicle are: Min length: 12.5m, Min height: 4.5m	The Traffic and Parking Report also confirms that "auto turn assessments show that an ambulance can access the hospital and than a refuse truck trug / rigid vehicle can access the site along the proposed internal access roads"	Complies
9.2 Loading/ Unloading and Manoeuvring Area requirements	All servicing vehicles must be able to manoeuvre entirely on-site and enter and leave the site in a forward direction. All truck turning or manoeuvring areas must be separate from areas of normal pedestrian or vehicular traffic. All loading dock facilities must guarantee satisfactory on-site manoeuvring areas for trucks in accordance with AS2890.2.	The Traffic and Parking Report also confirms that "auto turn assessments show that an ambulance can access the hospital and than a refuse truck trug / rigid vehicle can access the site along the proposed internal access roads"	Complies

The proposal is in accordance with Council's balanced approach to parking provision and will obtain access from a road network will be able to adequately cater for the traffic generated by the proposed development.

The proposal is considered to be consistent with the objectives and the requirements of the DCP.

7.3.10 Chapter E6: Landscaping

Chapter E6 outlines Council's requirements for the lodgement of landscape plans in conjunction with a development proposal.

WDCP Requirements		Proposed	Compliance
Section 4: Minimum Requirements to accompany a Development Application			
4.2 Landscape Concept Plan	1. Community, educational, health, aged care housing, tourism, child care facilities, places of public worship require the provision of a 'Category 3' Landscape Concept Plan, which means it has to be prepared by a Landscape Architect eligible for corporate membership of the Institute of Landscape Architects.	A Landscape Concept plan prepared by Nicholas Bray Landscapes accompanies the concept application.	Complies
	The submitted Landscape Concept Plan shall comply with the requirements of the Table in section 4.2 of this chapter.	Refer to Landscape Concept Plan	Complies

7.3.11 Chapter E7: Waste Management

Chapter E7 contains general requirements for waste minimisation, management and recycling for all developments within the Wollongong LGA.

WDCP Requirements		Proposed	Compliance
Section 4: Submission / Application Requirements			
4.1 General	1. All applications for development must be accompanied by an SEE, which is to include a Site Waste Minimisation and Management Plan (SWMMP) as the central document of compliance with this chapter. Waste management facilities shall be clearly illustrated on the architectural plans accompanying the development application	A concept site waste and minimisation plan accompanies the application prepared by TCG Planning dated November 2012.	Complies
Part 5: Planning Requirements / Assessment Criteria			
5.7 Commercial Development and Change of Use	A complete Site Waste Minimisation and Management Plan shall accompany the development application. The plans submitted to show: § Location of waste storage areas; § Location of temporary waste areas; § Identified collection point; Every development must include a designated general waste storage area. For sites containing road frontages, the development should be designed to make provision for adequate access arrangements for servicing of waste. The waste/recycling storage room or area must be able to accommodate bins that are of sufficient volume to contain the quantity of waste generated at the rate described in Appendix 4, Waste / Recycling Generation Rates between collections.	A concept site waste and minimisation plan accompanies the application prepared by TCG Planning dated November 2012.	Complies

7.3.12 Chapter E14: Stormwater Management

Chapter E14 outline Council's requirements for stormwater drainage design and on-site stormwater detention for all developments within the Wollongong LGA.

WDCP Requirements		Proposed	Compliance
Section 11: Management of Stormwater from Development			
11.1 General	Detailed plans showing the proposed method of stormwater disposal are to be submitted with the development application.	A Stormwater Concept Plan prepared by C&M Consulting Engineers accompanies the application.	Complies

WDCP Requirements		Proposed	Compliance
Section 12: On Site Stormwater Detention			
12.1 Application of OSD	OSD requirements generally apply to all types of development.	Refer to Engineering Report prepared by C&M Engineering. The proposed drainage system includes bio-retention / detention basins to reduce nutrient runoff and peak flows to pre development levels.	Refer to Engineering Plans
Section 13: Information Requirements (to be submitted by applicant)			
13.1 DA Stage	1. A stormwater layout is required.	A Stormwater Concept Plan prepared by C&M Consulting Engineers accompanies the application.	Complies

7.3.13 Chapter E18: Threatened Species

A flora and Fauna Assessment has been prepared by Kevin Mills & Associates dated November 2012 and is contained in Appendix 12. This Assessment has addressed the Environmental Planning and Assessment Act, 1979; NSW Threatened Species Conservation Act, 1995; and the Commonwealth Environment Protection and Biodiversity Conservation Act, 1999. The Flora and Fauna Assessment accompanying this application satisfies the objectives and controls contained within Chapter E18 Threatened Species of WDP 2009.

7.3.14 Chapter E19: Earthworks

Chapter E19 outlines Council's requirements and environmental management measures for development involving earthworks.

WDCP Requirements		Proposed	Compliance
Section 4: Development Standards			
4.1 Stormwater Management, Sediment Control & Land Stability	4. A application involving earthworks must address impact on the geotechnical stability. Earthworks on steep slopes and or earthworks greater than 1m will generally be required to submit a geotechnical report	A Geotechnical Assessment has been prepared by Coffey Geotechnics, however, a more detailed geotechnical assessment will be carried out prior to commencement of works, including an assessment of earthworks proposed.	Refer comment

7.3.15 Chapter D8: On Site Sewage Management System

Chapter D8 provides the framework for the integrated management and regulation of on-site sewage management systems within the Wollongong LGA.

True Water Australia has confirmed at the preliminary design stage that an onsite wastewater management system can be achieved affordably and sustainably on the site in the event that the applicant chooses not to connect to the Sydney Water system. An approximate area of 8 hectares is available for the application of tertiary treated effluent via irrigation. This provides an alternate option for disposal of effluent for the serviced apartments, ancillary accommodation and research complex, self care seniors housing, residential care facility and hostel. The proposed system which will provide for

discharge and reuse is the Fuji Clean PCN Class A. The Medical Centre, Hospital and High School be discharged to the reticulated sewerage system.

7.3.16 Chapter E20: Contaminated Land Management

Chapter E20 outlines Council's procedures in dealing with the assessment of known or potentially contaminated land and the remediation of the contaminated land. Phase 1 Contamination Assessment was prepared by Clearsafe Ref: 1357-01-LC. The findings of this Assessment are discussed in Section 6.2.5 in relation to compliance with State Environmental Planning Policy No. 55 - Remediation of Land.

8 Environmental Risk Analysis

This section includes consideration of the potential environmental impact of the project and identification of the key issues which have been the subject of further assessment within specialist subconsultant investigations. Specifically this section contains an environmental risk analysis to identify potential environmental impacts associated with the activity.

8.1 Description of the Existing Environment

The subject site is located to the south of the existing residential area of Berkeley approximately 10km south of the Wollongong CBD. Specifically, Lot 4 is situated directly behind residential lots with immediate frontage to Warwick Street and Hopman Crescent. The smaller allotments, Lot 2 DP 534116 and Lot 2 DP 249184 are located to the rear of battleaxe lots which do not have direct frontage to York Street, Nottingham Street or Nolan Street.

Residential development is situated to the east, and south, while the F6 lies immediately to the north of the site. On the northern side of the Southern Freeway lies the Unanderra Industrial estate. The Nan Tien Temple is situated further to the north east on the eastern side of the F6 beyond the existing residential development.

Approximately 1km to the south east lies the northern shores of Lake Illawarra and lake foreshore areas. To the south, beyond Northcliffe Drive numerous outdoor recreation areas are situated including the Berkeley netball courts and Macedonia Park.

8.2 Identification of Key Issues

8.2.1 Potential Geotechnical Constraints

Whilst the Berkeley Land Stability Sheet (Bowman, 1970) indicates that the site is on Zone 1 – Stable Land – no landslip problems, more detailed subsurface investigations were considered appropriate to identify the general surface conditions on the site, clarify any further works which will be required in conjunction with future stages and to identify design solutions and works which will be required to ensure site and structure stability. This investigation was considered prudent given the existence of fill which has been encountered in the northern to north-western portions of the site and the existence of the F6 road cutting to the west of the site which provides evidence of horizontal contact between two different rock units.

The outcomes of this investigation are discussed in further detail in Section 9.2.1 of this Environmental Assessment.

8.2.2 Potential Site Contamination

Whilst Council's S149 Certificate indicated that the land has not been subject any orders under the Contaminated Land Management Act 1997, a Phase 1 Preliminary Assessment was undertaken, involving historical searches, review of Council files and EPA Contaminated Lands Register and a site inspection. The

Phase 1 Assessment confirmed that Acid Sulphate Soils had been mapped on the site on Lot 4 York St, however the assessment did not involve an acid sulphate soils investigation.

It was revealed there is evidence of illegal dumping of asbestos materials and miscellaneous materials, an indicator of other possible contaminants. Asbestos contamination of the soil has been identified in certain site areas. The outcomes of this investigation are discussed in further detail in Section 9.2.2 of this Environmental Assessment.

8.2.3 Potential Heritage Impacts

The risk analysis which was undertaken as a component of the Environmental Assessment also extended to the consideration of the existence of European and Aboriginal heritage items or relics to ensure that the development does not impact on the integrity of such items or result in damage to, or the loss of, such items.

This issue has been addressed within the "Non-Indigenous Heritage Assessment" (2012) and the "Aboriginal Heritage Assessment" prepared by Artefact Heritage, the outcomes of which are summarised in Section 9.2.3 of this Environmental Assessment.

8.2.4 Potential Loss of Biodiversity

Whilst the subject site has been highly disturbed through the historical effects of dairy farming and, more recently, by the dumping of rubbish and trail bike riding, this Environmental Assessment has considered the potential impact of the development on the biodiversity. This assessment has focused on the main concentration of native species, being the Mixed Regrowth Forest/Woodland which is located in the south-eastern portion of the site to determine mitigation strategies to minimise the loss of this area, which although not identified as an endangered ecological community does provide a fauna habitat. This also acknowledges the importance of this area of vegetation in providing a buffer between adjacent residential landuses and the proposed development and in providing additional screening of buildings to assist in reducing the visual impact of the development.

This issue has been addressed within the "Flora and Fauna Assessment' was conducted by Kevin Mills and Associates in November 2012, the outcomes of which are summarised in Section 9.2.4 of this Environmental Assessment.

8.2.5 Potential Bushfire Impact

The site contains a number of areas of bushland located within and surrounding the site which may provide a potential bushfire hazard threat, particularly having regard to the range of sensitive uses which are located on the site. Hence there will be a need to ensure that Asset Protection Zones (APZs) which are provided are consistent with the minimum requirements for Special Fire Protection Purpose (SFPP) development according to 'Planning for Bush Fire Protection' (Rural Fire Service, 2006) and to determine the additional works which are required to achieve such. There will also be a need to ensure that the internal road system is capable of accommodating fire fighting vehicles and that secondary access is available in the event of an emergency.

This issue has been addressed within the "Bushfire Protection Assessment" was conducted by EcoLogical in November 2012, the outcomes of which are summarised in Section 9.2.5 of this Environmental Assessment.

8.2.6 Impacts of Building Placement Within the E3 Environmental Management Zone

The subject site is zoned R2 Low Density Residential zone in the north-western sector of the site adjacent to the F6 Freeway and E3 Environmental Management under WLEP 2009 for the balance of the land. Figure 27 below indicates that the Stage 8 (Healthcare Technical High School), the Stage 5 (Hi Tech Holistic Cancer and Medical Hospital) and vast majority of the Stage 4 (Ancillary Accommodation and Research) are sited within the R2 Low Density Residential zone, however the balance of the stages are sited within the E3 Environmental Management zone.

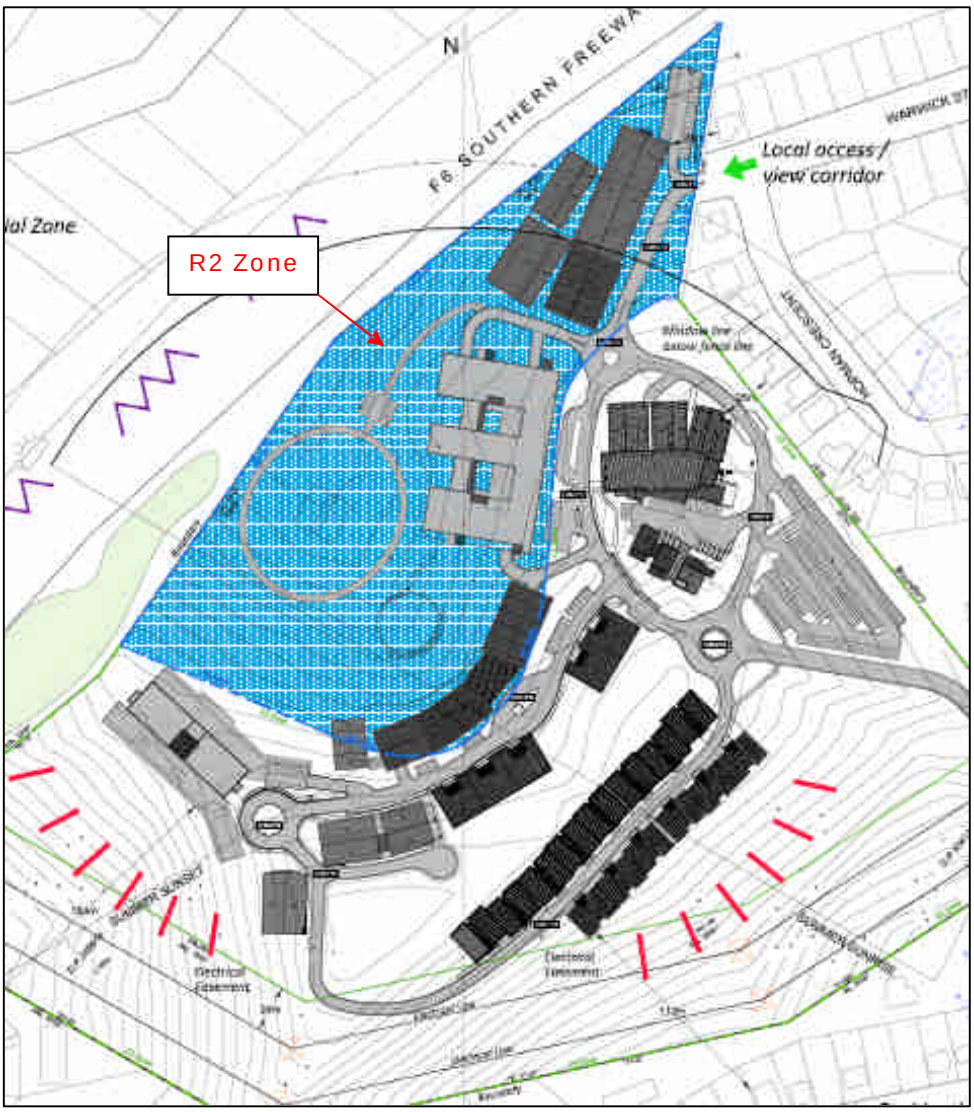


Figure 27: Overlay of buildings on WLEP 2009 zone map showing Stages 4, 5 and 8 within the R2 zone.

Given the placement of buildings within the E3 Environmental Management zone there is a need to determine if the proposed building location is appropriate and if such siting will result in unacceptable impacts, particularly with respect to ecological and visual impacts. Hence, this Environmental Assessment includes consideration of the following issues:

- Consideration of building locations and other options which were considered – refer to Section 5.3 of this EA;
- The manner in which the proposed development will accord with the objectives of the E3 Environmental Management zone – refer to Section 9.2.6 of this EA;
- Potential impacts on flora and fauna – Refer to Section 9.2.4 of this EA;
- Potential visual impacts – Refer to Section 9.2.9 of this EA and within the Visual Analysis prepared by TCG Planning (Appendix 23).

8.2.7 Built Form and Urban Design Outcomes

The site provides a range of educational, medical and residential facilities on land which is accessible to the broader Illawarra region, satisfying a need for additional community services and employment needs. There is necessary to ensure that the development contains a cohesive mix of landuses, which contains complementary functions appropriate in this location. This issue has been addressed within Section 9.2.8 of this Environmental Assessment.

Further, the development incorporates a range of building heights, density and design to provide a complex with contrasting but integrated buildings. However, given the siting of the development adjacent to detached residential dwellings there is a need to consider whether the desired built form outcomes are achieved, having regard to the site's context. This issue has been addressed within Section 9.2.7 of this Environmental Assessment.

8.2.8 Potential Environmental and Residential Amenity Impacts

This Environmental Assessment has identified environmental and residential amenity impacts such as solar access, visual privacy, overshadowing, view loss and wind impacts as potential impacts primarily due to the proximity of the proposed development to adjacent residential properties fronting Warwick Street and Hopman Crescent to the north.

Further, the acoustic impacts of the development require consideration both in terms of noise intrusion and noise emission to determine potential impacts to occupiers both adjacent to and within the development site. This has included consideration of traffic noise, vehicle movements, sleep disturbance and noise from mechanical plant due to the proximity of the development and the access roads to adjacent residential properties. Further, the proposed development is located adjacent to the F6 freeway and, due to the high volumes of traffic carried by this main road, an assessment of the noise impacts of this road on the proposed development was undertaken.

Hence, this Environmental Assessment includes consideration of:

- The visual impact of the development and the loss of key view corridors within the Visual Analysis prepared by TCG Planning in February 2013 (Appendix 23) and discussed within Section 9.2.9;

- § The impact of the development on acoustic privacy as addressed by Acoustic Logic within the 'Masterplan Acoustic Assessment' dated 1 November 2012, which is summarised in Section 9.2.9 of this Environmental Assessment;
- § The overshadowing impacts of the development and the solar access implications of the buildings which are addressed within the diagrams prepared by Boss Design and discussed within Section 9.2.9 of this Environmental Assessment;
- § The wind impacts of the development, which are addressed within the 'ESD Report' prepared by Vim Sustainability dated 5 October 2012 and which are summarised within Section 9.2.9 of this Environmental Assessment.

8.2.9 Achievement of Ecologically Sustainable Development Outcomes

The subject development represents a project focusing on the medical, educational and aged care and hence necessitates a sustainable approach which addresses the long term suitability of the project. If sustainable options are not investigated and implemented, where appropriate, there is a risk that the project could have a significant reliance on resource use such as energy and water and will fail to provide adequate levels of internal comfort for residents.

The range of sustainable opportunities which are available for the development have been considered within the 'ESD Report' prepared by Vim Sustainability dated October 2012, which is summarised in Section 9.2.10 of this Environmental Assessment.

There is also a need for the development to incorporate water sensitive urban design principles to ensure the protection of natural systems, integrate stormwater treatment into the landscape, protect water quality and reduce runoff and peak flows. Water Sensitive Urban Design Principles to be employed within the development are also discussed within this report and also within the 'Engineering Report' (Rev 3) dated February 2013 prepared by C&M Consulting Engineers as discussed in Section 9.2.11 of this Environmental Assessment.

8.2.10 Potential Transport and Accessibility Impacts

The subject site is bounded by the F6 Freeway to the west and existing residential estate within Berkeley to the north, west and south. Traffic associated with the development will enter and exit the site from surrounding residential streets, prior to linking with the F6 Freeway or the Princes Highway and hence it is necessary that intersections continue to operate effectively following commencement of operations of the development. It is also reasonable that the site provides the required level of parking for the development to ensure that parking with surrounding residential streets does not occur.

To provide an appropriate level of services for the seniors living component of the development and for medical patients, this Environmental Assessment has also considered opportunity for the expansion of sustainable transport opportunities including an expansion of private/public bus services.

The outcomes of this analysis are contained within the 'Traffic and Transport Assessment' prepared by GHD, the results of which are summarised in Section 9.2.13 of this Environmental Assessment.

8.2.11 Servicing Capacity- Utilities

In developing the Concept Plan for the Life City investigations were conducted to ensure that all stages within the development can be serviced or, if servicing limitations exist to address on site options which will be viable to accommodate future stages. Accordingly, the Environmental Assessment has been prepared in consultation with Sydney Water to confirm the existing servicing capacity and any works which are required to ensure the provision of utilities to service the development. This Environmental assessment has also considered the availability of power, telecommunication and gas services for the proposed development.

This issue has been addressed within the 'Engineering Report' prepared by C&M Consulting dated October 2012 and the 'Sydney Water Feasibility' letter dated 1 November 2012 and the 'Onsite Effluent Management Assessment' prepared by True Water Australia dated November, the outcomes of which are summarised in Section 9.2.14 of this Environmental Assessment.

