

# APPENDIX B

## ECONOMIC DEVELOPMENT STUDY

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# EXECUTIVE SUMMARY

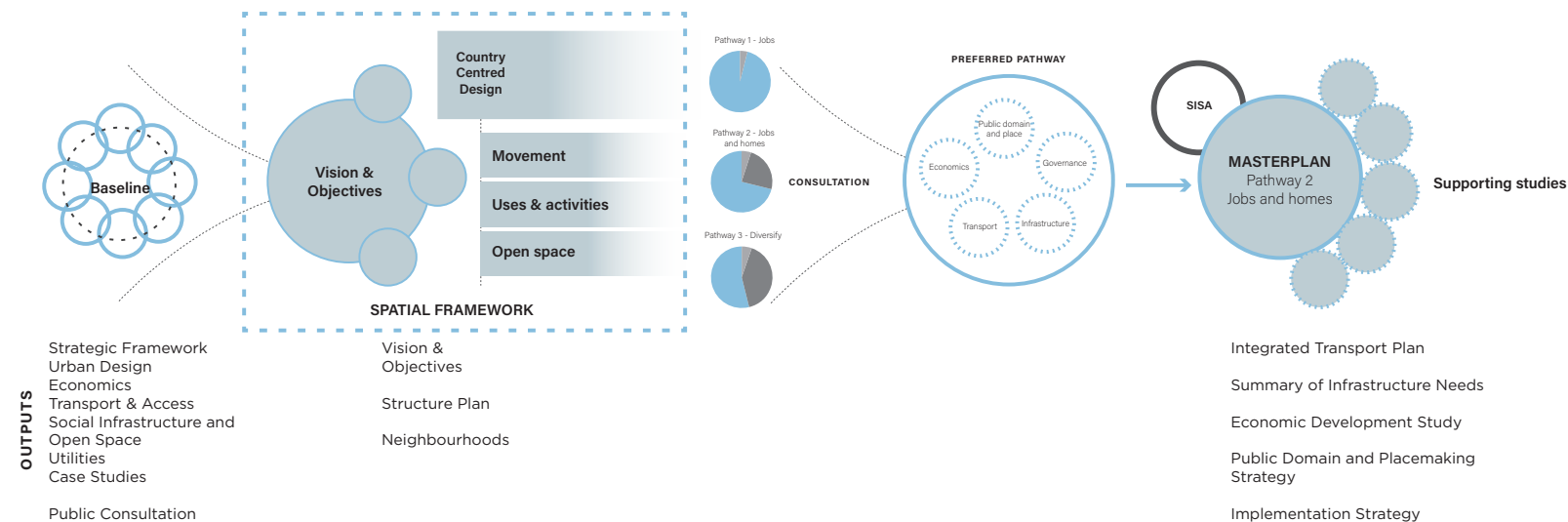
## OVERVIEW

Macquarie Park has become an economic powerhouse, contributing over \$9.5 billion to the NSW economy in 2018<sup>1</sup>. Home to Macquarie University, Macquarie University Hospital and more than 180 large international and 200 small businesses, the 170 hectare precinct is part of Sydney's Eastern Economic Corridor – “the State's greatest economic asset – contributing two-thirds of NSW's economic growth in 2015-16”<sup>2</sup>.

Commissioned by the NSW Department of Planning, Industry, and Environment (DPIE), key findings from this study are drawn from analysis of key economic indicators and baseline profiling data (Appendix E), as well as discussions with the City of Ryde, DPIE and Greater Sydney Commission (GSC), landowners, businesses, and other stakeholders at Macquarie Park.

This evidence base is framed against the key elements for Macquarie Park to evolve as a successful innovation district. Key priority actions are recommended in conclusion, to leverage Macquarie Park's strengths and build upon the existing economic, physical, and network assets and offer critical mass of industry and institutions; a high quality of place where people can live, work, and play; and effective governance and tools to support continual development.

Findings from this report will support development of the Macquarie Park masterplan, and as such, a particular emphasis has been given to place-based interventions.



<sup>1</sup> City of Ryde, Macquarie Park Marketing Plan 2019-2023, 2019

<sup>2</sup> Greater Sydney Commission, Eastern City District Plan 2018

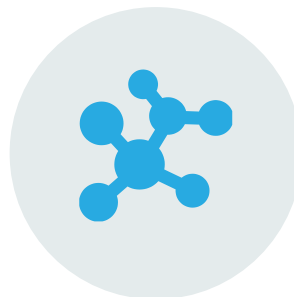
## REALISING MACQUARIE PARK'S SUCCESS AS AN INNOVATION DISTRICT

With its existing strengths, Macquarie Park can play a critical role in growing the innovation economy in NSW.

Realising the potential future prime economic role and direction for Macquarie Park is closely tied to the Corridor's success as an innovation district – to “spur productive, inclusive and sustainable economic development” and “provide a strong foundation for the creation and expansion of firms and jobs by helping companies, entrepreneurs, universities, researchers and investors – across sectors and disciplines – co-invent and co-produce new discoveries for the market”<sup>1</sup>.

According to the Brookings Institute, innovation districts are made up economic, physical, and network assets. Economic assets are the firms and institutions that create or support innovation. Physical assets are the buildings, spaces, streets, and infrastructure which support collaboration. Networking assets, or the relationships between organisations and people that generate and help commercialise ideas.

Today, the most successful innovation districts are strong across each asset – offering a critical mass of industry and institutions; a high quality of place where people can live, work, and play; and effective governance and tools that support continual development.local government area (LGA) within Sydney.



**TALENT AND  
TECHNOLOGY**



**INCLUSIVE  
GROWTH**



**LEADERSHIP**



**VISION**



**ACCESS TO  
CAPITAL**



**QUALITY OF  
PLACE**

<sup>1</sup> Brookings Institute, The Rise of Innovation Districts: A New Geography of Innovation in America, 2014

Macquarie Park was assessed against this innovation districts framework, to determine the precinct's key strengths and weaknesses, uncovering opportunities to build upon and support the corridor's evolution as a successful innovation district.

INNOVATION DISTRICT SUCCESS FACTOR	STRENGTHS	WEAKNESSES
Talent and technology	<ul style="list-style-type: none"> <li>Leverage the strong knowledge intensive innovation sector which has seen consistent growth – for example, pharmaceuticals, high tech, computing and technology and electronics with employers such as Johnson &amp; Johnson, Microsoft, Sony, Optus, Cochlear and Foxtel.</li> <li>Macquarie Park has access to a large, qualified labour pool as part of the Eastern Economic Corridor which contains close to one-third of Greater Sydney's jobs.</li> <li>Leverage the number of strong existing innovation cultivators and anchors, such as Macquarie University, the Hospital and Macquarie University Incubator.</li> </ul>	<ul style="list-style-type: none"> <li>Macquarie Park's sectors could be diversified to add economic resilience – a stronger mix of sectors could ensure there is not susceptibility of Macquarie Park to industry specific shocks and stresses.</li> <li>Small representation of small and medium sized entrepreneurs – Macquarie Park accounts for a smaller share of SMEs when compared to Greater Sydney and Australia. SMEs play an important role in growing jobs. Macquarie Park could benefit from added diversity in scale of firms.</li> </ul>
Inclusive growth	<ul style="list-style-type: none"> <li>Leverage the global resident base – there is a strong international and cosmopolite dimension of Macquarie Park.</li> <li>There is an opportunity to engage a growing and young population base – this age group is growing locally, which is positive trend for the local economy.</li> </ul>	<ul style="list-style-type: none"> <li>Affordability poses a barrier to increasing employment diversity in Macquarie Park – with a larger proportion of residents who rent are in mortgage stress compared to the NSW average of 13%.</li> <li>Lack of diversity in occupation – professionals account for the large majority of residents, with less managers and clerical and administrative workers in Macquarie Park compared to the City of Ryde and Greater Sydney.</li> </ul>
Leadership	<ul style="list-style-type: none"> <li>Combined government private sector leadership – there are a number of linkages between the City of Ryde and MPID for example, as well as connecting internationally with other innovation districts (for example through MIT REAP).</li> </ul>	<ul style="list-style-type: none"> <li>Unclear leadership model - there are various institutions involved in setting the area objectives including City of Ryde, MPID and NSW State Government. While there is collective agreement as to the innovation focus of Macquarie Park, the individual roles, and responsibilities for each stakeholder on delivery has not clearly defined.</li> </ul>
Vision	<ul style="list-style-type: none"> <li>Recognised as a strategic employment centre by NSW Government - The State Government recognises Macquarie Park as a key health and education precinct.</li> <li>Branding as an innovation district – the City of Ryde has helped to promote the area as an innovation district.</li> </ul>	<ul style="list-style-type: none"> <li>There is no agreed vision for Macquarie Park - the vision and objectives for Macquarie Park as an innovation district have not been established.</li> </ul>

INNOVATION DISTRICT SUCCESS FACTOR	STRENGTHS	WEAKNESSES
Access to capital	<ul style="list-style-type: none"> <li>Emerging structures and networks in place to widen access to venture capital / angel investment driven by Macquarie University and MPID - the Macquarie University Incubator and collaboration hubs have a platform in establishing Macquarie Park as an innovation district. MPID also participated in the MIT Regional Entrepreneurship Acceleration Program (MIT REAP) which is a program targeted at accelerating innovation activities including access to capital.</li> <li>Structured approaches to supporting business growth and inward investment in Innovation District driven by the MPID and the City of Ryde - collaborative spaces, start up support programs and industry summits are all important ways to steward the innovation network.</li> </ul>	<ul style="list-style-type: none"> <li>There needs to be greater emphasis on growing the scale and depth of capital in Macquarie Park – the Macquarie university incubator is an important asset but is one of the smaller incubators in Sydney.</li> <li>The place-based infrastructure needs to evolve and requires ongoing funding - NSW Government / or MPID could consider fiscal mechanisms to capture local increases in development values and local taxes to provide a revenue stream to reinvest in infrastructure within Macquarie Park.</li> <li>Need for networks to support business growth – support and build the public-private sector collaboration to build the right type of business space supporting business growth, particularly from SMEs.</li> </ul>
Quality of place	<ul style="list-style-type: none"> <li>Macquarie Park is seeing a growing mix of uses, opening the door to becoming a 18/7 neighbourhood.</li> <li>Increased vibrancy – The residential population has grown by 27% between 2011 and 2016.</li> <li>Increased connectivity through additional transportation capacity – the Sydney Metro West project is forecasted to increase the capacity of the line running through Macquarie Park by approximately 7,000 people per hour by 2041.</li> <li>Macquarie Park has unique access to the natural landscape - Residents, workers and students in Macquarie Park benefit from their proximity to Lane Cove National Park and natural settings within the Macquarie University campus. This is a major point of difference in Macquarie Park relative to other employment centres in Sydney.</li> </ul>	<ul style="list-style-type: none"> <li>There is lack of flexible and affordable space to cater to the full array of innovation sector firms – where commercial office spaces within Macquarie Park have been developed to accommodate large scale corporate users, with a severe lack of affordable space for SMEs.</li> <li>Lack of density - whilst some organisations within Macquarie Park seek the ‘campus’ style layout, the low- density physical layout is currently not dense enough for close concentrations of people, with the precinct lacking in energy and a buzz from low footfall.</li> <li>Absence of amenities and identity limits attractiveness for workers and residents - there is a lack of leisure spaces, experimental and temporary sites that can create casual interactions and collaboration. One of the only major visitor attractors to Macquarie Park is the retail offering at Macquarie Centre on Herring Road.</li> <li>Poor transportation options and road congestion make Macquarie Park an auto-centric environment with local car congestion being significant and a growing problem, with long delays and journey times during peak periods.</li> </ul>

## OBJECTIVES AND RECOMMENDED ACTIONS

Macquarie Park can play a critical role in growing the innovation economy and have a significant economic impact for NSW. This section recommends actions that can be taken to leverage Macquarie Park's strengths and build upon the existing economic, physical, and network assets to offer critical mass of industry and institutions; a high quality of place where people can live, work, and play; effective leadership and governance that support Macquarie Park's evolution and continual development as an innovation district.

These actions will feed into the development of the Macquarie Park masterplan, and as such, a greater emphasis was focused on developing actions related to the place-based element of innovation districts, 'Quality of Place'. The recommendations relating to the additional elements will need to be addressed to realise the key objectives of the masterplan and to drive the continued development of an innovation district in Macquarie Park.

To deliver these actions in the following section, we assume that NSW Government would need to provide some level of funding.

