City North Social Innovation Precinct and Innovation Spine

A proposal for skills-led urban renewal

4 September 2023

RMIT UNIVERSITY

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Executive summary

Context

A resilient and sustainable society relies on the skills, knowledge and expertise of its people. The *Victorian Skills Plan (2022)* has identified the need for hundreds of thousands of equipped and empowered workers drawn from a diverse community. They are needed to support transition to a clean economy, to meet the needs of an ageing and growing population and to secure Victoria's manufacturing and design capability. Digital transformation and the potential of deep technologies offer a pathway to redefining the way we work and live, but only if we equip people with the right skills and extend the opportunity to the whole community.

In the last two decades, the urban innovation district model has emerged internationally as a way to respond to major social and economic challenges. The strategic partnership of industry, education and non-profit organisations physically co-located and purposefully working together as part of an 'innovation ecosystem' can create a powerful environment for delivering skills and solving complex problems.

This document is not intended as a full business case for re-development, but a proposal for the purpose, activity mix, partnership and shared planning of this distinctive precinct in Melbourne's City North. It proposes a skills-led urban renewal and establishment of a walkable innovation spine that creates widespread economic and social value.

The proposal offers a vision, developed through years of partnership with industry, governments and community, and a design scenario on which specific solutions for planning, ownership, costs, benefits and commercial relationships can be explored in future. The proposal does not make any assumptions about the cost to government or other parties of implementing this vision.

The potential of City North

The Social Innovation Precinct site at City North is a major opportunity for Victoria. It is a significant land holding jointly owned by RMIT and the State, in a pivotal location at the centre of the Melbourne Innovation District and within the wider Parkville Precinct and National Employment and Innovation Cluster (NEIC). It boasts a rich history of social innovation, skills delivery and civic impact through work of public institutions and not-for-profit organisations based in the neighbourhood, dating back to the nineteenth century.

The site is on the land of the Woi Wurrung language group of the Eastern Kulin Nation and formed part of an important cultural landscape in which the Woi Wurrung gathered resources, cared for country, and interacted with other Aboriginal groups.[1] Its renewal offers an opportunity to build further connections with truth-telling, community engagement and cultural heritage in this part of the city.

Already well served by public infrastructure, the site will soon become one of the most widely accessible parts of metropolitan Melbourne: at the northern edge of Melbourne's CBD, a short walk from Melbourne's Swanston Street tram corridor and with a new Metro Station about to open. It is a

[1] Line of Sight Heritage, CBD North, RMIT Locations Framework – Heritage context, 2021

short walk from major cultural sites including the Queen Victoria Market, Lygon St and the Royal Exhibition precinct beyond, close to major hospitals, businesses and research centres.

Yet, because of historical accidents in planning, tenure and activity mix, many of the buildings in the precinct are not fit for purpose, with some requiring urgent refurbishment or replacement. There is little open green space and wide expanses of on-street parking and asphalt. Current heritage and planning controls, design and development overlays and mixed ownership of small plots interact to create unintended consequences – a situation where long-term precinct renewal and investment are prevented. Collectively, we are poised to address these challenges.

Alongside the State's strategic precincts agenda, the City of Melbourne (CoM) has driven the advancement of place-based innovation through a smart city agenda. Proposed CoM planning amendments are expected to significantly revise development controls that impact the site and encourage greater development and investment in innovation-related land uses.

A vision for social innovation

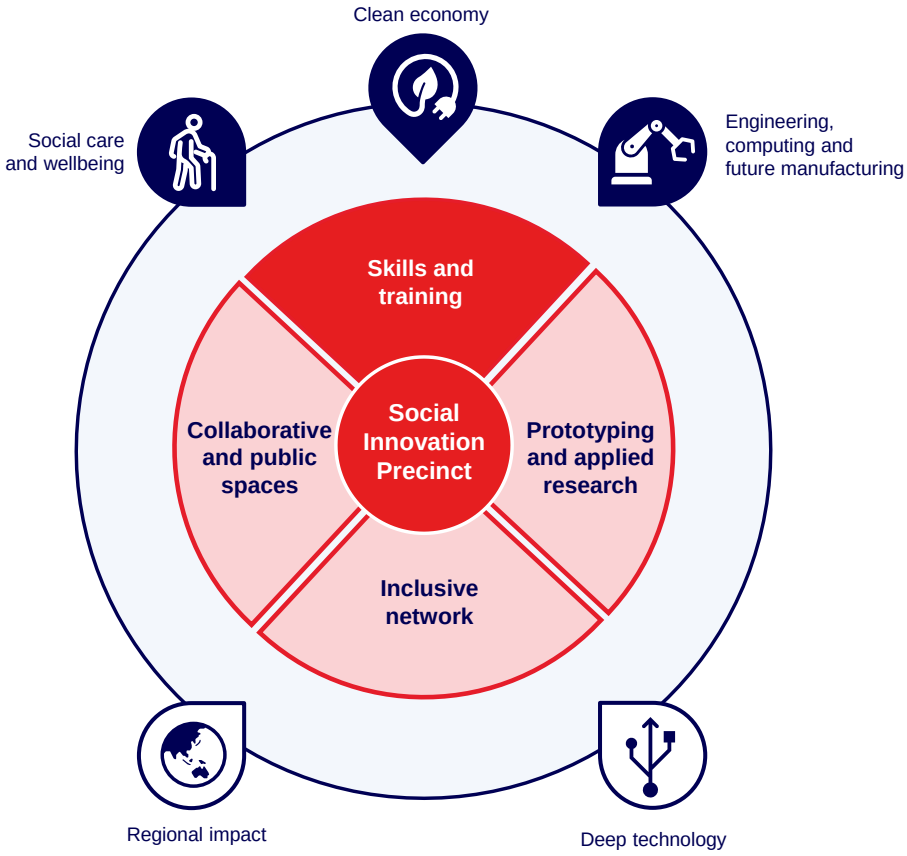
The City North Social Innovation Precinct will bring together the best minds and skills from different disciplines, organisations and backgrounds to engage with the major social challenges of our times.

The precinct will train tens of thousands of highly skilled workers for the Victorian economy over the next two decades, connecting them with career pathways and industry networks, contributing to major workforce challenges such as electrification, mental health and social care. The proposed approach will deepen the productivity and international engagement of key sectors, collaborate and complement existing capabilities across City North, and widen these opportunities to people across Melbourne's metropolitan area.

The precinct will draw learners, workers and the wider community to the area, encouraging participation and engagement. This will take many forms – gaining skills and micro-credentials through vocational and higher education, attending the precinct's community events, or simply enjoying the area's revitalised public spaces and hospitality. Start-ups, entrepreneurs and social innovators will take advantage of the precinct's networks, affordable prototyping and workspaces. RMIT will act as an anchor to attract industry and academics to work with the community to address social issues, generating skills solutions and enterprises**.** Learning and innovation will be visible, sparking curiosity and participation.

The Social Innovation Precinct will be a place where the future of social care and wellbeing is reimagined, where smart and sustainable city-shaping is brought to life, where the next generation of engineering and manufacturing leaves the lab and enters the workplace, and the potential of deep technology is put to work in solving complex problems ranging from mental health and medical implants to cyber-security and inter-cultural understanding. The precinct will be connected to Asia, and the world, by leveraging decades of Asia engagement and expertise developed by RMIT, along with our partners including the University of Melbourne and the Asia Society. The key elements of the vision are summarised in Figure 1.

Figure 1: RMIT's Vision for a Social Innovation Precinct at City North



Skills and innovation focus

The skills and innovation focus for the precinct will be clustered in three sectors:

- **Social care and wellbeing:** Delivering critical training in nursing, aged care, disability, and other areas of workforce shortage. Driving innovation in human services and healthcare in response to diverse community needs and an aging population. Co-locating human services, NGO partners and ethical businesses. Prototyping and connecting health, housing and social services to digital and engineering capabilities.
- **Clean economy:** Growing sustainability skills to support clean energy and transport, construction, and the circular economy. Providing access to small scale prototyping spaces, developing centres of excellence and innovation in electrification. Making the precinct a living lab for smart, sustainable urban planning and climate change adaptation.
- **Future engineering, computing and manufacturing:** Growing digital and engineering skills and industry partnerships that contribute to innovation across sectors. Developing critical technology expertise in automation, cloud, AI and fabrication technologies. Supporting the pivot from traditional manufacturing to tech-enabled future manufacturing and re-skilling workers. Providing inclusive access to digital skills.

Sector innovation will be underpinned by RMIT’s deep technology capability and commitment to, and network across, Asia.

- **Deep technology:** Ensuring the next wave of technologies delivers social and economic benefits. Building capability and applying emerging technologies including quantum computing, biofabrication and nanotechnology to solve important challenges. Bringing together design, prototyping and translation facilities and networks.
- **Regional impact:** Leveraging RMIT's well-established presence and networks across the Asia Pacific, especially ASEAN. Providing a front door to Asia for Victorian business and engagement. Expanding a landing pad for new regional talent and investment into Melbourne.

Space needs

In line with growing sector and workforce needs, student demand on the City North site is projected to grow from a student load of 10,000 equivalent full-time students (EFTSL) (approximately 12,800 students) to between 15,000 and 20,000 EFTSL by 2042. Conservative assumptions result in space needs broadly in line with RMIT's preferred design option. This option relies on revision to the current planning controls.