8.2.12 Implications of Staging and Implications for Infrastructure and Contributions

There is always an inherent risk with a project of this scale that the development could place an increased demand on local or regional serviced which are publicly funded. This may be particularly relevant if infrastructure is not provided at the required stage to service the additional demands created by the development. In the case of the Life City development there is a need to ensure that the development adequately addresses the timely provision of transport and traffic facilities and services and that it can be adequately serviced with utilities.

This issue has been addressed within the 'Engineering Report' prepared by C&M Consulting dated February 2013 and the 'Traffic and Transport Assessment' prepared by GHD, the outcomes of which are summarised in Sections 9.2.15 of this Environmental Assessment.

9 Environmental Assessment

Section 9 contains an assessment of the potential impacts of the project, such as any cumulative impacts, having regard to the outcomes of the specialist subconsultant investigations and the identified site constraints and building design. Where appropriate, suitable mitigation measures are proposed to address these impacts.

9.1 Cumulative Impacts

The cumulative impacts of the proposed development must take into account other major projects planned in the area. A Council development application and a DoPI website database search was undertaken. No Major Projects have been identified within the area surrounding the site and hence the cumulative impacts with respect to environmental factors are considered to be minimal.

9.2 Assessment of Potential Impacts of the Project

9.2.1 Geotechnical Constraints Analysis

The Director General's requirements specify the need for preparation of a geotechnical report by a "recognized professional which assesses the risk of geotechnical failure of the site and identifies design solutions and works to be carried out to ensure the stability of the land and structures and safety of persons". In response to this requirement a preliminary geotechnical assessment was undertaken by Coffey Geotechnics in October 2012 to assess general subsurface conditions over the site, undertake a landslide risk of the current site and to determine the need for further investigation works in selected portions of the site. This investigation included both a desktop assessment and subsurface investigations which were undertaken on 25 September 2012. The subsurface investigations comprised a total of 12 test pits, which were excavated by a 5 tonne mini-excavator to depths of 0.8m to 2.65m.

The desktop assessment confirms that the site is underlain by three different geological units, being "Pheasants Nest Formation (a member of the Illawarra Coal Measures) in the central and northern portions of the site; Dapto Latite in the south of the site; and Nolan Dolerite-mid grey Dolerite in the eastern portions of the site closer to Nolan Street". The Berkeley Land Stability Sheet (Bowman, 1970) indicates the site is 'Zone 1 - Stable land – no landslip problems'.

The geotechnical investigations identified the following:

- The filled areas, which are located over parts of the site and which are most extensive in the north to north-western parts of the site, appear to comprise largely uncontrolled fill and these areas will require remediation before development can occur over these areas. Remediation from the geotechnical perspective will likely involve progressive excavation of the filled areas, removal of unsuitable fill materials and reuse and re-compaction of reusable fill soils in a controlled manner to AS3798-2007. Coffey recommend that this should occur following a contamination assessment of the fill material and following development of an integrated geotechnical/environmental fill reuse strategy.

- Preliminary mapping of the site indicates that subject to cut and fill each being limited to 1.5m:
  - the areas with a slope of between 3 to 10 degrees, with thinner soil cover (soil cover less than 1.0m deep) have an assessed landslide risk assessment of low;
  - the areas with a slope of between 10 to 20 degrees, with thinner soil cover (soil cover less than 1.0m deep) have an assessed landslide risk assessment of moderate;
  - the areas with a slope of between 10 to 20 degrees, with thicker soil cover (soil cover sometimes thicker than 2.0m) have an assessed landslide risk assessment of high.

Figure 28 below identifies the low, medium and high risk areas, together with the areas of uncontrolled fill.

Figure 28 Landslide Risk Assessment - Coffey Geotechnics, Preliminary Geotechnical Assessment, *GEOTWOLL03229AB-AA, 31 October 2012*

Coffey Geotechnics note that "for the areas marked as 'high' risk of instability, further geotechnical investigations work in this area may result in some portions of land being found that could have lower risk levels and that there may be some areas of 'High Risk' in areas of the site currently mapped as 'Moderate Risk'. This could be due to portions of the site currently being inaccessible for mapping purposes."

The outcomes of this landslide risk assessment were considered by C&M Consulting Engineers following discussions with Coffey Geotechnics to determine construction and management measures which could be implemented to address the high landslide risk areas. C&M Consulting Engineers, within their revised Engineering Report (Ref PN00864.R01 Rev 3 dated February 2013) suggest that "where the risks are high the top clay layer will either be removed or replaced with granular materials excavated on the site. Subsurface drains will be provided to minimise seepage flows". Typical sections demonstrating the proposed construction technique are provided within Figure 2 of the revised Engineering Report and were provided to Coffey for further review. Following review of the concept sections and the Bulk Earthworks Plan prepared by C&M Engineers, Coffey have confirmed within the revised Preliminary Geotechnical Assessment dated 6 February 2013 that provided "further engineering works and appropriately controlled construction works are carried out over the course of this development that is targeted at reducing the currently assessed risk level, then it is feasible to progress development within these higher risk areas of the site". Coffey further recommend that the risk for property following engineering measures and construction activities should be no higher than moderate for property risk and tolerable for life risk. Further detailed design and geotechnical work will occur at relevant stages within the development to confirm adherence to the recommendations of the geotechnical engineer.

9.2.2 Contamination Assessment

The 'Preliminary Environmental Assessment (Phase 1)' carried out by Clearsafe in November 2012 (Ref: 1367-01-LC) and involved an historical title search, a review of available Council files, a search of the EPA contaminated lands register, viewing of historical and recent aerial photographs, a review of Section 149(5) certificates, a Workcover SCID Search and a site inspection on 29 October 2012. Suspected asbestos material fragments were identified and sampled at three sites being:

- An area adjacent to the Warwick Street gate entry to the site;
- An area located 225m south-west of the Warwick Street gate entry; and
- The area adjacent to the southernmost of the two southern high voltage cable towers.

The testing and investigations revealed the existence of asbestos material in areas of the site where illegal dumping had occurred. A desktop analysis has also revealed that Acid Sulphate Soils have been mapped on part of the site. The following recommendations have therefore been provided:

- Acid Sulphate Soils have mapped on Site under Clause 7.5 of the Wollongong Local Environmental Plan 2009. This is limited to the lot 4 York Street area of the Site. An acid Sulphate Soil Investigation should be conducted to determine the level of soil contamination before works are undertaken that will impact on the area.
- It is recommended that Phase 2 Detailed Site Assessment is conducted to investigate the site for possible contamination.

9.2.3 Non-Indigenous and Aboriginal Heritage Impacts

A 'Non- Indigenous Heritage Assessment' prepared by Artefact Heritage in September 2012 confirms that the study area formed part of a large land grant which was associated with the establishment of dairy farming in the Illawarra region however the study area does not have historical or associative

significance. The study also confirms that, following heritage register searches, background historical research and a field survey, no built heritage items were identified within the study area or in its vicinity. Further, Artefact conclude that:

- based on documentary evidence for the area and observations during the field survey, the archaeological potential of the study area was assessed as low;
- the study area has low social significance as it did not form a string or special association with any identified community or cultural group;
- the study area is not rare in the local context and representative values are low;
- the study area demonstrates a low heritage significance or a low archaeological research potential.

An 'Aboriginal Heritage Assessment' of the site was also conducted by Artefact Heritage in September 2012. This study confirmed that an extensive search of the Office of Environmental Heritage (OEH) Aboriginal Heritage Information Management System (AHIMS) sites register indicated no record of Aboriginal sites located either within, or in the immediate vicinity of the study area. On 11 September 2012 a ground survey of the study area was conducted consisting of 12 transects across the study area. This survey was conducted with representatives of the Illawarra Local Aboriginal Land Council (ILALC) and Artefact Heritage. The site surveys concluded that the subject site has been significantly disturbed and that extensive vegetation clearance has taken place across the study area, with the subsequent establishment of thick, tall weeds across the southern and western slopes. Numerous instances of rubbish dumping were observed, in addition to several trail bike tracks which have resulted in surface erosion.

No Aboriginal sites or areas of potential archaeological deposit (PAD) were identified by Artefact within the study area. Further, Artefact conclude that:

- representativeness values are low within the study area and it is not rare in the local context;
- the study area is assessed as having a low archaeological significance;
- no Aboriginal sites, areas of particular cultural significance or areas of archaeological potential will be impacted by the project.

The study concludes that no further investigation of Aboriginal heritage is required before the project commences.

9.2.4 Biodiversity Assessment

The Director General required that the Environmental Assessment include an assessment of the impacts on flora and fauna, including threatened species, populations and endangered ecological communities and their habitats and steps to be taken to mitigate any identified impacts to protect the environment and enhance the biodiversity conservation value of the site.

A 'Flora and Fauna Assessment' was conducted by Kevin Mills and Associates in November 2012 (Ref: 10/11) in response to this requirement and involved a flora survey which was conducted on the site over three (3) days using multiple traverses of the study area with vegetation mapping on specific sites. A fauna survey was also conducted over three (3) days to record fauna species present on the site.

The study found that only three vegetation communities occur on the subject site and none of these are natural. The communities located include:

- Mixed Regrowth Forest/Woodland containing the key species of Commersonia fraseri, Acacia meamsii plus many rainforest species as well as many exotic species located in the northeast and continuing onto the adjoining property.
- Wattle Forest/Woodland containing Acacia mearnsii, Lantana camara and Pennisetum clandestinum in scattered occurrences, mainly to the south and east and continuing onto adjoining properties.
- Kikuyu grassland containing Pennisetum clandestinum, Chloris gayana and Imperata cylindrica which covers most of the site occurring on cleared land and as an understorey to the Wattle Forest/Woodland.

The fauna survey concluded that the vegetation delineated as Community 1 of Figure 29 “has some value as habitat for native flora and fauna”. Retention of a significant part of this area along with a commitment to regenerate the area to native forest vegetation will be a positive outcome of the development. The area which is most appropriate for retention and rehabilitation is located in the south-east of the site. It is recommended that a Vegetation Management Plan be prepared for this area.

Kevin Mills and Associates acknowledge that “there will be some loss of native vegetation; this will be offset by regenerating native vegetation in the area described above”. Further the study concludes “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.”

The study also concludes that ”the proposed development is not likely to constitute a ‘controlled action’ because it is not likely to have a significant impact on a matter of national environmental significance”. Hence, it is not likely that there will be a significant impact under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 and therefore Kevin Mills concludes that “referral to the Minister for assessment and approval are therefore not warranted.”

Figure 29: Figure 2 Vegetation Map for the Subject Land, Kevin Mills & Associates, Flora and Fauna Assessment November 2012

9.2.5 Bushfire Risk Assessment

The Director General's requirements specified the need for the undertaking of an assessment in accordance with the requirements of 'Planning for Bushfire Protection', 2006 and to identify the ongoing management arrangements for any asset protection zones required. This report confirmed that the proposal constitutes a Special Fire Protection Purpose (SFPP) development, which requires a higher standard of bushfire protection. The width of the Asset protection Zones (APZ) which will therefore be required are detailed in Table 19 below:

Table 19: Threat Assessment, APZ and Bushfire Attack Level for the Life City Development

Direction	Slope1	Vegetation2	PBP Required APZ3	Proposed APZ3	AS3959 BAL4
East(adjacent to Tall Heath/Scrub /Low Dry Rainforest vegetation)	Downslope >10-15 Degrees	Tall Heath (Scrub)	60m	>60 m (provided via managed land + building setback within property)	BAL -12.5* and additional ember proofing measures as outlined in PBP, 2010 Appendix 3 Addendum
South/South west (adjacent to remnant pockets of Tall Heath/	Downslope> >10-15 degrees	Low-Hazard Tall Heath (Scrub) & Rainforest	60m	>60m (provided via managed land + building setback within	BAL-12.5* and additional ember proofing measure as outlined in PBP,

Direction	Slope1	Vegetation2	PBP Required APZ3	Proposed APZ3	AS3959 BAL4
Scrub/Low Dry Rainforest vegetation)		remnant pockets)		property)	2010 Appendix 3 Addendum
West/North west (adjacent freeway corridor)	Downslope > 0-5 degrees	Not a significant hazard. Treated as grassland.	20m	>20m (provided via managed land + building setback within property)	BAL-12.5* and additional ember proofing measure as outlined in PBP, 2010 Appendix 3 Addendum
All other directions are considered to be managed lands and consist primarily of existing portions of the Life City Holistic Medical Facility or neighbouring managed lands.					

Source: Table 1: Threat assessment, APZ and bushfire attack level (Bushfire Assessment, EcoLogical Aust)

Figure 30 confirms the location of the required Asset Protection Zones and confirms that such APZs will be provided through building setbacks and managed land in accordance with the recommendations of EcoLogical Australia. The Bushfire Attack Level (BAL) distances in relation to the proposed Life City development are detailed in Table 20 below:

Table 20: BAL Separation Distances in Relation to the Proposed Development

Subject land area and Vegetation and Slope	Bal-FZ Distance	BAL – 40 Distance	BAL-29 Distance	BAL-19 Distance	BAL – 12.5 Distance	BAL - Low
East(adjacent to Tall Heath/Scrub/Low Dry Rainforest vegetation) 10-15 degree downslope	<14m	14 - <19m	19-<28m	28-<39m	39-<100m*	>100m*
South/South west (adjacent to remnant pockets of Tall Heath/ Scrub/Low Dry Rainforest vegetation) 10-15 degree downslope	<17m	17-<23m	23-<33m	33-<34m	45-<100m*	>100m*
All other directions Managed lands	BAL-Low (separation distance exceeds 100m due to existing management or development)					

Source: Table 2: Threat assessment, APZ and bushfire attack level (Bushfire Assessment, EcoLogical Aust)

The Bushfire Assessment provided by EcoLogical Australia concludes: "The proposed Asset Protection Zones (APZs) are consistent with the minimum requirements for Special Fire Protection Purpose (SFPP) development according to 'Planning for Bush Fire Protection', however; the establishment of these APZs will require significant further works in order to achieve an appropriate standard of vegetation clearing and management. A portion of the proposed Life City Holistic Medical Centre buildings, situated within 100m bushfire hazard areas, will require the implementation of BAL-12.5 construction standards in accordance with AS 3959-2009 with additional ember proofing requirements set by the NSW Rural Fire Service where noted." The report also confirms that the access and water supply requirements are addressed by the proposed Concept Plan.

Figure 30: Siting of Asset Protection Zones, Building Setbacks and Managed Vegetation Areas

9.2.6 Implications of Development Within the E3 Environmental Management Zone

As confirmed within section 7.1.2 of this Environmental Assessment the proposed development is located partly with the R2 Low Density Residential zone and partly within the E3 Environmental Management zone of WLEP 2009. It is anticipated, having regard to the objectives of the zone, that the E3 Environmental Management zone was partly applied to this site based on the existence of vegetation cover and partly due to the potential visual impact of development, given the topographic level of the land. Specifically, the zone boundary line between the R2 and E3 zone broadly follows the line of vegetation on the site, with the cleared areas predominantly contained within the R2 zone. The application of this zone would have appeared reasonable at the time of mapping in conjunction with a local environmental plan, based on the level of site investigations which had been undertaken at that time.

However, more detailed site investigations which have been undertaken in conjunction with this Environmental Assessment (which have included consideration of ecological and aesthetic values), confirm that development can be accommodated within the E3 zone without compromising the objectives of this zone. Accordingly, the application of a merits based approach is considered to be reasonable to ensure that the overarching social benefits of the proposal are realized and that restoration of significant areas of bushland occurs as an integral part of this development. The following demonstrates the ability of the Life City development to satisfy the objectives of the E3 zone, which are as follows:

- 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.

Objective 1:

- The subject site does not contain any heritage items as listed within WLEP 1990 nor is it located adjacent to, or in close proximity to a heritage item.
- The 'Non- Indigenous Heritage Assessment' prepared by Artefact Heritage in September 2012 confirms that:
  - representativeness values are low within the study area and it is not rare in the local context;
  - the study area is assessed as having a low archaeological significance;
  - no Aboriginal sites, areas of particular cultural significance or areas of archaeological potential will be impacted by the project.
- The subject site, whilst having a level of visibility due to its topographic position, could not be considered as a site within a high level of aesthetic quality. The land is highly disturbed and degraded; is bounded by the F6 Freeway and a significant 'man made' embankment to the west; is in close proximity to the Unanderra industrial estate to the west which has no aesthetic qualities of value; and is an isolated parcel which is bounded by developed residential land to the north, east and south which restricts its ability to provide connectivity to adjacent vegetated lands.
- The 'Flora and Fauna Assessment' was conducted by Kevin Mills and Associates in November 2012 (Ref: 10/11) found that only three vegetation communities occur on the subject site and none of these are natural. The communities located include Mixed Regrowth Forest/Woodland; Wattle

Forest/Woodland; and Kikuyu grassland. The report notes that there are no large or old trees located anywhere on the site and the vegetation is regrowth rather than remnant from the original rainforest which once grew across the Berkeley Hills. The assessment also notes that the "vast majority of the vegetation on the property is exotic (introduced)". Further, remnant of Illawarra Subtropical rainforest (which once covered all of the Berkeley Hills) occur "here and there on the site there is some regrowth of the constituent species in the study area". Kevin Mills notes there will be some loss of native vegetation, however retention of an area of the highest quality vegetation in the south-eastern portion of the site and regeneration of native vegetation elsewhere on the site will ensure that the objectives of the E3 zone are met.

Hence, it is considered that the proposed development will meet the objectives of the E3 zone subject to the preparation of a Vegetation/Habitat Management Plan to address the revegetation of the retained areas of vegetation in the south-western and south-eastern locations of the site.

9.2.7 Impacts Associated with Development Density/Scale

Scale of the Development

The architects for the project, Boss Design, provide background information regarding the scale of each stage within the overall development:

Stage 1 - Medical Centre, Day Surgery, Child Care Centre and Respite Care Centre

The medical centre consists of a day surgery, respite centre and a child care facility, detached from the main building. The medical centre is a three storey building set in tiers to blend with the surrounding environment. The roof is segmented and part of the lower ground level is recessed in to the ground making good use of the contours to reduce the height impact of the building. It is located adjacent to the "Hi-Tech Holistic Cancer & Medical Hospital".

The childcare centre will accommodate up to 70 children whilst catering to the needs of doctors, medical staff and families. The building is single storey and the roof is broken into three segments to soften the impact.

Stage 2- Holistic health Course

This stage is an outdoor facility incorporating low scale structures for yoga, reiki, laughter therapy, meditation, auras and pranic healing.

Stage 3- Serviced Apartments

Serviced apartments have been provided to cater for the visiting patients and families that require accommodation for short or medium length periods of time. Sixty three (63) apartments of various sizes have been provided in two residential 4 storey blocks to accommodate sufficient beds, having regard to the size of the adjacent medical facilities.

The apartment block configuration has been adopted to minimize building footprint, while taking advantage of the views available from the site. This arrangement allows larger landscaped areas to be

retained, to retain the vegetated qualities of the site. The building has been articulated in two via a central vertical nexus and the roof line has been staggered to reduce visual impact.

Stage 4- Ancillary Accommodation, Lecture Theatre and Auditorium Complex

The ancillary lecture theatre and conference room complex to host conventions, seminars and meetings for the ongoing training and formation of the medical staff, alumni or residents. The different conference rooms are equipped with folding walls permitting different configurations depending on the specific needs.

Complete with restaurant and hostel facilities for visiting lecturers or visitors to the complex and strategically placed in the centre of the development adjacent the holistic health course, it will serve as a hub and communal meeting point, strengthening the sense of community. The size and scale of these buildings will provide for functional use, with the height maintained at two storeys (with on lower level) due to the placement of this building at a higher position on the site. The footprint of the building will follow the contours of the land and the buildings are tied together with a wrap around balcony and are accessed via an underground car park.

Stage 5- Hi-Tech Holistic Cancer & Medical Hospital

The 320 bed Hi-Tech Holistic Cancer & Medical Hospital is the dominant building of the entire site consisting of a building footprint of over 5000 m^2. The massing of this five storey building (above ground) was carefully designed to accommodate four floors @ 80 beds per floor (ward) with the ground floor consisting of administration and ancillary services. This facility has designed in keeping with hospital standards, existing site constraints and has minimized the building footprint, while taking advantage of the views from the site. The building form consists of three fins, enabling each room to have a view, linked by a central spine. The facades are well articulated with the horizontal glazing woven into the solid vertical elements, giving relief and rhythm.