### TALENT AND TECHNOLOGY



**Objective 1: Support skills development to build resilience to external change (i.e. economic change, technological advances) with a focus on cutting-edge technologies and digital infrastructure.**

Action 1.1: Invest in digital infrastructure and technology across Macquarie Park to create a high-quality platform for innovative firms and strengthen its networking assets

Action 1.2: Develop a purpose-built building in a strategic location within the commercial core which provides curated, affordable and agile office space for new and innovative enterprises

### INCLUSIVE GROWTH



**Objective 2: Foster a strong collaborative relationship between government, local community, industry and investors to expand and broaden opportunities for a diverse range of people to work, live and play in Macquarie Park.**

Action 2.1: Promote entrepreneurship and provide opportunities for SMEs to increase their exposure to anchor institutions in Macquarie Park

Action 2.2: Engage the private sector actively in events and programme development

### LEADERSHIP



**Objective 3: Develop a strong, consistent senior leadership team with clearly defined roles, to provide a coordinated and collaborative vision for Macquarie Park's future.**

Action 3.1: Develop a high calibre dedicated team

Action 3.2: Develop a clear, governance structure

Action 3.3: Promote outwards links (leveraging the Hearing Hub and medical research facilities) including local, regional and international networks to further develop Macquarie Park

### VISION



**Objective 4: Develop a cohesive, clear vision for Macquarie Park outlining a unique value proposition to support both inward and outward investment.**

Action 4.1: Develop a clear vision

Action 4.2: Promote innovation outwards, including using Macquarie Park as a test bed to promote innovation and trial of new technologies

## ACCESS TO CAPITAL



### **Objective 5: Focus on growing the scale and depth of capital in Macquarie Park.**

Action 5.1: Support business growth and inward investment through the provision of incentives to create live/work opportunities for entrepreneurs

Action 5.2: Develop funding strategy for investments within Macquarie Park

Action 5.3: Create a plan to intensify venture capital presence

## QUALITY OF PLACE



### **Objective 6: Deliver a range of social and transport infrastructure and services to support community diversity and wellbeing, enhancing the appeal and competitiveness of Macquarie Park for a range of users including residents, students, workers and visitors.**

Action 6.1: Create high-quality pedestrian environment and public domain works

Action 6.2: Leverage off the National Park and other natural assets

Action 6.3: Provision of open space and leisure amenity for children and young people

Action 6.4: Provision of high-quality green infrastructure including creek restoration

Action 6.5: Develop an infrastructure priority list for Macquarie Park to shortlist the projects that will deliver the greatest economic impact

Action 6.6: Consider changes to the planning controls to encourage mixed-use

Action 6.7: Provision of social infrastructure

Action 6.8: Develop an investment fund for programmed public spaces

Action 6.9: Develop an 18-hour economy strategy

Action 6.10: Develop business case for transit links to Parramatta and Epping to meet long term demand and reduce car mode share



# 1. INTRODUCTION

## 1.1 PURPOSE OF THIS STUDY

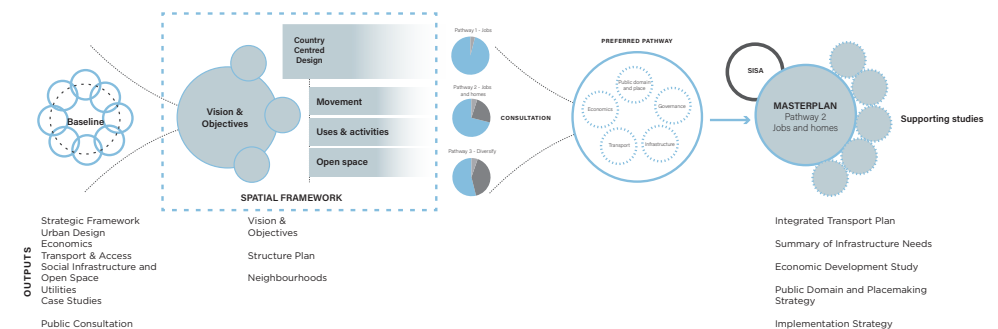
Arup has been commissioned by the NSW Department of Planning, Industry, and Environment (DPIE) to deliver an Economic Development Study to inform the development of the Macquarie Park masterplan. The purpose of this report is to summarise the baseline economic conditions established in the Economic Baseline Analysis Report (Appendix E) as framed against the key elements for successful innovation districts. The recommended actions from this report will feed into the development of the Macquarie Park masterplan, as such, a particular emphasis has been paid to place-based interventions.

Arup drew from analysis of key economic indicators and baseline profiling data as well as discussions with the City of Ryde, DPIE and Greater Sydney Commission (GSC), landowners, businesses, and other stakeholders within Macquarie Park. Through understanding the current strengths and opportunities against the key elements for success from innovation districts, this report provides a series of recommended actions to support the continued growth of Macquarie Park as one of Sydney's key innovation districts.

## 1.2 APPROACH

An evidence-based approach underpins the development of the Macquarie Park masterplan. This Economic Development Study sits alongside the Integrated Transport Plan, Summary of Infrastructure Needs, Public Domain and Placemaking Strategy.

Within this report, the economic context is first summarised, key success factors for innovation districts are then analysed drawing from a framework by the Brookings Institute. The existing conditions at Macquarie Park have then been evaluated against a set of success criteria, revealing key areas of opportunity to be developed through the masterplan process. Actions to support the realisation of key objectives and their relative priority are recommended in conclusion.



## 1.3 DATA AND INFORMATION

This Study has been prepared by Arup drawing on analysis and information obtained between 2018 and 2021, noting that a COVID-19 update was prepared in February 2021 to test and refine Arup's recommendations.

The report draws upon a number of different sources and research, along with information received through consultation with key stakeholders from the City of Ryde Council, DPIE, GSC and landowners since 2016.

### KEY SOURCES

- Australian Bureau of Statistics, Business Counts Cat 8165.0, 2019
- Australian Bureau of Statistics, Census for Population and Housing, 2016
- Australian Bureau of Statistics, Counts of Australian Businesses, 8165.0, 2018
- City of Ryde, City of Ryde Local Strategic Planning Statement, 2020
- City of Ryde, Macquarie Park Investment Prospectus, 2015
- Department of Industry, Science, Energy and Resources, Australian Innovation System Monitor, 2020
- Greater Sydney Commission, Metropolis of Three Cities, 2018
- Greater Sydney Commission, North District Plan 2056, 2018
- Macquarie University, Macquarie University Annual Report, 2016 - 2019
- Transport for New South Wales, Future Transport Strategy 2056, 2018
- Transport for NSW, Travel to Work, 2016
- NSW Treasury, NSW Economic Blueprint 2040, 2019

## 1.4 STUDY AREA AND CONTEXT

For the purposes of this study, the area known as the Macquarie Park Investigation Area (MPIA) was adopted, consistent with the masterplan and as shown in Figure 1. The strategic investigation area sits within the Macquarie Park Corridor covering approximately 170 hectares, including land between Macquarie Centre and Ivanhoe Estate (Herring Road Precinct) to Lachlan's Line and Riverside Corporate Park (North Ryde Station Precinct).

An established business park, Macquarie Park is located 12 kilometres from the Sydney CBD, and 13 kilometres from the Parramatta CBD within the City of Ryde, a northern local government area (LGA) within Sydney. Figure 2 shows Macquarie Park in the context of surrounding centres.

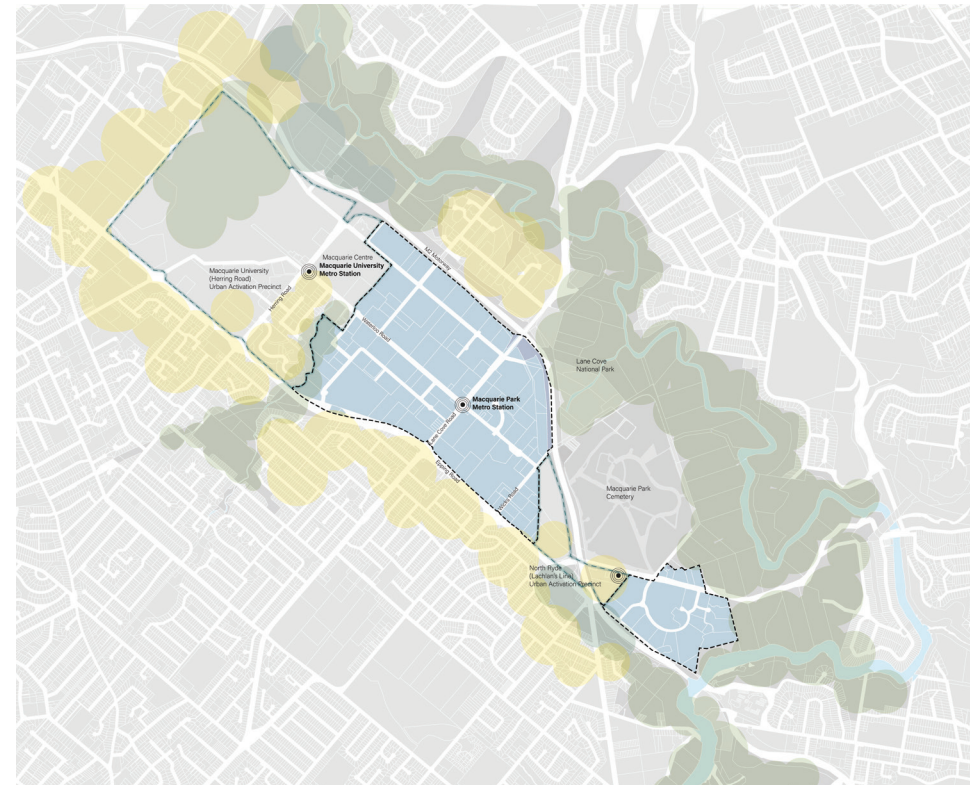


Figure 1: Macquarie Park Investigation Area (Source: Arup)

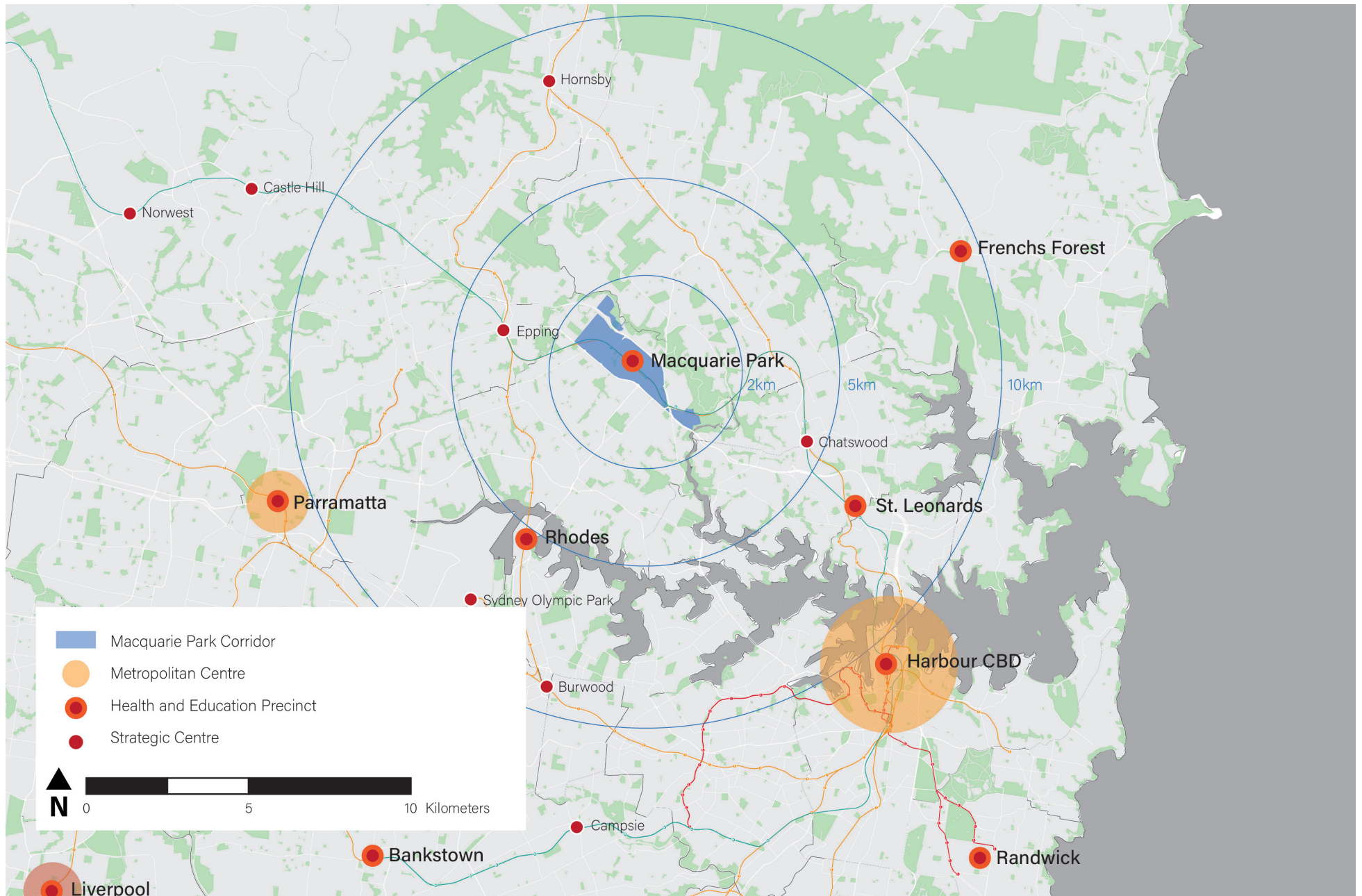


Figure 2: Macquarie Park and surrounding centres (Source: Arup)

# 2. ECONOMIC CONTEXT

## 2.1 STRATEGIC CONTEXT

Macquarie Park forms part of the Eastern Economic Corridor, a priority corridor identified by the Greater Sydney Commission (GSC) in the Greater Sydney Region Plan (GSRP) (Figure 3). The Eastern Economic Corridor from Macquarie Park to Sydney Airport is noted by the GSC as “the State’s greatest economic asset – contributing two-thirds of NSW’s economic growth in the 2015-16 financial year”<sup>1</sup> and is recognised for its strong financial, business, professional services and innovation start up sectors and a focus on health and education.

