5.0 Site Description and Location

5.1 Land title and zoning

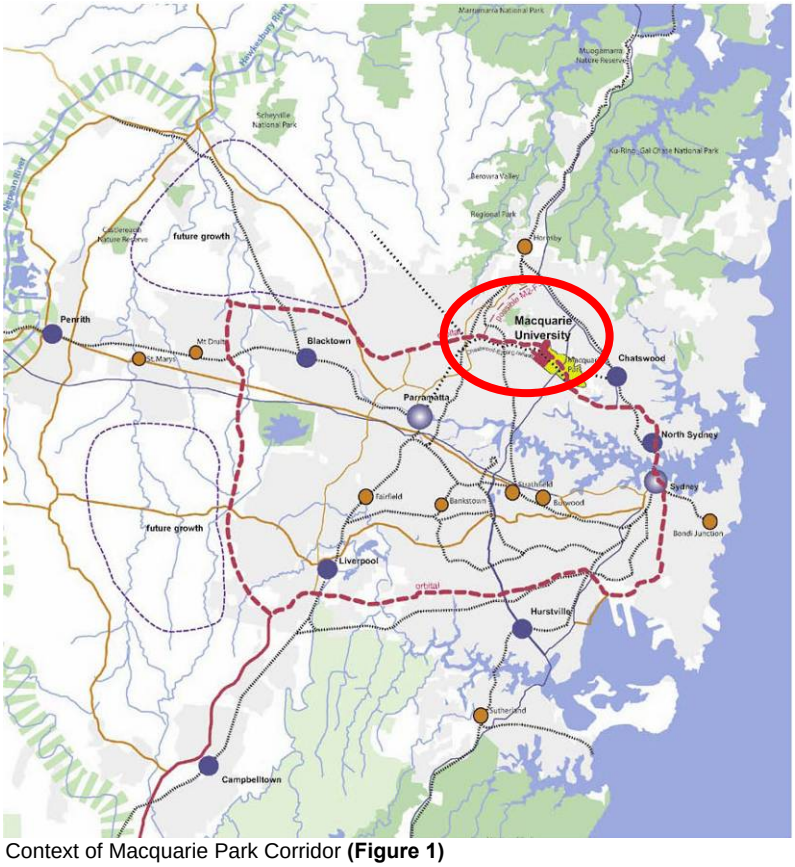
The site has an area of 9379 m^2 and is known as 3 Technology Place. It is owned by Macquarie University and is legally described as Lot 18 DP 1058168; Parish of Hunters Hill and County of Cumberland (refer to Site Survey Plan at Section **11.1**).

The Site is situated on the southern side of Technology Place, at its western intersection with Talavera Road and Christie Road. It is bounded by Research Park Drive to the west and Talavera Road to the east and shares a boundary with an existing 7 storey commercial development to the south. (Refer **Figure 7**)

5.2 Location and Context

5.2.1 Regional Context

The site for the proposed development is situated in the north eastern corner of Macquarie Park Corridor at North Ryde, within the Ryde Local Government Area (LGA), to the north west of the Sydney CBD. (Refer **Figure 1).** The Macquarie Park Corridor is a major employment and research business precinct that is bounded by the M2, Epping Road and Culloden Road, and is located approximately 17kms from the Sydney central business district and 2 kilometres from Epping. Lane Cove National Park is located further to the north and east, and adjoins generally residential areas of Epping, Marsfield, Eastwood and North Ryde to the west and south. (Refer **Figure 4**)

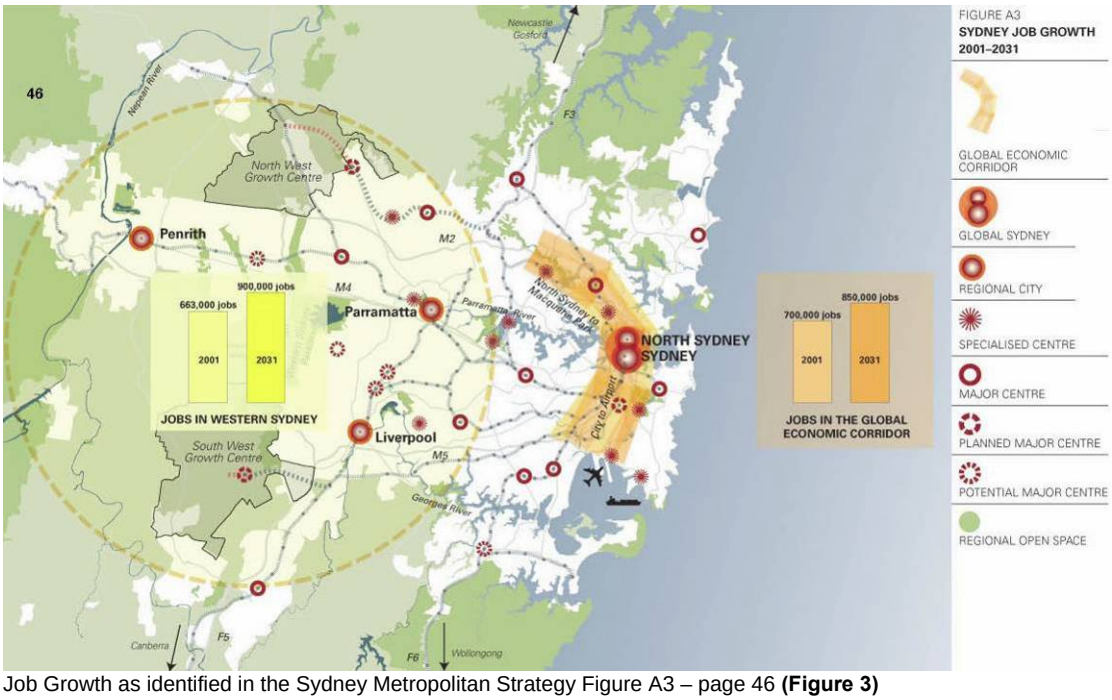


Metropolitan Context of Macquarie Park Corridor **(Figure 1)**

The subject development will be located within Sydney's Global Economic Corridor, also known as the "Global Arc" and the Arc of Knowledge and high skilled industry in the Sydney Metropolitan Strategy (MS) titled *City of Cities – A Plan for Sydney's Future*. (Refer **Figure 2**).