Stage 6 – Self Care Seniors Housing

The Self Care Seniors Housing contains a mix of 3 bedroom, 2 bedroom and 1 bedroom plus study, catering for the different senior living needs. The senior housing apartments will be surrounded by modern healthcare facilities and landscaped areas and will provide an extended range of living options for aging residents of Berkeley and the greater Wollongong area.

The apartment sizes have been designed to allow for comfortable living but without need for excessive cleaning or maintenance costs, with outdoor living areas that provide outlook to the landscaped setting. The apartments are grouped over various clusters that make use of the natural contours to incorporate parking under the building and provide direct access via lift to the apartments. The building configuration has been adopted to minimise the building footprint, while limiting the number of residential levels to three.

Stage 7- Residential Care Facility:

The proposed residential care facility will accommodate 167 residents in 156 rooms over 4 storeys and two basements levels. The residential care facility will include 82 low care beds, 28 high care beds, 30 dementia beds and 27 hostel beds. These numbers have been calculated to ensure economic viability of

the facility and the provision of 'best practice' long term care. The most critical element in achieving operational viability is staffing, as wages and related costs are the overwhelming operational cost component. The layout and resident numbers on each floor are critical considerations, as are roster hours for registered nurses, carers and therapy staff.

Both the resident numbers on each floor as well as within the overall building will be both critical to the long term successful operation in light of the Federal Government's plans for residential aged care facilities to accommodate essentially residents with high care/nursing needs. The thrust of the Government's reforms will result in a rapid expansion of home support services with most people only entering residential care when their care/nursing needs are at a high level. Demographic information available confirms the population will age rapidly over the next 20 years and hence the number of high care residents will increase. This will necessitate more general and specialist staff, so resident numbers will become increasingly critical for efficient cost sharing.

Increasing dementia specialist accommodation is going to be a feature of residential aged care in the future as many of the people unable to cope at home and will be unable to do so due to the onset of dementia. The proposed building provides 30 dementia beds grouped in one of the wings. Again, the staffing model is critical to sustainability, as is the flexibility of the building to create other secure areas as the need arises. Economic viability of the facility will ensure a high level of care services. The highest level of services can only be delivered if the layout, numbers per floor and overall facility numbers are conducive to an efficient operation, making sure that the highest possible level of service can be delivered to the increasing number of frail aged in the region.

A four storey vertical configuration has been adopted to ensure cross ventilation, maximize views and minimize building footprint. This layout also permits the building to be compartmented into different uses and ensures fire safety evacuation. Two basement levels have been provided to meet the number requirements as well as make use of the natural contours, integrating the lower levels into the landscape.

Stage 8 – Healthcare Technical High School

The Healthcare Technical High School has been designed for 360 students, thus allowing for 2 classes of 30 per year, from years 7 to 12. The minimum number of students has been calculated to ensure variety of choice and viable teaching group sizes. Study areas adjacent the classrooms have been provided to serve as a social base where students can interact and interchange knowledge. The high school facility also requires administration and teachers' offices, laboratories, ancillary sports buildings and outdoor sports areas to complement the classrooms.

The selected overall building size and landscaped areas will ensure a superior learning environment and will provide teaching facilities of the highest standards. The area of playing fields to be provided will provide the adopted standard of sustaining seven hours of play per week in term time without detriment. The sports hall / auditorium and sports oval have been placed in close proximity to the entrance and are provided with individual access so that they can be used by the community after school hours and by activity groups on the weekends, complementing the rest of the development and neighbouring residences.

Density and Height of Development

The proposed development is sited both within the R2 Low Density Residential zone of WLEP 2009, where a maximum 0.5:1 floor space ratio and a 9m maximum height is permissible. The development is also partly sited within the E3 Environmental Management zone where no maximum floor space ratio or height provisions are specified by the floor space ratio or height maps of WLEP 2090. The floor space ratio of the development, when considered over the total site, will achieve a floor space ratio of 0.367:1, which is less than that which is permitted within the R2 zone (on this site and on adjacent lands). There is no numerical determining standard of FSR or height within the E3 zone, with the suitability of this development on this land to be most appropriately determined following assessment of built form, visual and environmental impacts. This EA considers such factors in determining whether the development is suitability sited within the E3 zone.

With respect to the scale and density of development, it is noted that the overall FSR of the proposal is less than the maximum 0.5:1 which is permitted for dwellings and other forms of development within the immediately surrounding residential estate of Berkeley. Further, whilst the overall height of buildings will exceed the maximum 9m overall height in the adjacent residential estate, this increased height is a factor of the reduced building footprint on the site, which will assist in minimising impacts on vegetation and provides for closer physical linkages between the various stages and functions within the Life City development.

Hence, whilst the density of development accords with that of surrounding residential lands, the height exceeds that evident within adjacent detached housing. In assessing the suitability of heights within the Life City development, consideration should be given to the site's context and relationship to all surrounding landuses, including the scale and density of development within the broader precinct. This precinct includes industrial development to the west of the site, where a maximum 11m height is specified within WLEP 2009. Further, within the immediate precinct variation in the height of buildings is also evidenced within the Nan Tien (Buddhist) Temple located to the north of the site, where buildings of a comparable height to the Life City development are evident, also on a site adjacent to the F6 Freeway. A discussion of the potential impacts of such increased building heights, having regard to the siting of the buildings, is contained in the following section of this EA.

Impact on Surrounding Development:

The facility contains eight (8) stages, with the scale and density of buildings within each stage commensurate with the nature of the use and the functions which are required to be incorporated within each facility.

The Stage 1 Medical Centre/Day Surgery is 3 storeys in height, with an overall building height of 12.59m and a maximum overall elevation of RL 70.50. The Stage 8 Healthcare Technical High School is 2 storeys in height, with an overall height of 11.70m and a maximum overall elevation of RL 60.70. Stages 1 and 8, which are two of the stages with buildings containing the least number of storeys, are sited in the eastern portion of the site in the position closest to adjacent residential development. As depicted on the Site Analysis Plan prepared by Boss Design (refer to extract in Figure 31A below) a minimum 25m

separation distance is provided between the buildings within each of these stages and the nearest residential dwelling in Warwick Street and Hopman Crescent.

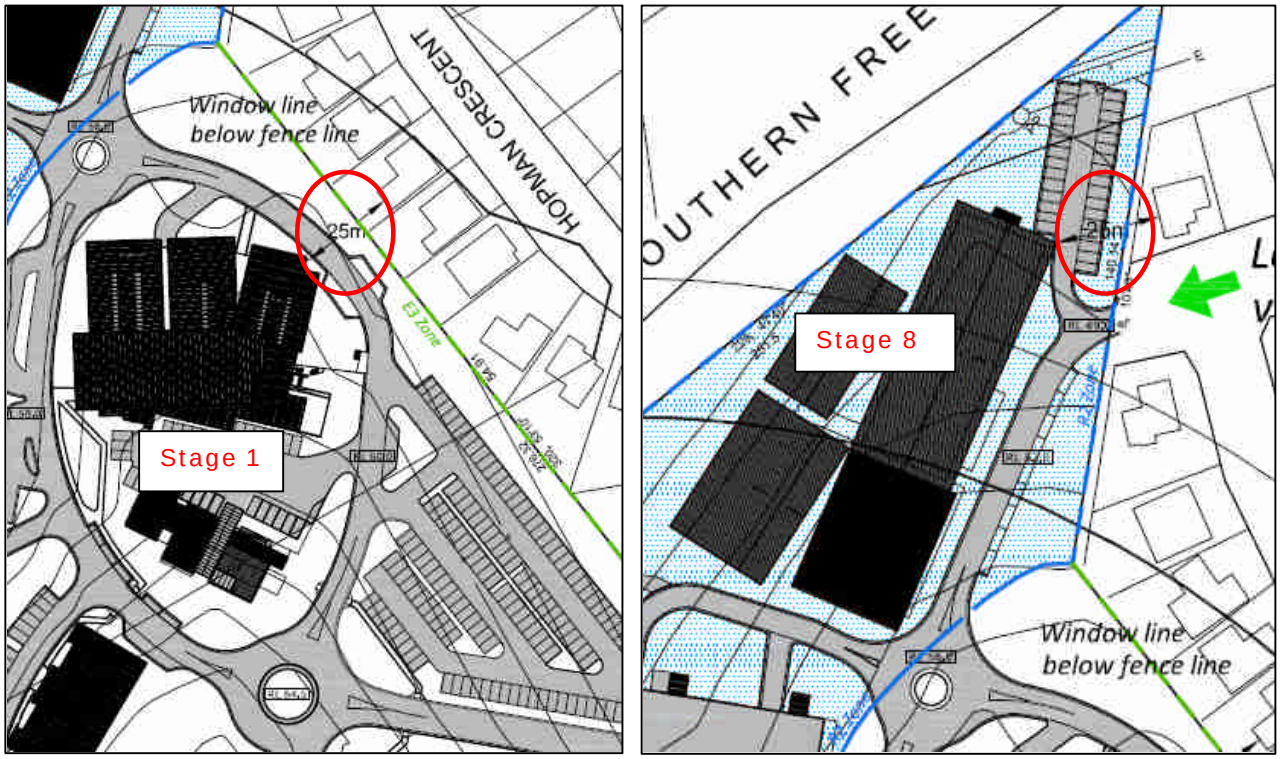


Figure 31A: Building Setbacks of Stages 1 and 8 to Residential Housing in Warwick Street and Hopman Cres

It is further noted that the visual impact of the proposed Stage 1 development will be reduced due to the slope of the land in the eastern portion of the site which falls from a level of approximately RL 66.0 at the western elevation of the Day Care Centre to approximately RL 56.8 at the rear of allotments fronting Hopman Crescent. As depicted on the survey plan prepared by JRK Surveys (Ref: 12-107P1 dated 9.8.12) the ridge line of dwellings on adjacent dwelling in Hopman Crescent ranges from approximately RL 56.27 to 59.6. Such ridge heights are consistent with, or only slightly above, the height of the land at the boundary with the Life City property, as shown in Figure 32 below.

Stage 6 of the development, which contains the seniors self care housing, is also 3 storeys in height, and has a maximum overall height of 11.892m and a maximum overall RL of 79.31. Figure 31B confirms that a 112m separation distance is provided between buildings within Stage 6 and the nearest residence in Nottingham Street, with this increased setback provided by the transition line easement and the vegetative buffer. A minimum 154m separation distance is provided to the nearest residential dwelling in York Street, with a vegetative buffer also to be retained between dwellings and the Stage 3 and 7 development.

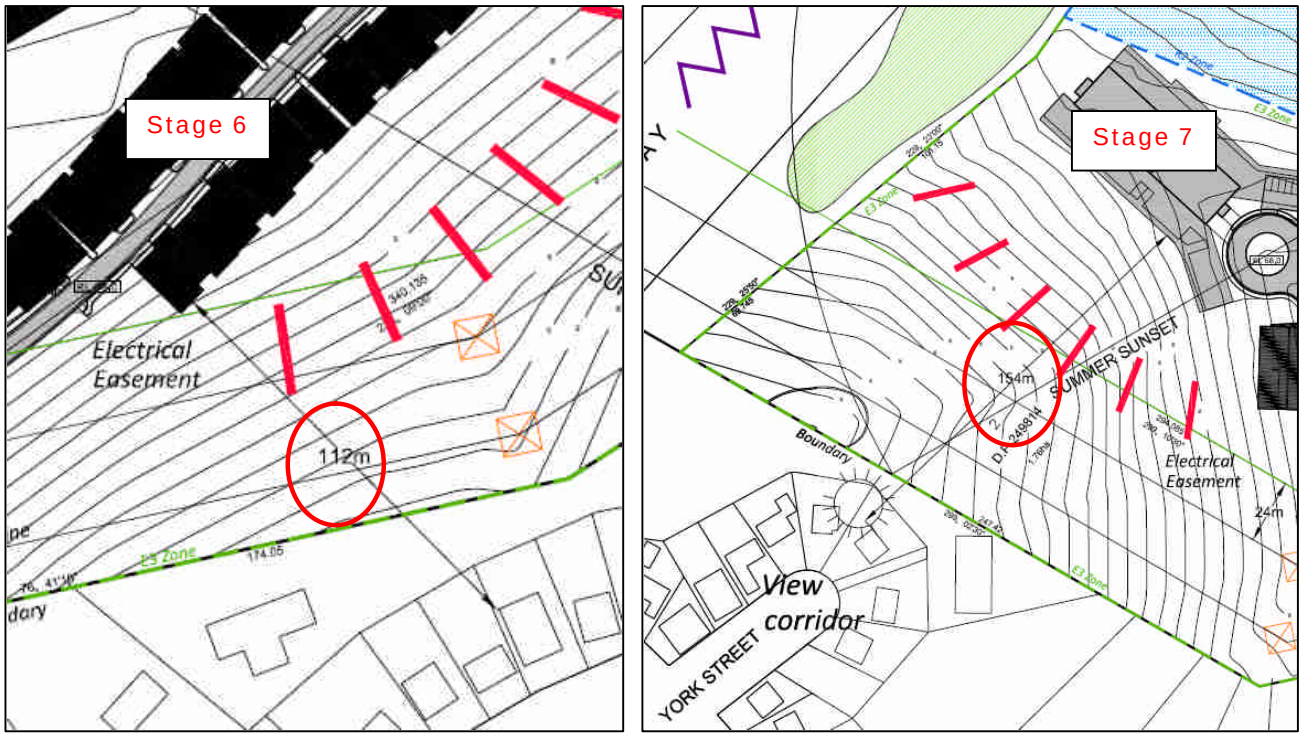
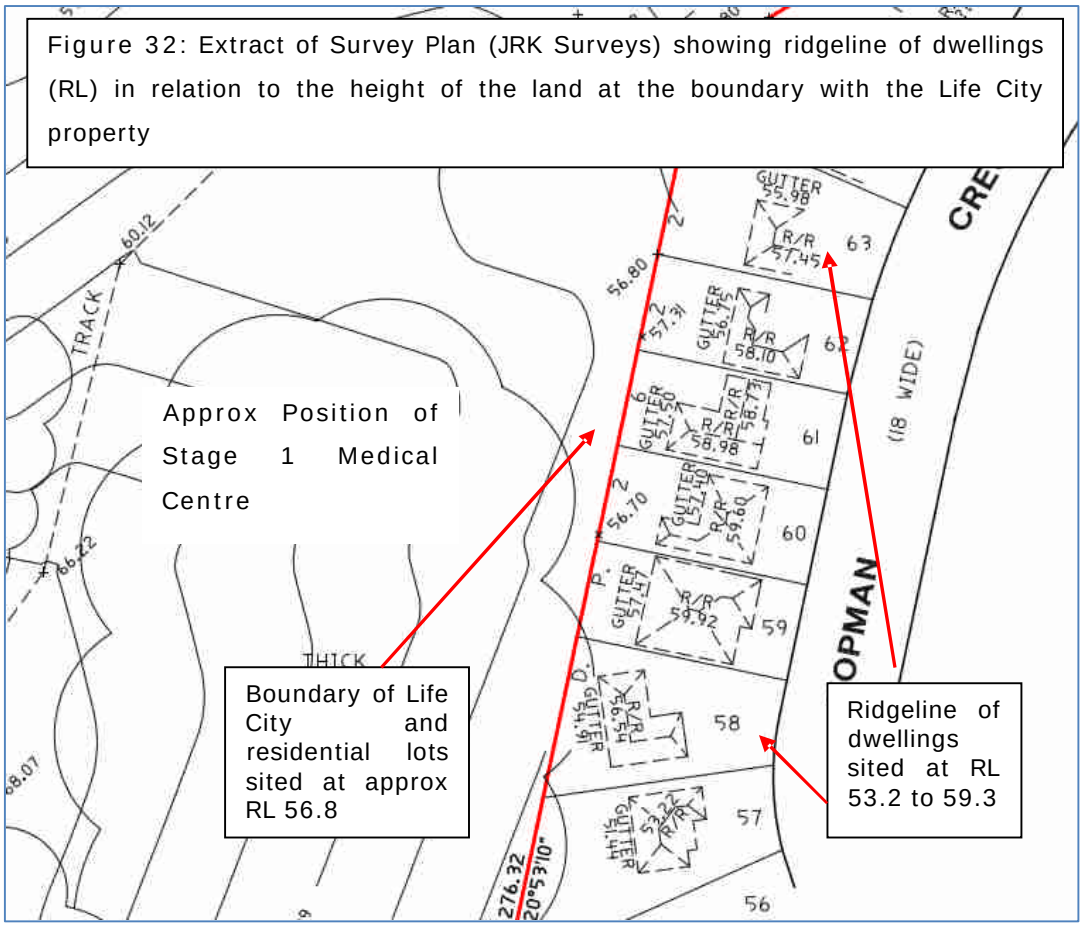


Figure 31B: Building Setbacks of Stages 1 and 8 to Residential Housing

Figure 32: Extract of Survey Plan (JRK Surveys) showing ridgeline of dwellings (RL) in relation to the height of the land at the boundary with the Life City property



The siting of the buildings on the land therefore provides reduced setbacks to the buildings which are 2-3 storeys in height and increased setbacks to the Stage 5 (Hi Tech Holistic Cancer and Medical Hospital) which contains 5 levels and 4 lower levels; the Stage 7 (Residential Care Facility and Hostel) which contains 4 levels and 2 lower levels and the Stage 3 (Serviced Apartments) which contains 4 levels and 1 lower level.

9.2.8 Built Form and Urban Design Outcomes and Impacts of Land Use Mix

The Functional and Physical Relationship of the Proposed Uses on the Site:

The Life City development contains a unique range of landuses, anchored by the medical use of the site. The facility will provide a 'whole of life' range of facilities which will cater from the very young (within the child care centre), youth (within the medical high school), all ages (within the hospital and day care centre) and aged (within the senior's accommodation). This unique development will include a range of inpatient and outpatient healthcare facilities, associated research facilities, educational and training functions, short and longer term accommodation options and permanent residential accommodation for seniors and recreation facilities. The Hi-tech Holistic Cancer and Medical Hospital underpins the range of uses on the site and will provide a tertiary training hospital for the purpose of providing health care services to people admitted as inpatients. The need for this type of facility is evident with the "NSW Cancer Plan 2011-2015" (NSW Government) confirming that "the number of people in NSW diagnosed with cancer is steadily rising. In 2008, 36,611 people were diagnosed with invasive cancer in NSW".

The Life City development incorporates a unique concept in the provision of health care by incorporating a tertiary inpatient cancer hospital supported by a range of support services, medical facilities, training facilities and accommodation types. The physical and functional relationships between such uses are demonstrated in Figure 33 and are summarised as follows:

The Stage 1 (Medical Centre, Day Surgery, Child Care Centre and Respite Care Centre) will provide specialist rooms, general practitioner services, and day surgery functions based on the needs of the local and regional community. This type of facility has proven to be highly successful when considering the comparative operations of the integrated health care facilities provided at the Centre Health Complex in Barrack Heights (in the Shellharbour local government area to the south). This facility is also operated by Dr Rashid, the Director of Delbest. The "Life City" development will replicate the success of the Shellharbour facility by providing comprehensive primary health care within one facility. The facility will combine family heath care with preventative and specialist care and will include services ranging from dental care, optometry and physiotherapy in a location where expanded health care is a priority.

The Stage 2 (holistic Health Care Course) will be utilised by inpatients of the hospital and outpatients staying within the ancillary accommodation and will promote a holistic approach to health care and improved treatment outcomes. The outdoor course will contribute to the intended outcomes of the overall Life City facility, which includes the provision of integrated and preventative care to patients, including those who attend the facility for preventative health checks and elective surgery within the day facility.