The GSRP acknowledges that there are many opportunities to improve connectivity and support continued growth in global industries, particularly strengthening the economic links between Macquarie Park and Greater Parramatta.

The North District Plan further sets out the strategic priorities for Macquarie Park:

- enable additional capacity for commercial floor space and maintain a commercial core;
- improve urban amenity including reducing the impact of vehicle movements on pedestrian and cyclist accessibility;
- deliver a finer grain road network to enhance pedestrian connections and provide new access points;
- promote design excellence in urban design by upgrading public areas;
- deliver an innovation ecosystem in Macquarie Park, capitalising on the relationship with Macquarie University and nearby high-tech and medical corporations; and
- improve public transport connections to Parramatta and the District’s other strategic centres, including the Northern Beaches Hospital.

This study and the broader strategic investigation of Macquarie Park through the masterplan are guided by these actions.

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<sup>1</sup> Greater Sydney Commission, Eastern Harbour City Vision, 2018



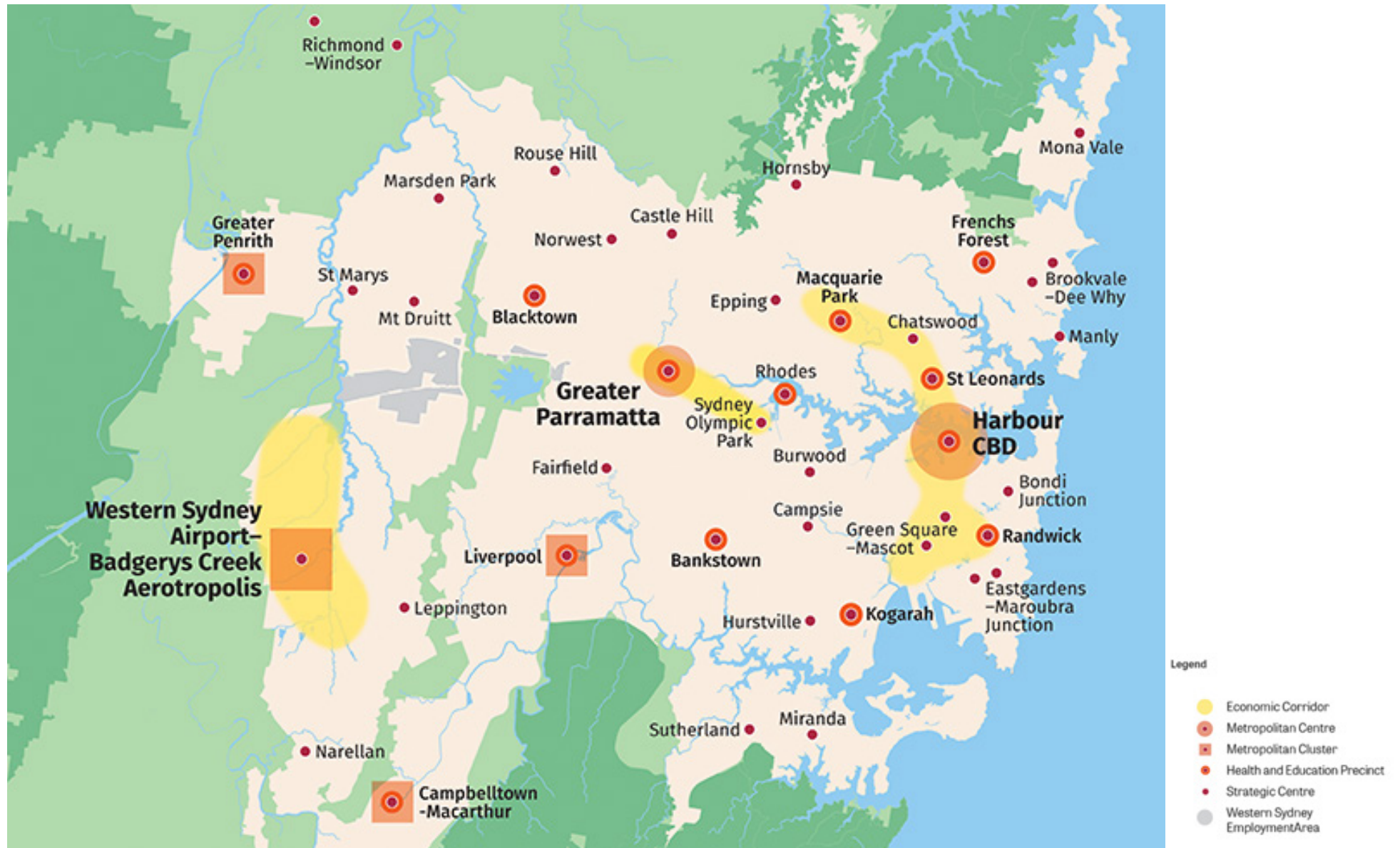


Figure 3: Contextual Map of Macquarie Park forming part of the Eastern Economic Corridor (Source: GSC)

## 2.2 LAND USE

The current land use at Macquarie Park includes a strong commercial core, with more diverse uses towards the north and south (Figure 4).

From the north, Macquarie University and Macquarie Shopping Centre define the educational and retail uses. Along Waterloo Road, the uses are mostly commercial with dispersed shops and ancillary uses. Around Shrimptons Creek and to the south, more residential uses are found around North Ryde Metro Station.

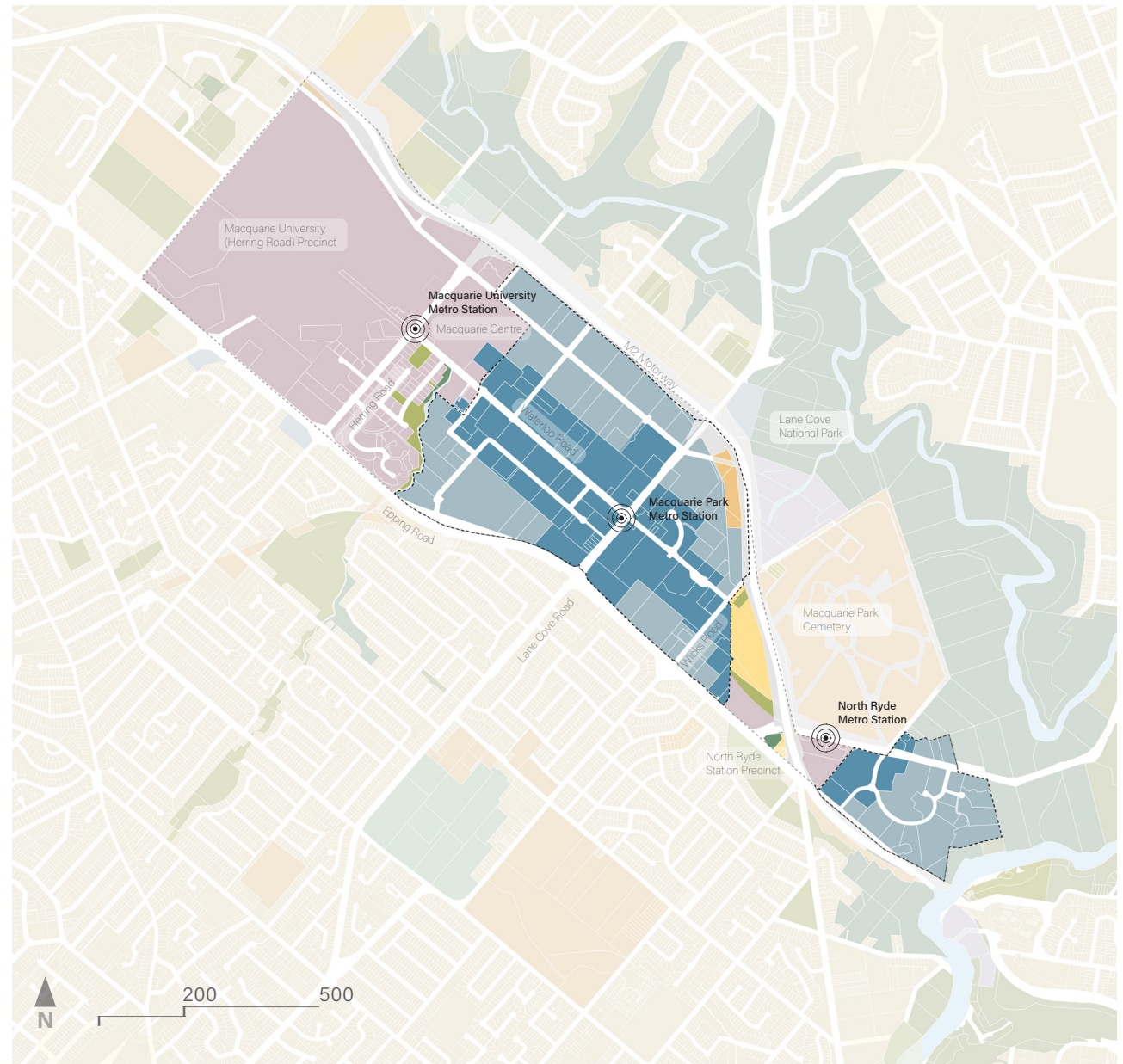
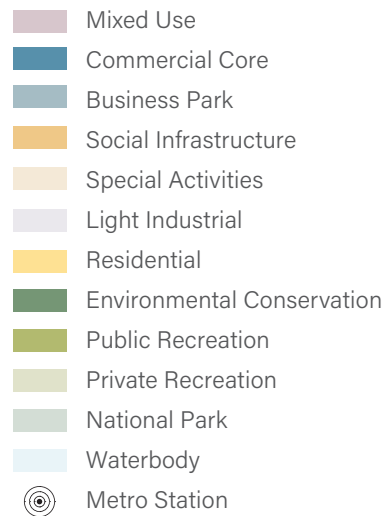


Figure 4: Existing Land Use (Source: Arup)



## 2.3 ECONOMIC CONTEXT

Macquarie Park is a major employment area with over 47,000 jobs as recorded in the 2016 ABS Census. Macquarie Park is the fourth largest employment centre in the metropolitan area by number of employees (Table 1), and is the largest non-CBD office market in Australia<sup>1</sup>.

Table 1: Top sectors of employment in Sydney, by employment centre (Source: ABS, 2016)

SA2 SMALL AREA	NUMBER OF EMPLOYED PEOPLE WORKING IN REGION
Sydney - Haymarket - The Rocks	316,984
Parramatta - Rosehill	49,956
North Sydney - Lavender Bay	48,206
Macquarie Park - Marsfield	47,540
Pymont - Ultimo	36,437
Surry Hills	29,458
St Leonards - Naremburn	29,025
Homebush Bay - Silverwater	26,289
Baulkham Hills (West) - Bella Vista	23,337

<sup>1</sup> Greater Sydney Commission, North District Plan, 2018

The economy of Macquarie Park is diverse with the presence of major industries, education and health. Macquarie Park largest employment sectors include Wholesale Trade, Professional, Scientific and Technical Services and Information, Media and Telecommunications as well as Manufacturing.

Major economic functions at Macquarie Park include:

- **Education:** Macquarie University is one of Australia's top-ranking research institutions and has one of the highest ranked MBA programs in the country<sup>2</sup>. The university has been a tenant since the district was established.
- **Research and development:** The Commonwealth Scientific and Industrial Research Organisation (CSIRO) located in North Ryde.
- **Knowledge intensive sectors:** Significant clusters of pharmaceutical (Johnson & Johnson, Cochlear, AstraZeneca), technology (Microsoft), electronics (Sony) and telecommunication (Optus, Foxtel) sectors.
- **Health services:** Macquarie University Hospital is located within the precinct.

To better understand the specific characteristic of Macquarie Park's labour market, we have compared it to Australia and Sydney labour markets using a location quotient analysis as reported in Figures 5 and 6 on the next page. This analysis expresses a sector's importance to a local area as a multiple of the national average. As an example, if a sector contributed 5% of all employment nationally, but 10% of employment locally, the employment quotient would be 2.0 (10% / 5% = 2.0). Sectors with a location quotient of less than 1 are under-represented in the local economy, whilst those with a score of over 1 are over-represented.