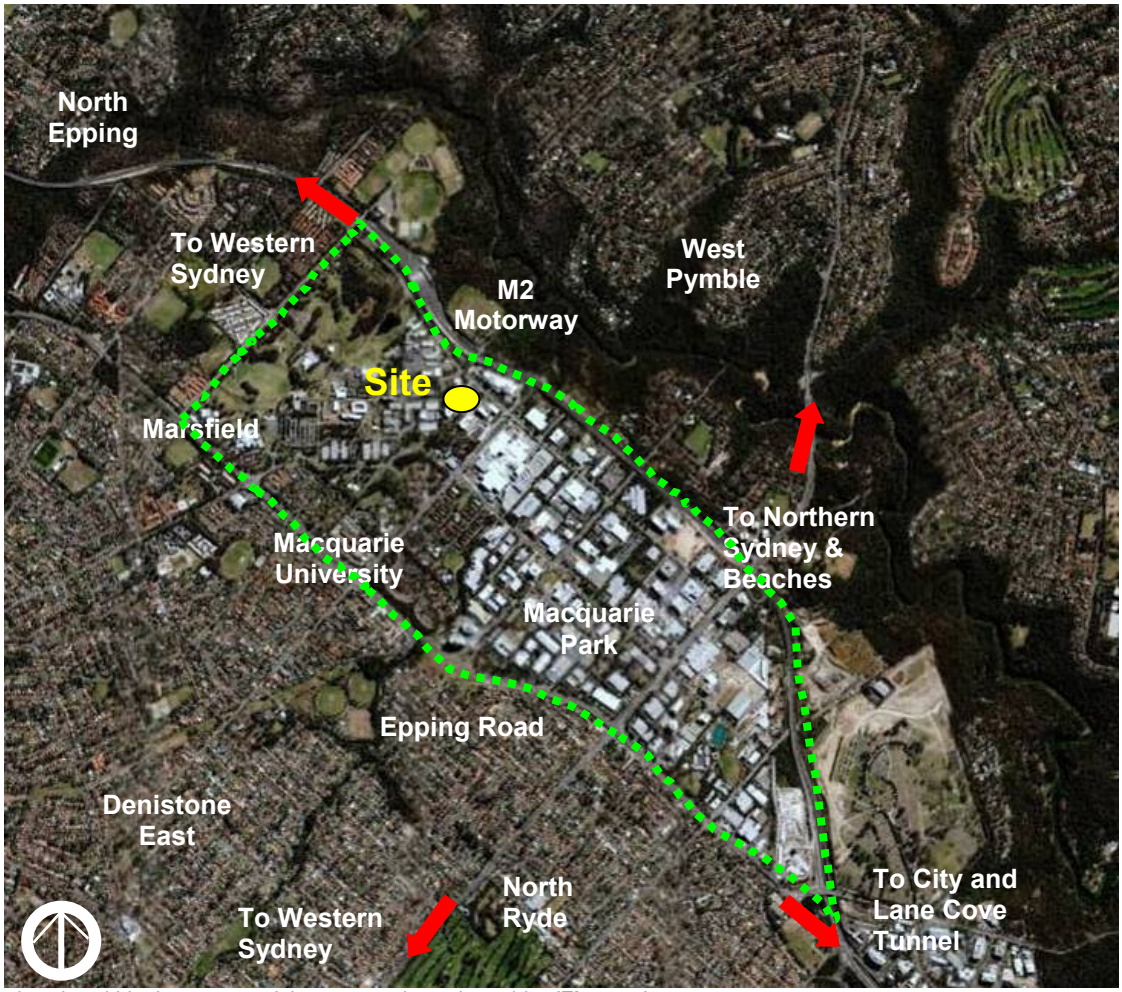
Global Economic Corridor as identified in the Sydney Metropolitan Strategy Figure B9 – page 108 **(Figure 2)**

Macquarie Park has been identified as a "Specialized Centre – Employment Precinct in the Sydney Metropolitan Strategy, primarily due to the presence of Macquarie University, as well as the surrounding information technology and telecommunication industries. The "Global Arc contains nearly a quarter of all Sydney's jobs and half the regions professional jobs. The Macquarie Park area is identified and being able to accommodate and additional 22,690 jobs (ie 70% over the next 30 years). (Refer **Figure 3**)



Job Growth as identified in the Sydney Metropolitan Strategy Figure A3 – page 46 **(Figure 3)**

On completion of the Epping to Chatswood Railway line, the University and Macquarie Park will be directly connected by public transport that will further consolidate the “Global Arc”.



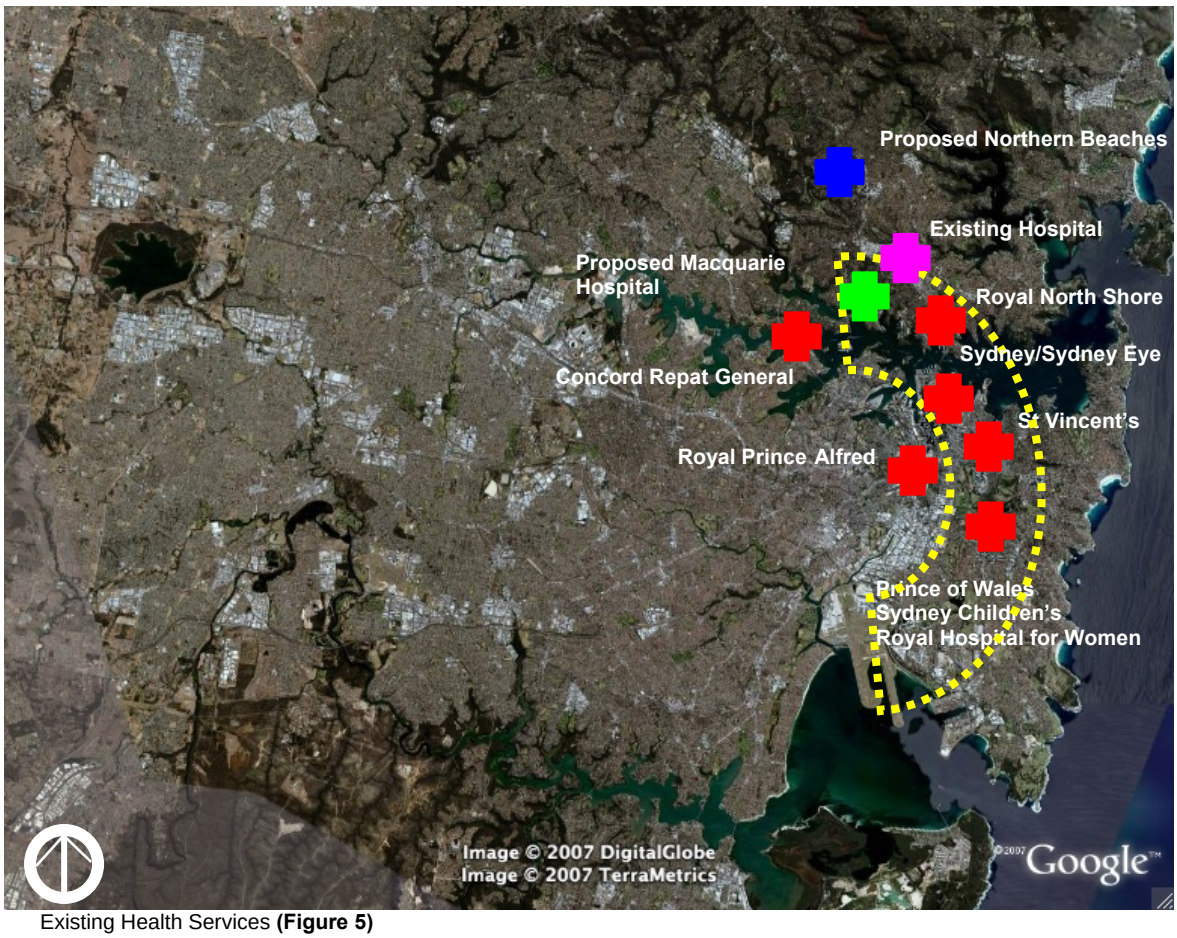
The Site within the context of the Macquarie Park corridor **(Figure 4)**