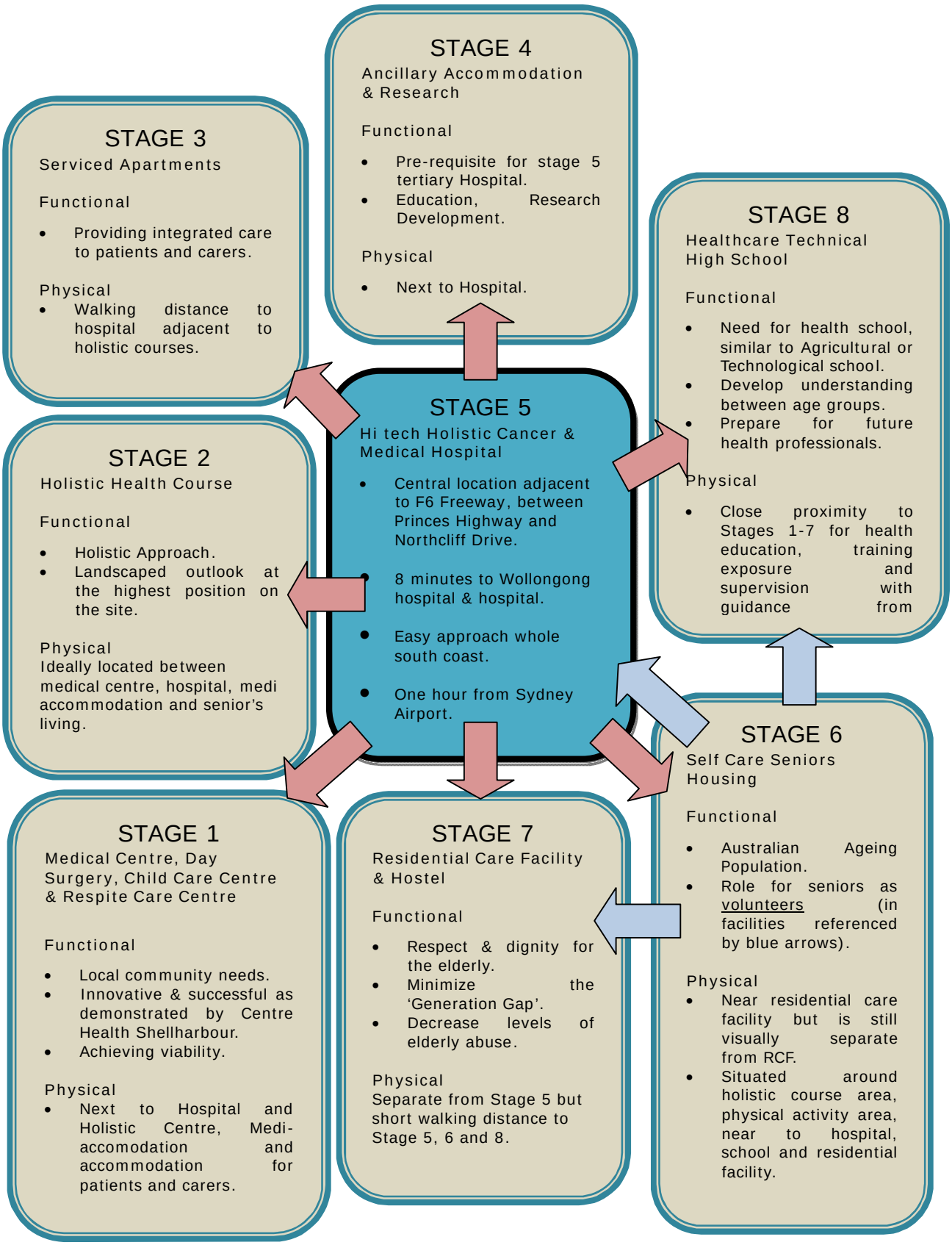


Figure 33: The Relationship between Form and Function within the 8 stages of "Life City"

Stage 3 (Serviced Apartments), which are referred to as 'Medi Accommodation', will provide accommodation for patients seeking outpatient treatment and also for attendants of persons seeking inpatient treatment. The placement of this type of accommodation the site on which the Stage 1 (Medical Centre, Day Surgery, Child Care Centre and Respite Care Centre) and Stage 5 (Hi Tech Holistic Cancer and Medical Hospital) facilities are located will ensure that family members have immediate access to patients; will enable patients to remain in close proximity to medical professionals during and following their outpatient treatment; and will minimise travel distances for patients and carers. The provision of this form of accommodation will also contribute to 'medical tourism' by providing health care accommodation for short term overseas visitors who seek to access a wide variety of different medical treatments and procedures performed by highly trained specialists in purpose built facilities.

Stage 4 (Ancillary Accommodation and research, library, lecture theatre, auditorium complex) is a necessary component and prerequisite for any teaching hospital and is an integral component of the Stage 5 operations. Hence, it is essential that this stage be constructed prior to, or in conjunction with, the Stage 5 (Hi Tech Holistic Cancer and Medical Hospital).

Stage 5 (Hi Tech Holistic Cancer and Medical Hospital) is a tertiary training hospital which will provide professional health care services to people admitted as in-patients.

Stage 6 (Self Care Seniors Housing) and Stage 7 (Residential Care Facility and Hostel) will allow for the development of a concept which promotes integration of elderly and youth to improve levels of respect and dignity and to reduce discrimination against elderly. The inclusion of this unique range of facilities is intended to assist in bridging the 'generation gap' which currently exists in our society. The placement of seniors housing within the Life City complex will encourage seniors to operate as volunteers within the medical and educational components of the development. It is intended that by encouraging close linkages between the seniors component of the development and the Stage 8 (Healthcare Technical High School) and the Stage 5 (Hi Tech Holistic Cancer and Medical Hospital) that younger members of the community will gain an improved understanding of the elderly and the elderly will be able to make a valuable contribution at the later stages of their lives. The siting of the seniors housing adjacent to a broad range of medical facilities will also provide an increased level of comfort and safety for residents and will provide access to high quality medical treatment without the need to access the wider transport system.

Stage 8 (Healthcare Technical High School) will be a specialist high school catering for students who seek to enter the medical field and will allow for transition of students to Wollongong University or other tertiary institutions. The concept is of a 'healthcare' high school is unique within Australia but is based on the well developed concept of high schools specialising in certain fields, such as Cherrybrook Technology High School, Wollongong High School of the Performing Arts and Hurlstone Agricultural High School.

Rationale for Building Siting

The topography of the site and views have had a major influence in the site configuration, positioning the buildings facing the favourable views towards Lake Illawarra and stepping down from the higher points of

the ridge. The arrangement of buildings on the site has also predominantly been guided by the contours of the land, together with the siting of vegetation and separation from the F6 Freeway, rather than merely focusing on the zone boundary line which traverses the site. Buildings in the previous and preferred schemes are placed around the contours below the ridge which extends through the site in a north-east to south-west direction. This is evident in Figure 34 below, which shows the placement of buildings to follow the contours of the land and to overlook either the open space or the vegetated buffer (in the case of the independent living units). The lower buildings in terms of overall height (Medical Centre, High School) are placed in closest proximity to residences and those buildings with increased height (hospital and residential care facility) are sited where greater setbacks to residential dwellings are available.

Figure 34: Siting of Buildings following the contours of the land and overlooking open space and vegetated corridors

The key determining features associated with the siting of buildings on the land are as follows:

§ The Medical Centre and Hospital are located closest to the site entrance for direct access to the local road network.

§ The Holistic Health Course is located in an accessible central open space area, high on the site enjoying views and natural breezes.

§ The Serviced Apartments are sited in close proximity to the Stage 1 and 5 medical facilities and are provided as a longer narrower building to provide improved ventilation, minimise the building footprint and provide expansive outdoor areas.

- The Ancillary Accommodation and Research Facilities are also sited in close proximity to Stage 1 and 5 to provide immediate access by medical staff of the teaching hospital. This stage takes advantage of the natural slope of the land, producing a lower profile streetscape, with direct access to the health course and outdoor areas.
- The Self Care Seniors Housing faces the native regeneration area, with improved views and is not subject to the impact of noise for the F6 Freeway.
- The Residential Care facility is provided with increased setbacks to residential properties to allow for an increase in the height of the building. This building is separated from the self care housing to provide a level of visual independence for residents of the self care housing, yet still providing physical closeness for sharing of services. Over 55 residents who are still active and independent prefer not to be adjacent to what they typically refer to a 'retirement home'.
- The Healthcare Technical High School is sited closest to residential dwellings, as this type of use is one which generally integrates effectively into the residential environment.
- Buffer landscaping around the perimeter of the site protects from noise emission generated by the F6 Freeway.

Impacts of Building Siting on Significant Vegetation

The Flora and Fauna Assessment prepared by Kevin Mills and Associates confirms that "the site generally has poor biodiversity values at present, the only vegetation of much value is the degraded stand of rainforest and other plants in the south-eastern corner of the site". Three vegetation communities are identified on the land, as shown in Figure 35 below, being Mixed Growth Forest/Woodland, Wattle Forest/Woodland and Kikuyu Grassland.

The majority of the development is sited on the Kikuyu Grassland, which contains patches of exotic species and has no conservation significance, being:

- Stage 5 Hi Tech Holistic Cancer and Medical Hospital;
- Stage 7 Residential Care Facility;
- The majority of the Stage 4 Ancillary Accommodation and Research;
- Approximately two thirds of the Stage 3 Serviced Apartments; and
- The majority of the two northern buildings of the Stage 6 Self Care Seniors Housing;

Within the second vegetation community, being the Wattle Forest Woodland, the following stages are located:

- The south-western building of the Stage 3 Serviced Apartments; and
- The south-western portion of the Stage 6 Self Care Seniors Housing.

This Wattle Forest Woodland, which is contained in the southern and south-western portions of the site, is dominated by Black Wattle Acacia mearnsii, and is not considered within the Flora Fauna Assessment prepared by Kevin Mills to be vegetation with conservation value. This report confirms that within this community "there are few is any other trees present, the understorey is largely Kikuyu Grassland or is composed of thickets of Lantana camera".

Figure 35: Siting of Buildings in Relation to Vegetation Communities

The only vegetation community on the site which is identified as having some value is the Mixed Regrowth Forest/Woodland which occurs in the south-eastern and eastern portion of the site. The following stages are located on land containing this community:

§ Stage 1 Medical centre, Day Surgery, Child Care Centre and Respite Care Centre; and

§ The south-eastern section of the Stage 6 Self Care Seniors Housing.

The Stage 6 development is located on the periphery of this area and will still allow for the retention of the majority of the highest quality Mixed Regrowth Forest/Woodland. The Stage 1 development will

require the removal of the northern section of this community, however it is noted that this area of vegetation, whilst still forming part of the Mixed Regrowth Forest/Woodland, is more sparely vegetated. Further, Kevin Mills confirms that whilst the native species concentrated in this community "are mostly associated with Illawarra Subtropical Rainforest…..that 'community' has neither the structure of a rainforest nor a dominance of rainforest plant species in terms of cover". Further, the position where the Stage 1 facility is located does not form part of the area which has a greater level of significance and which is located in the south-eastern portion of the site. The 'Flora Fauna Assessment' confirms that a recommendation of the study, which was incorporated within the design of the development, was the retention of the south-eastern corner of the property as an open space area where rainforest regeneration will be undertaken. This will be achieved through the reparation of a Vegetation/Habitat Management Plan for this area.

Hence, the assessment concludes that whilst "there will be some loss of native vegetation, this will be offset by regenerating native vegetation in the south-eastern corner of the site". The regeneration of the area of Mixed Forest Regrowth/Woodland in the south-eastern corner of the site and the area of Wattle Forest Woodland in the southern portion of the site (as shown in Figure 36) will offset the loss of the area of Mixed Regrowth Forest/Woodland which is to be removed to accommodate the Stage 1 development and the north-eastern section of the Stage 6 development. A further area of such vegetation (between the buildings and regeneration areas), as shown in Figure 36 will be managed as an area for Asset Protection purposes, in accordance with the recommendations of the Bushfire Assessment prepared by Ecological.

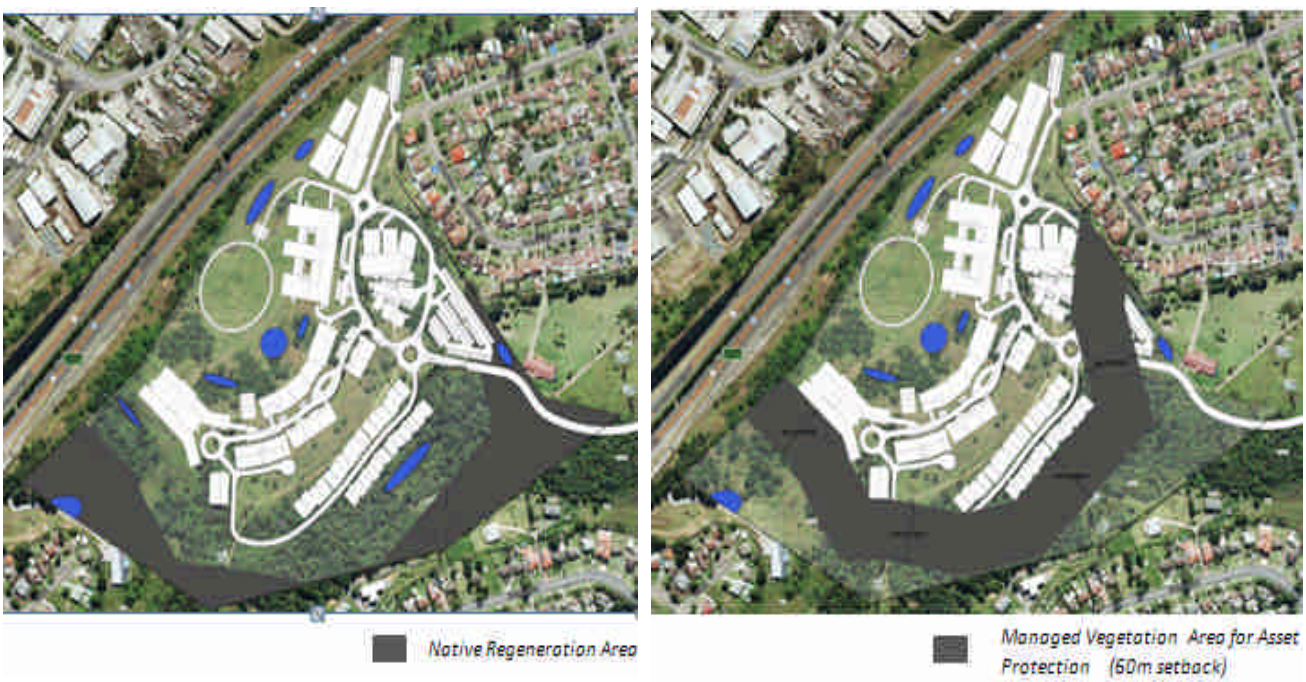


Figure 36: Native Regeneration Area and Managed Vegetation Area for Asset Protection Purposes

Urban Design Outcomes:

Life City Wollongong will provide world class, environmentally sustainable, hi-tech holistic health care facilities which has been designed to encapsulate a multi facetted health service, educational and recreational complex. Delbest Pty Ltd is committed to providing fair and equitable access to its facilities which will incorporate the following key design considerations:

- Ensure comfortable access to the facility by people with disabilities;
- Provide a modern functional facility that performs efficiently and provides maximum opportunity to generate income and reduce liability its operational costs;
- Provide a facility that incorporates environmentally sustainable design initiatives where possible;
- Provide a design to minimise maintenance and operation costs through the selection of materials, finishes, and equipment systems which can sustain high usage and which can be easily cleaned and maintained;
- A design that ensures the local environment is not negatively impacted by the development;
- A design that is clearly identifiable and offers a welcoming character with the vitality deserving of such a unique complex; and
- A design that provides for the future needs of the local community and has the ability to be extended into the future.

Boss Design has addressed the impact of the proposed development on the urban context: “The Life City Wollongong (LFW) 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.

The built form is designed to complement the proposed use for the building and it maintains the predominant building alignments best expressed by the existing landscape and the contour of the land. The proposed development creates an attractive and safe apartment with private driveways and easy access into the individual units. The built form strives to set a higher bench mark to the rest of the development in the area, by ensuring that the building responds to the orientation, view corridor and the surrounding site characteristics. In particular, built form for the taller buildings are carefully designed to introduce the horizontal division between the base, the main body and the top part of the building by the choice in different material, expression of the building and the selection of the cladding material.

Although LCW introduces different scale and form from the rest of the surrounding built forms in the community, the proposed residential amenities and the expression of the proposed built form will set very high bench mark, not only for the community but for the whole of the region as well.

The residential buildings are sympathetic to the scale and views governed by the existing site condition. It is designed with consideration for articulation to lessen and soften the impact of the multi storey on the undeveloped site.

The proposed residential buildings are higher in comparison to the rest of the dwelling houses in the surrounding but it has no impact to the adjoining neighbours due to its distance. Furthermore, the impact

to the streetscape within the complex and overall site will be minimised by articulation with the balconies, and the use of different cladding material which effectively reduces bulk further."

9.2.9 Environmental and Residential Amenity Impacts

This Environmental Assessment includes consideration of the impacts of the proposal on solar access, acoustic privacy, visual privacy, view loss and wind impacts within the site and on surrounding development). The assessment also includes consideration of the measures to be implemented to achieve a high level of environmental and residential amenity.

Consultation has also occurred with the community and relevant agencies to ensure that environmental and residential amenity impacts are appropriate considered within this Environmental Assessment. The results of this consultation process are contained within the Consultation Report dated 29 November 2012, prepared by TCG Planning, which is contained in Appendix 18.

Wind Impact:

The Director General's recommendations require consideration of the impact of wind on the development and on the areas surrounding the development. This matter has been addressed within the 'ESD Report' prepared by Vim Sustainability dated 5 October 2012 which notes the beneficial effects which will be provided by wind including the "the availability of the breezes from the nearby coast, lake and mountains" which "need to be utilised wherever possible to assist with building cooling and if possible power generation or water circulation"

The study notes that the development has a ridge running in a north-east to south-east direction through the site and buildings are generally kept below the height of this ridge to minimise visual impact, negate wind impacts and to allow for summer cooling within buildings and ventilation throughout the year. With respect to modelling of wind analysis, Vim Sustainability confirm that this is not feasible at this stage as the block forms and boundary conditions are not sufficiently developed to enable this to occur, due to the application pertaining to a Concept Plan. Detailed wind modelling will be undertaken in conjunction with further design work to identify the impact on both external and internal environmental conditions and for inhabitant comfort within the development. It will also identify any possible negative wind impacts for surrounding neighbours as a result of the built form or landscaping. Preliminary local wind climate analysis has been undertaken by Vim Sustainability which indicates that "the breeze levels of this area are typical of a seaside location and are at this stage not expected to create any negative issues".

An 'Onsite Effluent Management Assessment' has also been prepared by True Water Australia to determine options which exist, in the event that Sydney Water advised that adequate capacity does not exist to service the site. Whilst Sydney Water has now confirmed (within its feasibility Letter of 1 November 2012) the ability of the site to be serviced, the True Water investigations provide an alternate option for servicing of the site in the event that the applicant seeks to utilise an onsite sewerage management system, which will promote more sustainable practices. This report confirms that a Packaged Tertiary Treatment Plant (such as a Fuji Clean PCN) with tertiary treated effluent pumped to land application area of 6.5ha, (which will consist of both subsurface and surface irrigation) could be utilised. True Water Australia (Report No. LC1112NSW) conclude that "onsite wastewater management

can be achieved affordably and sustainably". Wastewater from the Day Care Centre / Medical Centre, Child Care Centre, Healthcare Technical High school, and the Hi Tech Holistic Cancer and Medical Hospital can be directed to town sewer to negate any possible issues associated with chemicals and pharmaceuticals generated within this wastewater load. The remaining wastewater from can be directed to advanced packaged treatment plants to provide tertiary treatment of wastewater to then be managed throughout the site for irrigation purposes using Fuji Clean PCN.

Visual Impact:

Photomontages which have been prepared by Boss Design are contained in Figures 37 to 43. These photomontages demonstrate the visual impact of the proposed Life City Wollongong facility. An analysis of views, taking into consideration the site and surrounding topography, reveals that the main vantage points of the site are long distance views from the west and south. The majority of development on the site will be located on the north-west facing slopes, with only part of Stage 6 seniors living and Stage 7 residential care facility to be located on the south or south-eastern facing slope.

View 1 has been taken from the western side of the Southern Freeway, in Unanderra. From these long distance vantage points, the site has some level of visibility. The highest components of Life City will be visible from these long distance views from the north-west, however from this potion the impact will not be significant.

From the west and south-west (View 2), the Hi Tech Holistic Hospital will be the most dominant visual form, however due to the undulating topography and higher ridgeline which lies further to the north-east than the Life City site, from this view, the hospital will lie within the height of these surrounding ridgelines. The remaining buildings proposed will also sit below the height of the higher ridgelines to the east.