A plan for transformation

The preferred design option will create a far more open, accessible and connected precinct. It will increase space available for collaboration and collocation of industry and start-ups, joint prototyping spaces for digital health and low carbon technologies, hands on teaching and learning experiences for nursing, social care, engineering, design and workforce training. These spaces will be housed in modernised buildings, sympathetic to the surrounding area and with far greater environmental efficiency and performance (see Figure 2).

Figure 2: Artist impression of central civic square and potential transformation of Cardigan Street

Source: MGS Architects, RMIT MASTERPLAN PROPOSAL REPORT 2022

The design approach adds approximately 60,000m^2 of highly flexible gross floor area (GFA) allowing for additional students and future uses. The future state space mix will reduce allocations for workspace and privilege space that drives interaction, student and community experience and industry collaboration.

The proposed buildings combine with a significant uplift in open green space creating a welcoming experience at ground level and inviting the public to explore and engage with innovation and skills development. The design establishes a new central civic square able to be used by both RMIT and the broader community, which in turn forms a key link in the Melbourne Innovation Spine. The spine includes pedestrianising part of Cardigan Street and would ultimately connect Queen Victoria Market to Cardigan Street, Melbourne, Connect, University Square and beyond. This creates a walkable link between key innovation and cultural assets such as the State Library and Trades Hall.

The preferred design consolidates the site into four quarters that optimise land use and allow for efficient shared building infrastructure, staging, and investable development.

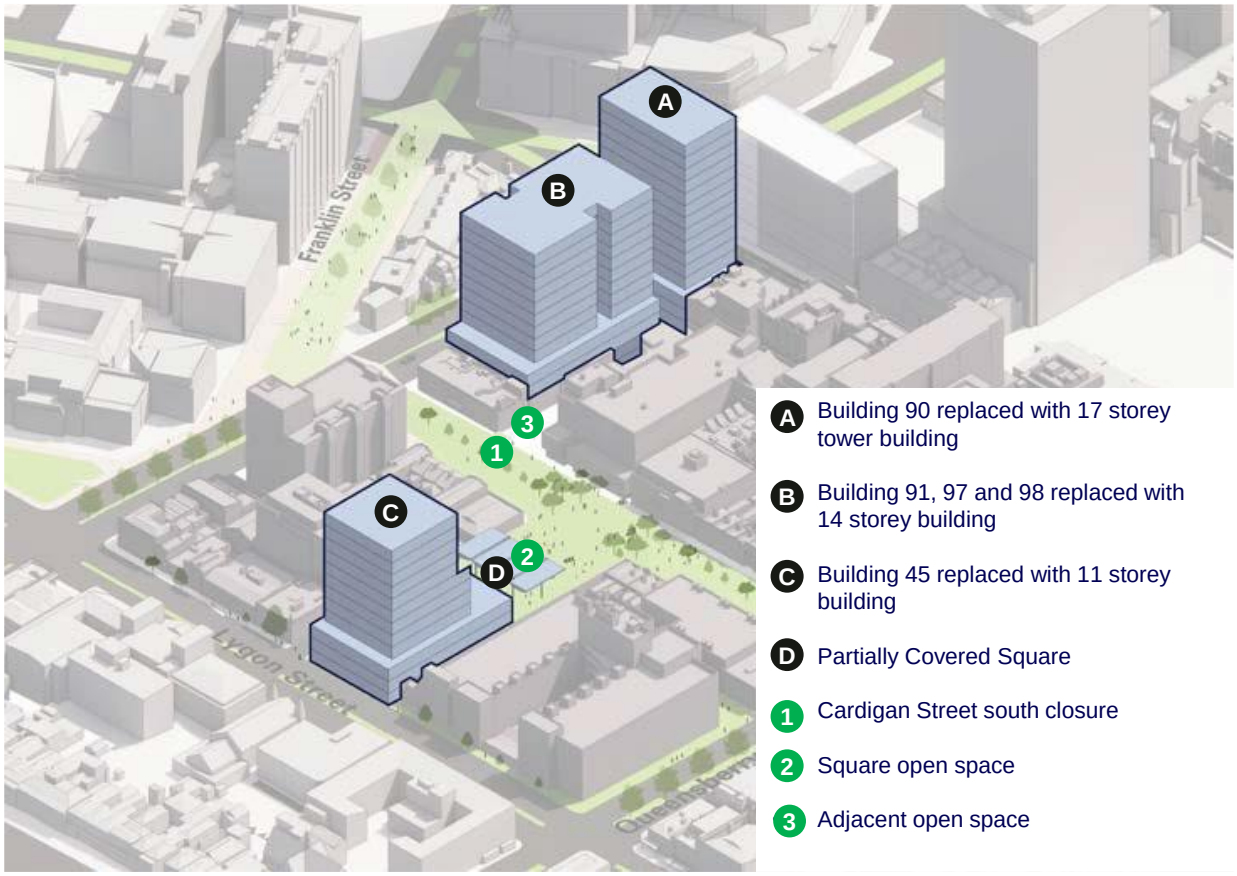
Figure 3: Masterplan proposal quarters

Source: MGS Architects, RMIT MASTERPLAN PROPOSAL REPORT 2022

The design proposal suggests that the first phase of redevelopment focus on core learning and teaching facilities at the intersection of Victoria and Swanston Streets. This phase will also deliver a

central square in the heart of the campus, activated by a new learning hub replacing Building 45. Below ground services, infrastructure and key sustainability precinct wide would need to be incorporated as part of the initial redevelopment. Car parking could be consolidated into a new basement below the B45 redevelopment as shown in Figure 4 below.

Figure 4: Suggested Phase 1 implementation



Source: Adapted from MGS Architects, RMIT MASTERPLAN PROPOSAL REPORT 2022

Delivering economic benefit for Victoria

Successful transformation of the City North site into a world leading Social Innovation Precinct could achieve a multitude of benefits. The value to the Victorian economy is estimated at $2.71 billion by 2070 with an additional $0.99 billion to the Australian economy in discounted terms. The precinct will add ~1,500 jobs to the Victorian economy by 2070.

The economic benefits are driven by:

- Adding capacity for an additional 5,000-10,000 full-time students each year at completion
- Improving students' skills match and employability
- Increased industry innovation - adding $52 million in research and development investment each year
- Capital investment to maximise land use and stimulate economic activity on the precinct

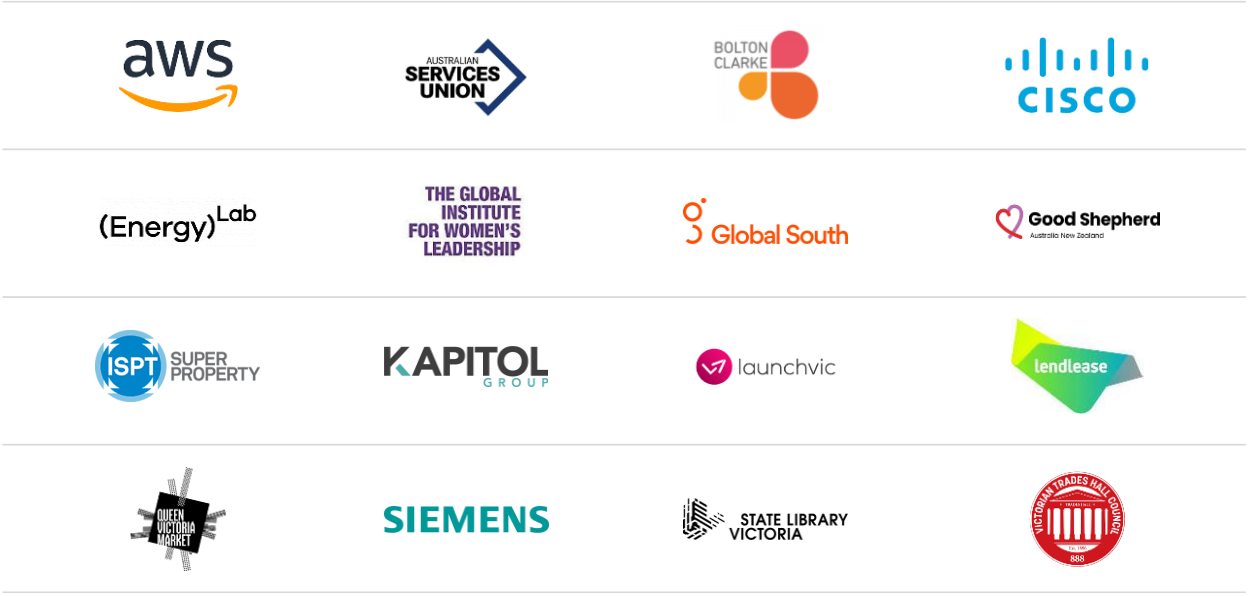
The incremental cost of developing the precinct over 20 years is ~$1.54 billion in discounted terms.

Next steps

After over eighteen months of work, involving wide ranging community and stakeholder engagement, expert advice and collaboration, the proposal to develop the City North Social Innovation Precinct has reached a formative point, as described in this document.

Among project partners there is a broad agreement to the City North Social Innovation Precinct vision, combined with an equally broad willingness to progress. This is matched by a high level of support for the concept and future direction from current and potential partners (see Figure 5). In addition, the proposal is likely to be attractive to leading institutional infrastructure and real estate investors seeking to participate in potential funding and capital works.