<sup>2</sup> Macquarie University, Annual Report, 2019

In addition to key anchors and industries, several initiatives have emerged in recent years to encourage collaboration of the innovation ecosystem within Macquarie Park:

The *Macquarie Park Innovation District (MPID)* group was created in 2015 and plays an important advocacy role for Macquarie Park with a growing number of local institutions on its membership such as CSIRO, Optus, AMP Capital, NAB, Abbott, Johnson & Johnson, Cochlear, Fujitsu, Konica Minolta, MQ Health, and Macquarie University. These businesses located in Macquarie Park constitute wide industry and education representation. While MPID is industry led, the NSW Government represent one of the founding partners. Its role has grown in recent years to be an important networking asset for Macquarie Park. MPID seeks to drive a relationship between the businesses and institutions located within Macquarie Park. The activities of MPID include those that are likely to build strong ties between different businesses and institutions in Macquarie Park, for example through education and development programs for small businesses in emerging sectors and collaborative network summits. MPID is different to business chambers typical in other Sydney employment areas. It takes on a semi-formal organising body for the area and has a singular focus on growing the innovation ecosystem.

*Macquarie University's Incubator* is home to a nexus of students, researchers, start-ups, and intrapreneurs exploring, developing, and scaling ideas through bespoke education programs delivered by leaders in their field. The Incubator's vision is to create entrepreneurship programs that train and nurture innovation, supporting the growth and success of impactful solutions to the world's problems in vibrant and accessible spaces where expertise and ideas flow freely.

And, as part of a global network, *Venture Café Global Institute (VCGI)* provides an important role in connecting businesses with start-ups as well as accelerator activities for small or medium sized enterprises (SMEs). The Macquarie Park venture café is one of only ten global locations for VCGI (other locations include Cambridge, Philadelphia among others). The VCGI along with Macquarie University provide important spaces in Macquarie Park for SMEs to focus on developing and commercialising ideas, through face-to-face informal weekly gatherings, sharing tech-ideas and building business relationships.

Additionally, the *MIT Regional Entrepreneurship Acceleration Program (REAP)* is a global initiative that engages with communities around the world to strengthen innovation-driven entrepreneurial ecosystems and transforms economies. The MIT REAP framework identifies five sectors to collaborate to achieve this vision, including Entrepreneurs, Risk Capital, Corporate, Government and University. The Macquarie Park team has stakeholders representing all five sectors who seek to transform Macquarie Park from a traditional business park to a true innovation ecosystem. The team comprises of representatives from institutions such as Macquarie University, AMP Capital, EY, Kingsway Australia, Lend Lease and National Australia Bank.

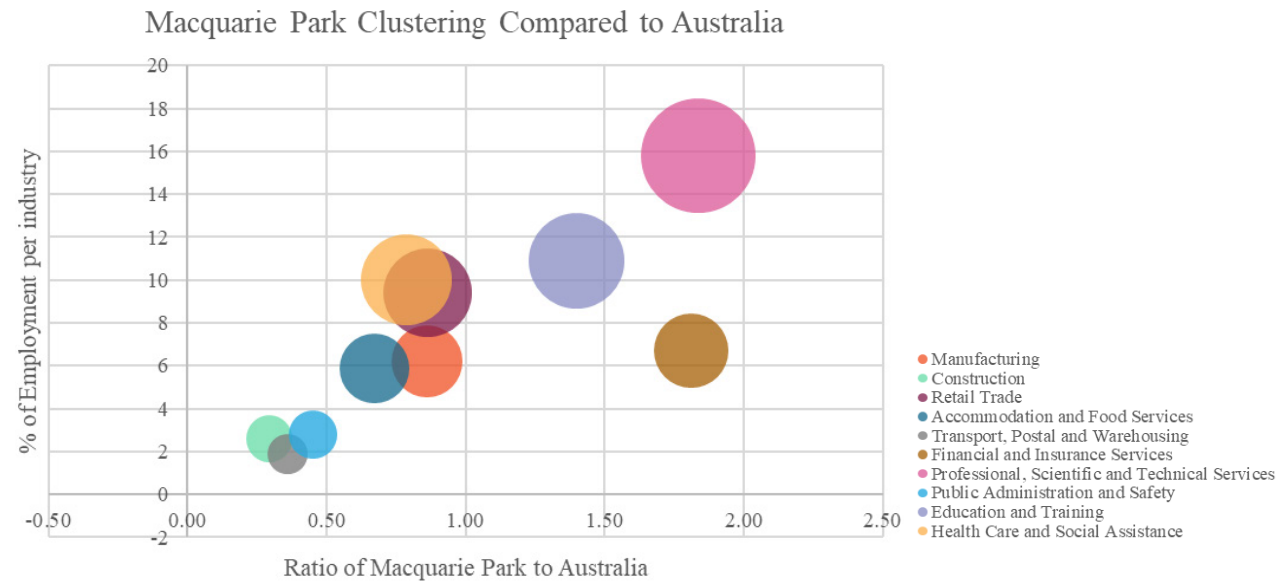


Figure 5: Industry clustering comparison – Macquarie Park compared to Australia (ABS Cat 5220.0, 2016)

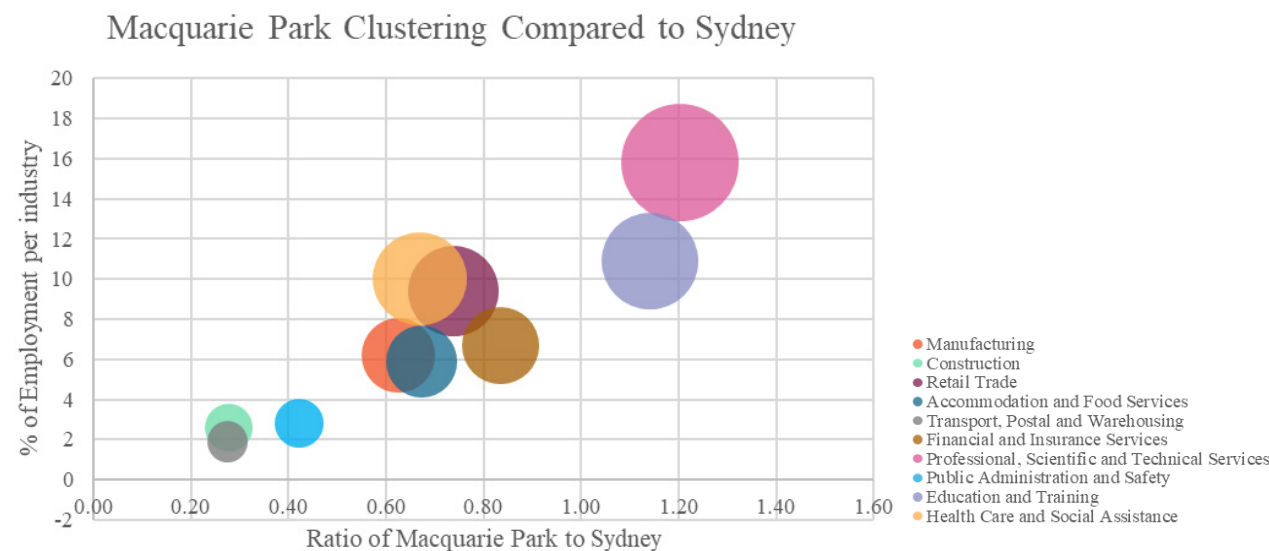


Figure 6: Industry clustering comparison – Macquarie Park compared to Sydney (ABS Cat 5220.0, 2016)



## 2.4 MACQUARIE PARK'S POSITION IN SYDNEY'S WIDER ECONOMIC GEOGRAPHY

Comparable innovation districts to Macquarie Park in Sydney include the Australian Technology Park (ATP) Development in South Eveleigh, Westmead innovation precinct, and the planned Tech Central located near the Sydney City Centre.

Macquarie Park has a higher concentration of employment in Professional, Scientific and Technical Services and Education and Training compared to the Sydney average (shown in Figure 6 on previous page). Key firms contributing to this specialisation range from medical, pharmaceutical and telecommunication firms. Relative to the other innovation focused districts in Sydney, Macquarie Park is unique in landscape, characterised by its proximity to Lane Cove National Park and its connection to Macquarie University and Macquarie University Hospital.

Macquarie Park's connectivity via the Macquarie University Station, the Sydney Metro networks, bus routes, and motorways including the M2 has enhanced its accessibility in recent years. Its proximity to the Sydney CBD and surrounding economic and physical infrastructure means it is well placed to attract major firms. Location preferences of some of tenants in Macquarie Park in the Wholesale Trade and Media sectors have to date displayed a tendency to prefer the economic base and spatial structure Macquarie Park offers. However, a key barrier to its future success relates to its low level of density and compactness, and its poor walkability to urban amenity.

Australian Technology Park and Tech Central are purpose-built innovation districts that are being designed with walkability and amenity in mind. It will be important for Macquarie Park to evolve as a place and offer the types of amenity that is present in these and other competing centres.

## 2.5 COVID-19 FUTURE TRENDS AND DRIVERS

COVID-19 presents an opportunity for the masterplan to outline current advantages in Macquarie Park, including the adaptable and affordable spaces, connections to the landscape, and continuing improvements to the local transport network. There is also opportunity for Macquarie Park to capitalise on strong relationships with tenants, particularly between academic, corporate, and government communities to aid in the recovery from COVID-19.

In a response to lockdowns and restrictions, communities have adopted social distancing and moved to working from home models. These measures have prompted profound changes to the way people move, consume, and work, changing patterns of infrastructure use. The pandemic has highlighted the need for flexibility within the masterplan to make Macquarie Park attractive for workers to return to the office on a sustained basis.

The following section examines the impact COVID-19 has had on ways of working, commercial property and mobility, which are all critical components of Macquarie Park. These changes highlight the need to re-establish and reframe Macquarie Park as a well-connected, vibrant, and amenable environment where there is critical mass of related enterprises which leverage proximity to anchor institutions like Macquarie University.

### WAYS OF WORKING

- Acceleration of digital transformation.
- Work from home is here to stay - Connect Macquarie Park survey reported 58% of people want to work from home 2-3 days a week, in contrast to pre-COVID-19 where 62% of people wanted to work from the office every day<sup>1</sup>.
- Reduced demand for public transport - Infrastructure Australia's mobility trends analysis indicate public transport usage has settled at a 'new norm' of ~60-70% as people partially returned to work and travelled more flexibly across the day<sup>2</sup>. Additionally, the Connect MacPark survey reported a 6% shift in modal preferences from train to car since the pandemic began<sup>3</sup>.

The demand for efficient, collaborative digital technology increased during COVID-19 as more workers in professional services moved to working from home. Many view the working conditions during COVID-19 lockdowns as demonstrable proof that remote working can be successful, thus accelerating the trends of digital transformation. Employees have had to quickly upskill on a variety of digital platforms, and this new fluency will likely influence future ways of working and physical workspace requirements.

There is an opportunity to maximise the utility of unoccupied and underutilised space to increase the diversity mix of offer, in the form of meanwhile uses to occupy vacant spaces or through the provision of co-working spaces for example. Many companies have embraced the hub-and-spoke model, where their workforces are distributed from a centralised location, while preserving connection and company culture. This has led to growing demand for co-working spaces which provide a "third space" for people who can't work from home, or don't want to travel back into the CBD or head office.

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1 Connect Macquarie Park and North Ryde, Finding the path forward – Measuring the impact of COVID-19 on work and travel in Macquarie Park, 2020

2 Infrastructure Australia, Infrastructure beyond COVID-19 – A national study on the impacts of the pandemic on Australia, 2020

3 Connect Macquarie Park and North Ryde, Finding the path forward – Measuring the impact of COVID-19 on work and travel in Macquarie Park, 2020

## COMMERCIAL PROPERTY

- Vacancy rates increased by 2.8% between July 2019 and July 2020<sup>1</sup>.
- Negative net tenant demand (1.6% to -1.7% between July 2019 and July 2020)<sup>2</sup>.
- Greater need for adaptable and affordable flexible spaces (i.e. co-working spaces).

Amidst economic uncertainty due the COVID-19 pandemic and government restrictions on movement, office leasing activity has declined, and vacancy rates have started to rise. Between July 2019 and July 2020, Macquarie Park recorded negative net tenant demand from 1.6% to -1.7%. According to the Property Council of Australia, vacancy rates in Macquarie Park have increased by 2.8% between July 2020 to January 2021 (from 6.8% to 9.6% respectively).

Prior to COVID-19, Macquarie Park lacked affordable and adaptive spaces, limiting the diversity of businesses it attracts. This trend has only been exacerbated by COVID-19, where the lack of diversity has made the area more susceptible to industry-specific shocks and disruptions. To improve the economic resilience of Macquarie Park, business collaboration and co-investment in the area is required.