Extent of Macquarie Park Corridor

5.2.2 Metropolitan Health Services

Within the Global Arc there are several major hospitals, to the north and south of the harbour. (Refer **Figure 5** and **Figure 35**) Services provided by these hospitals elsewhere in the Global Arc are shown in **Table 1**. Health services outside the Global Arc are also discussed (Refer **Table 2**)

The proponent Dalcross currently provides services such as Neurosurgery, Spinal Surgery, Vascular Surgery and Ophthalmology in its existing premises on the lower North Shore, some of which are specialisations, and seeks to relocate and consolidate into facilities nearby in the local area which will foster and expand services.



Existing Health Services **(Figure 5)**

Global Arc

Existing Hospitals

Proposed Public Hospital

Proposed Macquarie Private Hospital

Existing Dalcross Private Hospital

Of the services currently provided by the existing hospital, procedures such as:

- Subarachnoid haemorrhage & AVM bleeds
- Acute stroke management & thrombolytic therapy
- Carotid Stenting and
- Neuro interventional radiology,

are "high end" specialties that by their very nature are very expensive and resource intensive. Inherently, if these specialties are restricted in growing in within the private sector, this will impose an additional burden on the public sector.

Royal North Shore Hospital (located at St Leonards) has a long established reputation in Neurosurgery, (e.g. spinal cord injuries). In recent years, the hospital has developed the most advanced services in cerebrovascular disease.

A team of Interventional neuroradiologists at both Royal North Shore and Dalcross hospital currently undertake repair of brain aneurysms without invasive surgery, embolise arteriovenous malformations and thrombolytic treatment to reverse strokes, requiring special skills (not easily attempted in other facilities).

This service is not available in most parts of Australia. Dalcross is the only private hospital in Australia that is routinely undertaking Interventional neuro radiology.

In the area of spinal surgery, Royal North Shore and Dalcross have pioneered a number of "first" procedures.

- The replacement of a cancerous vertebra with a carbon-fibre vertebra.
- The first bilateral cervical disc replacement surgery
- The invention and patent of the R90 disc spacer by Dr William Sears (regarded currently as the best prosthetic device for "fusion' surgery in the world)

The recent appointments of young vascular surgeons at Royal North Shore and Dalcross have resulted in an emphasis on minimal invasive techniques in the treatment of vascular disease.

Dalcross currently offers the full gambit of ophthalmic procedures such as cataract surgery, oculoplastic surgery, corneal transplants, and retina disease and glaucoma treatment. The new facility will offer ocular oncology, a first in the private sector. The facility also needs to provide Lasik technology on site.

The relocation and further development of these specialised services in its new location will: -

- Substantially support the existing and planned infrastructure at Royal North Shore Hospital (RNSH).
- Provide much needed Intensive care beds, which will serve to meet the overflow demands of RNSH particularly in the area of cerebrovascular and stroke victims.
- Provide private facilities for a number of highly specialised practitioners associated with RNSH, which by the nature of their specialisation attracts a number of "out of the area" referrals. This will also assist RNSH administration in the remuneration structures that could be offered to engage these specialists.

Medical advances and technology is finding new solutions for old problems, but this is at a great cost to governments, insurers and ultimately society. These services cannot be provided efficiently or effectively at every healthcare facility and supply never seems to meet demand.

The emerging trend of private medical schools for undergraduate and postgraduate studies will require a number of medical facilities to provide qualitative training. Very few private hospitals are currently equipped to accommodate the needs of these medical schools. The new facilities will be designed specifically to facilitate onsite practical training for both undergraduate and postgraduate education.

Research is another strong focus and an opportunity to develop specific research with the major biotechnology companies in Australia. It will create a close working environment between practitioners and scientists on projects that will ultimately have commercial application. Therefore the location in Macquarie Research Park adjacent to Macquarie University is ideal.

In short, the proposed development will not replace services provided in hospitals elsewhere in the Global Arc, but will in fact expand on those currently available.

Table 1 – Health Services within the Global Arc

South				
Hospital	**Health Service**	**Services**	**Teaching**	**Comments**
Prince of Wales (also includes Royal Hospital for Women and Sydney Children's Hospital)	South Eastern Sydney Illawarra Area Health Service	Sydney's largest tertiary referral centre • aged and community health, • anaesthetics, • intensive care, • cardiac services, • medical imaging & nuclear medicine, • mental health • neurology • oncology • rehabilitation • spinal medicine Royal Hospital for Women a tertiary specialist referral centre gynaecology, gynae-oncology, maternity services and neonatology Sydney Children's Hospital • paediatric services	University of NSW University of NSW School of Obstetrics and Gynaecology University of Sydney's Centre for Women's Health Nursing University of NSW School of Women's and Children's Health.	Associated research units include : • Prince of Wales Medical Research Institute • Spinal Injuries Research Centre Co located with Prince of Wales Private Hospital
Sydney Hospital and Sydney Eye Hospitals	South Eastern Sydney Illawarra Area Health Service	Sydney Hospital • tertiary referral centre for hand trauma, abnormalities and diseases • general emergency • sexual health • drug and alcohol, • HIV/AIDS • AIDS psychiatry services. Sydney Eye Hospital • public sector eye surgery	University of NSW University of Sydney	
St Vincent's Hospital (operated by Sister of Charity Health Service)	affiliated with South Eastern Sydney Illawarra Area Health Service	Tertiary hospital providing specialised medical, surgical and critical care Australia-wide referral centre for cardiac care/ diagnostic services, coronary care and heart/lung transplantation. Sacred Heart Palliative Care Hospital, rehabilitation, community health, alcohol and other drug service, mental health service and the diabetic education centre.	University of NSW	Associated research units include : • Victor Chang Cardiac Research Institute • Garvan Institute Co located with St Vincent's Private Hospital (operated by St Vincent's and Mater Health Sydney)