Figure 5: Partners who have expressed in principle support



RMIT proposes that the Victorian government commit to the advancement of a staged program of work, in partnership with RMIT, the City of Melbourne and other relevant precinct partners, to enable the skills-driven urban renewal of City North, as presented in this proposal. The essential steps in this staged work are:

1. Confirm a working governance and decision-making structure to progress the precinct partnership, including consideration of development and financing options, precinct governance, and approaches to investment and implementation to ensure effective delivery of precinct benefits and outcomes, delivering public value to government, RMIT and the community;
2. Collaborate on the preparation of reports and other analysis required to ensure key aspects of the program are considered and endorsed to progress through a stage-gated process which addresses the opportunities in a timely way, with whole of government visibility as required;
3. Connect and align with the planning for skills and tertiary education priorities, as defined through the Victorian Skills Plan, and other policies, to further define complementary uses and infrastructure for workforce development to increase the positive impact of the City North Social Innovation Precinct, leveraging and diversifying the strengths of the Parkville National Employment and Innovation Cluster and advancing skills training and innovation in key sectors;
4. Facilitate the establishment of appropriate urban and metropolitan planning settings in consultation with relevant government departments, City of Melbourne and other key stakeholders; and
5. Engage with relevant State transport agencies and City of Melbourne to consider and address wider precinct connectivity and pedestrian amenity issues, prioritising urban and public realm improvements including the City North Innovation Spine to ensure that the benefits of Melbourne Metro are fully realised and connecting the City North Social Innovation Precinct to the wider Parkville and City North District.

1. Context

1.1 Strategic context

The last few years have reinforced a critical need to address decarbonisation, respond to the demands of our ageing, growing population and maintain critical technology-enabled manufacturing capability onshore while re-committing to principles of social inclusion and community wellbeing. Digital transformation and the potential of deep technologies offer a pathway to redefining the way we work and live, but only if we equip people with the right skills and invest in applied research and innovation.

In this context of rapid change, maintaining inclusive access to jobs means providing equitable access to opportunities to upskill and reskill. The *Victorian Skills Plan (2022)* has identified the need for hundreds of thousands of equipped and empowered workers, drawn from a diverse community.

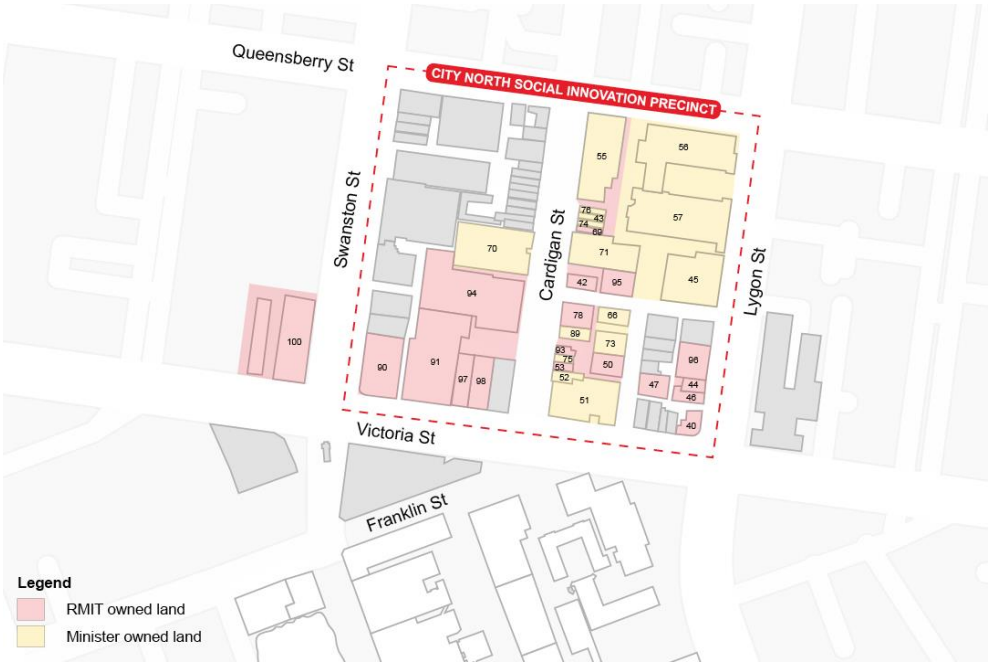
Bringing education, research and civic engagement together to create skills and support inclusive innovation requires us to explore new ways to collaborate, co-locate and co-create with industry partners and the wider community. In the last two decades, urban innovation districts have emerged as a means of connecting knowledge-intensive institutions with public spaces, industry and labour movements, start-ups and SMEs, social hubs, and cultural institutions. As many local and international examples now demonstrate, the strategic partnership of industry, education and non-profit organisations, physically co-located and purposefully working together as an ‘innovation precinct’ can create a powerful environment for skills delivery and innovation ecosystems to thrive.

1.2 Project background

Through the Victorian Higher Education State Investment Fund (VHESIF), the Victorian government provided funding for RMIT to develop a Masterplan proposal for the long-term renewal of the precinct, aligned with its history of skills-focused innovation and educational use. This document proposes the priority activities, shared uses and spatial identity of the City North Social Innovation Precinct, and the actions required to achieve it.

Most land in the precinct is owned by RMIT and the Victorian Government (see Figure 6). Cardigan St is owned by the City of Melbourne. Shared ownership of buildings, land, and roads, combined with limited budgets for investment, demand a collaborative approach to precinct renewal.

Figure 6: Location plan with title boundaries and building numbers



Four overarching objectives were set by government for the masterplan proposal:

- Maximise educational outcomes
- Further whole of government priorities
- Ensure long-term public benefit
- Promote efficient use of the land within the limitations of the planning scheme.

Overseen by the CBD North Governance Group (CBDNGG), which includes representatives of State government, RMIT has led a highly collaborative 2-year process to develop a 20-year vision and establish a preferred urban design/masterplan option for the City North site. The work has examined the precinct's existing assets, strengths and capabilities and deep engagement with government and industry partners has identified high value future uses. Project scope, methodology and deliverables are shown in Appendix A:

Two key documents are also attached:

- **Attachment 1: Masterplan design proposal:** Prepared by lead consultants MGS Architects, it proposes a preferred option for land consolidation, built form and landscape opportunities and how it could be delivered.
- **Attachment 2: Economic impact assessment:** Prepared by Deloitte Access Economics based on their Regional General Equilibrium Model to estimate the impacts of the preferred precinct development option on the economy.

This document is not intended as a full business case for re-development, but a proposal for the purpose, activity mix, partnership and shared planning of the precinct as part of the wider city north area. The proposal provides a vision and design scenario on which specific issues of planning, ownership, costs, benefits and commercial relationships can be explored in the future. The proposal does not make any assumptions about the cost to government of delivery.

2. The potential of City North

The City North site represents a major opportunity for Victoria. It is a significant land holding jointly owned by RMIT and the State, in a pivotal location at the centre of the Melbourne Innovation District and the wider Parkville Precinct. The renewal of this landmark area offers the potential to recognise its Indigenous history, build on a legacy of social innovation, contribute to skills and productivity in key sectors, and leverage the substantial transport investment. Imminent changes to planning controls will facilitate renewal.

2.1 A history of social innovation and civic impact

City North has a rich post-settlement history of social innovation, skills delivery and civic impact through work of public institutions and not-for-profit organisations based in the neighbourhood. Its renewal provides an opportunity to celebrate Indigenous history, knowledge and achievement.

The Social Innovation Precinct site occupies the unceded land of the Woi Wurrung language group of the Eastern Kulin Nation. Prior to colonisation, the site was part of a system of waterways that fed the Birrarung. These waterways were an important seasonal source of water and resources and were located close to the ceremonial grounds near the Birrarung and the Merri Creek, making the area a desirable spot for camping. The site formed part of an important cultural landscape in which the Woi Wurrung gathered resources, cared for country, and interacted with other Aboriginal groups.[2] Its renewal offers an opportunity to build further connections with truth-telling, community engagement and cultural celebration and heritage in this part of the city.

The City North Area and surrounds have a long history of social innovation. The origins of some of Melbourne's post-colonial social innovations, committed to civic prosperity and public benefit, can be traced back to work of iconic institutions located in the area. For example, Melbourne's historic Trades Hall was built as a monument to the successful Eight Hour Day campaign of 1856, which transformed workers' rights and set the foundation for the union movement.

Likewise, RMIT's early establishment as the Working Men's College fulfilled its philanthropist founder's aim of bringing education to the working people of Melbourne. Queen Victoria Market has traded continuously from its site since its opening in 1878, providing affordable food and employment for generations of workers, with its early governance a precursor to the formation of Melbourne City Council. The State Library was founded in 1854 with the explicit aim of being "the people's university". Melbourne City Baths was first opened in 1860 as a public bath house and was lauded as a 'win' for the working class, improving health and wellbeing of city workers who would otherwise bathe in the polluted Yarra River.