<sup>1</sup> Property Council of Australia, 2021 Office Market Report, 2021

<sup>2</sup> Knight Frank, North Shore Office Market Report, October 2020



## 2.6 THE OPPORTUNITY FOR MACQUARIE PARK

State and local governments have articulated aspirations for Macquarie Park. The GSC has identified Macquarie Park as a strategic centre and an important employment hub. The Greater Sydney Regional Plan (GSRP) and North District Plan envisage Macquarie Park as an internationally competitive health, education, research, and innovation precinct. In 2019, the City of Ryde also developed a marketing plan to position Macquarie Park as a competitive, attractive innovation district.

Common through these aspirations is the vision of Macquarie Park as *a strong, competitive economic driver for the region, leveraging its existing assets in the innovation ecosystem*. Drawing from the presence of Macquarie University, global market leaders in high-growth industries, and increasingly well-connected location, Macquarie Park can be positioned as Sydney's emerging premier innovation district attracting and retaining top talent and industries.

Yet, a number of barriers do exist to this vision. The City of Ryde, DPIE and the GSC have been in extensive discussions with stakeholders on the future of the Macquarie Park corridor since 2016 which has unveiled some key considerations. These themes are summarised in the adjacent text box. In the next sections of this study, we define the factors for successful innovation districts and evaluate the strengths, as well as the barriers and weaknesses, of Macquarie Park to realise government's aspirations and support the critical role that Macquarie Park can play in growing the innovation economy in NSW.

### STAKEHOLDER ENGAGEMENT KEY THEMES:

- **Fractured governance structure** – One of the key barriers to implementation highlighted is the lack of coordination between Government, landowners, and end users of the facilities in Macquarie Park. There is currently multiple and fragmented ownership either of land holdings, strata lots or long-term leases which are disincentives to the realisation of the masterplan.
- **Office park perception** – There is a challenge for Macquarie Park to change the market perception from an office park of the past to a vibrant, innovation district that attracts staff and businesses.
- **Lack of quality amenity** – There is no street level activation in Macquarie Park or night-time/weekend economy, subsequently there is limited appeal for prospective tenants, particularly with younger staff who perceive Macquarie Park as 'boring'.
- **Lack of flexible spaces** – Commercial office space within Macquarie Park has been developed to accommodate large scale corporate users, with a severe lack of office spaces for SMEs which has led to competing, inferior office markets such as Chatswood and St Leonards capturing a significant amount of SME demand.
- **Poor sense of place** – A lack of identity of Macquarie Park has led to poor market appeal for major tenant users.
- **Support for mix of uses** – A range of landowners have shown support for a move towards more mixed-use zoning, including residential uses to activate the precinct off-peak. Landowners have expressed that a change in land use and the corresponding reduction in traffic will improve the economic efficiencies of the greater Macquarie Park area.
- **Congestion** – Traffic congestion is a major issue in Macquarie Park with access via the road network reaching capacity constraints. Car dependent models of growth are no longer viable or desirable.

# 3. SUCCESS FACTORS FOR MACQUARIE PARK

**With its existing strengths, Macquarie Park can play a critical role in growing the innovation economy in NSW. The innovation economy can create significant economic impact for the State.**

Companies in innovation-related sectors report that they are twice as likely to increase employment and seven times more likely to see an increase in number of export markets<sup>1</sup>. Moreover, clustering of innovation-related firms bolsters their impacts. Industry clusters see higher than average income, employment, gross value add, and export growth. In the United Kingdom, for example, clustered industries contribute 20% of total GVA with only 8% of businesses<sup>2</sup>. With NSW facing increasing global competition and economic stresses due to COVID-19, innovation-related sectors can contribute to productivity, competitiveness, and recovery.

A number of stakeholders in NSW are committed to growing innovation districts in Sydney. The NSW Government, the Greater Sydney Commission, universities, and major hospitals are supporting emerging precincts to become more competitive as drivers of economic activity and high-value jobs. In particular, the NSW Government has developed a suite of targeted actions related to the innovation economy, including its whole-of-government Innovation Strategy, Invest NSW, Jobs for NSW, A Metropolis of Three Cities, Future Transport 2056 and the NSW State Infrastructure Strategy. A range of NSW Government programs and services also support key participants within the broader innovation ecosystem, including SMEs, start-ups and entrepreneurs.

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<sup>1</sup> Australian Government, Australian Innovation System Monitor, 2020

<sup>2</sup> NSW Treasury, NSW Innovation Precincts, 2018

## 3.1 INNOVATION DISTRICT SUCCESS FACTORS

According to the Brookings Institute<sup>3</sup>, innovation districts are made up economic, physical, and network assets. Economic assets are the firms and institutions that create or support innovation. Physical assets are the buildings, spaces, streets, and infrastructure which support collaboration. Networking assets, or the relationships between organisations and people that generate and help commercialise ideas. Today, the most successful innovation districts are strong across each asset – offering a critical mass of industry and institutions; a high quality of place where people can live, work, and play; and effective governance and tools that support continual development.

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<sup>3</sup> Brookings Institute, The Rise of Innovation Districts, 2014

## Global innovation districts offer lessons for Macquarie Park on the necessary elements to foster an innovation ecosystem and spur economic growth.

### RESEARCH TRIANGLE PARK (NORTH CAROLINA, USA)

Employees: 50,000

Anchors: Duke University, North Carolina State University, University of North Carolina

Significant tenants: IBM, GlaxoSmithKline, Merck, Pfizer

The Research Triangle Park is one of the oldest and most successful science parks in the USA. Created in 1959 by state and local governments, nearby universities, and local businesses, it has contributed to tremendous economic growth in the area. However, over the years, the Park began to lose its appeal as a place for younger companies and a millennial workforce who preferred a more urban lifestyle. In response in 2014, a new masterplan was created to transform the Park dedicated exclusively to corporate research campuses to a mix of highly collaborative, amenity rich innovation nodes<sup>1</sup>.

- **Economic assets:** Anchored by three leading universities, RTP is home to more than 300 multi-national, start-up, and university-affiliated businesses across biotech, IT, professional services, and finance.
- **Physical assets:** RTP created spaces for co-location between researchers, students, and businesses – eroding divisions between research and industry<sup>2</sup>. A new master plan promises to deliver denser, mixed-use development with greater amenity offers.
- **Network assets:** The Research Triangle Foundation and Research Triangle Regional Partnership (RTRP), a business-driven, public-private partnership, have been responsible for collaboration and multiple strategies for diversifying and strengthening assets.

### KENDALL SQUARE (MASSACHUSETTS, USA)

Employees: 50,000

Anchors: MIT, Massachusetts General Hospital

Significant tenants: Google, Amazon, Microsoft, Pfizer, Novartis

Kendall Square, located on the eastern edge of MIT, is home to more than 450 start-up companies, global tech firms like Amazon, Google and Microsoft, and biotechnology companies like Pfizer, Sanofi and Novartis<sup>3</sup>. Spurred by coordinated development from MIT and private developers, rezoning changes to facilitate mixed-use uses, and strong branding and identity, Kendall Square has become a foremost biotech and IT innovation district. The area has a density of commercial research facilities, informal spaces and public realm, and nearly \$2 billion in planned investments for additional mixed-use development.

- **Economic assets:** Kendall Square is close to leading institutions like MIT, Massachusetts General Hospital, and Harvard, drawing a density of major industry corporations, start-ups, and venture capital interested in knowledge spill-over.
- **Physical assets:** There are varied informal spaces, retail offerings, and public spaces, with key players like MIT committed to shepherding additional amenities and mixed-use development in the area.
- **Network assets:** The Kendall Square Association was created to enhance brand and identity of the innovation district. Community-wide events and programming draw together students, researchers, and workers.

<sup>1</sup> Research Triangle Park, The Transformative Impact of the Research Triangle Park – A Case Study, 2018

<sup>2</sup> London Stansted Cambridge Corridor, The Triangle – North Carolina, 2016

<sup>3</sup> Budden et al, Case Study: Kendall Square, 2015

## WELLCOME GENOME CAMPUS<sup>1</sup> (CAMBRIDGESHIRE, UK)

Employees: 2,500

Anchors: Wellcome Sanger Institute, European Bioinformatics Institute

Significant tenants: BioData Innovation Centre is an incubator to businesses of all sizes focused on genomics and biodata

Wellcome Genome Campus is a global centre for science, research, and translation uses relating to genomics and biodata. The campus incorporates expanded research and business facilities, unique living environments, places for engagement and collaboration, and the accompanying social infrastructure to enable it to be one of the preeminent places of genome and bio-data research in the world. The campus is part of the planned Oxford Cambridge Arc, a cross-government partnership to leverage the existing assets to spur economic and innovation growth in the region.

- **Economic assets:** The Sanger Institute has played a pivotal role in the Human Genome Project, allowing it to act as key anchor for genomics and biodata companies.
- **Physical assets:** The campus has a number of retail, food, recreational and public space offerings, and is adjacent to a 15-acre nature reserve. A planned expansion was approved in 2020 that also enhances transportation, housing offerings, and landscaping.
- **Network assets:** More regionally, the Government has announced the development of a spatial plan and a growth body that will work with local partners to deliver the vision of the Oxford-Cambridge Arc.

## QUEEN ELIZABETH OLYMPIC PARK (LONDON, UK)

Employees: 40,000

Anchors: Loughborough University, University College London, UAL London College of Fashion, Staffordshire University London, Cancer Research UK, Plexal

Significant tenants: Ford Mobility, Sports Interactive, Hobs Studio, UCL Robotics Lab

Queen Elizabeth Olympic Park (QEOP) is located in East London and situated adjacent to the Stratford City Development. QEOP has close ties to the near-by cluster of technology and software companies within East London Tech City and is home to globally recognised educational institutions and nationally significant sporting venues. QEOP is building on its growing networks of knowledge-producers in the area including the University College of London (UCL), Loughborough University and UAL's London College of Fashion, enhancing collaboration through its co-working space schemes found in innovation centres such as Plexal and hopes to secure investment with a plan to deliver 33,000 homes by 2036 and 40,000 jobs by 2025<sup>2</sup>.

- **Economic assets:** QEOP has generated 1.5 billion pounds to the local economy of East Bank and campuses of leading institutions including UCL, Loughborough University and Staffordshire University have supported research, innovation and knowledge transfer in the region<sup>3</sup>. East London Tech City is home to globally renowned software firms including Amazon, Facebook and Google and have developed ties between its enterprises and education institutions in QEOP, the technology cluster has a designated accelerator space for spin out companies in QEOP further improving the concertation of its technology cluster and the opportunity for economic growth it offers.
- **Physical assets:** Co-working and open spaces aimed to enhance innovation and collaboration in QEOP with institutions including the innovation centre and coworking space offered by 'Plexal' and 'The Trampery' which utilises open space to provide low-cost studios for local creative businesses<sup>4</sup>. QEOP is also home to key sporting venues including the London Stadium and the London Aquatic Centre.
- **Network assets:** Collaborative programs aimed to encourage inclusive growth include the place-based network 'Echo' which stimulates the exchange of skills, knowledge and opportunities and East Works who provide a socio-economic programme enabling like-minded businesses to collaborate and connect with university, education and skills providers<sup>5</sup>.

<sup>2</sup> Mayor of London, Queen Elizabeth Olympic Park Key Facts, 2020

<sup>3</sup> Mayor of London, Queen Elizabeth Olympic Park Key Facts, 2020







<sup>4</sup> Here East, Here East: whos here, 2021

<sup>5</sup> Arup, UK Innovation Districts and knowledge Quarters: Driving more Productive Growth, 2018

<sup>1</sup> Wellcome Genome Campus, Science and Innovation, 2021

Drawing from the framework developed by the Brookings Institute, along with findings from precedent districts, the following elements in Table 2 lays out the success factors for Macquarie Park as an innovation district:

Table 2: Innovation district success factors (Source: Arup, 2021)

INNOVATION DISTRICT SUCCESS FACTORS		FACTOR FOR SUCCESS
	<b>Talent &amp; Technology</b>	Emphasis on genuinely <i>world class research</i> capabilities – and a clear <i>sector focus</i> , whilst retaining flexibility
	Pursue talent and technology, through initiatives to attract, retain and develop talented and skilled people.	Advanced <i>digital infrastructure</i>
	<b>Inclusive Growth</b>	Structured programme of <i>events and collaboration</i>
	Promote inclusive growth, through neighbourhood regeneration, increasing labour market participation, and stimulating local entrepreneurship.	Concerted approach to <i>promoting entrepreneurship</i> in collaboration with universities and other anchor institutions
	<b>Leadership</b>	Strong, consistent senior <i>leadership</i> , supported by a high calibre <i>dedicated team</i>
	Build a collaborative leadership network, bring together the decision-makers and leaders from the organisations and sectors to cooperate formally on the design, delivery, investment, and promotion of the district.	Clear links and <i>identification of roles</i> across the Innovation District
		Good local, regional, and international <i>networks</i> to further develop the district.
		Clear <i>planning policy</i> framework
		<i>Public-private sector collaboration</i> to build the right type of business space
	<b>Vision</b>	<i>Clear vision</i> and plan that can <i>be flexible</i> over time
	Set a vision for growth, based on understanding competitive advantage, setting out how institutions can work together, and re-imagine the physical landscape, buildings and infrastructure.	Effective <i>branding and identity</i>
	<b>Access to Capital</b>	<i>Prioritisation</i> of the Innovation District for investment and policy
	Ensure access to capital, by leveraging public and private sector sources of funding to support the growth of innovation districts.	<i>Structures and networks</i> in place to widen access to venture <i>capital</i> / angel investment
		Structured approaches to <i>supporting business growth</i> and inward investment in Innovation District
	<b>Quality of Place</b>	Substantial <i>investment</i> needed in infrastructure and place-shaping
	Create quality of place, with a diverse offer and amenities that can incentivise people to spend time and socialise, building a sense of community to inspire innovation.	<i>Flexible and agile spaces</i> to attract a diverse range of organisations and support a thriving eco-system and business environment



# 4. MACQUARIE PARK AS AN INNOVATION DISTRICT

Against the framework for a successful innovation district as described in Section 3.1, Macquarie Park was assessed to determine its strengths and weaknesses, uncovering opportunities that can be built upon and gaps to be addressed.