Table 1 cont – Health Services within the Global Arc

North				
Hospital	**Health Service**	**Services**	**Teaching**	**Research**
North Shore Hospital	Northern Sydney Central Coast Area Health Service	Tertiary hospital providing specialised medical, surgical and critical care services • aged and community health, • anaesthetics, • intensive care, • cardiac services, • medical imaging & nuclear medicine, • mental health • neurology • oncology • rehabilitation • emergency • obstetrics/gynaecology • paediatrics • neonatology North Shore is currently undergoing major redevelopment Concept Plan MP06-0051 and Project application MP06-0192)	University of Sydney	Associated research units include : • Kolling Institute of Medical Research • Institute of Magnetic Resonance Research • Bill Walsh Cancer Research Laboratories Co located with North Shore Private Hospital (Ramsay Health Care)
Proposed Northern Beaches Hospital	Northern Sydney Central Coast Area Health Service	New hospital currently in planning and due for completion in 2010, providing medical and surgical services • intensive care, • medical imaging • emergency • obstetrics/gynaecology • paediatrics		

Table 2 – Health Services outside the Global Arc

West				
Hospital	**Health Service**	**Services**	**Teaching**	**Research**
Westmead Hospital (also includes Children's Hospital)	Sydney West Area Health Service	Tertiary hospital providing specialised medical, surgical and critical care services • aged and community health, • anaesthetics, • intensive care, • cardiac services, • medical imaging & nuclear medicine, • mental health • neurology • oncology • rehabilitation • emergency • obstetrics/gynaecology • paediatrics • neonatology	University of Sydney	Associated research units include : • Dental Clinical School. • Institute of Clinical Pathology and Medical Research • Millennium Institute Westmead Private Hospital (Ramsay Health Care) located nearby
Royal Prince Alfred (also associated with Rachel Forster, King George V, and Dame Eadith Walker Hospitals)	Sydney South West Area Health Service	Tertiary hospital providing specialised medical, surgical and critical care services • aged and community health, • anaesthetics • emergency • intensive care, • cardiology • medical imaging & nuclear medicine, • neurology • liver & kidney transplants • oncology • rehabilitation • obstetrics/gynaecology • paediatrics	Principal teaching hospital of the University of Sydney located adjacent	Associated research units include : • Centenary Institute for Cancer Medicine and Cell Biology, • Heart Research Institute, • Woolcock Institute of Respiratory Research, • Endocrine, Haematology and Neuroscience Institutes

Table 2 cont – Health Services outside the Global Arc

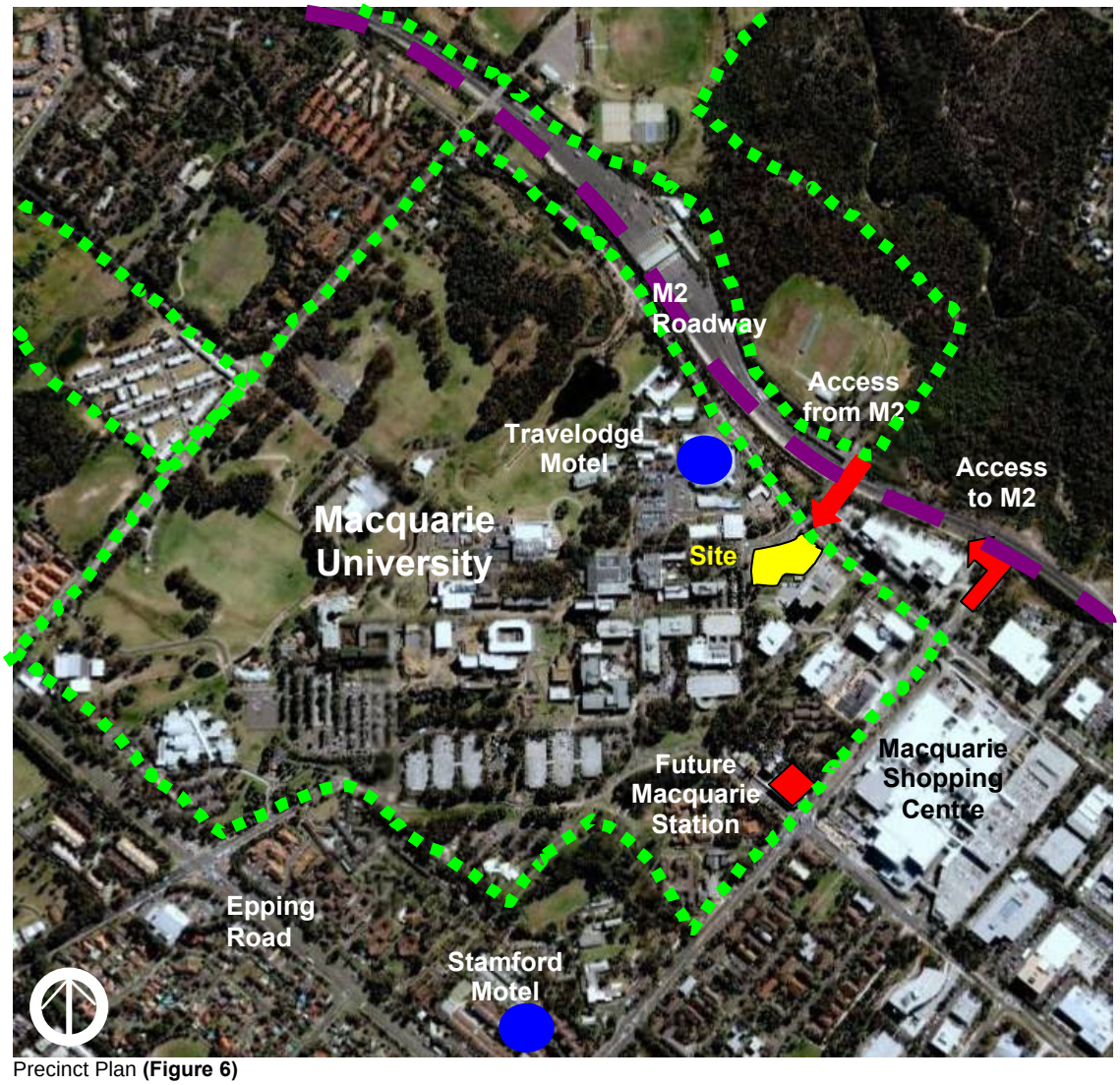
West				
Hospital	**Health Service**	**Services**	**Teaching**	**Research**
Concord Repatriation General Hospital	Sydney South West Area Health Service	Tertiary hospital providing specialised medical, surgical and critical care services • Ambulatory Care Clinics • Bone and Joint • Cancer Services • Colorectal Services • Critical Care Services, including Burns Service • Gastroenterology • Geriatrics and Rehabilitation Medicine • Haematology • Respiratory Medicine • medical imaging & nuclear medicine	University of Sydney	Associated research units include : • ANZAC Research Institute