[2] Line of Sight Heritage, CBD North, RMIT Locations Framework – Heritage context, 2021

Today, these anchor institutions are joined by a multitude of social innovators, not-for-profits, social enterprises, and research organisations. City North's community of social innovators work alongside RMIT's established vocational and higher education programs in a range of in-demand and growing disciplines. (See Appendix B:) RMIT's long-standing presence in the district provides an ideal foundation to address the urgent and ongoing need for skills and innovation and support the next stage of Victoria's approach to social innovation.

2.2 A strategic site

The City North Social Innovation Precinct is located at the epicentre of Melbourne's innovation ecosystem: at the southern edge of the State's Parkville Precinct (a National Employment Innovation Cluster), at the heart of the Melbourne Innovation District, and on the northern edge of Melbourne's CBD (the historical engine room of the state's economy). The City North Social Innovation Precinct will soon become one of the most widely accessible parts of metropolitan Melbourne, located a short walk from Melbourne's Swanston Street tram corridor and only a few meters from a new State Library metro station.

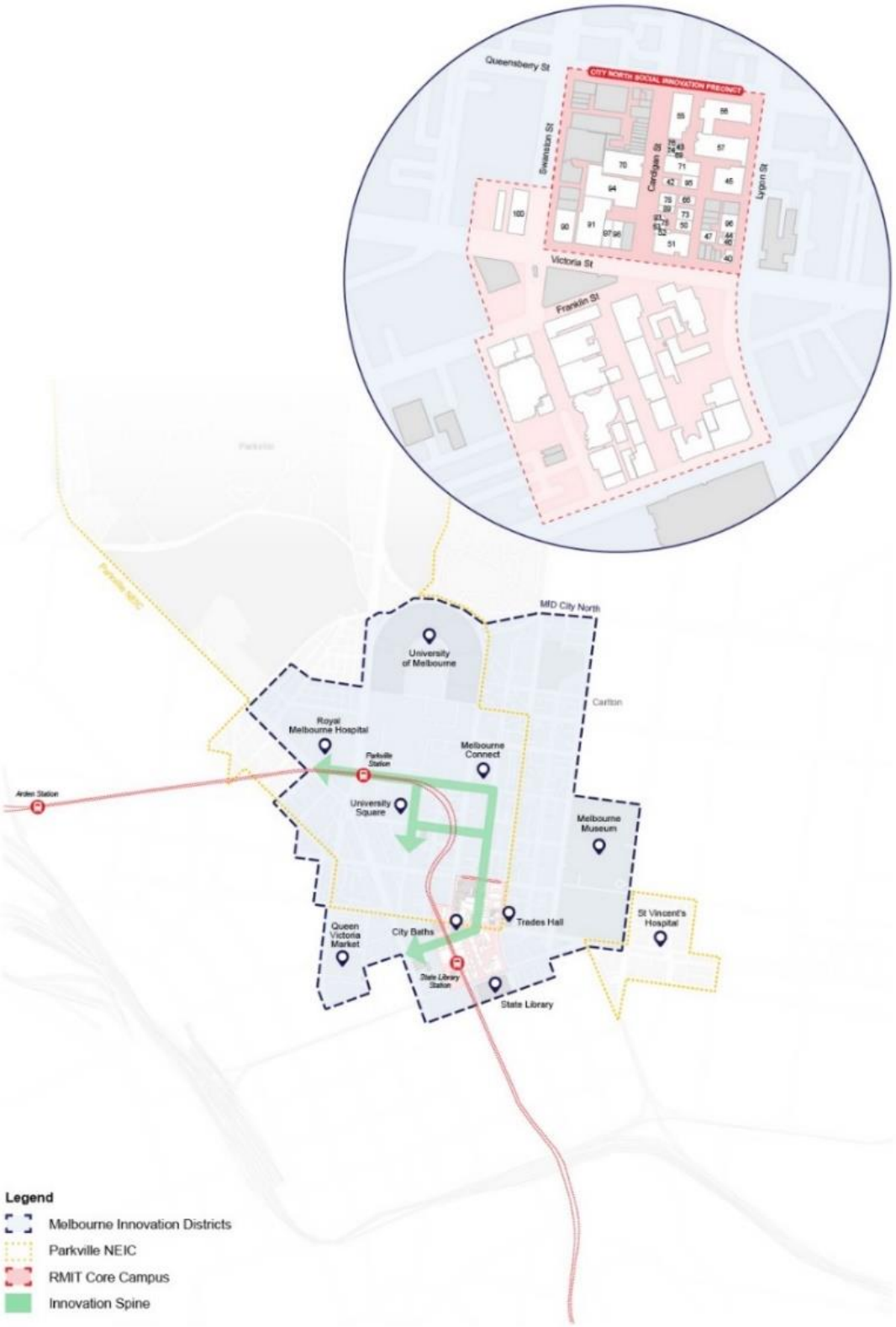
The City North site offers a rare opportunity to create a destination for innovation and skills that is both desirable for business and accessible to the wider community. Land use planning at State and City level is already encouraging innovation-oriented activities in this area, in recognition of the site's value and the importance of skills training as a key driver of Victoria's future growth and economic development.

The *Parkville Opportunity Statement (2022)* recognises City North's contribution to Parkville's diverse innovation ecosystem, as

> *… home to world class tertiary education institutions, think tanks and creative labs, City North/Carlton* ***unlocks innovation in biomedicine and beyond****. Providing a learning lab that promotes engagement, experimentation, and the sharing of knowledge, the area* ***supports the activation of emerging enterprises driving social and technological innovation****…*

This is amplified by the City of Melbourne's *City North Opportunities Plan* (2019) which notes how City North complements and expands existing Parkville's clinical and biomedical capabilities, with its focus on vocational allied health training, digital health and social system transformation and potential for more low-cost start-up collaboration spaces. It augments Parkville's existing offering by creating greater opportunities for emerging business, while providing opportunities for wider community engagement in innovation activities.

Figure 7: City North Context



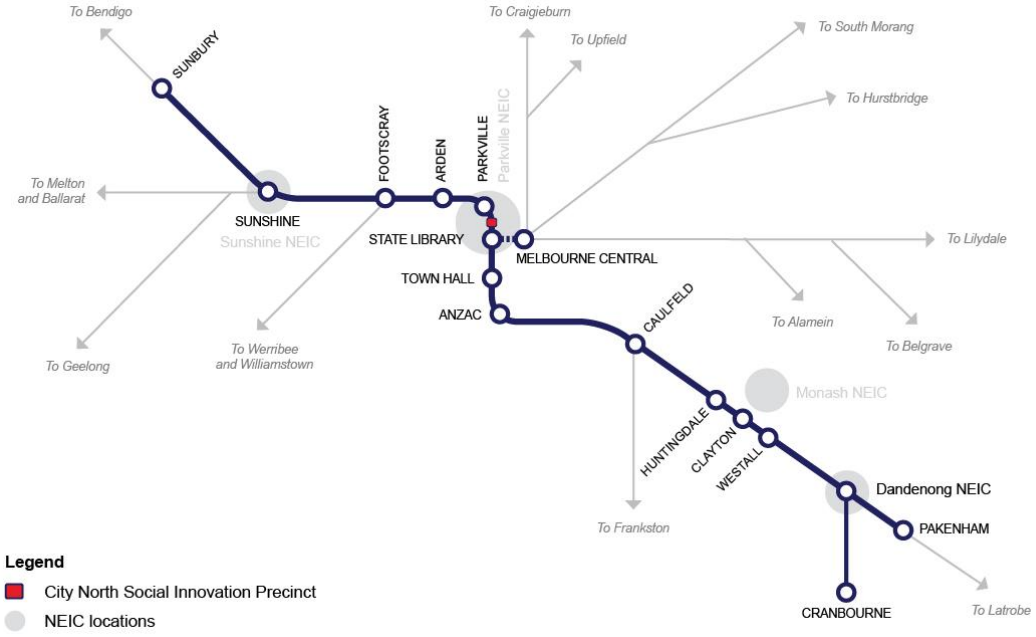
Situated at the nexus of Melbourne's tram, train and bus network, City North has unsurpassed transport accessibility. The imminent completion of the Melbourne Metro and the opening of State Library station (scheduled for 2024) will further enhance its appeal as a place of study and work, connecting City North to Melbourne's wider precincts as never before as the State's vision for Metro Tunnel is realised (described here in Plan Melbourne, Melbourne's Metropolitan Planning Strategy

Figure 8 for illustration):

> *The Metro Tunnel will significantly transform Melbourne. For the first time, key living, learning and work precincts will be linked by a high-capacity train network. National employment and innovation clusters at Sunshine, Parkville, Monash and Dandenong will be linked to each other as well as other significant precincts such as Footscray, Arden, Domain, St Kilda Road, Caulfield, Oakleigh and Chadstone.*

Without renewal of the Social Innovation Precinct area, the full potential benefit of the State's strategic investment in the Metro Tunnel will not be realised.