From the south, the ridgeline of the Life City site is visible and a noticeable component of the landscape. Vehicles travelling north along the Southern Freeway, and person viewing from recreational areas including Macedonia Park to the south will have views of the southern most area of the site. However, from this point, due to the topography of the site, only the southern most buildings will be visible. This will include the aged care components of Life City, being the independent seniors living and the residential care facility and hostel. The hospital will also be a visible building on the landscape from this position and is intended to provide a focal entry point to the Wollongong locality.

Due to the steep topography of the southern most portions of the site, which limit short distances views toward the top ridgeline of the site, views from the south-east are predominately long distance views and are limited to only the southern most proposed built components. From this view, the proposed buildings will also follow the existing ridgeline (can be seen by View 4) and will not adversely intrude upon the landscape.

Views to the site are also available from the higher land to the north-east however, there is little development in this area and views are limited to Berkeley Road.

Figure 37: Visual Impact from the north-west of the site (Boss Design)

Figure 38: Visual Impact from the industrial estate to the west (Boss Design)

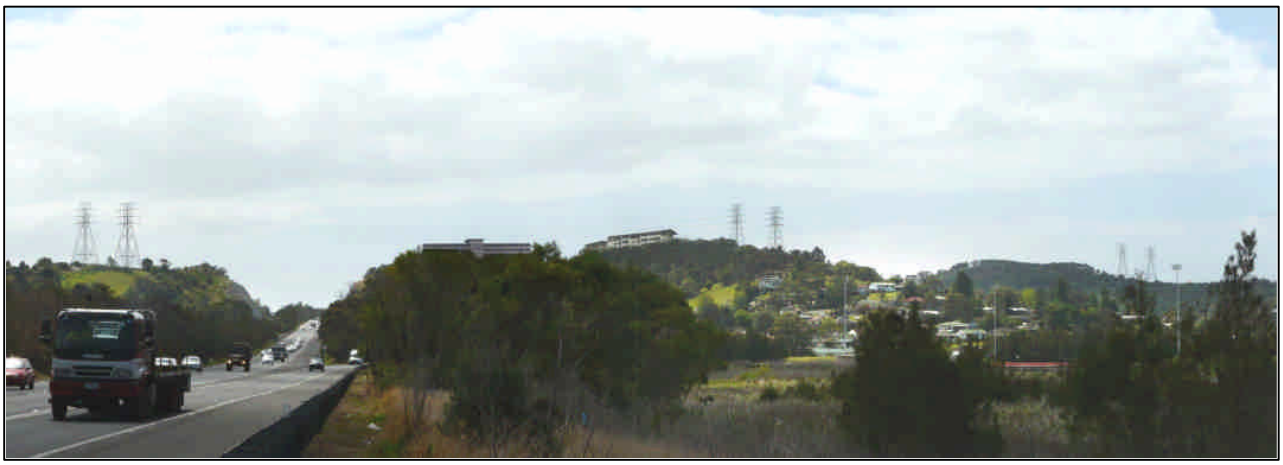


Figure 39: Visual Impact from F6 Freeway looking north to the site (Boss Design)

Figure 40: Visual Impact from the south (Northcliffe Drive)

Short distance views of the site will also be available from the vantage points in the immediately surrounding residential estate, most notably Warwick Street, York Street and Nottingham Street which immediately adjoin the site.

Views from Warwick Street (refer Figure 41) will focus on the two level Stage 8 (Healthcare Technical High School) which is of a scale and landuse type which will integrate within the residential neighbourhood. Views from Nottingham Street (Figure 42) will be medium distance views, with the impact lessened due to separation distance, vegetation in the foreground and will generally be limited to the Stage 6 (Self Care Seniors Housing).

The most significant short term view impact will be from positions in the vicinity of York Street where the Stage 7 (Residential Care Facility) will be evident (refer Figure 43). To assist in softening the impact of the lower levels of the building in this location it is recommended that revegetation occur in the south-western corner of the site (whilst still providing the required managed area for asset protection purposes) to reduce the impact of this stage of the development.

Figure 41: View Impact from the Western End of Warwick Street looking west to the Stage 8 development

Figure 42: View Impact from Nottingham Street looking north to the Stage 6 development

Figure 43: View Impact from York Street looking north-east to the Stage 7 development

Solar Access and Overshadowing:

Shadow Diagrams provided by Boss Design confirm the impacts of overshadowing on June 21st, as well as the summer solstice and the equinox. The shadow diagrams confirm there will be no overshadowing of any adjoining dwellings on June 21 during the hours of 9am and 3pm. Significant separation distances are provided from the proposed buildings within the southern area of the site to the southern and south western boundary, therefore limiting shadow opportunity.

Acoustic Privacy:

The impact of the development on acoustic privacy is addressed by Acoustic Logic within the 'Masterplan Acoustic Assessment' dated 1 November 2012. The investigation considered impacts both on and from the development in terms of the surrounding environment in particular impacts on the residential precinct and impacts from the adjacent F6 Freeway.

This acoustic assessment included monitoring which was conducted continuously between 13 September and 20 September 2012, inclusive, to characterise the existing acoustic environment of the potentially most affected residential areas. Attended and unattended noise monitoring was conducted adjacent to the F6 Freeway, in the approximate location of the future school facade, and also on the southern side of the site, near the approximate location of the future residential units.

Existing noise sources which were identified within the area were traffic on the F6 Freeway for the northern side and Northcliffe Drive, Nolan Street and general neighbourhood noise on the southern side. Acoustic Logic confirm that the nearest properties potentially affected from the operation of the proposed development are the residential receivers adjoining the site at Hopman Crescent and Warwick Street, at the northern end of York Street, and those on the northern side of Nottingham Street and Nolan Street. The nearest non-residential receivers are the industrial lots on the opposite side of the F6 Freeway.

Noise Emission Assessment:

The acoustic assessment included consideration of the impacts of vehicles driving on the site on surrounding property occupiers. The assessment confirms that "based on the indicative layouts, it is practical and reasonable to achieve compliance with the project noise emission goals for noise emissions from carparks on site with the use of barriers/screens etc. The indicative height of such screening is 2.3m to the eastern boundary of the site, adjacent to the residential receivers along Hopman Crescent and Warwick Street". Further, acoustic Logic conclude that 'due to the more lively background noise environment on the northern side of the site, noise emissions are predicted to comply with 1.8m high screening between the car engine and the residential receivers, for vehicles within 50m of the residents".

Given the 24 hour operation of the development, the assessment also included consideration of potential sleep disturbance as a result of the development. This analysis indicates that cars starting and doors closing will not create L_1 noise levels of >45dB(A) at the nearest southern residential facades, or >54dB(A) at the nearest northern residential façade. Therefore Acoustic Logic confirm that full compliance with the sleep disturbance goals will be achieved.

Whilst specific details of mechanical plant are not yet available at the Concept Plan stage, Acoustic Logic note that such plant is likely to include ventilation equipment, air conditioning equipment and refrigeration condensers. It is confirmed that that such plant may be acoustically treated to comply with sound level recommendations, with this documentation to be provided at the Construction Certificate stage.

Traffic noise generated by the proposed development has also been assessed to ensure that the development will comply with the requirements if the DECCW/EPA Road Noise Policy. Table 21 below contains details of this criteria together with the projected traffic noise from the development:

Table 21: Noise Associated with Traffic Generation at Life City

Receiver Location	Time of Day	Projected Traffic vph	Projected Traffic Noise Level at Façade dB(A)	Criteria	Complies
Warwick Street	7am-10pm	213	56 L_{eq}(Worst 1hr)	55 L_{eq}(Worst 1hr)	Yes
	10pm-7am	34	50 L_{eq}(Worst 1hour)	50 L_{eq}(Worst 1hr)	Yes
Nolan Street	7am-10pm	1094	57 L_{eq}(Worst 1hr)	60 L_{eq}(15hr)	Yes
	10pm-7am	133	48 L_{eq}(Worst 1hr)	55 L_{eq}(9hr)	Yes

Ref: Acoustic Logic, 2012

An assessment of traffic noise generated by the development indicates that the noise levels generally complied with the NSW Road Noise Policy. The day time peak hour noise levels on Warwick Street are predicted to exceed the goal by 1dB(A) however Acoustic Logic note that the average listener is unable to detect this level of difference. Therefore they conclude that "the proposed development is acoustically acceptable without additional treatment".

Noise Intrusion Assessment:

The proposed development is located adjacent to the F6 freeway and, due to the high volumes of traffic carried by this main road, an assessment of the noise impacts of this road on the proposed development is essential. This investigation confirmed that the external noise levels contained in Table 22 below were evident following attended and unattended noise monitoring which was conducted adjacent to the F6 Freeway, in the approximate location of the future school façade and also on the southern side of the site, in the approximate location of the future residential units.

Table 22: Average Noise Levels at Northern and Southern Monitors

Location	Description	Day Noise Level 7am to 10pm (dB(A))	Night Noise Level 10pm to 7am (dB(A))
Northern Location	Average Noise Level Leq (period)/ L_{eq} (worst 1hr)	65/68	62/66
Southern Location		48/50	45/48

Ref: Acoustic Logic, 2012

SEPP (Infrastructure) 2006 specifies noise goals for buildings within 100m of the freeway of between 35 L_{eq}(9hour) for night time in residential bedrooms and in hospital wards and up to 45L_{eq} (15 hour) in other sensitive areas within hospitals. Further, Australian Standards AS2107:2000 specifies the following internal noise goals for buildings beyond 100m of the F6 Freeway of between 35 L_{eq}(9 hour) for bedrooms at night time and 45 L_{eq} (15 hour) for bedrooms in daytime.

Acoustic Logic confirm that acoustic treatment will be required to ensure compliance with the assessment criteria due to the transfer of noise through windows and doors. Noise transfer through the masonry elements was not considered to be significant and hence considered further. The treatments recommended include upgraded glazing, acoustic seals and appropriate selection of wall materials.

The investigation carried out by Acoustic Logic Consultancy concludes that the acoustic amenity of existing properties surrounding the development would not be adversely impacted by the proposed development provided appropriate management and engineering control measures are implemented.

9.2.10 Achievement of Ecologically Sustainable Development Principles

Vim Sustainability were engaged to detail how the development will incorporate ESD principles in the design, construction and ongoing operation of the development including identifying appropriate infrastructure to support Ecologically Sustainable Development (ESD) initiatives.

The 'ESD Report' prepared by Vim Sustainability (dated 5 October 2012) has confirmed the range of sustainability initiatives that may be incorporated within the project to provide overall resource efficiency including energy and water usage combined with a high level of internal comfort and maximised internal environment quality. In addition, renewable energy methodologies and suitable landscaping outcomes are to be implemented as appropriate.

The proposed sustainability strategy for this particular development involves use of a staged process which initially involves adoption of a climate responsive design methodology as the first step of the process. The next step is to identify what are appropriate comfort levels for the inhabitants within the facility with a view to providing a more resource efficient adaptive comfort operational protocol. Vim Sustainability confirm that "Implementation of these two core sustainable design and operational principles are key to a successful sustainable outcome across this development and will enable the most appropriate built form initiatives to be provided. This will result in improved occupant comfort levels, reduced heating, cooling and electrical loads and subsequent lower resource usage levels."

Vim Sustainability recommend preparation of an overarching Sustainability Masterplan to encapsulate all areas of relevance and to provide a high level guidance tool in the design stage of the project. A range of options will be considered for inclusion in the project within this masterplan including:

- Adoption of the American Society of heating, refrigeration and Air Conditioning Engineers (ASHRAE) Adaptive Comfort Standards 55-2010 to improve internal thermal comfort levels, improve healing outcomes and measurably reduce energy and water usage.
- Use of Natural Ventilation - The proximity of the proposed development to the sea and Lake Illawarra will provide opportunity to naturally ventilate the facilities, thereby providing many

advantages over traditional air conditioning systems. This can be achieved using varied design methodologies such as façade design, solar thermal chimneys and automated windows.

- Use of bespoke facades - A range of facade types for particular buildings will offer improved thermal and daylight performance. This could include double skinned facades, reverse brick veneer facades or possibly green 'living' facades. The selection of facades will assist in ensuring that buildings will only require artificial heating and cooling during the extremes of summer and winter. Further investigation will also be undertaken at the detailed design stages involving detailed 3D air flow, air pressure and thermal analysis modelling, as required.
- Use of Solar Windows – To accelerate air movement and energy free cooling in the buildings, internal thermal chimneys, separate to the ventilated façade design will be considered for the project.
- Double glazed window units, maximised fabric insulation and night purging - Suitable glazing design, i.e. (double glazed window units), wall and roof insulation levels and all relevant windows and opening ventilation/shading components will be implemented once building thermal modelling is employed to understand the efficacy of each option.
- IBMS – the use of an Intelligent Building Management System will be considered to control a range of operational requirements such as heating, cooling, shading, window automation etc.
- Renewable Energy Photovoltaic/ Wind generators – Photovoltaic cells for energy generation will be considered.
- Energy generating Lifts – Specific lift types what generate energy during use will be considered for buildings within the project.
- Commissioning – A suitable commissioning process will be implemented across the development when required to reduce resource waste and improve overall efficiencies.
- Thermal Mass Construction – Exposed thermal mass, which will be a key feature of the internal building design to improve summer and winter comfort, will be further quantified and appropriately located during the design development process.
- Maximised Internal Environment Quality – Low toxic materials, paints and glues as well as furniture, carpets and curtains can be considered for utilisation as part of the overall ESD improvements strategy for maximised internal comfort.
- Materials – Detailed investigation will be undertaken into material selection incorporating consideration of longevity, low maintenance, climate and location suitability, sustainability and low toxicity.
- Metering – A suitable metering strategy to monitor and manage water and energy use throughout the facility may be implemented.
- Compliance with Section J Energy Efficiency Requirements – Section J Performance Standards will be achieved as a base compliance level, where appropriate for buildings throughout the facility.
- Maximise Daylight – Where possible daylight will be maximised into useable spaces with engineering daylight solutions utilised as a design outcome.
- Dynamic Live Internal Environment – One of the key design parameters will be to provide a dynamic and 'live' internal environment rather than the 'fixed temperature and lux level' which is typically found in buildings.

- Sensor control of lighting and equipment – Will be utilised where functional and valuable.
- Landscaping – Suitable water efficient landscaping will be integrated into the development wherever possible.
- Shading – Will be utilised as appropriate, together with shading automation.
- Water Efficiency devices – All water outlets will be selected to minimise water flow as required. Maximised WELS level taps and spouting will be considered together with sensors on taps.
- Capture of rainwater – Rainwater capture will be considered, together with storage for sprinkler pipe supply, landscaping and for toilet flushing subject to storage and spatial requirements.

Water Sensitive Urban Design will also be utilised wherever possible to protect natural systems, integrate stormwater treatments into the landscape, protect water quality and reduce runoff and peak flows. Further details regarding the measures to be employed are discussed within Section 9.2.8 below:

9.2.11 Water Sensitive Urban Design

Vim Sustainability confirm within their 'ESD Report' prepared in October 2012 that water sensitive urban design principles (WSUD) will be applied wherever possible to protect natural systems, integrate stormwater into the landscape, protect water quality and reduce runoff and peak flows. The methods to be employed have been further considered within the 'Engineering Report' prepared by C&M Consulting Engineers in February 2013. This report confirms that stormwater runoff requirements will accord with the requirements of Chapter E14: Stormwater Managment of Wollongong Development Control Plan 2009, whilst WSUD elements will be designed and constructed in accordance with Chapter E15: Water Sensitive Urban Design of the DCP.

The proposed drainage system including water quality controls are shown in Drawings 00864_SK08 and 00864_SK09 contained in Appendix 22. The key issues and mitigating measure to be employed within the development site are:

Stormwater Flow

The site is divided into two major catchments, being the northbound and southbound catchments. The northbound catchment drains to the existing stormwater drainage system provided for the Berkeley residential development which includes a culvert under the F6 Freeway. 4.7ha of this catchment is zoned R2 Low Density Residential. Wollongong DCP 2009 confirms that this catchment is exempted from on site detention requirements as it is controlled by a regional detention basin. However, C&M Consulting Engineers note that as the proposed development has not been considered within the regional stormwater system a local detention system is proposed. The south bound catchment which is zoned E3 Environmental Management drains to the existing properties via a designated stormwater drainage system.

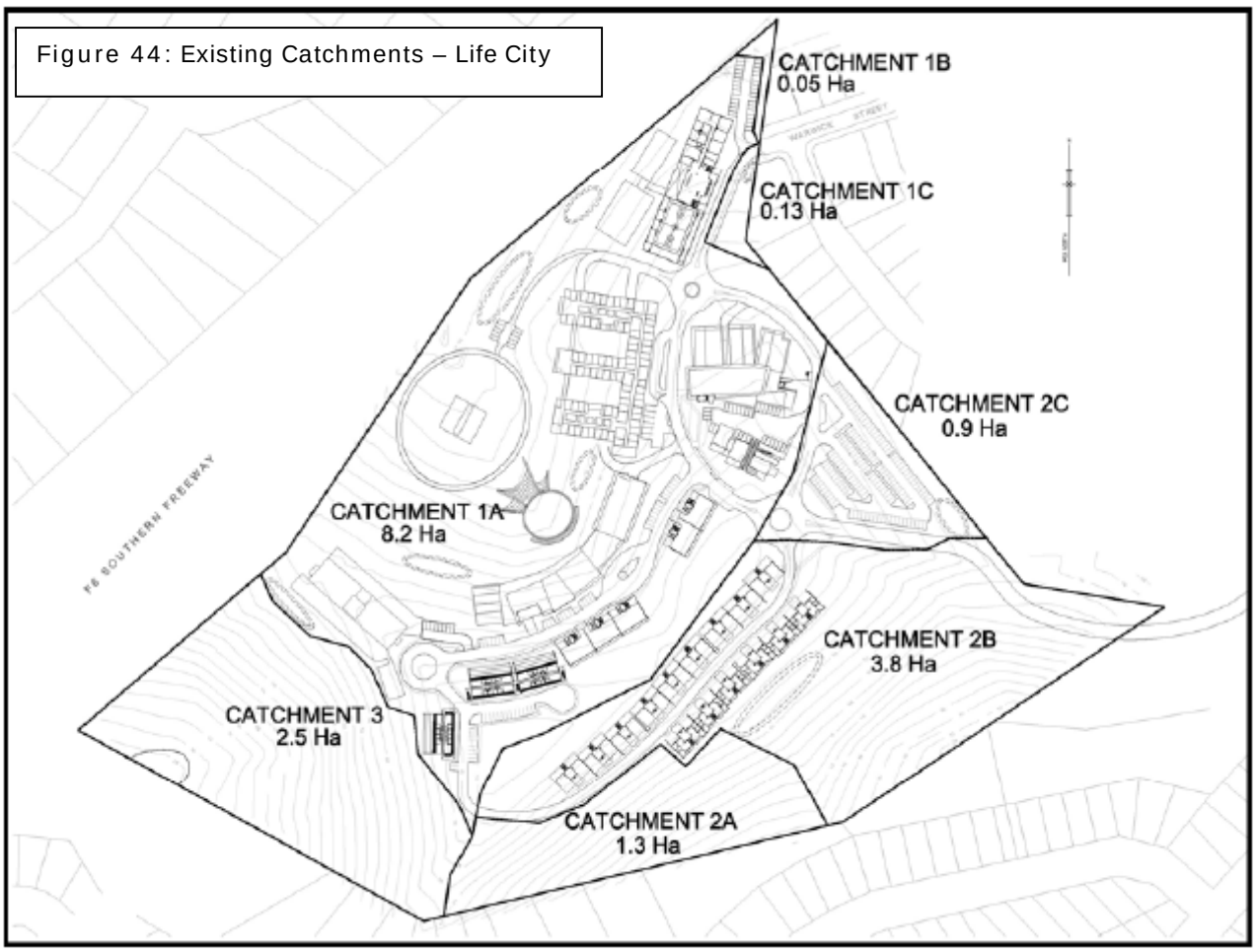
The proposed drainage system for the development will be designed to collect all surface runoff flows from impermeable surfaces such as roads, buildings and hard surface areas to the designated conveyancing system. The drainage system will include:

- A piped system to collect minor stormwater flows from the developed areas;
- Grass lined swales off the edges of the carparks;

- § Gross pollutants traps at each minor stormwater outlet point;
- § Rainwater tanks for each building;
- § Bio-retention/detention basin to reduce nutrient runoff and peak flows to pre-development levels.