5.2.3 Local Precinct

The local area for the site is bounded by Herring Road to the south east, Talavera Road to the north east and Macquarie University to the west. Further to the south east is a high technology industrial estate, known as Macquarie Park. (Refer **Figure 4**)

Notable features of the area as shown in **Figure 6** below include:

- The site is within Macquarie University Research Park.
- It is directly adjacent to Macquarie Shopping Centre
- The site is within 500m of the soon to be completed Macquarie University Station,
- It is within easy walking distance of transportation networks and major bus routes
- It has direct access to the Epping Road, Lane Cove tunnel and the Orbital Motorway.
- Future transport initiatives, including the M2/F2 connection will make North Ryde accessible from locations throughout the Sydney metropolitan area
- Accommodation is available within a short distance (Travelodge, 250m and Stamford 1500m)



Precinct Plan **(Figure 6)**

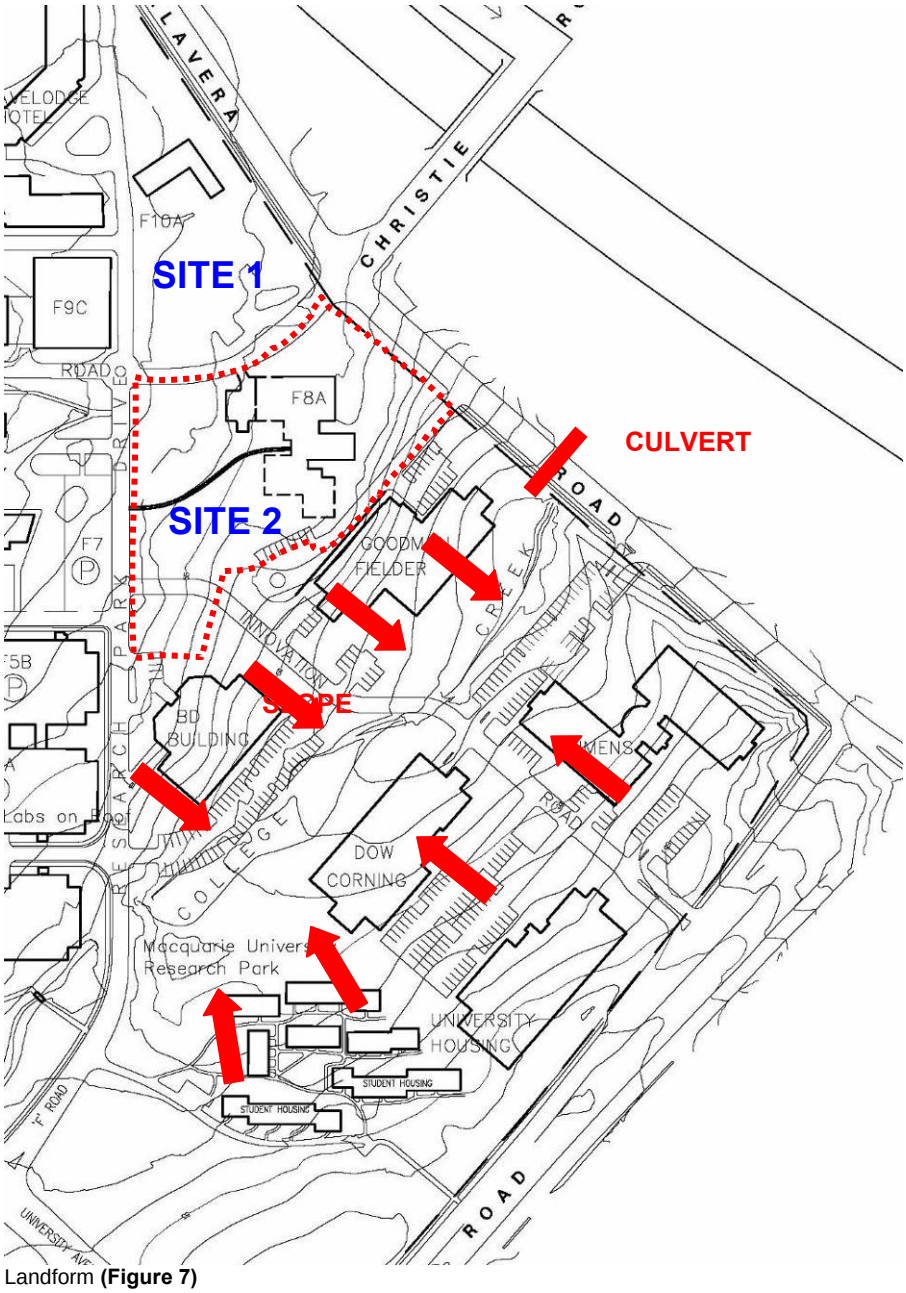
Extent of Macquarie University Campus

5.3 Landform and Topography

Macquarie University Research Park (MURP) has an existing creek running from the south west corner through the centre of the site to a culvert pipe under Talavera Road. MURP slopes quite steeply from the north and south boundaries towards the creek. (Refer **Figure 7**)

The Hospital site, on the northern perimeter of the Research Park, slopes approximately 5m (in height) diagonally across the site from north-west to south-east.

Registered Surveyors, Rygate and Partners have prepared a detailed survey of the site for this project, which is included with the drawings submitted. (Refer **Section 12.1**)



Landform **(Figure 7)**

The Site

5.4 Surrounding development and built form

Land Use
The site is fully contained within the existing Macquarie University Research Park (MURP), (refer **Figure 8)** home to a number of leading Australian and international companies including:

- **BD** - medical devices and diagnostic systems
- **Cisco Systems** - wireless LAN technology
- **Covance** - A global research and drug development company
- **Dow Corning** - Silicones and specialty materials
- **EMC Corporation** - data storage technology
- **Eppendorf** - laboratory equipment and analytical devices
- **Goodman Fielder** - The largest Australian-owned food company
- **Nortel Networks** - high-performance communication networks
- **OPSM -** optical retailer in Australia and New Zealand
- **Siemens** - power and communication technologies

The companies currently within MURP ensure there is the potential for useful associations with the University, especially in research collaboration including:

- Synergies between industry research and Macquarie University (MU) research
- Joint research projects building on MU expertise and facilities and opportunities for commercialisation
- Executive management programs (MGSM) extended into industry
- Utilisation of Macquarie Research Ltd expertise
- Collaboration with leading Australian business, academic and research companies
- Employment opportunities for undergraduates and graduates.

The site immediately to the south east comprises the property known as 75 Talavera Road, which is a contemporary seven (7) storey office building, with basement parking under, used by Goodman Fielder Pty Ltd and OPSM. **(Figure 9)** The M2 motorway lies beyond, which forms a physical barrier to the bushland of Lane Cove National Park further to the east.