Macquarie Park already has many key ingredients of a successful innovation district, with significant talent base from existing industries and anchor institutions such as Macquarie University, CSIRO, MPID, and Macquarie University Hospital, natural landscape and growing mix of uses, and emerging public and industry partnerships. However, like many legacy business parks, Macquarie Park faces a number of challenges. Lack of diverse office space offerings restricts the attraction of firms (particularly SMEs), limited residential and retail diminish quality of place, and absence of concrete roles and authorities, particularly around funding, detracts from the setting and implementation of a powerful, coherent vision.

## 4.1 TALENT AND TECHNOLOGY



For Macquarie Park to become a successful innovation district and economic driver, it will need to attract, retain and develop talent. Already, Macquarie Park is a major employment cluster. With 58,000 jobs and 1,800 businesses,<sup>1</sup> it is the second largest employment hub in the North District of Greater Sydney. By leveraging its existing anchors, committed major employers, and embedded pipeline of talent, Macquarie Park can ensure a thriving ecosystem of collaboration and innovation.

### STRENGTHS

- **Macquarie Park is home to strong industry clusters in knowledge intensive sectors and has seen consistent growth.** Macquarie Park has significant presence of pharmaceutical (19%), high tech, computing and technology (25%), electronics (20%) and telecommunication (7%) businesses, with employers such as Johnson & Johnson, Microsoft, Sony, Optus, Cochlear and Foxtel<sup>2</sup> attracting highly skilled workers (Figure 7). New businesses continue to move into the area, helping to forge a strong brand for the area as a place to invest and do business. In particular, the number of firms in professional, scientific, and technical services have increased between 2009 and 2016, growing a net 70 firms<sup>3</sup>.

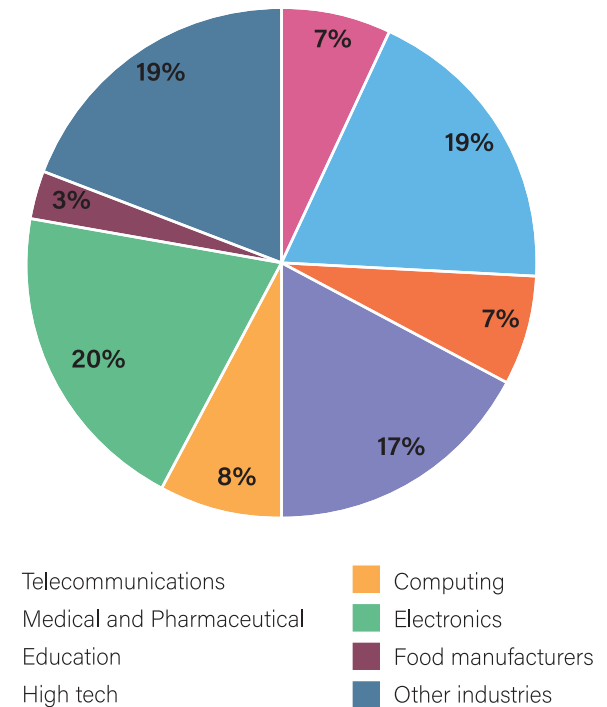


Figure 7: Percentage of companies per sector amongst largest firms (Source: City of Ryde, Macquarie Park Investment Prospectus, 2015)

<sup>1</sup> Greater Sydney Commission, North District Plan, 2018

<sup>2</sup> Australian Bureau of Statistics, Business by Industry, 2015

<sup>3</sup> City of Ryde, Macquarie Park Investment Prospectus, 2015

- **Macquarie Park has access to a large, qualified labour pool.** The Eastern Economic Corridor contains close to one-third of Greater Sydney's jobs. Being part of this corridor provides Macquarie Park firms with proximity to skilled workers and firms, who can make use of nearby motorways, rail, and airport infrastructure. Macquarie Park residents are more educated (48% hold a bachelors or higher) compared to the City of Ryde (39%)<sup>1</sup>, with the majority of workers within Macquarie Park living in surrounding suburbs, including Eastwood, North Ryde, North Epping and Pennant Hills.
- **There is a strong talent pipeline embedded naturally within Macquarie Park.** Macquarie Park benefits from the presence of Macquarie University, with more than 45,000 students and 3,000 staff in the area<sup>2</sup>. Each year, more than 9,300 graduates enter the job market. In 2016, about 20% of students were pursuing a course in engineering and related technologies, health, IT, and natural and physical sciences, all disciplines associated with Macquarie Park's sectoral specialisation<sup>3</sup>. The University also has a long history in establishing partnerships with businesses in the Macquarie Park district. For example, the University formed a partnership with Cochlear, which allowed Cochlear to gain access to onsite research academics, and Macquarie University in return was able to increase its research funding income due to the ongoing partnership. Additionally, the University in 2016 formed a partnership known as the Optus Macquarie University Cyber Security Hub which allowed Optus to conduct cross-cutting research with academics across multiple disciplines including computing, engineering, business, criminology, law and psychology, to tackle cyber security issues<sup>4</sup>. Leveraging access to the University will be key to maintaining a strong pipeline in Macquarie Park.

1 Australian Bureau of Statistics, Census of Population and Housing, 2016

2 Macquarie University, Annual Report, 2016

3 Macquarie University, Annual Report, 2016

4 City of Ryde, Macquarie Park Marketing Plan 2019-2023, 2019

- **There are a number of strong innovation cultivators and anchors.** Institutions such as Macquarie University, the Hospital and Macquarie University Incubator, currently support the growth of individuals, firms and their ideas.

## WEAKNESSES:

- **A wider diversity of sectors can add economic resilience.** Workers by industry are largely comprised of telecommunications (30%), medical and pharmaceuticals (20%) as well as electronics (12%), high tech (11%) and computing (11%). A stronger mix of sectors could ensure there is no susceptibility of Macquarie Park to industry specific shocks and stresses<sup>5</sup>.
- **Macquarie Park is home to fewer small and medium sized enterprises.** Compared to Greater Sydney and Australia as a whole, there is a smaller share of SMEs in Macquarie Park (Figure 8). Given the role that SMEs play in growing jobs (small businesses accounted for just under 60 per cent of total employment growth in the private sector nationally between 2013 and 2018)<sup>6</sup>, their importance in the evolution of innovation districts and growth of key industries (including Medtech, health and biomedical sciences), Macquarie Park would benefit from added diversity in scale of firms. As previously noted, a potential barrier to location and growth in SMEs at Macquarie Park is the lack of flexible, affordable commercial space.

5 Arup Analysis, 2011 and 2016 ABS Place of Work Data

6 Commonwealth Government, Small Business Sector Contribution to the Australian Economy, 2020

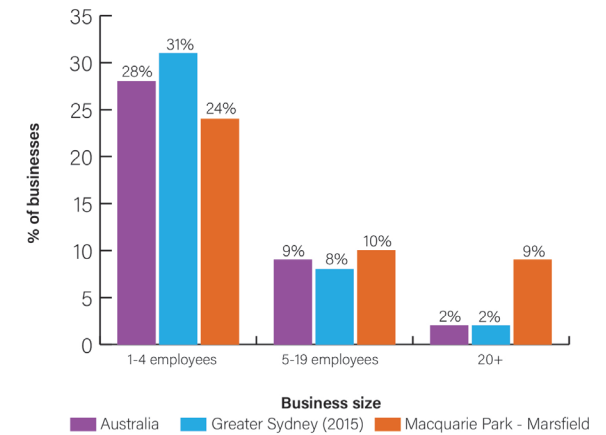


Figure 8: Business size in Australia, Greater Sydney and Macquarie Park, excluding non-employing firms (Source: ABS, 2015)

## KEY CONSIDERATIONS:

- Macquarie Park should leverage its existing innovation assets, including presence of education and health anchor institutions and a growing knowledge intensive industry base, to further facilitate formal and informal collaboration through programming, physical spaces, and greater digital connectivity.
- Macquarie Park should focus on attracting a diversity of firms and talent to bolster economic resilience and spur economic growth, through developing the types of spaces, amenities, and quality of life needs workers in growing industries seek.

### EXPERIENCES IN GLOBAL INNOVATION DISTRICTS:

In Kendall Square, MIT and Cambridge Innovation Center provide affordable spaces and flexible terms for incubators, allowing thousands of start-ups in bioscience and life sciences to co-exist with major science corporation and research institutions. These firms are able to access mentorship, start-up capital, event programming, and various types of office space that encourage their growth.

## 4.2 INCLUSIVE GROWTH



Macquarie Park will need to intentionally support a diversity of people, provide broad economic opportunity and connect nearby communities to its growth. With an international resident base and growing numbers of young people in the area, there is potential for Macquarie Park to create more inclusive programming to connect and expand industry opportunities.

## STRENGTHS:

- **Macquarie Park is home to a global resident base.** The proportion of Australian citizens is much lower in Macquarie Park (52%) compared to the City of Ryde (74%) and the Greater Sydney (79%), indicating the strong international and cosmopolite dimension of Macquarie Park<sup>1</sup>.
- **There is opportunity to engage a growing and young population base.** The age structure of the local population reveals that Macquarie Park benefits from a young population. In 2016, 65% of the population were between the ages of 15 and 39, with the largest age group being 20 to 24-year olds<sup>2</sup>. The growth from 2011 in this age group shows that the population eligible to work is growing locally, which is a positive trend for the local economy. The younger population in Macquarie Park and Ryde is likely to remain high, with Ryde projected to have the highest growth in young population within Sydney's North District until 2036.

## WEAKNESSES:

- **Affordability poses a barrier to increasing employment diversity in Macquarie Park.** A larger proportion (21%) of residents who rent are in mortgage stress, with rent greater than 30% of household income, compared to the NSW average of 13%<sup>3</sup>. This points to an affordability risk for those not working in high-paying sectors. Housing affordability also threatens ability to attract skilled workers, as well as pose difficulties for support staff in advanced industries to live near their place of work.

1 Australian Bureau of Statistics, Census of Population and Housing, 2016  
2 Australian Bureau of Statistics, Census of Population and Housing, 2016  
3 ABS, Quick Stat – Macquarie Park – Marsfield, 2016

- **There is a lack of diversity in occupation.** Professionals account for 42.1% of residents in Macquarie Park, with less Managers and Clerical and Administrative Workers in Macquarie Park compared to the City of Ryde and Greater Sydney<sup>4</sup>.

## KEY CONSIDERATIONS:

- With an international, young, and growing population base, Macquarie Park has opportunities to build additional bridges to industry, including expanding entrepreneurship opportunities and developing pipelines with local communities.
- Macquarie Park should ensure the provision of a diverse set of commercial and residential spaces that can support many levels of affordability, allowing attraction and retention of workers, firms, and reside that may not be able to pay market rents.

### EXPERIENCES IN GLOBAL INNOVATION DISTRICTS:

In Kendall Square, there are a number of public and non-profit initiatives that facilitate connections between the innovation economy with the greater community, from supporting workforce development to providing affordable office spaces. For example, the national non-profit Per Scholas provides free, hands-on training, career development, and job placement support in the innovation economy for students of the Greater Boston area. Per Scholas operates out of the Link, a space created by the Cambridge Redevelopment Authority specifically to serve as a connector between the innovation ecosystem and underrepresented job seekers.

4 Australian Bureau of Statistics, Census of Population and Housing, 2016

## 4.3 LEADERSHIP



### STRENGTHS:

- **Combined government private sector leadership.** City of Ryde efforts to position and promote Macquarie Park as an innovation district are supported by private sector efforts by the likes of MPID, who are driving linkages between industry (for example through the Macquarie Park Innovation Summit Series) as well as connecting internationally with other innovation districts (for example through the MIT REAP).