Figure 8: Metro Tunnel Precinct Links



Source: Plan Melbourne and Victoria's Big Build

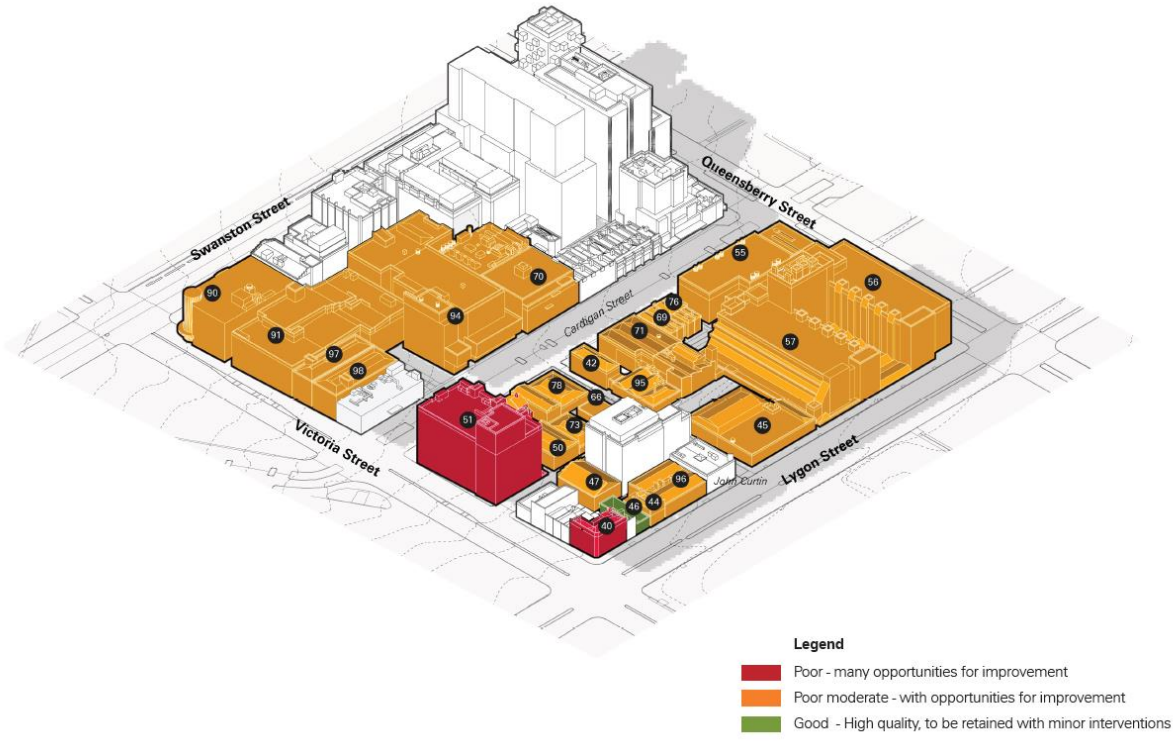
2.3 The timing is right for urban renewal

To date, redevelopment has been constrained by historical tenure and use, heritage and planning controls, design and development overlays and mixed ownership of small plots. The site currently contains a patchwork of low-quality buildings and little quality public space. However, planning at both State and City level has prioritised the development and ongoing support for Melbourne's City North innovation ecosystem as critical to Victoria's wider innovation offer and to economic growth.

Several factors contribute to the current underutilisation of the City North site. The planning controls applied to the City North site constrain the area's urban renewal potential by limiting the scale of possible development. In turn, this restricts the capacity to accommodate the number of workers and students needed to activate and enliven the area. The level of through traffic on Victoria Street continues to segregate City North from the more vibrant campus experience of RMIT's City campus immediately to the south, and from the State Library and Melbourne Central. This has a flow-on effect for South Carlton and Lygon Street, which could benefit from greater student presence in the area.

The public realm has yet to receive significant streetscape improvements by the City of Melbourne, leaving wide expanses of on-street parking and asphalt and a comparative lack of green open space. Furthermore, many of RMIT's buildings in the area are not fit for contemporary purpose, with some requiring urgent refurbishment or replacement (Figure 9). The extent of RMIT and State-owned land in the area creates significant opportunities to create larger developable footprints while conserving and adapting existing heritage buildings.

Figure 9: Current building condition



Source: MGS Architects, RMIT VISION AND OPPORTUNITIES REPORT 2022

A coordinated approach to precinct masterplanning is required to integrate the City's capital improvements program, leverage the State's investment in the Metro Project and ensure that the full range of opportunities for urban improvement are realised to create an engaging, welcoming experience.

Alongside the State's strategic precinct's agenda, City of Melbourne has driven the advancement of place-based innovation through its smart city agenda, seeking to drive investment in the knowledge economy and help shape the city's future. This vision was crystalised through the establishment of the Melbourne Innovation Districts (MID) in 2017 in partnership with RMIT and University of Melbourne, along with the development of the *City North Opportunities Plan* (2019). The City's high-level commitment is now being translated into planning policy and development controls that prioritise innovation uses in City North through the advancement of two planning scheme amendments, scheduled for public exhibition in 2023:

1. The Municipal Planning Strategy (MPS) (Planning Scheme Amendment C432); and
2. The Melbourne Innovation District (MID) – City North (Planning Scheme Amendment C431).

These amendments are expected to significantly revise the development controls that impact on the Social Innovation Precinct site to encourage investment in innovation related land uses that will enhance the skills and innovation capability of RMIT, the wider City North site and in turn, the city more broadly. These settings will greatly improve the value proposition for industry co-investment in City North.

With changes to these controls imminent, there is a rare opportunity to begin an integrated precinct-wide renewal. Although the planning and development context may have prevented large scale redevelopment in the past, it is this relative underdevelopment that creates an ideal environment for a comprehensive, multi-staged masterplan to progress. Likewise, while in the past, the fragmented nature of the extensive RMIT and State-owned land in the area has served to complicate proposals for development, recent collaboration through this project has demonstrated the kind of partnership needed to move forward and realise a joint vision for this key part of Melbourne.

Creating the planning conditions to encourage innovation and skills is one critical piece of the puzzle. To be truly successful, particularly in today's digital age, harnessing the power of place requires people to gather and collaborate in real life. Bringing places to life requires strategic curation of the kinds of uses and activities that will encourage people to engage with future ideas and collaborate with peers, to gain new skills and apply knowledge.

3. A vision for social innovation

The City North Social Innovation Precinct will bring together the best minds and skills from different disciplines, organisations and backgrounds to engage with the major social challenges of our times.

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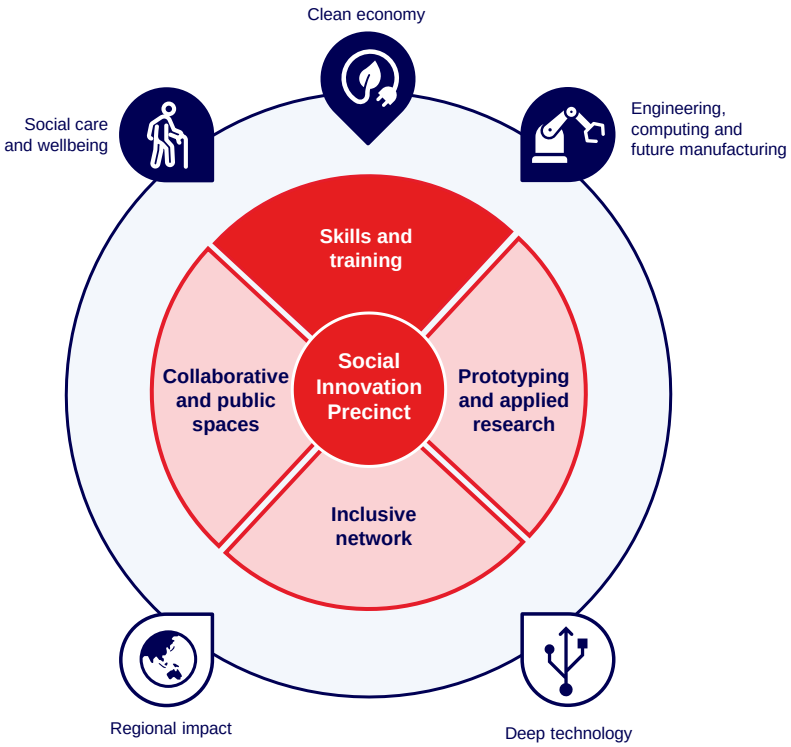
Figure 10: RMIT's Vision for a Social Innovation Precinct at City North



The renewal of City North represents an opportunity to bring RMIT's leadership across these five areas; to deliver the skills and transformative innovation needed to improve lives in a fast-changing society. Developing the products, systems and services people need to live well in a complex time of transition, goes hand in hand with ensuring they are equipped with the skills required to thrive. This also requires us to involve and engage people who have traditionally been excluded from processes of innovation and policy reform.

The City North Social Innovation Precinct is a logical next stage in the historical evolution of the area, building on a legacy of civic partnership and public service that has characterised the work of resident institutions for generations. This will be enlivened and challenged by new participants, as a workforce innovation and skills reform agenda is brought to life. Established businesses will be drawn to the area to take their place alongside existing industry partners, researchers and educators, as the skills of the future are developed.

More importantly, workers of the future are trained and equipped to contribute to emerging economies and new ways of working. Start-ups will be joined by innovators across commercial and non-profit sector to find new solutions to complex problems, testing ideas with the community, transforming traditional products and services to meet emerging demands.

In an era of remote working and hybrid learning, the City North Social Innovation Precinct asserts the power of place to foster inclusion and a sense of belonging. A dynamic mix of uses will be carefully curated in collaboration with precinct partners to leverage its central location and transport accessibility, creating a place that people will want to be - to work, to study, to collaborate. Bringing people together will open innovation to the community, breaking down practical barriers and perceptions to encourage participation in lifelong learning and reskilling in the areas where future skills are most needed.