The preliminary drainage investigation which has been undertaken by C&M Consulting Engineers confirms that the site is further divided into seven (7) catchments, as described in Table 23 and shown in Figure 44 below:

Figure 44: Existing Catchments – Life City



Ref: Engineering Report, C&M Consulting Engineers February 2013

Table 23: Catchments Within the Life City Site

Catchment	Area (Ha)	Description
1A	7.2	This subcatchment drains to the existing 1200mm diameter culvert under F6 Southern Freeway
1B	0.25	This is a small subcatchment that drains to the reserve at the back of residential houses on the northern side of Warwick St, which then drains to the existing 1500mm diameter culvert under the F6 near Newcombe Street.
1C	0.03	This small subcatchment drains to Warwick Street stormwater system.
2A	2.0	This subcatchment discharges to the existing residential houses in Nottingham Street. Runoff from the roofs and hard surface areas will be directed to subcatchment 2B.
2B	3.0	This subcatchment discharges to the existing residential houses in Nottingham Street. There is a 450mm diameter pipe that collects runoff from the site.
2C	1.3	This subcatchment discharges to the existing residential houses in Hopman Crescent and to Nolan Street. Runoff from the development in this subcatchment will be directed to Nolan Street.
3	3.1	This subcatchment discharges to the back of the existing residential houses in York Street. There is no formal discharge point for the subcatchment. Runoff from the roofs and hard surface areas will be directed to subcatchment 1A.
Total	16.88	

Although watershed boundaries should not be altered by the development, some minor modification is necessary. As catchments 2A and 3 have no legal point of discharge, any development within these areas will be re-directed to adjacent catchments. The additional flow in these areas has been compensated for in the on-site detention system. Table 24 below shows a comparison between existing and post developed catchments, whilst Table 25 shows the permissible site discharge (PSD) and Site Storage requirements (SSR) for the 5 year ARI and 100 year ARI for each subcatchment.

Table 24- Comparison of Existing and Developed Catchments

Subcatchment No.	Existing Catchments		Post Dev Catchments	
	Area (Ha)	% Imp	Area (Ha)	% Imp
1A	7.2	24[Note1]	8.2	70
1B	0.25	40[Note2]	0.05	0
1C	0.03	40[Note2]	0.13	40
2A	2.0	0	1.3	0
2B	3.0	0	3.8	30
2C	1.3	0	0.9	90
3	3.1	0	2.5	0

Note 1- from Council's Urban Drainage Design Manual. 40% of 4.4ha of R2 over 7.2=24%
Note 1- from Council's Urban Drainage Design Manual
Ref: Engineering Report, C&M Consulting Engineers November 2012

Table 25-OSD Requirements

Subcatchment No.	5 Year ARI Requirements		100 Yr ARI Requirements	
	PSD (m^3/s)	SSR (m^3/s)	PSD (m^3/s)	SSR (m^3)
1A	5.2	1,425	9.04	2,475
1B	OSD Not Required [Note 1]			
1C	0.037	5.1	0.065	9.0
2A	OSD Not Required [Note 2]			
2B	0.99	261	1.75	463
2C	0.23	95	0.4	168
3	OSD Not Required [Note 2]			

Note 1- The catchment was reduced form 0.25ha of 40% impervious to 0.05ha of no impervious area.
Note 2-The catchment has been reduced with no impervious area.
Ref: Engineering Report, C&M Consulting Engineers February 2013

Accordingly, based on their investigations, C&M Consulting Engineers confirm that "in principle the proposed drainage system can achieve its main function of safe conveyancing through the site without any adverse impact on both site and downstream site."

Water Quality Control

It is proposed that a 'Treatment Train' will be provided within the Life City development to provide effective water quality control measures, incorporating two or more measures which are most effective in reducing pollutant loadings. The most effective treatment train will consist of a gross pollutant trap (GPT), vegetation buffers and a bio-retention basin or wetland. The GPT will intercept the majority of gross pollutants greater than 3mm and the vegetation buffer would then filter course sediments before polishing off runoff by bio-retention or a wetland.

The results of Water quality modelling which has been undertaken by C&M Consulting Engineers using MUSIC Modelling is contained in Table 26 below:

Table 26: Summary of Music Model Results

Parameter	Existing Site Load (Kg/Yr)	Developed Site Load with Treatment (Kg/Yr)	Reduction (%)	Target Achieved
GP	1480	0	100	Yes
TSS	7780	619	92	Yes
TP	17.8	3.99	77.6	Yes
TN	136	65	52	Yes

Ref: Engineering Report, C&M Consulting Engineers February 2013

This confirms that in all instances the proposed water quality control measures will enable the reduction targets to be achieved for all key stormwater pollutants. Accordingly, C&M Consulting Engineers confirm that "by implementing the proposed treatment measures within the proposed development there will be no detrimental effect on the quality of stormwater running from the site".

Rainwater Harvesting and Reuse

C&M Consulting Engineers within their 'Engineering Report' have also undertaken a preliminary assessment into potential water sensitive urban design opportunities to reduce demand on potable water and to reduce wastewater exported from the development. This investigation considered the use of rainwater tables to supplements water supply and the installation of AAA fitting to reduce consumption of potable water. C&M Consulting Engineers note that this information has been prepared for the Concept Plan to show what levels of reduction in potable water demand can be achieved and to show what measures may or may not be adopted.

The modelling which was undertaken assumed that the captured rainwater could be used for toilet flushing and irrigational purposes except for the hospital building where irrigation only was proposed. A summary of the results in contained in Table 27 below:

Table 27: Summary of Water Balance Model Results

Building /Stage	Roof Area Connected (m2)	No of Occupants	Irrigation area (ha)	Rainwater Tank Size (KL)	Total Water Demand (kL/yr)	Total Rainwater used (Kl/Yr)	% Potable Water Reuse
1	2000	50	0.3	250	1761	1403	80
2	No building - Landscaped area will be irrigated from Stage 3 buildings						
3	2500	75	0.4	200	1952	1530	79
4	2000	100	0.3	200	1660	1320	80
5	2000	-	0.25	50	700	580	82
6	2500	200	0.1	300	2500	1850	75
7	1500	160	0.1	300	2040	1270	60
8	2500	380	0.2	300	2320	1790	78

The above water balance model shows that a reduction in potable water demand of up to 80% can be achieved. In addition, AAA fittings can further reduce this figure by 10 to 15%. Accordingly, C&M Consulting Engineers confirm that “adoption of the rainwater tanks will provide an integrated, sustainable approach to water cycle management on the site by meeting the objectives set”.

9.2.12 Landscaping and Revegetation Outcomes

The Landscape Masterplan has incorporated active and passive spaces and native regeneration areas throughout the site. The Landscape Masterplan has sought to present the natural landscape as the central design element for Life City. Landscaping has sought to incorporate low recourse, recyclable, drought tolerant, long lasting and low maintenance species and materials while enhancing the environment through restoration and maximising the ecological potential of the site as a key natural resource. The Landscaping Design Principles which have resulted from a detailed landscape appraisal of the subject site by Nicholas Bray Landscaping and the Flora and fauna Assessment by Kevin Mills and associates are as follows:

Nicholas Bray Landscaping confirm that “the proposed scale of the built form and the elevated site position make the landscape treatment crucial for the project’s success. Vegetation and earthworks will allow the master plan to nestle into the surrounding neighbourhood”. Further, the Landscape Design Principles for the site will be achieved through the identification of the following landscape objectives and landscaping outcomes for each stage of the project;

Stage 1 Medical Centre and Day Surgery

Landscape Objective: Create a series of intimate spaces around the building complex.

<u>Main entry on Eastern Façade:</u>

- Trees and landscape to frame view of entry;
- Hedge planting to create separation from seating deck and pedestrian entry;

<u>Convenience Store Eastern Courtyard:</u>

- Shaded seating area for eating and rest;
- Screened from bus stop;
- Water feature to create tranquil atmosphere;
- Connections via ramp to main pedestrian entry to building;
- Retaining walls softened with dense planting.

North Courtyard and Western Lawn Area

- Respite space for tranquil relaxation;
- Heavy screen planting to road;
- Low planting to access road verge to maintain sight lines for vehicles;
- Avenue trees and planting to reduce scale of building;
- Sweeping contoured lawns.

Childcare Centre

- Dynamic outdoor learning area;
- Combination of play features for all ages;
- Organic materials used where possible;
- Fencing to be nestled into garden beds to reduce scale;
- Low maintenance and practical soft fall surfaces utilised;
- Active and passive spaces for flexibility of activities;
- Shaded car park to the north.

Stage 2 Holistic Health Care Course

Landscape Objective: To develop a truly inspiring healing garden that is protected from the elements.

Ridgeline:

- Combination of active and passive space;
- Tree avenues and hedging for sheltered microclimate;
- Inspiring mix of gardens, seating, pergolas, dry stone walls, water features and sculpture;
- Water features design to emphasis regenerative flow;
- Planting palettes combine medicinal, scented and bird attracting;
- Mix of ramped pathways providing access to all areas.

Stage 3 Serviced Apartments

Landscape Objective: Provide a sense of residential community

- Planted courtyards giving separation to access roads;
- Shallow rooted plants above sunken car park;
- Maximise open parkland views to west;
- Shade trees to car park.

Stage 4 Ancillary Accommodation and Research, Library, Lecture Theatre and Auditorium Complex

Landscape Objective: Develop accessibility to the steep ground to the north. Provide shade trees and planting to reduce impact of internal roads on building.

North Side:

- Retainer walls to reduce slope down to pond and oval;
- Stepped/ramped pathways leading down to timber deck around pond;

- Mix of native ground covers to stabilise slopes and minimise erosion;
- Shade trees to frame the view.

Northern Oval:

- Focal point on site;
- Active recreation area;
- Balance of cut and fill;
- Heavily screened from the freeway;
- Edge in shade trees to provide shelter for spectators.

South Side:

- Groundcovers and shade trees between car parks;
- Planting around auditorium to reduce maintenance.

Stage 5 Holistic Cancer and Hi-Tech Medical Hospital

Landscape Objective: Develop a series of gardens that are of human scale.

Roof Garden and Lower Level Internal Courtyards:

- Mix of shade trees, pergolas and screens to ameliorate climate;
- Planter boxes to break up space;
- Raised lawns for relaxing and resting;
- Seating areas and timber decks to act as viewing platforms.

Stage 6 Self Care Seniors Living

Southern Building Cluster:

- Maximise views to south;
- Pond becomes centrepiece and focal point;
- Backdrop of open parkland and shelter belts;
- Mowed grass path connections to native forest;
- Small gardens that adjoin building footprints.

North Building Cluster:

- Visual connects to open space on ridge (stage 2);
- Architecture to provide microclimate from exposure on ridgeline.

Stage 7 Residential Care Facility and Hostel

Landscape Objective: Integrate the building into the surrounding landscape

Rooftop gardens:

- Series of passive spaces for rest, meetings and contemplation;
- Combination of water feature, shade trees, decks and planting;

Surrounding parkland:

- Overland stream winding through earth banks to bio pond to NW;

- Pathway throughout the overland stream;
- Heavy screening to boundaries to soften freeway noise.

Stage 8 High School Precincts

Landscape Objective: Separate the school from the busy freeway

Space around school:

- Shade trees and gardens from car park to school entry;
- Soft fall zones to courtyards;
- Mowed lawn areas for active play;
- Connection to oval via shade tree avenue;
- Overland drainage directed into drainage swales;
- Low level planting to maintain visual access for vehicle and pedestrian safety.

Native Regeneration Area

- Blocks of maintained forest to maintained bio diversity;
- Corridors of mowed grassland to reduce bushfire risk;
- Connectivity for native fauna;
- Access pathways for pedestrians and maintenance vehicles;
- Ongoing maintenance of tree debris.

Internal Roads

Landscape Objective: Develop a sense of community. Focus on intimacy to make the road a human scale.

- Shade trees;
- Ground cover planting to steep batters;
- Visual access for vehicles and pedestrians maintained.

Boundary Access

Landscape Objective: Establish a sense of the site boundary as a threshold from the surrounding neighbourhood into a protected oasis.

- Mix of native indigenous shrubs and trees for dense screen;
- Low shrub and small tree planting under power lines.

Car Parks

- Shade trees;
- Percolation trenches and other stormwater measures to utilise runoff.

Bulk Earthworks:

- Balance of cut and fill;
- Contour banks to minimise site runoff;

- Rock mattresses in exit points of drainage pipes;
- Erosion control measures maintained until vegetation cover stabilises slopes;
- Protection of existing vegetation to be retained.

Bio Retention Pond:

- Fauna resource;
- Ground covers and native grasses to steep slopes;
- Mowed verges to allow access;
- Pool safe fencing to minimise risks.

9.2.13 Traffic, Transport and Access

A 'Traffic and Transport Assessment' was prepared by GHD dated November 2012 to detail pedestrian and cycle movements; describe measures to be introduced to promote sustainable means of transport; address daily and peak traffic movements likely to be generated by the proposal; address access to the site; and address the level of carparking provision.

This assessment confirms the following conditions for roads surrounding and/or accessing the site:

§ Nolan Street is a collector road, with a 50km/h speed limit except for the 40km/h sped limit and has a sealed carriageway with one lane marked in each direction. This street has a pedestrian footpath 1.5m wide on both sides of the road between Northcliffe Drive and the pedestrian crossing to the school, however does not have on or off road bicycle facilities;

§ Warwick Street is a local road with a 50km/h speed limit and a sealed 10m wide carriageway with no road marking;

§ Northcliffe Drive is a sub-arterial road with a 70km/h speed limit, with a sealed carriageway with two lanes in each direction.

§ The Princes Highway performs the function of a sub-arterial road, with a 70km/h speed limit in the vicinity of Nolan Street and a sealed carriageway with two marked lanes in each direction.

Bus Services

A number of public bus stops are located in the vicinity of the site as shown in Figure 1C of this Environmental Assessment. Route 34 which runs from Wollongong to Warrawong travels through Nolan Street every 20-30 minutes from 6am to 8.30pm Monday to Friday and more limited services also operate on weekends and public holidays.

GHD recommend that investigations commenced with Premiere Illawarra potential for provision of a bus stop within the site as an extension of bus route 34 and if required. Appendix 3 contains advice from Premier Illawarra which confirms that a deviation of the current route to provide public transport to Life City Wollongong is a possibility for their service. It is further recommended that discussion be initiated with Wollongong City Council to investigate the possibility of dedicating the internal road as a public road to accommodate this bus route, noting the additional intention by Delbest to provide a private bus service for residents.

Potential Traffic Generation

GHD confirm that the peak movement from the proposed development would be in the order of 738vph (one way) in the AM peak and PM peak which equates to 369 vph (two way).as shown in Table 28 below:

Table 28: Peak Hour Traffic Generation Potential

Stage	Morning Peak (vtph)IN	Morning Peak (vtph) OUT	Evening Peak (vtph)IN	Evening Peak (vtph) IN	Expected Timeframe
1	69	69	69	69	2014/2012
2	6	6	6	6	2014/2015
3	18	18	18	18	2015/2016
4	50	50	50	50	2016/2017
5	137	137	137	137	2017/2018
6	22	22	22	22	2018/2019
7	17	17	17	17	2018/2019
8	50	50	50	50	2020
Total	369	369	369	369	

Ref: GHD Traffic and Transport Assessment, 2012

Development Access

Vehicular access to the site will be from Nolan Street and Warwick Street, with Warwick Street providing the main visual access to the site. With respect to the Nolan Street access, GHD confirm that this driveway will have an approach site distance of 160m from the north and 90m from the south which will meet the 50m requirement specified in the Austroads Publication 'Guide to Traffic Engineering Practice, Part 5: Intersections at Grade (2005). This intersection will also meet the safe intersection sight distance (SISD) requirement of 90m.

Parking Requirements

The Traffic and Transport Assessment conducted by GHD also examines the parking requirements of the development to determine compliance with the requirements specified in Chapter E3: Carparking Access, Servicing/Loading facilities and Traffic Management of Wollongong Development Control Plan 2009. The results of this analysis are contained in Table 29 below:

Table 29: Calculation of Parking Requirements for the Development

Stage	Component	Beds/Rooms/ Persons/GFA	Parking Requirements	No. Spaces (WCC DCP)	No. Spaces Provided
1	Medical Centre and day surgery Childcare Centre	6,00 m2 GFA 70 Children	4 spaces per consulting room and 1 space per 3 employees 1 per 6 children 1 per staff present 1 accessible 2 large spaces	135 20	154 27
2	Holistic Healthcare Course	Outdoors	*Assumption: 30 persons at any time assume 20	20	0
3	Serviced Apartments	56x2 bedroom 13x3 bedroom	1 space per 1 bedroom (<70m2) 2 space per 2 bedroom (+110 m2) 0.2 per dwelling for visitors	138	61

Stage	Component	Beds/Rooms/ Persons/GFA	Parking Requirements	No. Spaces (WCC DCP)	No. Spaces Provided
4	Ancillary accommodation and research, library, lecture theatre, auditorium			115	92
5	Hi Tech Holistic Cancer and medical hospital	320 beds	1 space per 2 beds plus 1 space per practitioner and 1 per 2 employees	224	290
6	Self-care seniors housing	36x1 bedroom 38x2 bedroom 12x3 bedroom	Seniors Housing 0.5 per bedroom	74	86
7	Residential Care Facility and Hostel	170 beds	1 space per 10 beds plus 1 per 2 employees	34	60
8	Healthcare Technical High School	350 students	1 space per staff and 1 space per 10 year 12 students	50	50
Total				810	820

Source: Table 10 Parking Requirements- Life City Wollongong (GHD Traffic and Transport Assessment dated November 2012

Table 29 confirms that approximately 815 parking spaces will be provided to serve the total development, which exceeds the requirements of 810 spaces. Whilst some adjustment to bedroom numbers and specialist rooms has occurred and may continue to occur as the more detailed design progresses for the various stages of the project, it is apparent that the site has adequate capacity to accommodate the required level of parking without placing additional demands on surrounding residential streets.

GHD also confirm that parking dimensions and aisle widths will meet Australian Standard AS2890.1:2004 Parking facilities, Part 1: Off-Street Car Parking, with accessible parking to be provided at the rate of 1 space for every 100 carparking spaces. Hence a total of approximately seven (7) accessible carparking spaces will be provided for the development.

With respect to servicing GHD also confirm that basement service areas provide turning plates to allow trucks to turn internally and leave the site in a forward direction. Turning movements have been assessed in Auto Turn for the internal road network and GHD also confirm that "a refuse vehicle and fire truck can be accommodated on site and that the trucks would be able to exit the site in a forward direction".

Intersection Performance

GHD estimate that approximately 80% of the development traffic would enter and exit the site via Nolan Street, with the remaining 20% entering and exiting via Warwick Street. The expected distribution for development traffic suggests that approximately 60% of development traffic will be to/from Northcliffe Drive (F6 Southern Freeway) and 40% of development traffic would be to/from the Princes Highway.