### WEAKNESSES:

- **Unclear leadership model.** There are various institutions involved in setting the area objectives including City of Ryde, MPID and NSW State Government. While there is collective agreement as to the innovation focus of Macquarie Park, the individual roles, and responsibilities for each stakeholder on delivery has not clearly defined.

### KEY CONSIDERATIONS:

- **Fractured Governance model needs to be addressed.** Macquarie Park needs consistent senior leadership with more clearly defined roles for each key stakeholder. Leadership is not only necessary to sustain government and council electoral cycles but also to provide coordinated and collaborative vision for Macquarie Park's future.
- **Government and private stakeholders need to further invest in developing the non-physical networks within and outside of Macquarie Park.** Work could be undertaken to better link Macquarie Park with other employment areas suitable for technology driven high growth firms, and which can provide grow-on space. Macquarie Park could provide a focus for promoting innovation across Sydney.

### EXPERIENCES IN GLOBAL INNOVATION DISTRICTS:

RTP is governed by the Research Triangle Foundation, with board representation from the anchor universities, the public sector, and major corporate players. RTF is responsible fostering cooperation between universities and industry partners and creating economic impact for the region. Moreover, RTRP, a public-private-partnership dedicated to the regional economic development around RTP, has brought together 12 economic development agencies and partners to focus on marketing and economic growth of the wider area.

Regionally to the Wellcome Genome Campus, the Government has announced plans for the creation of the Oxford-Cambridge Arc. As an initial step, a growth body will be launched to provide economic leadership and work with local partners. The inclusion of the leadership body as a first step demonstrates the importance of consistent senior leadership in driving forth a vision.

## 4.4 VISION



### STRENGTHS:

- **Recognised as a strategic employment centre by NSW Government.** The state government recognise Macquarie Park as a key health and education precinct. There are several government stakeholders currently collaborating to strengthen the areas planning including City of Ryde, MPID and NSW State Government.
- **Branding of Macquarie Park as an innovation district.** Some branding and marketing efforts are being led by the City of Ryde to promote the area and attract inward investment through the production of fact sheets and other soft marketing materials.

### WEAKNESSES:

- **There is no agreed vision for Macquarie Park.** The vision and objectives for Macquarie Park as an innovation district have not been established. The masterplan will support the Macquarie Park story and convey a sense of place but to be a successful innovation district there needs to be a vision that sets out the must win battles along with concise, attainable objectives.

### KEY CONSIDERATIONS:

- **NSW Government should set a multi-agency vision (DPI, GSC and MPID) for growth based on understanding of Macquarie Parks competitive advantage and setting out how institutions can work together to deliver on key objectives / and actions.** The vision should set out Macquarie Park as distinct from other employment centres (such as Tech Central) emphasising its unique identify as a health and science focused employment area.

- To accelerate the innovation district, the marketing plan needs to be based on a collective district vision for the area. The development of clear goals agreed across government with task-driven timelines will ensure marketing efforts are targeted.

#### EXPERIENCES IN GLOBAL INNOVATION DISTRICTS:

In RTP, the public-private entity RTRP has developed a number of economic development strategies and plans to set the vision for the growth of RTP. In 2009, Kendall Square Association was founded for the express purpose of strengthening the brand and identity of the innovation district.

## 4.5 ACCESS TO CAPITAL



#### STRENGTHS:

- **Emerging structures and networks in place to widen access to venture capital / angel investment driven by Macquarie University and MPID.** The Macquarie University Incubator and collaboration hubs have a platform in establishing Macquarie Park as an innovation district. MPID also participated in the MIT Regional Entrepreneurship Acceleration Program (MIT REAP) which is a program targeted at accelerating innovation activities including access to capital.
- **Structured approaches to supporting business growth and inward investment in Innovation District driven by the MPID and the City of Ryde.** Collaborative spaces, start up support programs and industry summits are all important ways to steward the innovation network.

#### WEAKNESSES:

- **There needs to be greater emphasis on growing the scale and depth of capital in Macquarie Park.** MPID contains a strong research base via Macquarie University and a wide range of multinationals focused on research and engineering areas. The Macquarie University incubator is an important asset, but it is one of the smaller incubators in Sydney. More start-up and scale-up presence is needed to leverage the existing assets of MPID to accelerate innovation.
- **The place-based infrastructure needs to evolve and requires ongoing funding.** NSW Government / or MPID could consider fiscal mechanisms to capture local increases in development values and local taxes to provide a revenue stream to reinvest in infrastructure within Macquarie Park.
- **Networks to support business growth** – support and build the public-private sector collaboration to build the right type of business space supporting business growth, particularly from SMEs.

#### KEY CONSIDERATIONS:

- **To realise the vision of Macquarie Park as an innovation district, there needs to be a greater emphasis on growing the scale and depth of capital in Macquarie Park.** A focus should be on leveraging the existing assets of MPID and encourage more start-up and scale-up presence to accelerate innovation.
- **NSW Government should provide ongoing funding to invest in place-based infrastructure,** improving the public realm to position Macquarie Park's appeal, as an attractive and desirable place to live, work and play.

#### EXPERIENCES IN GLOBAL INNOVATION DISTRICTS:

A large presence of venture capital in Kendall Square has successfully facilitated commercialisation of ideas and become a key component of the innovation ecosystem, making Massachusetts the third highest state for venture capital funding. Local stakeholders have played significant roles in scaling up access to funding, with institutions like Cambridge Innovation Center having raised over \$1.4 billion in capital for start-ups in its incubation.



## 4.6 QUALITY OF PLACE



A fundamental distinction of innovation districts is the role of the physical realm in advancing the innovation ecosystem. Connectivity, proximity, and vibrant, inclusive public spaces enable formal and informal idea exchanges and collaboration. While there are seeds of high quality of place at Macquarie Park, including its unique positioning adjacent to Lane Cove National Park, more is needed to transform a legacy business park with little emphasis on amenities to an integrated innovation district as an attractive place for work, life and play.

### STRENGTHS:

- **Macquarie Park is seeing a growing mix of uses, opening the door to becoming a 24/7 neighbourhood.** Between 2011 and 2016, the residential population has grown by 27%, representing 1,950 more people coming to live in the area<sup>1</sup>. As of 2016, there were 9,000 residents in Macquarie Park. The residential population is growing particularly in the younger adult population (as evident by changes in age structure of approximately 1,400 people in the 20-34 age group between 2011 and 2016)<sup>2</sup>.

- **Additional transportation capacity will bring increased connectivity.** The Sydney Metro City and Southwest projects are forecasted to increase the capacity of the Sydney Metro Northwest line travelling through Macquarie University, Macquarie Park and North Ryde stations by approximately 7,000 people per hour by 2041<sup>3</sup>. Research from the Brookings Institute suggests that demands of the individual and their employer for access to valued places deeply influences the physical dimensions of urban areas, from commuting routes and locations of housing to environmental quality.
- **Macquarie Park has unique access to the natural landscape.** Residents, workers and students in Macquarie Park benefit from their proximity to Lane Cove National Park and natural settings within the Macquarie University campus. This is a major point of difference in Macquarie Park relative to other employment centres in Sydney such as Paramatta where its connection to Sydney Olympic Park is only accessible by a 15-minute journey from the Paramatta CBD. Better connections to Lane Cove National Park could create a major draw for Macquarie Park.

### WEAKNESSES:

- **There is lack of flexible and affordable space to cater to the full array of innovation sector firms.** Commercial office spaces within Macquarie Park has been developed to accommodate large scale corporate users, with a severe lack of affordable space for SMEs. This has led to competing inferior office markets such as Chatswood and St Leonards capturing a significant amount of SME demand. This is important to consider as different stages of an innovation process require equally different modes of operation with multiple arrangements of workspaces<sup>4</sup>.

- **Lack of density.** Innovation districts thrive on high-density networks of knowledge workers and entrepreneurs, whose collaboration and knowledge sharing advance innovative ideas, attracting strategic partners to the area. Macquarie Park suffers from a perception of being a 'boring' place to work which impacts both attraction and retention of workers. Whilst some organisations within Macquarie Park seek the 'campus' style layout, the low-density physical layout is currently not dense enough for close concentrations of people, with the precinct lacking in energy and a buzz from low footfall. Finer grain layouts (and smaller block sizes) would be conducive to different mixes of uses enabling people to explore Macquarie Park during the day and at night after-work.
- **Absence of amenities and identity limits attractiveness for workers and residents.** There is a lack of leisure spaces, experimental and temporary sites that can create casual interactions and collaboration. One of the only major visitor attractors to Macquarie Park is the retail offering at Macquarie Centre on Herring Road. Though, the Macquarie Centre cluster for retail and food and beverage is not centrally located within Macquarie Park and can be up to a 35-minute walk with steep topography for workers located near North Ryde station. Lane Cove Road (Figure 9) is another example of a food and beverage shopping strip – however the strip lacks diversity beyond fast-food.



Figure 9: Food and beverage strip on Lane Cove Road. Source: Google, 2021

1 Profile ID, Macquarie Park: Community Profile, 2020

2 Profile ID, Macquarie Park: Community Profile, 2020

3 Arup, Macquarie Park: Strategic Infrastructure and Services Assessment Transport Report, 2020

4 Thnk, The importance of an excelled workspace, 2014

Along with insufficient food and beverage options throughout Macquarie Park, there is a need for a more diverse offer to retain workers in Macquarie Park out of working hours and position Macquarie Park as a desirable place to work, live and study. Moreover, large campus style organisations can prohibit interaction between businesses. Despite MPID efforts to encourage collaboration between tenants, the physical layout and distance between organisations is less than ideal.

- **Poor transportation options and road congestion make Macquarie Park an auto-centric environment.** Local car congestion is significant and a growing problem, with long delays and journey times during peak periods. Based on 2011 JTW data, 43,000 work trips are made daily to Macquarie Park. Approximately 75% of people travel to work by car, with average an average of 1.05 people per vehicle, compared to 1.5 for Sydney as a whole. There is a lack of infrastructure supporting active travel such as cycling routes, with low walkability levels<sup>1</sup>.
- **Current Planning zones and controls.** The dominant planning zones within the Strategic Investigation Area is commercial including B3 (Commercial Core) and B7 (Business Park) zones. These zones currently do not encourage mixed-use as compared to B4 (Mixed Use) which has a residential development component, which forms an important element in revitalisation and sustaining the area in close proximity to Commercial Cores and major transport routes. Mixed-use zones are vitally important to enabling activity, particularly on weekends.

## KEY CONSIDERATIONS:

- With large-format, low-density commercial spaces, Macquarie Park lacks the vibrant public realm, retail and dining, and amenities to attract workers (and firms) and residents. There is evidence globally that development set alongside quality public space and cultural amenity could generate higher values than development which continues in a 'business as usual' approach.
- Commercial space that is flexible and affordable can attract fast-growing small to medium enterprises (SMEs). Investment into SMEs at Macquarie Park could see an important uplift in job creation, as there is currently a lower proportion of smaller businesses in Macquarie Park (29%) compared to NSW (36%).
- There are opportunities for Macquarie Park to leverage its unique positioning near Lane Cove National Park as a competitive advantage. With enhanced connectivity, Macquarie Park can stand out as a singular place that connects industry with natural landscape.

## EXPERIENCES IN GLOBAL INNOVATION DISTRICTS:

To respond to the shifting needs of modern workers, RTP's Centennial Campus created a masterplan and activation strategy to move away from large format, inward-looking commercial buildings to vibrant retail, public space, programming, and mixed-use development. GoTriangle, the public transit authority, has plans for light-rail to enhance connectivity. In Kendall Square, MIT is investing over \$1 billion in the Kendall Square Initiative, a series of placemaking measures and mixed-use development, including additional 1.8 million square feet in housing and office space. Over the years, there has also been continued streetscape improvements, public space development, and support for food trucks, public art, and street programming.

<sup>1</sup> ABS, Journey to Work, 2011

# 5. RECOMMENDATIONS

**Macquarie Park can play a critical role in growing the innovation economy and have a significant economic impact for NSW. This section recommends actions that can be taken to leverage Macquarie Park's strengths and build upon the existing economic, physical, and network assets to offer critical mass of industry and institutions; a high quality of place where people can live, work, and play; and effective governance and tools that support continual development.**

These recommendations have been informed by baseline economic conditions established in the Economic Baseline Analysis Report (Appendix E) and as summarised in this report; stakeholder consultation; as well as assessment against key success factors of innovation districts, as described by Brookings Institute and applied to the Macquarie Park context.

These actions will feed into the development of the Macquarie Park masterplan, and as such, a greater emphasis was focused on developing actions related to the place-based element of innovation districts, 'Quality of Place'. The recommendations relating the additional elements will need to be addressed to realise the key objectives of the masterplan and to drive the continued development of an innovation district in Macquarie Park. Recommended timing of actions include:

- Short-term early wins (within the next 5 years);
- Medium term (within 6-10 years); and
- Long term (10 years and beyond).