The land to the north of Technology Place, known as No 2 Talavera Road, comprises vacant land (referred to as Site 1) the location for building yet to be constructed (LDA 676/2001) referred to as the Specialist Centre. Further to the north are the Macquarie University Travelodge and the School of Graduate Management. The site currently contains a single storey L shaped building used as a storage area and garage for maintenance vehicles and equipment. **(Figure 10)**

The land to the east, directly across Talavera Road from the site contains a multi-level industrial complex known as the Macquarie View Estate comprising a number of industrial units on the land known as 112-118 Talavera Road. **(Figure 11)**

The land to the west is currently used as open bitumen paved car park, with multi storey University Sciences Research Building beyond **(Figure 12)**

In summary the area has a predominantly contemporary character with a great degree of diversity in the nature, character, scale and style of development. The area provides accommodation for a wide range of uses, although the character is largely dominated by technology-oriented land uses.

The site of the new private hospital **(Figure 8)**

Development (Goodman Fielder) to the south east **(Figure 9)**

Site 1, for Specialist Centre development to the north **(Figure 10)**

Development to the east, directly across Talavera Road **(Figure 11)**

Open car park to the west, University Building F7B beyond **(Figure 12)**

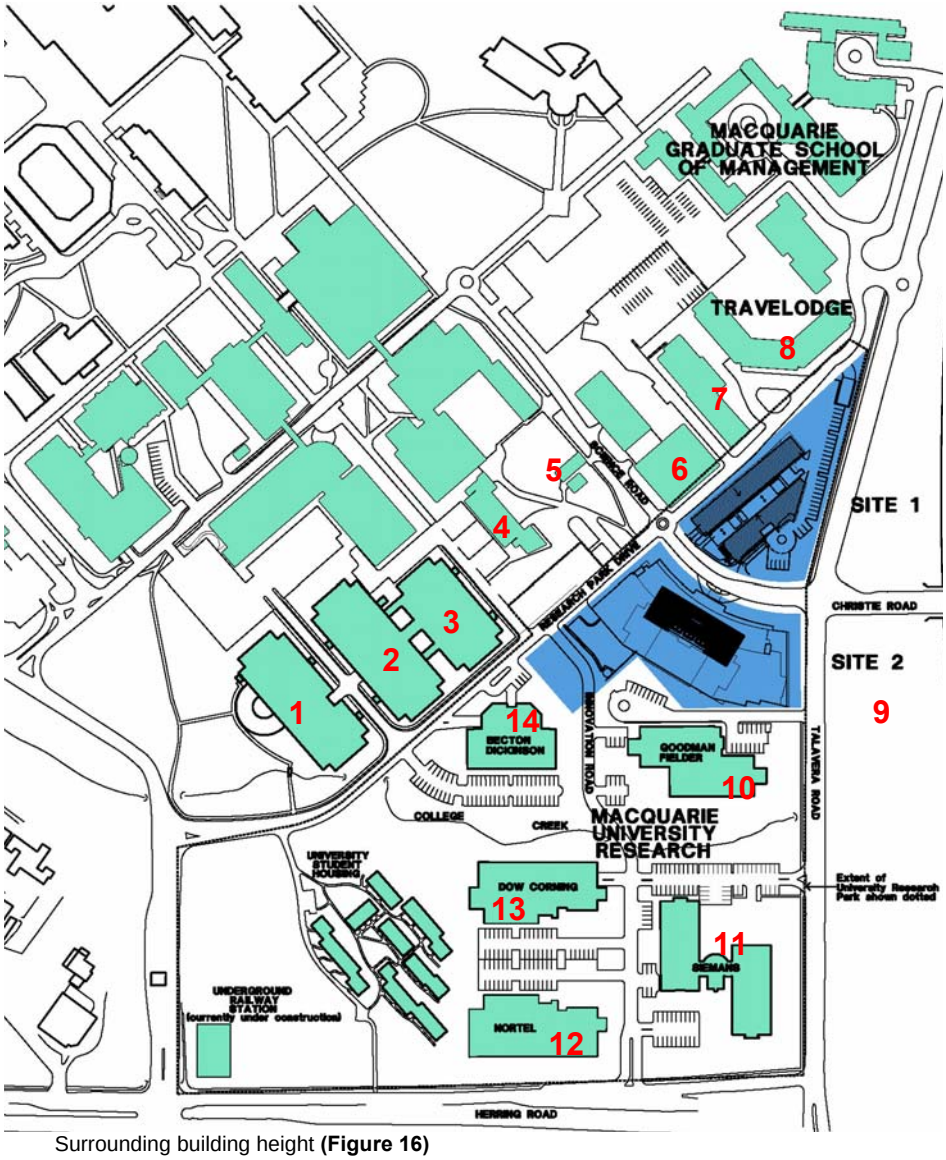
University car park to the south west **(Figure 13)**

Becton Dickson commercial building to the south west **(Figure 14)**

University TV and Drama building to the north west. Site 1 is to the right **(Figure 15)**

Surrounding Built Form

The MURP site is generally surrounded by a variety of built form ranging from tall buildings to the south and lower buildings to the north and west. **Figure 16** below indicates the height of adjacent buildings and structures.



Surrounding building height **(Figure 16)**

Figure	Building No.	Building Name	Number of Storeys
	1	MU Building F3A Open car park	2
	2	MU Building F5A Open car park	2
13	3	MU Building F5B Open car park	2
12	4	MU Building F7B Sciences Research Building	5
	5	MU Building F7A Gas Enclosure	1
15	6	MU Building F9C – TV & Drama	1
	7	MU Building F9A	1
	8	Travelodge Motel	3
11	9	Macquarie View	6
9	10	Goodman Fielder	7
	11	Siemens	4
	12	Nortel	5
	13	Dow Corning	4
14	14	Becton Dickinson	4

5.5 The Site

5.5.1 Flora

The site was largely cleared of native vegetation when the Macquarie University Campus was established in 1964. Prior to this the land was used for a number of uses including market gardening and poultry farming (refer **Appendix 10)**

Vegetation on the site is highly modified and contains a mixture of mature native and exotics trees, with a grassed or mulched understorey, bitumen walkways and parking areas and would not be regarded as a re-establishment of naturally occurring ecological communities on the site.(refer **Figure 17**)

The site looking to the east with existing structures to the right **(Figure 17)**

5.5.2 Fauna

Given the limited extent of naturally occurring native vegetation, the highly developed nature of the surrounding areas, the site's isolation due to the M2 and the availability of alternative habitat in the Lance Cove National Park to the north and east, the site is unlikely to provide important habitat.

5.5.3 Existing buildings structures and uses

The site currently contains a complex of single storey brick buildings with attached workshop, known as F8A, previously used by Macquarie University as the Office of Facilities Management. An asphalt paved car park is located adjacent.

5.5.4 Heritage

Review of historical information indicates that the land (various plots) was originally used for market gardens and poultry farming prior to the acquisition by Macquarie University in the mid 1960's (**Refer Appendix 10**). The buildings current occupying the site appear to have been constructed between 1961 and 1986. There are no items on proposed site that are listed on heritage registers held by local/state government or other agencies.