Like Melbourne’s central city revitalisation, the City North Social Innovation Precinct will be achieved in phases, guided by best practice urban design and planning through a staged process of renewal. The precinct will be shaped and envisioned with community input. Its buildings will be adapted and developed to meet contemporary demands for flexible, loose-fit work and study spaces, offering the potential to shift focus as technology advances and facility requirements change. However, some aspects will not change: the quality and cohesion of the public realm will unite the City North Social Innovation Precinct, welcoming the community and becoming an important part of the city’s wider network of open spaces. Melbourne’s Innovation Spine will emerge through the City North renewal process, making visible and encouraging community participation in the connections that drive a unique combination of innovation assets and institutions, spanning from the CBD’s northern edge to Carlton, Fitzroy and Parkville.

4. Skills and innovation focus

RMIT's mission is to empower people and communities to adapt and thrive across generations using education, research and civic engagement that are applied, inclusive and impactful. We aim to lead in emerging technologies, smart and sustainable cities, social innovation, and regional collaboration. As an industry focused, multi-sector university, RMIT creates visible pathways and connections between Vocational, Higher Education and Industry, responding to changing sectoral needs.

The skills and innovation focus for the precinct is clustered in three sectors:

- **Social care and wellbeing:** Delivering critical training in nursing, aged care, disability, and other areas of workforce shortage. Driving innovation in human services and healthcare in response to diverse community needs and an aging population. Co-locating human services, NGO partners and ethical businesses. Prototyping and connecting health, housing and social services to digital and engineering capabilities.
- **Clean economy:** Growing sustainability skills to support clean energy and transport, construction, and the circular economy. Providing access to small scale prototyping spaces, developing centres of excellence and innovation in electrification. Making the precinct a living lab for smart, sustainable urban planning and climate change adaptation.
- **Future engineering, computing and manufacturing:** Growing digital and engineering skills and industry partnerships that contribute to innovation across sectors. Developing critical technology expertise in automation, cloud, AI and fabrication technologies. Supporting the pivot from traditional manufacturing to tech-enabled future manufacturing and re-skilling workers. Providing inclusive access to digital skills.

Sector innovation will be underpinned by RMIT's deep technology capability and commitment to and network across Asia.

- **Deep technology:** Ensuring the that next wave of technologies deliver social and economic benefits. Building capability and applying emerging technologies including quantum computing, biofabrication and nanotechnology to solve important challenges. Bringing together design, prototyping and translation facilities and networks.
- **Regional impact:** Leveraging RMIT's well-established presence and networks across the Asia Pacific and ASEAN. Providing a front door to Asia for Victorian business and engagement. Expanding a landing pad for new regional talent and investment into Melbourne.

These focus areas were selected based on alignment to four key criteria:

- **Alignment to Victorian Government and cross-jurisdictional innovation and skills priorities**, related policies and investment in workforce growth, given economic disruption.
- **Alignment to existing RMIT capability and strengths** in skills delivery and applied innovation, externally-validated student load projections and RMIT strategic priorities.
- **Potential for industry and partner participation,** with organisations currently located within the precinct, and others who have demonstrated interest and enthusiasm for future collocation or partnership propositions (Refer to Section 8: Next Steps)

- **Potential for an innovation ecosystem approach**, offering practical learning experiences to diverse stakeholders, clustering of innovation expertise, and direct pathways to employment and lifelong learning.

4.1 Responding to community needs for social care and wellbeing

Delivering critical training in nursing, digital health, aged care, disability and other areas of workforce shortage. Driving innovation in human services and healthcare in response to community needs and an aging population. Co-locating human services, NGO partners and ethical businesses. Prototyping and connecting health, housing and human services to digital and engineering capabilities.

Transformation in social care and wellbeing is essential to supporting Victoria's growing, ageing population in the face of growing demographic need and inequality. On one hand, advanced technologies such as artificial intelligence, virtual reality and robotics present an opportunity to design and implement new models of care. On the other hand, the sector is already struggling to develop and cultivate workforce scale and skills to meet community demands, with forecasts suggesting that an additional ~110,000 workers will be required to meet projected demand over the next 5 years.[3]

As these two concerns coalesce, the care and wellbeing workforce is at risk of being outpaced by both demand and technological disruption. Australia's care sector is already lagging, with half of healthcare leaders identifying staff inexperience as the biggest barrier to smart and inclusive adoption of digital solutions. [4] The Victorian Government's Skills Plan has identified this challenge, stressing that technology will continue to drive demand for new types of workers, digital skills and career pathways. The Victorian Health Priorities Framework suggests a three-pronged approach: an expanded workforce, additional smart facilities and innovative delivery models that promote system connectedness. The scale and technology challenge has also been recognised within the Australian Government's Draft National Strategy for the Care and Support Economy. The report adds concerns about the impact of these shifts on women's economic equality. Women are overrepresented in the care and wellbeing workforce and are more likely to provide unpaid care when formal services are not available.

RMIT is poised to be a key partner in addressing both the scale of demand – RMIT will supply more than 15k graduates in HE and VE health-related studies by 2027 – and the improved application of technologies. RMIT's leadership in digital health and innovative partnerships such as the RMIT-Cisco Health Transformation Lab (see 0) allow RMIT to support sector transition with practical and applied research, access to prototyping spaces and skills development. Emerging technologies will also be linked to current practice through RMIT's deep technology and translation facilities (see 0).

[3] Deloitte Access Economics, RMIT City North Social Innovation Precinct and Innovation Spine: Economic impact assessment and sector case studies, 2022

[4] Philips, Health Index Australian Report, 2022

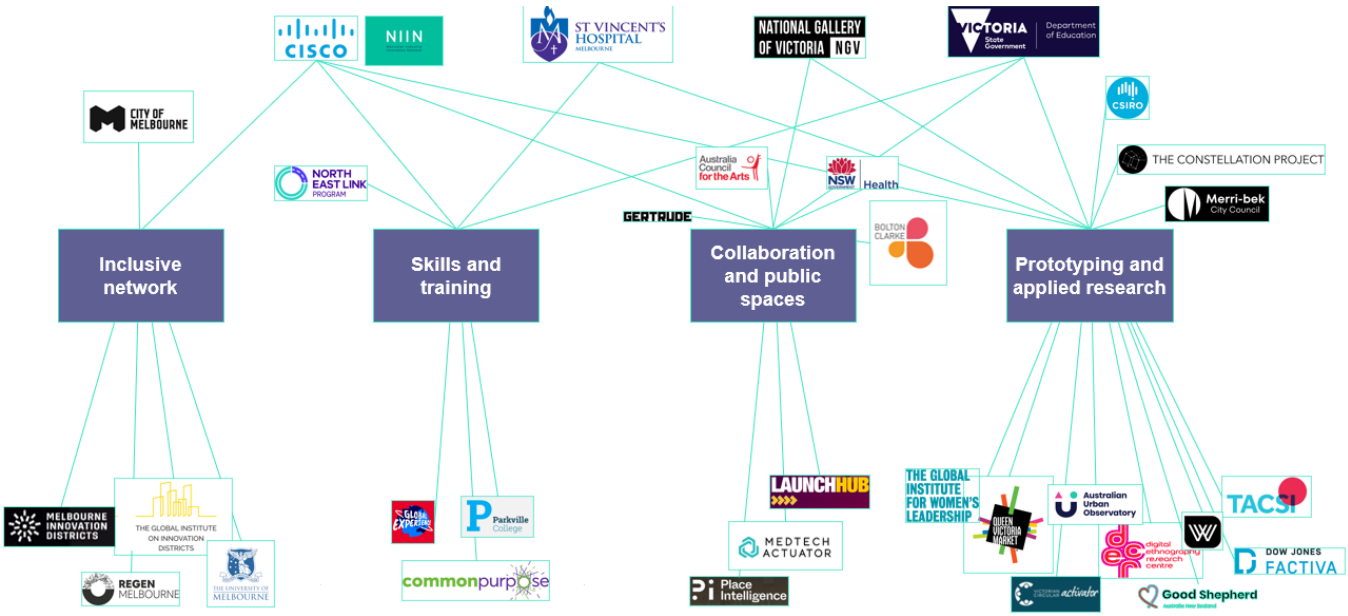
4.1.1 Alignment to government policy

Victorian Public Health and Wellbeing Plan (2019-2023)	• Emphasises the need for a broader conception of wellbeing and innovation approaches to overcome new challenges.
The Victorian Health Priorities Framework (2012-22)	• Emphasises the need for an expanded workforce and additional, accessible facilities to meet the challenges of an aging population and rising levels of chronic diseases • The framework also noted the need for innovation in delivery models that promote system connectedness
The Victorian Skills Plan (Health and Community Services) (2022)	• Insight report identified that advancement in the medical industry is driving new demand for workers • Identified three priorities, including building the supply of workers to address shortages, providing clearer career pathways to enhance retention, and upskilling the workforce to manage complex person-centred needs
The Department of Education and Training's Skills First Policy (2016)	• Aimed at ensuring high quality training that leads learners to real jobs in sectors primed for major job growth including medical technology and pharmaceuticals, new energy technology, construction technology and professional services
Keeping our sector strong: Victoria's workforce plan for the NDIS (2016)	• $26M committed to transform the disability workforce in Victoria as part of the transition to the National Disability Insurance Scheme (NDIS) • The plan includes an additional $2.1 million for RMIT's Workforce Innovation and Development Institute (WIDI)
Royal Commission into Mental Health (2021)	• $3.8B investment committed to transform the delivery of mental health and wellbeing services.
Royal Commission into Family Violence (2023)	• $435M invested into reform
National Skills Agreement (2022)	• National Skills Agreement outlines a $3.7 billion investment over 5 years to support major reform • Includes 300,000 free TAFE courses in essential sectors including care and support (aged, disability, veterans and early childhood and education)
Australian Government Draft National Strategy for the Care and Support Economy (2023)	• Sets a roadmap of actions to a sustainable and productive care and support economy that delivers quality care with decent jobs • Focuses on paid care and support services in aged care, disability care and support, veterans' care, early childhood education and care (ECEC)
University and VET training commitment (2022)	• Including an additional 20,000 university places allocated (in part) to: 2,600 places in nursing; 2,275 in IT; 2,740 in health professions like pharmacy and health science • Further funding to grow and upskill the medical and health workforce and improve access to essential services by investing in training, workforce incentives and trials for innovative models of care