SIDRA intersection modelling software was used to assess the proposed peak hour operating performance on intersections on the surrounding road network, in accordance with the requirements of the RMS 'Guide to Traffic Generating Developments'. The criteria for evaluating the operational performance of the intersections s detailed in Table 30 below:

Table 30: Performance Criteria at Intersections

Level of Service	Average Delay Per Vehicle (secs/vehicle)	Traffic Signals, Roundabout	Give-Way and Stop Signs
A	Less than 14	Good Operation	Good Operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory but accident study required
D	43 to 56	Operating near capacity	Near capacity and other accident study required
E	57 to 70	At capacity; at signals incidents will cause excessive delays	At capacity and requires other control mode
F	Greater than 70	Roundabouts require other control mode	

Ref: GHD Traffic and Transport Assessment, 2012

Existing traffic flows were analysed using SIDRA to obtain the operation of key intersections in the study area, the results of which are contained in Table 31(2021) and Table 32 (2031) below:

Table 31: Intersection Performance AM and PM Peak Hour- Traffic Conditions 2021 (with development)

Intersection	Morning peak			Evening Peak		
	Av Delay (S)	LoS	DoS	Av Delay (S)	LoS	DoS
Nolan St/Life City Access	46	D	0.88	44	D	0.87
Nolan St/Northcliffe Dr	15	B	0.57	17	B	0.71
Nolan St/Warwick St	16	B	0.25	17	B	0.25
Nolan St/Princes Hwy	21	B	0.81	20	B	0.75
Northcliffe Dr/Southern Fwy Southbound on/off ramps	17	B	0.29	17	B	0.33
Northcliffe Dr/Southern Fwy Northbound on/off ramps	15	B	0.5	15	B	0.52
Princes Hwy/Northcliffe Drive	26	B	0.9	22	B	0.82

Ref: GHD Traffic and Transport Assessment, 2012

Table 32: Intersection Performance AM and PM Peak Hour Traffic Conditions 2031 (with development)

Intersection	Morning peak			Evening Peak		
	Av Delay (S)	LoS	DoS	Av Delay (S)	LoS	DoS
Nolan St/Life City Access	60	E	0.93	65	E	0.95
Nolan St/Northcliffe Dr	16	B	0.63	20	B	0.80
Nolan St/Warwick St	17	B	0.26	18	B	0.27
Nolan St/Princes Hwy	23	B	0.85	23	B	0.82
Northcliffe Dr/Southern Fwy Southbound on/off ramps	17	B	0.68	28	B	0.88
Northcliffe Dr/Southern Fwy Northbound on/off ramps	21	B	0.69	23	B	0.72
Princes Hwy/Northcliffe Drive	37	C	0.89	31	C	0.90

Ref: GHD Traffic and Transport Assessment, 2012

GHD confirm that the existing intersections surrounding Life City currently operate satisfactorily in both the AM and PM peaks. Further, this analysis indicates that the Nolan Street/Life City access would operate satisfactory in the both the AM and PM peaks in 2021 but by 2031 this intersection will be near capacity.

GHD confirm that "additional analysis has been undertaken and shows that this intersection could be upgraded to a roundabout to reduce delays". It is further concluded that for the reminder of the intersections analysed and with the inclusion of the development traffic and predicted growth "all intersections operate satisfactorily in both the Am and PM peaks".

Sensitivity Testing

A sensitivity analysis was also conducted by GHD as public transport is not currently identified in the Journey to Work (JTW) data from Transport for NSW Bureau of Transport Statistics. This sensitivity analysis confirms that all intersections will operate satisfactorily in both the AM and PM peak under the assumption that all trips to and from the site are made by car. Further intersection analysis confirms that the surrounding road network (without public transport usage) will operate satisfactorily in both 20121 and 2031.

9.2.14 Servicing Capacity

The 'Engineering Report' which was prepared by C&M Engineering addresses the ability of the site to be serviced having regard to existing service capacity. This investigation confirmed that there is a DN150 sewer main in Warwick Street and a DN300 under the F6 Freeway which can be accessed via a public reserve at the back of residential houses on the northern side of Warwick Street. The Feasibility Letter provided by Sydney Water on 1 November 2012 confirms that 'the proposed development has multiple D150 sewer mains from which extensions and or amplification would be required to service the site. A waste water main extension and/or amplification of the existing sewer main will be required to service the development'.

This letter also confirms that 'the proposed development has possible connection points to the existing water supply system being a D100 main on the eastern side of Warwick Street or the DN150 main on the western side of Nolan Street'. Further, Sydney Water also advise that "based on a peak instantaneous capacity of 7l/s the water supply system has adequate capacity to service the proposed development."

C&M Engineering in the 'Engineering Report' also advise that the site can be connected to additional services such as electricity and gas.

9.2.15 Staging and Implications of the Development for Contributions and Infrastructure

The intended staging, associated area and works of the Life City development is outlined in Section 4 of this Environmental Assessment. Stage 1 (medical centre) will be the first stage of construction to meet the health needs of the local community. The serviced apartments will follow as the second stage second stage to provide a facility for patients requiring accommodation when attending for treatment/surgery. The Stage 4 (Ancillary Accommodation and Research) and the Stage 5 (Hospital) will be constructed concurrently or within a short timeframe of each other to provide complementary facilities for the teaching hospital. The Stage 6 and 7 (Seniors Housing) and the Stage 8 (High School) will be the final stages of the development when the medical and associated facilities are in place.

Consideration has been given to the implications for the delivery of infrastructure and services required for each of the stages, with the key implications being as listed below:

Staging:

Delbest advise of the intended timeframe for commencement of construction or the various stages of the development:

Table 33: Proposed Timing of the Staging of the Facility

Stage	Description of Proposed Development	Expected Timeframe
1	Medical Centre, Day surgery, Child Care Centre & Respite Care Centre	2014/2015
2	Holistic Health Care Course	2014/2015
3	Serviced apartments	2015/2016
4	Ancillary accommodation & research, library, lecture theatre, auditorium complex	2016/2017
5	Hi Tech Holistic Cancer & Medical Hospital	2017/2018
6	Self Care Seniors Housing	2018/2019
7	Residential Care Facility & Hostel	2018/2019
8	Healthcare Technical High School	2020

The implications of such time frame relate to infrastructure and servicing. An additional access road is proposed for Life City from Nolan Street. This access will carry approximately 80% of the vehicle traffic to the facility, including servicing vehicles. It is anticipated the Warwick Street access will provide access to the Healthcare Technical High School proposed for Stage 8. Initially (prior to undertaking of the Traffic Assessment) the Nolan Street access was proposed for Stage 5, however now is proposed for Stage 1 following completion of the detailed traffic assessment. All stages will utilise this as the primary access. Internal roads will be constructed as per the Staging Site Plans provided by Boss Design.

A deviation of the current bus route to provide public transport to Life City Wollongong, while not required, is a possibility and recommended outcome to improve access to and from the site. Initiation of further discussions with the bus service provider (Premier Illawarra) and Wollongong City Council (to investigate the possibility of dedicating the internal road as a public road to accommodate this bus route) should occur prior to the initial stages of the development.

In regard to servicing infrastructure (water and sewer), Sydney Water has confirmed via a feasibility letter that extensions or amplifications of mains may be required. Extensions and or amplifications to sewer and water infrastructure will be undertaken as required subject to further investigations with Sydney Water prior to Stage 1 and as required prior to further stages of the development.

Alternative Option for Sewer: Consideration will also be given to the alternate option for serving of the site in the event that the applicant seeks to utilise an onsite sewerage management system which will promote more sustainable practices. This will include consideration of the provision of a Packaged Tertiary Treatment Plant (such as a Fuji Clean PCN) with tertiary treated effluent pumped to land application area of 6.5ha.

Electricity and telecommunications are readily available and will be provided underground as required for each stage.

Demands on Wollongong City Council or regional assets, infrastructure and services are not anticipated as the site is fully contained facility. In accordance with Section 94A of the Environmental Planning and Assessment Act 1979, Council can impose a section 94A levy for all development within the local government area in accordance with an adopted Contributions Plan to assist Council in providing and maintaining high quality, diverse public facilities to meet the needs and expectations of the community. Council's section 94A plan includes a provision for partial or full exemptions for development privately funded community infrastructure, which includes private hospitals. The proposed development, Life City Wollongong will be a privately funded community facility which includes a privately funded hospital, medical centre and day surgery, education and research facilities, and aged care facilities. As such an exemption from the required contributions is requested.

9.3 Likely Impacts of Development

The following table outlines the key issues identified in the foregoing sections of this Environmental assessment and how they have been addressed:

Table 34: Key Issues and Mitigation Strategies

Key Issues	Addressed and/or Mitigation Strategy
Context and Setting	Relationship to local context: Life City Wollongong, will provide environmentally sustainable, hi-tech holistic health care facilities which has been designed to encapsulate and provide a multi facetted health service, educational and recreational complex. Boss Design has addressed the impact of the proposed development on the urban context and confirm that: "The Life City Wollongong (LFW) 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". The built form is designed to complement the proposed use for the building and it maintains the predominant building alignments best expressed by the existing landscape and the contour of the land. Potential impacts on adjacent properties: There will be no adverse shadow impacts; There will be no adverse impacts on visual and acoustic privacy; With respect to views the main vantage points of the site are long distance views from the west and south. The majority of development on the site will be located on the north-west facing slopes, with only part of Stage 6 and Stage 7 seniors living to be located on the south-eastern facing slope. Short distance views of the site will also be available from the vantage points in the immediately surrounding residential estate, most notably Warwick Street, York Street and Nottingham Street which immediately adjoin the site. The most significant short term view impact will be from positions in the vicinity of York Street where the Stage 7 (Residential Care Facility) will be evident. To assist in softening the impact of the lower levels of the building in this location it is recommended that revegetation occur in the south-western corner of the site (whilst still providing the required managed

Key Issues	Addressed and/or Mitigation Strategy
	area for asset protection purposes) to reduce the impact of this stage of the development.
Access, Transport & Traffic	Additional public transport is possible by a private local service or an extension of services provided by Premier Illawarra. Sight distances for the proposed access road from Nolan street will meet the 50m requirement specified in the Austroads Publication 'Guide to Traffic Engineering Practice, Part 5: Intersections at Grade (2005)'. This intersection will also meet the safe intersection sight distance (SISD) requirement of 90m. The Nolan Street/Life City access would operate satisfactory in the both the AM and PM peaks in 2021 but by 2031 this intersection will be near capacity. This intersection could be upgraded to a roundabout to reduce delays. The reminder of the intersections will operate satisfactorily in both the AM and PM peaks in 2021 and 2031.
Parking Provision	The development will provide adequate parking to meet the requirements of Wollongong Development Control an 2009. Parking dimensions and aisle widths will meet Australian Standard AS2890.1:2004 Parking facilities, Part 1: Off-Street Car Parking. With respect to turning movements, a refuse vehicle and fire truck can be accommodated on site and that the trucks would be able to exit the site in a forward direction.
Public Domain	The proposal: Will impact positively on public recreational opportunities; Have no impact on amount, location, design, use and management of public space around the site; Facilitate improved pedestrian linkages.
Utilities	The site can be adequately serviced to Sydney Water and other agency requirements, subject to any necessary augmentation of services by the developer. An on site sewerage management system can be feasibly provided on site to service a number of components of the development, in the event that a more sustainable outcome is sought by the developer.
Heritage	There is no requirement for further investigation of Aboriginal or European heritage before the project commences, as the site does not contain built heritage items, Aboriginal sites, areas of particular cultural significance or areas of archaeological potential.
Other Land Resources	No impact
Geotechnical	Coffer Geotechnics have identified an area of potential high landslide risk located centrally on the site. C&M Consulting Engineers, within their revised Engineering Report (Ref PN00864.R01 Rev 3 dated February 2013) suggest that "where the risks are high the top clay layer will either be removed or replaced with granular materials excavated on the site. Subsurface drains will be provided to minimise seepage flows". Following review of the concept sections and the Bulk Earthworks Plan prepared by C&M Engineers, Coffey have confirmed within the revised Preliminary Geotechnical Assessment dated 6 February 2013 that provided "further engineering works and appropriately controlled construction works are carried out over the course of this development that is targeted at reducing the currently assessed risk level, then it is feasible to progress development within these higher risk areas of the site".
Water Sensitive Urban Design	In principle, the proposed drainage system for the Concept Plan can achieve its main function of safe conveyancing through the site without any adverse impact on both site and downstream site. A 'Treatment Train' will be provided within the Life City development to provide effective water quality control measures, incorporating two or more measures which are most effective in reducing pollutant loadings. Music Modelling confirms that in all instances the proposed water quality control measures will enable the reduction targets to be achieved for all key stormwater pollutants and hence by implementing the proposed treatment measures within the proposed development there will be no detrimental effect on the quality of stormwater running from the site.
Soils	Acid Sulphate Soils exist on the site and hence an Acid Sulphate Soil Investigation should be conducted to determine the level of soil contamination before works are undertaken that will impact on the area.
Contamination	A Phase 2 Detailed Site Assessment should be conducted to investigate the site for possible contamination prior to the commencement of work, based on the existence of fill material on the site, which includes asbestos and the history of agricultural uses on the land.

Key Issues	Addressed and/or Mitigation Strategy
Air & Microclimate	No impact
Flora & Fauna	Retention of an area of Mixed Regrowth Forest/Woodland which occurs in the south-east of the site, along with a commitment to regenerate the area to native forest vegetation will be a positive outcome of the development. A Vegetation Management Plan should be prepared for this area. It is not likely that there will be a significant impact under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 and hence referral to the Minister for assessment and approval is therefore not warranted.
Waste	Waste will be disposed of in accordance with Council's requirements and in accordance with the principles contained in the Waste Management Plan prepared by TCG Planning dated 29.11.12.
ESD	A range of sustainability initiatives may be incorporated within the project to provide overall resource efficiency including energy and water usage combined with a high level of internal comfort and maximised internal environment quality. In addition, renewable energy methodologies and suitable landscaping outcomes are to be implemented as appropriate.
Wind Impact	Preliminary local wind climate analysis has been undertaken by Vim Sustainability which indicates that wind impacts are not expected to create any negative issues.
Noise	With respect to acoustic impacts, a detailed assessment confirms that existing properties surrounding the development would not be adversely impacted by the proposed development provided appropriate management and engineering control measures are implemented. Acoustic treatment will be required for components of the development to ensure compliance with the assessment criteria due to the transfer of noise through windows and doors from the F6 Freeway.
Bushfire Hazards	The development can accommodate the required Asset Protection Zones through building setbacks and removal/management of vegetation for Special Fire Protection Purpose (SFPP) development and will provide the required access arrangements and water supply for fire fighting purposes to meet the requirements of 'Planning for Bush Fire Protection' (Rural Fire service, 2006).
Technological Hazards	Not applicable
Safety, Security & Crime Prevention	'Safer by Design' principles to be implemented within the development to encourage passive surveillance and minimise entrapment opportunities.
Infrastructure Provision	The construction of the primary access road from Nolan Street within Stage 1 and the provision of a private bus service for the seniors housing will ensure that infrastructure is provided at the required stage. Reclassification of the Council owned land to operational land can occur before the development proceeds, with Wollongong City Council raising no initial objections to the use and reclassification of this land. Demands on Wollongong City Council or regional assets, infrastructure and services are not anticipated, as the site is fully contained facility.
Social Impact in Locality	The proposal will provide an expanded range of health services available for the local and regional community and will be a positive contribution for the local community.
Economic Impact in Locality	Economic costs and benefits include: Employment generation for local area; Positive impact on surrounding businesses; Positive contribution for the local community; The proposal will provide economic growth for the local area.
Cumulative Impact	No cumulative impacts are envisaged as a result of the development.

10 Justification for the Proposed Development

Section 10 contains addresses the reasons for carrying out the development and details the justification for the proposed development with regard to biophysical, economic and social considerations and taking into consideration the principles of ecological sustainable development.

10.1 Justification

Detailed consideration of the environmental impacts of the proposal has been undertaken in the environmental impact assessment process and in the preparation of the Environmental Assessment. In assessing the impacts of the proposed development, consideration has been given to social, economic and environmental matters.

As required by the Director General's requirements and Schedule 2 of the EP&A Regulations, this chapter of the Environmental Assessment considers the justification for the proposed development with regard to biophysical, economic and social considerations and with reference to the principles of ecologically sustainable development (ESD).

10.2 Biophysical Considerations

Potential biophysical impacts associated with the proposed development have been assessed within the Environmental Assessment. The assessment of the biophysical environment has included individual assessment of soil and water management.

The assessment of each of the elements has concluded that subject to the implementation of a number of mitigation measures and additional investigations the proposed development would not result in significant adverse impacts on the biophysical environment.

10.3 Economic considerations

The proposal will result in positive economic benefits for the Berkeley community, the wider Wollongong LGA and Illawarra region. The proposal will provide for an increased capture of health clients across the Illawarra, nationally and internationally and will deliver significant local and regional economic benefits through the provision of infrastructure to assist the specialised operation of a hospital treatment facility with minimal impact upon the natural environment.

10.4 Social Considerations

The assessment of the social impacts associated with the proposed development has included consideration of traffic and access, landscape and visual amenity, socio-economic impact, noise and air quality. Suitable measures identified and will be introduced to minimise and mitigate any social impacts arising as a result of the proposed development.

10.5 Ecologically Sustainable Development

ESD is a concept firmly entrenched in NSW environmental legislation and Government Policy. The guiding principles of ESD and its relationship to the proposed development are outlined below.

Precautionary Principle

The Intergovernmental Agreement on the Environment provides a definition of the precautionary principles which requires that where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of precautionary principle, public and private decisions should be guided by:

(i) careful evaluation to avoid, wherever practicable, serious, or irreversible damage to the environment.
(ii) An assessment of the risk-weighted consequences of various options.

The IGAE states that the precautionary principle is to be a guiding principle for informed policy making and programmed implementation by all levels of government in Australia. In this manner, it is to guide both the public and private sector in its decision making and assessment of different options, particularly when decisions are being made in the face of uncertainty. It requires avoidance of serious or irreversible damage to the environment wherever practicable.

The proposed development has been designed with regard to the precautionary principle. Through detailed environmental investigation of the site and surrounding area, knowledge of the characteristics of the locality and the processes and interactions of various components of the environment have been established. This knowledge has been used to determine the potential environmental impacts of the proposed development and appropriate mitigation measures to ensure significant environmental management practices and safeguards do occur and that residual impacts are minimised.

Inter-generational Equity

The principle of inter generational equity defined by the IGAE is a concept that requires the present generation to ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations. The most significant aspect of this concept is that future generations should not inherit a degraded environment.

The proposal has been located in such a way as to minimise its footprint, avoid areas of ecological value and wherever environmental impacts cannot be prevented mitigate these impacts by implementing appropriate management measures.

The proposed development will not result in the sterilisation of land or other resources. The proposed development involves the use of existing infrastructure to ensure that the use of additional resources is minimised. Upon implementation of environmental safeguards and site mitigation measures, the proposed development will result in the provision of valuable infrastructure without causing significant or irreversible environmental harm.

Conservation of biological diversity and ecological integrity

Sustainable consumption and production is about achieving more with less, focusing on the efficient use of resources. From a planning and development perspective this means promoting energy and resource efficiency in the design, construction and use of buildings and infrastructure. It requires consideration of materials, supply chains, construction techniques and the operation and use of facilities.

Natural resource protection and environmental enhancement seeks to ensure that development should protect and enhance the natural environment by avoiding and minimising adverse effects on biodiversity, landscape character and quality, as well as air, waste and soil quality, whilst maximising opportunities for enhancement. It is also necessary to consider the indirect impacts of development on natural resources relating to the use of energy and resources in the construction and use of developments.

The proposed development would take place within a vacant site. Environmental impacts have been mitigated and any residual impacts that remain are unlikely to result in significant impacts, subject to acceptable outcome of further testing.

Climate Change and Greenhouse Gases

Climate Change and energy involves minimising greenhouse gas emissions whilst adapting to the consequences of unavoidable climate change resulting from previous emissions. From a planning and development perspective this relates to energy generation, supply and usage, sustainable transport and movement, as well as the embodied energy of materials and construction techniques. Equally, it requires a planning approach which responds positively to flood risk, increasing temperatures, increased storm frequency and severity, at the same time ensuring an economically productive built environment that promotes human health and comfort.

The proposed development supports the use of existing infrastructure and in so doing will limit greenhouse gas emissions associated with its operation.

11 Statement of Commitments

Section 11 contains on outline of the proposed environmental management and monitoring measures which are recommended for Life City Wollongong. Specifically, this section contains a description of the measures that should be considered for implementation to avoid, minimise, mitigate, rehabilitate/remediate, monitor and/or offset the potential impacts of the project.

11.1 Geotechnical Design Solutions, Works and Investigations

The recommendations of the revised "Preliminary Geotechnical Assessment" dated February 2013 prepared by Coffey Geotechnics will be implemented:

- Development staging for this site should be viewed in conjunction with our preliminary landslide risk assessment. The landslide risk assessment should be refined based on further mapping and site investigation works.
- Further subsurface geotechnical and environmental investigation is required comprising test pits, standpipe piezometers, dynamic core penetrometers (DCP), testing and deeper cored boreholes to identify soil consistency and density, soil compaction, soil thickness, depth to bedrock and bedrock consistency and insitu rock strength.
- Investigation assessing potential issues regarding earthworks and pavement design should be carried out. Laboratory testing of the site should comprise both undisturbed tube and bulk bag samples to assess such things as CBR, Shrink/Swell and other geotechnical parameters.
- An integrated geotechnical and environmental ground treatment strategy will be required for the site and should be prepared or the site.
- If access to the site is to be gained from Nolan Street, further work should be carried out along access ways to assess ground conditions and in particular the extent of the Nolan Dolerite.