The realisation of Macquarie Park as an innovation district will require a tailored governance approach, where the successful delivery of the masterplan and associated actions will only be achieved through coordinated area development with dedicated leadership across the public sector (GSC, DPIE, TfNSW, Invest NSW), community (Indigenous Governance Committee), third sector (MPID) and private sector. The Ryde Coordination Group (RCG) has also been created which has enabled cross government coordination and collaboration with local councils, community, Macquarie University, and private sector to ensure that, while securing the economic vitality of the area, its 'quality of place' and amenity are improved and that the mix of uses and place-making objectives in the Macquarie Park masterplan are achieved.

To deliver these actions in the following section, we assume that NSW Government would need to provide some level of funding.



## 5.1 TALENT AND TECHNOLOGY



**Objective 1: Support skills development to build resilience to external change (i.e. economic change, technological advances), with a focus on cutting-edge technologies and digital infrastructure.**

ACTION	IMPORTANCE AND ALIGNMENT	RESPONSIBILITIES	TIMEFRAME
Action 1.1: Invest in digital infrastructure and technology across Macquarie Park to create a high-quality platform for innovative firms and strengthen its networking assets	<p>NSW Government should investigate ways to lower network costs, expand superfast access to SMEs in Macquarie Park.</p> <p>Key to Macquarie Parks 'brand' is science and technology. Given the specialisation of digital and science in Macquarie Park, quality physical and digital infrastructure is essential. Providing fast, reliable, and high bandwidth digital infrastructure and access to advanced technology and equipment will support innovation activities.</p>	NSW Government and City of Ryde	Medium term
Action 1.2: Develop a purpose-built building in a strategic location within the commercial core which provides curated, affordable and agile office space for new and innovative enterprises	<p>Incubators and start up or scale up space plays an important role in creating a thriving eco-system and business environment.</p> <p>The creation of a multi-use building that provides an entry level flexible space for new enterprises could help to attract SMEs. Attraction of a well-established co-working space provider, such as WeWork or Hub Australia, could help to attract and support a diverse array of businesses across industries.</p>	DPIE, City of Ryde, INSW, Investment NSW	Medium term catalyst project

## 5.2 INCLUSIVE GROWTH



**Objective 2: Foster a strong collaborative relationship between government, local community, industry and investors to expand and broaden opportunities for a diverse range of people to work, live and play in Macquarie Park.**

ACTION	IMPORTANCE AND ALIGNMENT	RESPONSIBILITIES	TIMEFRAME
Action 2.1: Promote entrepreneurship and provide opportunities for SMEs to increase their exposure to anchor institutions in Macquarie Park	<p>The NSW Government or Council could provide further training, mentorship, advisory support and grants to entrepreneurs in a broader range of targeted sectors to grow and scale SMEs (arts, digital, advanced manufacturing).</p> <p>The Incubator currently run several training programs, clinics and events, and offer hot desks for temporary uses and co-working desks for start-ups and entrepreneurs, funded by the Boosting Business Innovation Program. There is an opportunity for deeper research-industry collaboration in the future by expanding the scope of this program.</p>	<p>The role here could be for the MPID as a facilitator or joint venture collaborator with local firms. This could increase the chances of success for resident SME and entrepreneurs and keep bigger tenants engaged.</p> <p>Procurement supply chains – work with major employers to ‘buy local’ which means sourcing services and products from SMEs within Macquarie Park where available.</p>	Short term
Action 2.2: Engage the private sector actively in events and programme development	Develop a structured programme and events to encourage collaboration and actively engage the private sector.	MPID	Short term / to be scaled up over the medium term

## 5.3 LEADERSHIP



**Objective 3: Develop a strong, consistent senior leadership team with clearly defined roles, to provide a coordinated and collaborative vision for Macquarie Park's future.**

ACTION	IMPORTANCE AND ALIGNMENT	RESPONSIBILITIES	TIMEFRAME
Action 3.1: Develop a high calibre dedicated team	<p>Develop a strong, consistent senior leadership, supported by a high calibre dedicated team to bring together decision-makers and leaders from anchor organisations and sectors to cooperate formally on the design, delivery, investment and promotion of Macquarie Park.</p> <p>This should involve MPID and members from the MIT REAP Team, and be a fully resourced and funded team with an identified leader / champion for investment attraction, branding, programming and curation of the development and evolution of 'place', including coordination with investment in the urban realm.</p>	MPID, MIT REAP Team, DPIE, GSC, City of Ryde, Investment NSW and others	Short term
Action 3.2: Develop a clear, governance structure	The realisation of an innovation district in Macquarie Park will require a tailored governance approach, where the successful delivery of the masterplan and associated actions will only be achieved through coordinated area development with dedicated actors from the public sector (GSC, DPIE, TfNSW), community (Indigenous Governance Committee), third sector (MPID) and private sectors working together.	State Government (GSC)	Short term
Action 3.3: Promote outwards links (leveraging the Hearing Hub and medical research facilities) including local, regional and international networks to further develop Macquarie Park	The MPID, Macquarie University Incubator and the Macquarie Hospital are working with private sector bringing benefits to all parties but in disjointed ways. There is a need to further build visibility and drive opportunities for collaborative work with organisations outside of Macquarie Park.	The MPID should be expanded to promote, attract and secure more of these partnerships in a targeted way. This could involve establishing a governance structure and decision-making board focusing on engagement.	Short term / to be scaled up over medium term when the innovation district vision is clearly defined

## 5.4 VISION



**Objective 4: Develop a cohesive, clear vision for Macquarie Park outlining a unique value proposition to support both inward and outward investment.**

ACTION	IMPORTANCE AND ALIGNMENT	RESPONSIBILITIES	TIMEFRAME
Action 4.1: Develop a clear vision	Macquarie Park could benefit from a clear, well-defined vision for the future. There is an opportunity to work with key stakeholders to develop a clear vision and plan that can be flexible over time. This should also consider the future prime economic role and direction for Macquarie Park, drawing upon existing visions as developed by the City of Ryde. <sup>1</sup>	DPIE, GSC, City of Ryde	Short term
Action 4.2: Promote innovation outwards, including using Macquarie Park as a test bed to promote innovation and trial of new technologies	Develop an innovation strategy and brand that connects with Sydney's innovation activities and the wider national strategy. Provide an increased number of incubator spaces, flexible workspaces and advertising opportunities to interested parties from all industries: business, technology, arts, culture and science. This could involve using Macquarie Park as a test bed to promote innovation and trial of new technologies.	Private sector, RCG, MPID, City of Ryde, Investment NSW	Short to medium term

<sup>1</sup> The City of Ryde has developed a tailored vision for Macquarie Park (4.2.1 Vision) that "Macquarie Park will mature into a premium location for globally competitive business with strong links to the university and research institutions. It will become a vibrant, accessible CBD that balances work, recreation and entertainment. Macquarie Park will be characterised by a high-quality, well-designed, safe and liveable environment that reflects the natural setting, with three accessible and vibrant train station areas providing focal points. Housing will be focused in the Urban Activation Precincts (North Ryde Station Precinct and Macquarie University Station Precinct) providing opportunities for people to live and work in the area with supporting services and events that will bring vibrancy to the area beyond office hours" – City of Ryde, Local Strategic Planning Statement, 2014

## 5.5 ACCESS TO CAPITAL



**Objective 5: Focus on growing the scale and depth of capital in Macquarie Park.**

ACTION	IMPORTANCE AND ALIGNMENT	RESPONSIBILITIES	TIMEFRAME
Action 5.1: Support business growth and inward investment through the provision of incentives to create live/work opportunities for entrepreneurs	<p>Possible programs could include a Live/work residency program where people working in an innovation or arts field are provided a 18-month affordable apartment lease within areas of Macquarie Park.</p> <p>This would be similar to the City of Sydney live/work program in Waterloo for example, where people working in a creative field can apply for an 18-month lease for \$200 per week in a 1-bedroom apartment. Encouraging creative industries into the precinct could also help to stimulate off-peak activity such as arts markets on weekends.</p>	State Government (DPIE), Create NSW, GSC, Ryde Coordination Group, City of Ryde	Medium term / investigations to commence in the short term
Action 5.2: Develop funding strategy for investments within Macquarie Park	Explore funding options to deliver place-based and non place-based interventions within Macquarie Park. Include exploration of value capture mechanisms. This could be in the form of special infrastructure contributions or other infrastructure funding mechanisms.	DPIE, TfNSW, City of Ryde	Medium term / investigations to commence in the short term
Action 5.3: Create a plan to intensify venture capital presence	The presence of a strong venture capital community can drive growth and accelerate commercialisation, creating opportunities for start-ups within Macquarie Park. Convening venture firms without a presence in the area to understand their barriers and motivations can be a first step.	MPID, Investment NSW	Medium term / investigations to commence in the short term

## 5.6 QUALITY OF PLACE



**Objective 6: Deliver a range of social and transport infrastructure and services to support community diversity and wellbeing, enhancing the appeal and competitiveness of Macquarie Park for a range of users including residents, students, workers and visitors.**

ACTION	IMPORTANCE AND ALIGNMENT	RESPONSIBILITIES	TIMEFRAME
Action 6.1: Create high-quality pedestrian environment and public domain works	Investment in urban realm will help Macquarie Park better compete with other centres such as the CBD for both talent and tenants. Improvements should be prioritised based on delivering economic benefit. Of critical need to create direct routes between the metro station and destinations throughout the precinct (to support the 30-minute city concept). The pedestrian experience can be enhanced by providing more pedestrian crossings, and prioritisation of slow and low movements.	DPIE, TfNSW, City of Ryde	Short term
Action 6.2: Leverage off the National Park and other natural assets	Competing centres such as the CBD offer high amenity (i.e. parks, water, more public transport options, night economy). If the value proposition of Macquarie Park is not compelling, it will not attract or retain enough high value key anchors and supporting uses and attract more large-scale firms.	DPIE, NSW NPWS, City of Ryde	Short term
Action 6.3: Provision of open space and leisure amenity for children and young people	Macquarie Park will need to be a precinct for people. It will need services and infrastructure to meet communities' changing needs including demographic shifts in older people and younger people. It will need to optimise the use of available public land for social infrastructure.	DPIE, City of Ryde	Short to medium term
Action 6.4: Provision of high-quality green infrastructure including creek restoration	Macquarie Park could be an exemplar resilient zero carbon energy economy underpinned by high quality green infrastructure. Supporting this could include provision of high-quality green infrastructure in the public realm, development of an energy performance standard to raise minimum standards, and ensure buildings perform as designed.	DPIE, City of Ryde	Short to medium term

ACTION	IMPORTANCE AND ALIGNMENT	RESPONSIBILITIES	TIMEFRAME
Action 6.5: Develop an infrastructure priority list for Macquarie Park to shortlist the projects that will deliver the greatest economic impact	<p>Key benefits of projects should include those that can be measures though cost benefit analysis:</p> <ul style="list-style-type: none"> <li>• Reduce walk times.</li> <li>• Reduce car mode shares.</li> <li>• Enhance physical and mental health.</li> <li>• Increase tree canopy coverage.</li> </ul> <p>For other built form initiatives, key economic criteria should include metrics such as:</p> <ul style="list-style-type: none"> <li>• Reduced joblessness (ability to engage local workers).</li> <li>• Ability to attract inward investment.</li> <li>• Increased open space for Macquarie Park.</li> </ul>	DPIE, TfNSW, City of Ryde	Short to medium term
Action 6.6: Consider changes to the planning controls to encourage mixed-use	Changes to Planning Controls in the City of Ryde, outside of the commercial core would allow for and encourage more mixed-use development, providing a residential development component, encouraging and helping to stimulate activity during off-peak times at the precinct.	DPIE, City of Ryde	Short to medium term
Action 6.7: Provision of social infrastructure	Consider the needs of the growing communities within and around Macquarie Park, providing new social infrastructure like library branches and community halls, that can activate the area at all times of the day.	DPIE, City of Ryde	Short to medium term
Action 6.8: Develop an investment fund for programmed public spaces	This could involve the development of funded design competitions, public artworks, cultural events, sidewalk improvements along Waterloo Road. Use value capture mechanisms including levy to develop a revolving pot to deliver high quality public realm.	DPIE, City of Ryde	Medium term
Action 6.9: Develop an 18-hour economy strategy	The development of an 18-hour economy strategy will help to activate the precinct and ensure that visitors, workers, and residents have multiple options for activities after 5PM. The introduction of temporal differentiation to spaces throughout the day could activate an underutilised plaza for example at night with temporary uses and activities.	City of Ryde	Medium term
Action 6.10: Develop business case for transit links to Parramatta and Epping to meet long term demand and reduce car mode share	Longer term this project would support car mode share reduction projects and secure agglomeration and productivity benefits. It would place Macquarie Park at the centre of a networked city connecting to the west and east.	DPIE, TfNSW	Long term with infrastructure planning activities (including business cases) to commence in the medium term