4.1.2 What RMIT already does

RMIT is already prototyping an approach to the social innovation precinct via the RMIT Social Innovation hub located in City North. This hub houses an established ecosystem of partnered interventions that are realising the opportunity for a precinct-based approach to health and social transformation (see Figure 11). Current collaborations and funded work show a strong value proposition in applied innovation and advanced prototyping spaces. Customised design studios and immersive learning experiences are also attractive to a wide range of cross-sector partners.

Figure 11**:** RMIT Social Innovation Hub



Note: collaborations reflect a mix of funded & in-kind resourcing.

Examples of groups working within the hub include:

Case Study: The RMIT-Cisco Health Transformation Lab

Health Transformation Lab (HTL) is the premier destination for establishing new and anti-disciplinary ways of working across the health system and beyond. The HTL is home to an advanced prototyping lab customisable for experimentation in aged care, smart hospitals, and healthcare in the home. It conducts partnered research and experimentation in social robotics, AI and other advanced technologies, spanning the range from key user testing to community ethnography

Case Study: The Workforce Innovation and Development Institute

The Workforce Innovation and Development Institute (WIDI) is a trusted, independent innovator for the social sector workforce, operating at the intersections of lifelong learning, employers, government funders and policymakers, students. WIDI constructs scaleable lifelong learning solutions and personalised support models to grow and upskill the social sector workforce, including earn-and-learn pathways, evidence-based workforce strategies, applied research exploring critical workforce challenges and partnering with government, industry, and peak bodies in several jurisdictions.

In addition, RMIT supports a range of organisations dedicated to innovation and skill development in justice, health, and care, focused on human services and community wellbeing which can contribute to the City North Social Innovation precinct. These include:

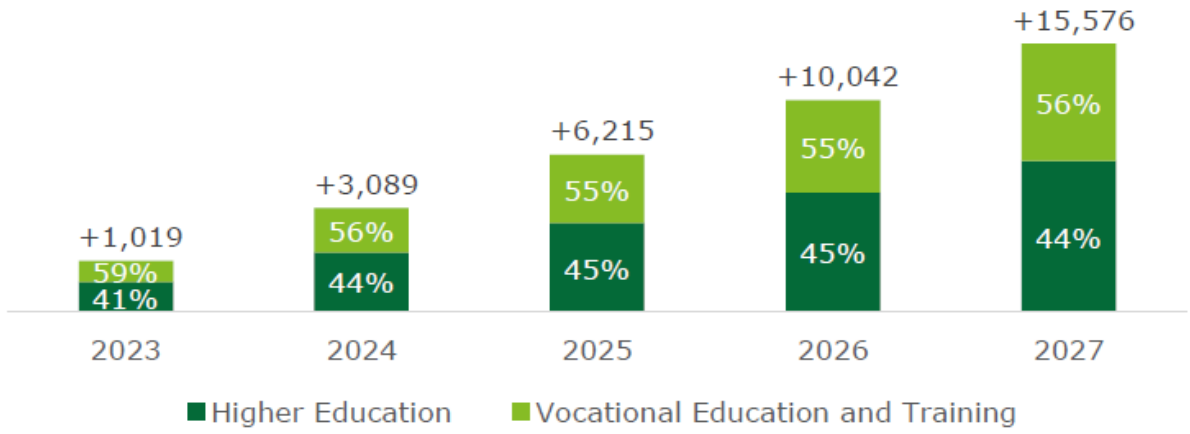
- **College of Vocational Education, Social Care and Health Cluster** offers a diverse range of programs across aged care and disability, allied health and applied sciences, community and education support, youth work, nursing, and dental care. This cluster provides opportunities for students to extend their learning across the entire spectrum of VE and clear pathways into higher education and into industry.
- **The RMIT Digital Health hub** is an international sector leader in the delivery of health workforce skills training. Leveraging its thought leadership in healthy ageing, mental health, virtual care and health workforce reform, the hub is driving professionalisation of a specialist digital health workforce in Australia. To students and workplaces, it offers accredited digital health training across AQF levels and disciplines as well as opportunities for workforce development. It also connects RMIT researchers to industry partners.
- **The Centre for Innovative Justice** (CIJ) develops, drives, and expands the capacity of the justice system to meet and adapt to the needs of its diverse users. CIJ does this by conducting impact-focused research – taking research findings, most of which involve direct engagement with service users, and applying them to develop innovative and workable solutions.
- **The Australian Housing and Urban Research Institute** is the only organisation in Australia dedicated exclusively to housing, homelessness, cities, and related urban research. Through RMIT's national network of university partners, it undertakes research that supports policy development at all levels of government, assists industry in improving practice and informs the broader community.

4.1.3 Future programs and uses

RMIT is already an established leading provider of social care and wellbeing programs and institutes. As shown in Figure 12, modelling performed by Deloitte Access Economics suggests that RMIT will supply 15,576 graduates in human services and healthcare related disciplines by 2027, and an additional 25,835 by 2040.[5]

[5] Deloitte Access Economics, RMIT City North Social Innovation Precinct and Innovation Spine: Economic impact assessment and sector case studies, 2022

Figure 12: RMIT human services and health care graduates from City campus (2026-42)



Source: Deloitte Access Economics and RMIT (2022)

Note: *includes graduates from medical studies, nursing, pharmacy, dental studies, public health, radiography, rehabilitation therapies, complementary therapies, other health, human welfare studies and services, and justice and law enforcement.*

The City North Social Innovation Precinct seeks to augment the aims of the Parkville Biomedical Precinct. It takes a broader conception of health and wellbeing and supports innovative, multidisciplinary approaches to overcoming social and healthcare challenges, aligning the precinct closely with recommendations from the Victorian Public Health and Wellbeing Plan (2019-2023). It will add innovation in nursing, aged care, allied health, disability and human services to Parkville through accessible prototyping spaces, simulated workplaces and opportunity of colocation of service providers. This focus complements Parkville's existing large scale clinical and pharmaceutical focus.

The Precinct will also leverage its proximity to the planned Arden Precinct north-west of Melbourne. Not only will the Social Innovation precinct complement the outpatient focus of Arden, but community members and essential care workers housed in the Arden residential zones will benefit from the ~15-minute commute to the City North precinct.

RMIT's Social Innovation Precinct will function as a highly visible, accessible urban 'front door' to the Parkville precinct by servicing a more diverse range of community and industry stakeholders and offering compact, lower-cost collaboration spaces. Social care and wellbeing services are fundamentally human work, and therefore have much to gain from bringing disparate groups together in the same physical location. This design element is fundamental to the aims of the precinct which seeks to build civic trust and connection to the care industry by supporting community involvement in social innovation.

A precinct intentionally purposed for this activity will be characterised by:

Training and talent for jobs and enterprise

- Continuing to develop and scale innovative workforce training solutions using a range of methods such as earn-and-learn pathways, placements, etc
- Access to digital, design and engineering skills support for the social care and wellbeing care sector

- Practical experiences for students, for example the development of a second 'Simulated Health Teaching Ward' located in City North. The existing ward, located within the Bundoora campus, contains 52 simulated hospital beds across five functional components: nursing labs, a high-fidelity simulation ward, simulation debrief / community and mental health scenarios, clinical prep student practice, training bathroom and technical support areas

Advanced collaboration and prototyping labs

- Simulated workplaces, prototyping labs and practical shared experiences for students, researchers, and industry partners
- Application of digital and engineering capabilities into the health and community care sector
- Incubation space and programs for start-ups and social enterprises
- Partnerships and onsite colocation with strategic human services and NGO partners, including continued presence of relevant community organisations in the neighbourhood, e.g., Save the Children, Oxfam, Trades Hall, Brotherhood of St Laurence, and Launch Housing

Applied innovation, research and experts

- Research and applied innovation focused on preventative health and community wellbeing
- Pilots or interventions to demonstrate systems thinking and impact measurement across the sector

Inclusive networks

- Research-informed public policy advocacy
- Skilled brokerage between big institutions, government, and innovators

4.2 Powering the clean economy

Growing sustainability skills to support clean energy and transport, construction and circular economy initiatives. Providing access to small scale prototyping spaces. Making the precinct a living lab for smart, sustainable urban planning and climate change adaptation. Leading by example through sustainable design (greening, built form, architecture, emissions, waste management).