11.2 Contamination

The Preliminary Phase 1 Assessment carried out by Clearsafe has revealed evidence of illegal dumping and some asbestos contaminated soils in areas of the site. A desktop analysis has also revealed that Acid Sulphate Soils have been mapped on part of the site. The following recommendations will therefore be adhered to:

- Acid Sulphate Soils have mapped on Site under Clause 7.5 of the Wollongong Local Environmental Plan 2009. This is limited to the lot 4 York Street area of the Site. An acid Sulphate Soil Investigation should be conducted to determine the level of soil contamination before works are undertaken that will impact on the area.
- It is recommended that Phase 2 Detailed Site Assessment is conducted to investigate the site for possible contamination.

11.3 Heritage Protection Measures

Whilst the subject site does not contain areas of non–indigenous archaeological potential and does not contain Aboriginal sites or area of potential archeological deposit the following will be implemented during construction works:

- If Aboriginal objects are located during works an archaeologist, the Illawarra Local Aboriginal Land Council, and the Office of Environmental Heritage should be notified and further archaeological work and Aboriginal consultation may be necessary.
- If human skeletal remains are encountered during excavation, work must cease immediately and the NSW Police, and the Office of Environmental Heritage must be notified. If the skeletal remains are found to be Aboriginal and process of consultation and investigation in accordance with the Office of Environmental Heritage guidelines must be implemented.
- If unexpected (Non-Indigenous) finds are located during works the NSW heritage Branch should be notified under the provisions of the Heritage Act. A qualified heritage consultant should be engaged to assess the significance of the unexpected find, and to recommend whether further investigation would be required prior to works commencing.
- If unexpected (Non-Indigenous) archaeological remains are encountered, works must cease in the vicinity of the remains and the Heritage Branch and qualified archaeologist must be contacted to assess their significance and advise whether further action is required.

11.4 Biodiversity

The 'Flora and Fauna Assessment' prepared by Kevin Mills & Associates dated November 2012 has assessed biodiversity across the site. The assessment concluded that the proposed development is not likely to have a significant impact on flora and fauna, however, the following recommendations will be implemented.

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 is shown on the development plans. It is recommended that the Vegetation/Habitat Management Plan be prepared for this area.

The Visual Analysis prepared by TCG Planning in February 2013 also recommends that revegetation occur in the south-western portion of the site to provide screening of the lower levels of the Stage 7 (Residential Care Facility and Hostel) from residences to the south.

11.5 Bushfire

The following recommendations made within the 'Bushfire Assessment' prepared by EcoLogical Australia will be adhered to:

- Recommendation 1- Asset protection zones are to be provided to the proposed special Fire Protection Purpose development as listed in Table 1 of the Bushfire Assessment prepared by EcoLogical Australia (Table 19, Section 9.2.5):
- Recommendation 2- Asset protection zone management is to comply with the NSW Rural Fire Service document 'Planning for Bush Fire Protection 2006' inner protection area requirements as listed in Appendix 2 Section A2.2 of PBP and guided by the fuel management principles listed in Section 4 of the Bushfire Assessment;
- Recommendation 3- Future landscaping across the development is to comply with the principles listed in appendix 5 of PBP;
- Recommendation 4- Construction standards of future proposed buildings shall comply with the requirements as listed within Table 2 (Bushfire Assessment prepared by EcoLogical Australia (Table 2, Section 9.2.5), in accordance with AS3959-2009- 'Construction of Buildings in Bushfire prone areas';
- Recommendation 5- A reticulated hydrant water supply should be installed throughout the proposed development in accordance with Australian Standards AS2419.1;
- Recommendation 6- Internal access roads are to comply with NSW Rural Fire Service document 'Planning for Bush Fire Protection 2006' as listed in Section 8 of the Bushfire Assessment;
- Recommendation 7- Electrical services should be installed underground;
- Recommendation 8- Gas services are to be installed and maintained in accordance with AS/NZS 1596:2008 (Standards Australia 2008);
- Recommendation 9-Adequate bushfire evacuation/emergency procedures and vegetation management plans should be prepared by the parties responsible for the ongoing management and maintenance of the proposed development. These plans should be prepared prior to the occupation on the Life City Holistic Medical Centre buildings.

11.6 Residential and Environmental Amenity

Soil and Water Management is to be carried out in accordance with the Soil and Water Management Plan prepared by C&M Consulting Engineers Report No. R00864-S&WMP. Basin Management, Land Disturbance Conditions, Construction Sequences, Erosion Control Measures, Sediment Control Conditions and Site Maintenance Requirements are to be undertaken in accordance with this Plan.

Detailed wind modelling will be undertaken in conjunction with further design work to identify the impact on both external and internal environmental conditions and for inhabitant comfort within the development. It will also identify any possible negative wind impacts for surrounding neighbours as a result of the built form or landscaping.

11.7 Sustainability

In accordance with the recommendation of Vim Sustainability an overarching Sustainability Masterplan will be prepared prior to the construction of the development. This masterplan will confirm the range of sustainability initiatives which will be incorporated within each stage of the project to provide overall resource efficiency including energy and water usage combined with a high level of internal comfort and

maximised internal environment quality. In addition, this Masterplan will identify renewable energy methodologies and suitable landscaping outcomes which are to be implemented for the project. Specific measures which will be considered at the detailed design stage include use of natural ventilation; bespoke facades; solar windows; double glazed window units; use of an intelligent building management system; renewable energy photovoltaic/ wind generator for energy generation; energy generating lifts; adoption of a suitable commissioning process; thermal mass construction; maximised internal environment quality through appropriate materials selection; a suitable metering strategy to monitor and manage water and energy use; compliance with Section J or BASIX energy efficiency requirements; sensor control of lighting and equipment; suitable water efficient landscaping; appropriate shading and solar access provision; water efficiency devices; and capture of rainwater.

In accordance with the recommendations of C&M Consulting Engineers the proposed development will incorporate a local detention system as the proposed developed has not been included within the regional stormwater system.

The proposed drainage system for the development will be designed to collect all surface runoff flows from impermeable surfaces such as roads, buildings and hard surface areas to the designated conveyancing system. The drainage system will include:

- A piped system to collect minor stormwater flows from the developed areas;
- Grass lined swales off the edges of the carparks;
- Gross pollutants traps at each minor stormwater outlet point;
- Rainwater tanks for each building;
- Bio-retention/detention basin to reduce nutrient runoff and peak flows to pre-development levels.

Detailed design of the drainage system will confirm that the proposed drainage system can achieve its main function of safe conveyancing through the site without any adverse impact on both site and downstream site.

A 'Treatment Train' will be provided within the Life City development to provide effective water quality control measures, incorporating two or more measures which are most effective in reducing pollutant loadings. The most likely treatment train will consist of a gross pollutant trap (GPT), vegetation buffers and a bio-retention basin or wetland.

Detailed design stages will also include consideration of opportunities to reduce demand on potable water and to reduce wastewater exported from the development, including consideration of rainwater tanks to supplements water supply and the installation of AAA fitting to reduce consumption of potable water.

11.8 Built Form

The design shall adhere to the principles and objectives of State Environmental Planning Policy 65 – Design Quality of Residential Flat Development and State Environmental Planning Policy- Housing for Seniors or People with a Disability (2004).

Further detailed design of any retaining structures and battering will occur prior to the commencement of the development to ensure that the height of retaining structures is minimised and battering in conjunction with landscaping is used where possible.

11.9 Traffic

The following facilities will be incorporated within the development to address parking and traffic issues as identified within this Environmental Assessment:

- Provision of a roundabout in conjunction with the stage 5 development to ensure that the Nolan Street/Life City access continues to operate at an effective level of service in 2031.
- Investigate with Premier Illawarra potential for provision of a bus stop within the site as an extension of bus route 34 and, if required, investigate with Wollongong City Council the possibility of dedicating the internal road as a public road to accommodate this bus route.
- Provide a private mini-bus service for residents of the seniors housing development to address the accessibility requirements of SEPP (Seniors Housing) 2004;
- Detail signage to be provided throughout the site in conjunction with each stage to ensure that the majority of traffic entering and exiting the site is directed towards the Nolan street exit, once constructed.
- Provide adequate carparking to meet the requirements specified in Chapter E3: Carparking Access, Servicing/Loading facilities and Traffic Management of Wollongong Development Control Plan 2009.

11.10 Site Servicing - Utilities

The following requirements of Sydney Water will be addressed at the Section 72 Application phase in accordance with the requirements of Sydney Water:

- Provision of peak water supply demand and identification of proposed connection points to enable Sydney Water to determine detailed water supply requirements.
- Provision of details of the proposed wastewater servicing scheme for the site (at Section 73 application stage) to identify proposed connection points and wastewater flows. This will most likely be provided in the form of a catchment plan and flow schedule showing connection to the existing system.
- Construction of water main and waste water extensions and amplification of the existing system to service the developer will be undertaken to Sydney Water requirements.

Consideration will also be given to an alternate option for servicing of the site in the event that the applicant seeks to utilise an onsite sewerage management system which will promote more sustainable practices. This will include consideration of the provision of a Packaged Tertiary Treatment Plant (such as a Fuji Clean PCN) with tertiary treated effluent pumped to land application area of 6.5ha, (which will consist of both subsurface and surface irrigation) could be utilised.

11.12 Waste Minimisation

The management of Life City Wollongong, including the Medical Centre & Day Surgery and Hi Tech Holistic Cancer & Medical Hospital will encourage waste minimisation and recycling opportunities, in addition to the avoidance of waste by appropriate purchasing of materials and products. This will be achieved through education and training of staff and implementation of an operational waste management strategy. Other operational management measures will be implemented such as spill management and waste handling procedures. This can also be implemented through the occupational health and safety processes of the hospital.

Waste collection areas and arrangements shall adhere to the principles contained within the Waste Management Plan prepared by TCG Planning dated 29 November 2012.

11.13 Acoustic

To achieve the necessary noise levels, the following construction items are to be included:

- Indicative external glazing on the northern portion of the site including the Healthcare Technical High school, Hi Tech Holistic Hospital and Residential Care Facility to be upgraded single glazing 6.38mm laminated glazing with full perimeter acoustic seals, with the precise measurement to be determined prior to construction.
- Indicative external glazing on the central portion of the site including the Day Surgery / Medical Centre, Child Care Centre, Research and Ancillary Accommodation and Serviced Apartments to be upgraded single glazing 6mm float glazing with full perimeter acoustic seals, with the precise measurement to be determined prior to construction.
- External glazing for the Seniors Living apartments to be naturally ventilated standard glazing without acoustic seals.
- Light weight wall / roof construction is allowable, however, noise intrusion of this material is to be taken into consideration to ensure overall internal noise levels are compliant.
- Provision of 1.8m high screening between carparking areas/access driveways and residential receivers for areas within 50m of residences.

11.14 Site Management

A management plan detailing the operations of the self care housing, residential care facility and hostel is to be prepared prior to Stages 6 and 7 proceeding, which will further address detailed aspects of State Environmental Planning Policy- Housing for Seniors or People with a Disability (2004).

The development shall incorporate a range of measures to address 'Safer by Design Principles' including:

- The provision of security outside of working hours to provide continued surveillance of the site during the construction phase.
- Implementation of a system to ensure that visitors during the construction phase report to administration/reception on arrival.
- Security lighting in key locations to provide good visibility at night.

- The provision of pedestrian and bicycle pathways accessing the site from surrounding streets.
- Consideration of potential safety problems such as locations for entrapment. Landscaped areas will be designed to ensure that vegetation will not obstruct lines of sight and will be maintained to a good standard.

12 Conclusion

This Environmental Assessment details the findings of a comprehensive assessment of the environmental impacts associated with the proposed Life City development, which is a $383 million Hi Tech Holistic Cancer and Medical Hospital Facility providing tertiary inpatient cancer treatments and a range of medical services to be located in Berkeley, NSW. This Environmental Assessment has been prepared for Delbest Pty Ltd to accompany an application for a Concept Plan for the proposed hospital facility, which will be constructed in eight (8) stages, over a ten (10) year period.

The project has been declared as a 'transitional' project under repealed Part 3A of the EP&A Act, as it is captured under Schedule 1, Group 7, Clause 18 of State Environment Planning Projects 2005 (Major Projects), being a hospital development valued at more than $15 million. The Director General issued his requirements for project MP10-0147 on 26 October 2010. This assessment has been prepared in accordance with the provisions of the Environmental Planning and Assessment Act, 1979 and Environmental Planning and Assessment Regulations, 2000 and addresses the requirements of the Director General.

The proposed Hi Tech Holistic Cancer and Medical Hospital facility development is to be established within the boundaries of Lot 4 DP 258635 Warwick Street, Lot 2 DP 534116 Nottingham Street and Lot 2 DP 249814 York Street, Berkeley, with the primary point of access provided through Council owned land, identified as Lot 21 DP 1008877 and Lot 2 DP 860917.

The beneficial effects of the proposal include:

- The improved level of health and educational services which the project will provide to local, regional, national and international patents, particularly focusing on holistic services and tertiary inpatient cancer treatments.
- The land use provides a site specific response to the development of the site with regard to the environmental impacts of the proposal on the site and surrounding area.
- The development will result in low level amenity impacts including noise, air quality and water quality impacts.
- The acceptable environmental impacts associated with the proposal with regard to impact on biodiversity and other site features and the ability to implement mitigating strategies to address any areas of concern.
- The proposal will facilitate the regeneration of native vegetation on a site which has undergone significant historical clearing.
- The development will have positive social and economic impacts through the provision of increased health care and employment opportunities.

The subject land lies within both the R2 Low Density Residential zone and E3 Environmental Management zone of Wollongong Local Environmental Plan 2009. Whilst a number of the proposed uses within on the site (and primarily within the E3 zone) are prohibited under WLEP 2009 and are not expressly permitted

by State Environmental Planning Policy (infrastructure) 2007, the Director General may grant approval to the Concept Plan as the land is not an within an environmentally sensitive area of State significance or a sensitive coastal location.

This assessment has also considered the implications of regional, state and national legislation, strategies and policies and has determined that the proposed development will adhere to the principles and objectives of such strategies. Whilst the broader principles of State Environmental Planning Policy (Housing for Seniors of People with a Disability) 2004 and State Environmental Planning Policy No. 65 (Design Quality of Residential Flat Development) have been addressed within the Concept Plan, it is recommended that the components of the development to which these policies apply, adhere to the specific design requirements of the SEPPs.

This Environmental Assessment has been prepared following preparation and consideration of a range of specialist subconsultant investigations which have been undertaken to address site constraints, environmental implications and mitigating strategies. The primary issues/outcomes which have been identified within the Environmental Assessment and the recommended mitigating strategies are summarised as follows:

- Further engineering works and appropriately controlled construction works shall be carried out consultation with the geotechnical engineer for each stage of the development to ensure that the risk level for property following engineering measures and construction is not higher than moderate for property and the risk to life is at least tolerable.
- Acid Sulphate Soils exist on the site and hence an acid Sulphate Soil Investigation should be conducted to determine the level of soil contamination before works are undertaken that will impact on the area.
- A Phase 2 Detailed Site Assessment should be conducted to investigate the site for possible contamination prior to the commencement of work, based on the existence of fill material on the site, which includes asbestos and the history of agricultural uses on the land.
- There is no requirement for further investigation of Aboriginal or European heritage before the project commences, as the site does not contain built heritage items, Aboriginal sites, areas of particular cultural significance or areas of archaeological potential.
- Retention of an area of Mixed Regrowth Forest/Woodland which occurs in the south-east of the site and an area of Wattle Forest Woodland which occurs in the south of the site, along with a commitment to regenerate the area to native forest vegetation will be a positive outcome of the development. A Vegetation Management Plan should be prepared for these areas. It is not likely that there will be a significant impact under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 and hence referral to the Minister for assessment and approval is therefore not warranted.
- The development can accommodate the required Asset Protection Zones through building setbacks and removal/management of vegetation for Special Fire Protection Purpose (SFPP) development and will provide the required access arrangements and water supply for fire fighting purposes to meet the requirements of 'Planning for Bush Fire Protection 2006' (Rural Fire service).

- Preliminary local wind climate analysis has been undertaken by Vim Sustainability which indicates that wind impacts are not expected to create any negative issues.
- The site can be adequately serviced to Sydney Water and other agency requirements, subject to any necessary augmentation of services by the developer. An on site sewerage management system can be feasibly provided on site to service a number of components of the development, in the event that a more sustainable outcome is sought by the developer.
- An analysis of views, taking into consideration the site and surrounding topography, reveals that the main vantage points of the site are long distance views from the west and south. The majority of development on the site will be located on the north-west facing slopes, with only part of Stage 6 seniors living to be located on the south-eastern facing slope.
- The development will not significantly impact on adjacent residents when considering residential amenity, streetscape impact overshadowing and privacy. Revegetation should occur on the southern portion of the site to reduce the impact of the Stage 7 (Residential Care Facility and Hostel) when viewed from properties immediately to the south.
- With respect to acoustic impacts, a detailed assessment confirms that existing properties surrounding the development would not be adversely impacted by the proposed development provided appropriate management and engineering control measures are implemented. Acoustic treatment will be required for components of the development to ensure compliance with the assessment criteria due to the transfer of noise through windows and doors from the F6 Freeway.
- A range of sustainability initiatives may be incorporated within the project to provide overall resource efficiency including energy and water usage combined with a high level of internal comfort and maximised internal environment quality. In addition, renewable energy methodologies and suitable landscaping outcomes are to be implemented as appropriate.
- In principle, the proposed drainage system for the Concept Plan can achieve its main function of safe conveyancing through the site without any adverse impact on both site and downstream site. A 'Treatment Train' will be provided within the Life City development to provide effective water quality control measures, incorporating two or more measures which are most effective in reducing pollutant loadings.
- Music Modelling confirms that in all instances the proposed water quality control measures will enable the reduction targets to be achieved for all key stormwater pollutants and hence by implementing the proposed treatment measures within the proposed development there will be no detrimental effect on the quality of stormwater running from the site.
- The built form is designed to complement the proposed use for the building and it maintains the predominant building alignments best expressed by the existing landscape and the contour of the land.
- The construction of the primary access road from Nolan Street within Stage 1 and the provision of a private bus service for the seniors housing will ensure that infrastructure is provided at the required stage. Reclassification of Lot 2 DP 860917 and Lot 21 DP 1008877 to operational land can occur before the development proceeds, with Wollongong City Council raising no initial objections to the use and reclassification of this land. Demands on Wollongong City Council or regional assets, infrastructure and services are not anticipated, as the site is fully contained facility.

- Sight distances for the proposed access road from Nolan street will meet the 50m requirement specified in the Austroads Publication 'Guide to Traffic Engineering Practice, Part 5: Intersections at Grade (2005). This intersection will also meet the safe intersection sight distance (SISD) requirement of 90m.
- The development will provide adequate parking to meet the requirements of Wollongong Development Control an 2009. Parking dimensions and aisle widths will meet Australian Standard AS2890.1:2004 Parking facilities, Part 1: Off-Street Car Parking.
- With respect to turning movements, a refuse vehicle and fire truck can be accommodated on site and that the trucks would be able to exit the site in a forward direction.
- The Nolan Street/Life City access would operate satisfactory in the both the AM and PM peaks in 2021 but by 2031 this intersection will be near capacity. This intersection could be upgraded to a roundabout to reduce delays. The reminder of the intersections will operate satisfactorily in both the AM and PM peaks in 2021 and 2031.

Detailed consideration of the environmental impacts of the proposed Life City Wollongong development has been undertaken within this Environmental Assessment. In assessing the impacts of the proposed development consideration has been given to social, economic and environmental matters. The assessment of each of these elements has concluded that, subject to the implementation of appropriate mitigation measures, the proposed development will not result in significant adverse impacts on the biophysical or social environment. Further, the development will not require the provision of publicly funded infrastructure at a local, regional or state level.

Based on the principally low levels of environmental risk, and the economic and employment benefits to the Illawarra Region, it is concluded that Life City Wollongong, hi -tech cancer and medical hospital facility should be approved subject to the imposition of appropriate conditions of consent to mitigate against any potential impacts and to address the requirement for additional investigations prior to the commencement of works.