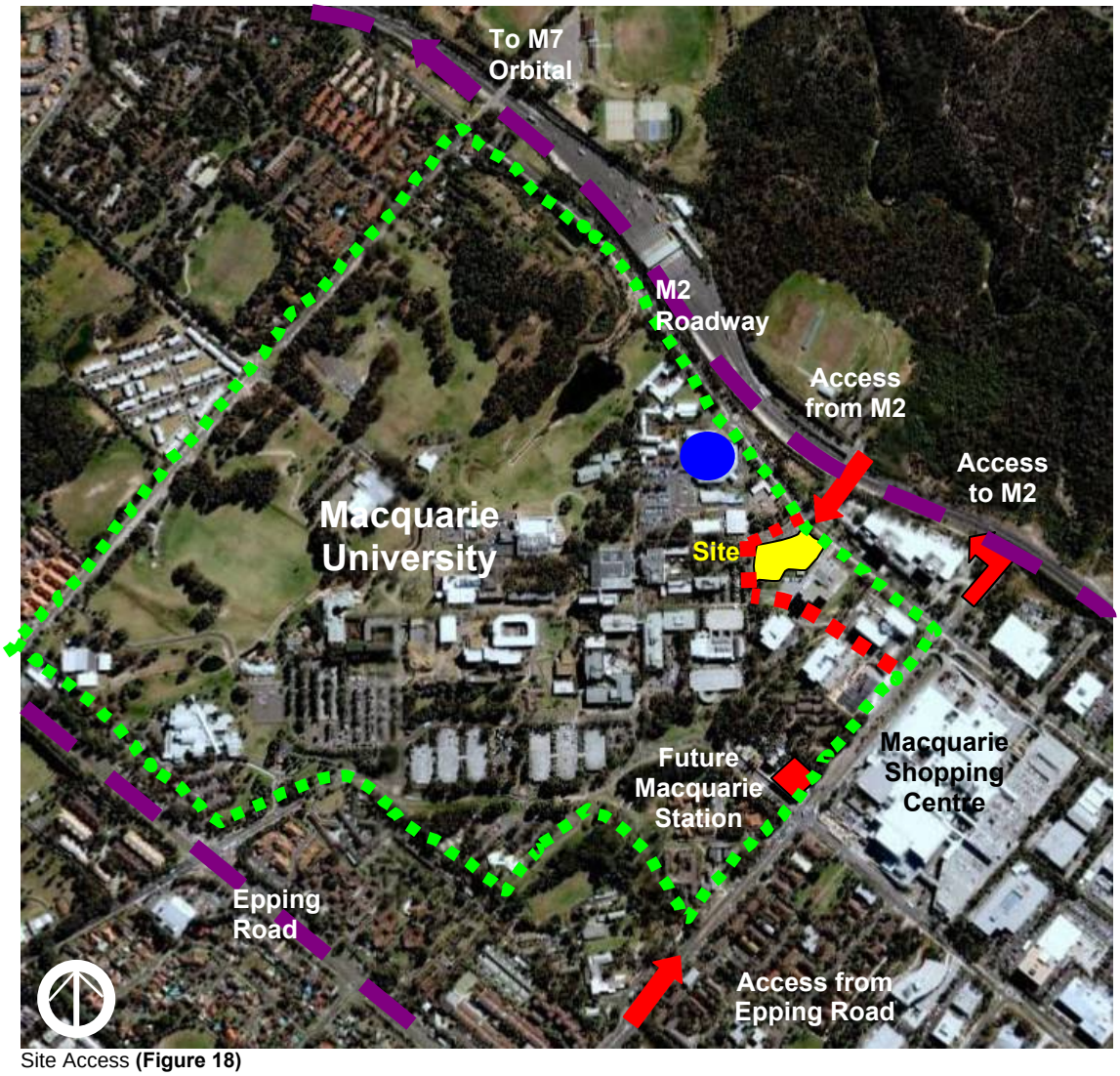
5.6 Access and circulation

5.6.1 Overview

Existing traffic and transport conditions have been examined by TEF Consulting. A copy of their report is included in **Appendix 5.**

The site has convenient access to public transport, especially bus routes along Epping Road, the bus interchange at Macquarie Shopping Centre and in the near future, rail, on completion of the Epping to Chatswood rail link in 2008. (Refer **Figure 18**)

The location of the site in close proximity to MU Station will make a major contribution to the transit oriented development principles of the Metropolitan Strategy.



Site Access **(Figure 18)**

Major road

Alternative Road

5.6.2 Public Transport

The area is well served by major transport infrastructure, including the Epping to Chatswood railway line (including Macquarie University Station) due to be completed in 2008, the Sydney Orbital project and the Lane Cove tunnel (completion 2007). Future transport initiatives including the M2/F2 connection and the North West Rail line, will make North Ryde accessible from locations throughout the Sydney metropolitan area.

The site is well serviced by a network of buses (refer **Appendix 5)** with up to 800 movements on a typical weekday passing through the University adjacent, connecting to major commercial centres, surrounding areas and a number of railway stations. The bus routes are focussed on the bus station in Herring Road outside Macquarie Shopping Centre.

5.6.3 Access and parking

The site can be accessed externally from the two adjacent roadways, Technology Place to the north and Research Park Drive to the west. There will be no direct access to the development from Talavera Road. Technology Place has direct access from Talavera Road to the east via a signalized intersection at the junction with Christie Road. It is anticipated that this roadway will be used as the main vehicular access to the new hospital development to drop-off or pick up patients. **(Figure 19)**

Looking east towards Talavera Road/Christie Road from Technology Place. The site is shown to the right. **(Figure 19)**

Service access to the loading dock and to the underground car park will be from Research Park Drive. **(Figure 20)**

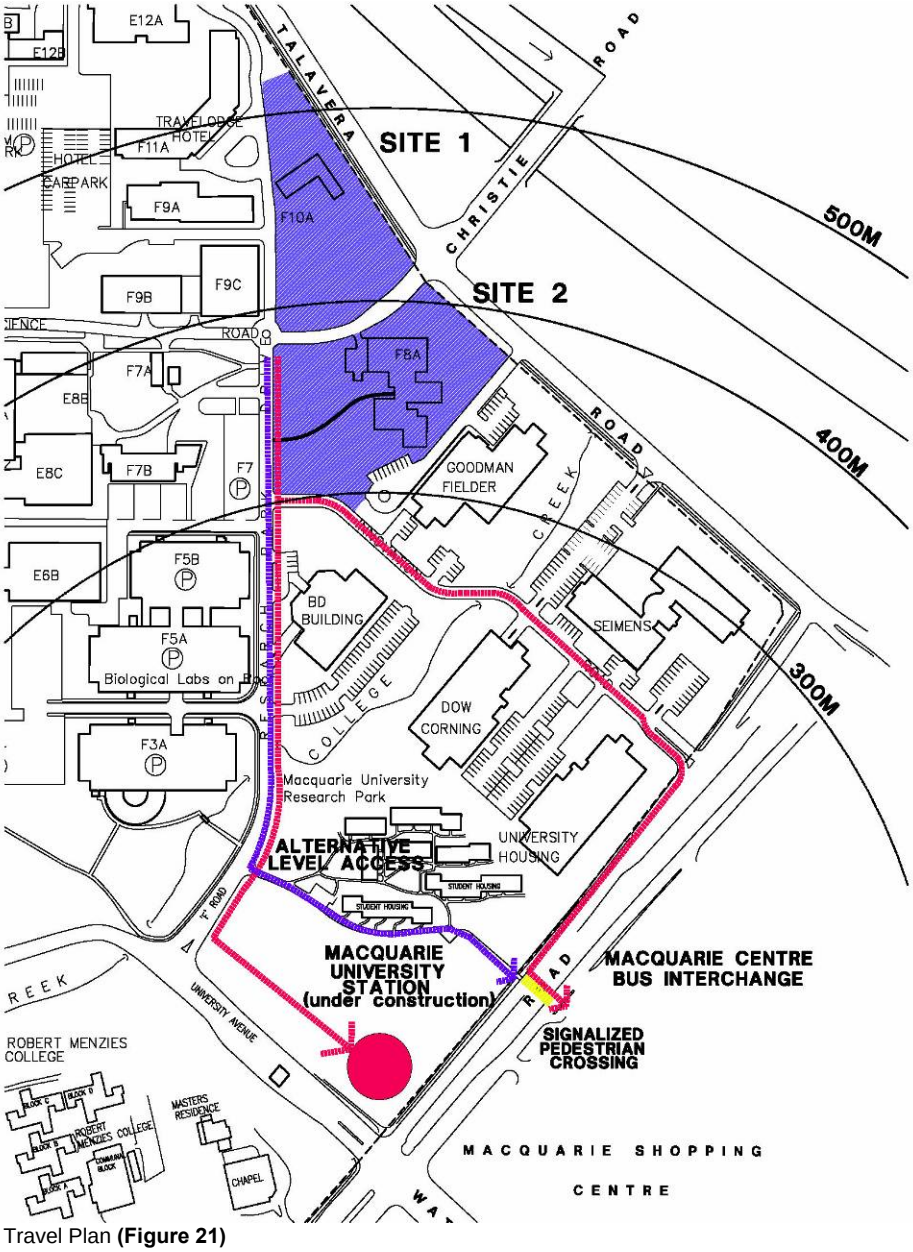
South along Research Park Drive looking south towards the new Macquarie park Station. The site is shown to the left. **(Figure 20)**

As demonstrated in **Figure 21,** the site lies within 400m of the new station at the junction of Herring and Waterloo Roads or the bus station at Macquarie Shopping Centre. The access to the station along Research Park Drive is generally level. Access to the bus station is either along Innovation drive which has some steeper gradients, then across at signalized crossing at Herring Road. A level alternative is along Research Park Drive then through the University pathways to the bus station.

These arrangements are consistent with State Government Policy (SEPP 66) of:

- Improving accessibility to employment and services by walking, cycling and public transport
- Improving the choice of transport and reducing dependence on cars for travel purposes

Further management of the issues relating to encouraging employees and visitors to use public transport forms part of the Draft Statement of Commitments.



Travel Plan **(Figure 21)**

5.7 Services and Infrastructure

All required services are readily available as follows:

Sewer
The MURP site is served by a 300mm Boards Main which traverses the site on a north south direction and is available for connection, with sufficient capacity for the proposed development. Existing sewer inspection pits will be retained or with minor relocation if required.

Water
Existing water mains runs along Talavera Road (150mm), and is available for connection.

Electricity
A major electrical service line (11KV) runs across Site 1 to the north, and is available for connection.

Stormwater and Onsite Detention (OSD)
Stormwater mains are available in several locations, some connected via On Site Detention (OSD) systems within the basement. The stormwater collected over the roof of the new building will be connected to the OSD system. A Stormwater Project Application has been provided showing this proposed connection. Refer **Appendix 6.**

Medical Gases
Bulk Oxygen will be located off Innovation Road, to the south west of the site adjacent to the Loading Dock. The gas bottle enclosure will be in masonry, and screened with landscaping. Other medical gas bottles will stored in appropriate enclosure off the loading dock. Cylinders will be grouped in storage areas according to their contents, and provision made for their use in order of receipt. Empty cylinders will be stored separately, grouped and marked accordingly.

5.8 Geotechnical

An investigation of the site conducted by Jeffery & Katauskas Pty Ltd (Refer **Appendix 9**) has revealed that the site is underlain by Hawkesbury sandstone, at depths ranging from 1.1m to 3m below the surface. Some groundwater has been identified, but further investigation will be required after site has been vacated and prior to commencement of construction. The investigation has revealed no issues that preclude the site from being used for development. (refer **Appendix 9**)

5.9 Site Contamination

A Limited Scope Phase 1 Environmental Site Assessment was conducted by HLA Envirosciences Pty Ltd was undertaken in September 2006 (Refer **Appendix 10**). The report concluded that there was a potential for subsurface contamination to have occurred as the result of past activities on the site, including market gardens and that some areas in buildings to be demolished showed signs of potential asbestos cement sheeting, which would require further examination prior to the demolition of the structures.

Since the original inspection and report were completed, the buildings on Site 1 have been demolished. A subsequent inspection undertaken on 22 January 2007 confirmed that all building structures noted on Site 1 during the initial site inspection had been demolished and the buildings materials had been removed from the Site.

The SITA waste disposal certificate is provided as (refer **Appendix D** in **Appendix 10**) and confirms that approximately 500 kg of 'asbestos category 3' waste was removed from the Site. Airsafe Occupational Health Consultants (Airsafe) undertook airborne asbestos fibre monitoring of the area surrounding the former location of L-shaped building on 2 November 2006. A site inspection was also undertaken by Airsafe to visually inspect the surface soils. This inspection confirmed that asbestos cement sheeting 'had been removed to a satisfactory industry standard' (refer to Appendix D).

The site inspection did not identify any changes to the condition of Site 2 from that which was observed on 12 September 2006.

It was also noted that, based on the nature of the proposed basement excavations, which it is understood will extend to a depth of approximately 6.0 m bgl, waste classification of materials at the Site should also be undertaken so that these materials can be taken offsite to an appropriately licensed landfill. These works can be undertaken at the same time as the limited intrusive investigation and should meet the requirements of the NSW EPA (1999) Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes.

Further investigation of potential sub surface contaminants and asbestos cement form part of the Draft Statement of Commitments.