Victoria's Climate Change Strategy focuses on a transition to renewable energy including establishing large-scale infrastructure, electrifying vehicles, building and renovating energy-efficient homes and efficient waste management. This has been reinforced by the re-establishment of the State Electricity Commission (SEC) and sizeable investment in infrastructure for renewables, public transport and energy efficiency.

The critical role of skills in transition to a low carbon economy is reflected in government investment in the SEC Centre for Training Excellence and Clean Economy Workforce Capacity Building Fund. Net Zero Australia estimates that Australia will require an additional 0.8 to 1.2 million additional energy workers[6]. This involves demand at all qualification levels, with most growth occurring in VET-related roles including electricians, engineering professionals, project managers, associated trades workers and construction labourers.[7] The types of skills needed are also changing. By 2030,

[6] Net Zero Australia, Interim Results, 2022 <https://www.netzeroaustralia.net.au/interim-results/>

[7] McCoy, J, Davis, D, Mayfield, E, Brear, M, Downscaling – Employment impacts, Net Zero Australia, 2023 <https://www.netzeroaustralia.net.au/wp-content/uploads/2023/04/Downscaling-Employment-impacts.pdf>

operation and maintenance of renewable energy installations could account for 50 per cent of jobs in the electrical sector.[8] As Victoria's largest public provider of vocational education, RMIT is well placed to respond to the scale of this training challenge.

Approximately 40% of carbon emissions globally are from the built environment.[9] Carbon-negative future construction and making existing buildings more energy efficient can reduce emissions and support more equitable, healthier communities. We are already seeing high demand for green skills in construction management and building trades. Investment in future technology will require further adjustments to skills and trades such as plumbing in renewable hydrogen. As a technology focussed dual sector university RMIT is well-practiced in bringing applied innovation into the classroom.

In addition to fast growing demand for jobs in sustainability management, there is a heightened requirement for sustainability skills in non-traditional roles, such as finance and fashion, with demand for green talent and green skills typically outpacing supply.[10]

The Victorian Government's focus and investment in the Circular Economy Business Innovation highlights the opportunities for reducing waste generation in material-intensive sectors such as construction, manufacturing, food, and fibre. RMIT is already a contributor to this network and sees the potential for increased focus on applied research and translation.

As an urban renewal project, the Social Innovation Precinct can establish itself as a living lab for smart, sustainable urban planning and climate change adaptation.

4.2.1 Alignment to government policy

Victoria's Climate Change Strategy (2022)	A five-point plan to transition the state to net zero: 1. A clean energy economy – Continuing the State's journey on the energy transition to renewables 2. Innovation for the future – Investment in technology and innovation in zero-emissions to bolster future opportunities 3. Resilient farms and forests – Securing the future of the State's natural environment and supporting advancements in agriculture 4. Climate smart businesses and communities – Supporting Victorians to reduce emissions through the adoption of more efficient solutions 5. A climate resilient Victoria – Building resilience in our communities, ecosystems and landscapes to withstand climate events.
State Electricity Commission (SEC) (2023)	◦ Re-establishment of the SEC, the SEC Centre for Training Excellence and associated workforce development needs

[8] Clean Energy at Work, Clean Energy Council, 2020; New Technologies for Electricians, M1andCo, Dec 2020

[9] WEF Global Risk Report, What are the challenges in making technology more sustainable, 2020, Appendix A: Descriptions of Global Risks 2020, The importance of decarbonizing the built environment, 2020

[10] LinkedIn, Global Green Skills Report, 2022

Clean Energy Workforce Strategy (2022)	• The $6 million Clean Economy Workforce Capacity Building Fund (CEWCBF) will help drive Victoria's clean energy future and net zero emissions by 2050 through projects that promote training for an expanded clean economy workforce. Applicants can receive up to $1 million for projects to address skills needs as major sectors transition, help upskill or reskill workers, and address issues within food production, transport and industry. The fund will continue to foster valuable more opportunities for collaboration between the Victorian TAFE and training sector and industry on new training, jobs and products.
Victorian Skills Plan (2022)	The growth in preference for renewable energy and recyclable materials is driving the demand for green jobs and the Victorian Skills Plan has outlined workforce priorities for the Construction industry as well as the Electricity, Gas, Water, and Waste Services industry. Priorities include building supply of workers, improve retention of workers, addressing skills gaps and upskilling of workforce. • VSP Action 6: Build skills to support Victoria's clean economy intentions: Further develop Victoria-wide project-based workforce planning tools to provide insights to education and training sectors to inform skills delivery planning. Embed Clean Economy Workforce Priorities identified in the strategy into future skills plans. Develop innovative approaches in conjunction with the Office of TAFE Coordination and Delivery, to scope and deliver programs for new clean economy skills
Solar Victoria Training and Workforce Development (2023)	• An $11 million investment to deliver a comprehensive training and workforce development package designed to assist people to upskill with free and low-cost training to help grow Victoria's clean energy workforce.
Transmission and grid infrastructure (2020)	• $1.6 billion clean energy package to invest in renewables, grid infrastructure, energy efficiency and decarbonisation projects, including $540 million to establish 6 Renewable Energy Zones (REZs). • Solar Victoria VPP pilot program and $26.7m in grant funding to support communities implementing projects such as microgrids and neighbourhood batteries • Working with AEMO to deliver the transmission required to connect new renewable resources to the grid (VicGrid)
Victoria's Infrastructure Strategy (2021)	New sustainable infrastructure will require increased vocational education and transitioning of the current workforce into the clean energy economy. The Victorian Infrastructure plan outlines the broad objective of constructing infrastructure to enable the renewable energy transition. The plan also includes sustainable infrastructure in water cycle management, emergency water networks, coastal management, green space development and irrigation network modernisation for agriculture.
Circular Economy Recycling Victoria: A new economy (2020)	• This 10-year, over $300 million investment and action plan will transform Victoria's waste and recycling system. In recent years the Victorian government has announced a series of circular economy initiatives, aimed at increasing infrastructure and innovation to strengthen the waste and recycling industry. This includes funding new waste to energy research to develop safe end uses for residual products and planning for waste to energy facilities as part of the Victorian Recycling Infrastructure Plan. • **Circular Economy Business Innovation Centre (CEBIC)**. RV recognises that Victorian businesses are central in the transition to a circular economy and details a commitment to improving business productivity, reducing waste and accelerating innovation. From this commitment, CEBIC was born. Funding of up to $1M is available. (Victorian Circular Activator is funded by CEBIC)

Energy efficiency in homes and businesses	∘ Solar Homes program ∘ Appliance upgrade program ∘ $5.3bn to construct 12,000 low cost 7-star energy efficient homes
Zero Emission Vehicle (ZEV) Roadmap (2021)	The state government intends to support the deployment of ZEVs, providing $100 million in funding to achieve the aims of the roadmap. The Victorian government have set a target of 50% of light vehicle sales to be ZEVs by 2030 and have also outlined plans to support research activities, primarily within battery innovation and hydrogen vehicle development.
Victorian Hydrogen Strategy (2021)	The strategy aims to accelerate innovative hydrogen research in Victoria and to develop the state into a leading hydrogen higher education centre. The government plans to launch large collaborative research projects in addition to increasing their efforts to commercialise hydrogen energy, namely by developing hydrogen focused incubators and accelerators. The strategy outlines its aim to grow Victoria's reputation as a leader in hydrogen education which includes improved vocational education for renewable hydrogen infrastructure.
Building Victoria's climate resilience (2022)	Five-year plans for driving adaptation action across seven essential systems: Build environment. Education and Training, Health and Human Services, Natural Environment. Primary Production, Transport, Water Cycle.
Built Environment Adaptation Action Plan (2022)	The action plan placed a target of constructing new urban green spaces in Victoria such as the development of parks, corridors and nature strips. The plan aims to provide at least 30% tree canopy coverage across the urban landscape to support cooling and greening responses using design measures and infrastructure to minimise bushfire risks where necessary.
National hydrogen funding (Federal Budget 2023/24)	∘ The Australian Government announced the establishment of the $2 billion Hydrogen Headstart initiative in the 2023-24 budget to underwrite the biggest green hydrogen projects to be built in Australia. ∘ Funding will provide revenue support for investment in renewable hydrogen production through competitive production contracts. Funding will cover the commercial gap between the cost of hydrogen production from renewables and its current market price. ∘ Victoria Hydrogen Energy Supply Chain (HESC) pilot completed in 2022. The project led to the world's first shipment of liquified hydrogen to Japan and is a major milestone in hydrogen export technology.
National circular economy funding (2021)	∘ The federal government has made recycling a priority sector for investment and aims to significantly shift Australia's waste sector. In 2021, the government launched the $250 million Recycling Modernisation Fund which supports new and upgraded recycling infrastructure. The government has also released the A$100 million Australian Recycling Investment Fund to support large projects using clean energy technologies in recycling waste plastics, paper, glass and tyres. ∘ National Clothing Product Stewardship Scheme to improve the design, recovery, reuse and recycling of clothing, providing a roadmap to circularity in Australia by 2030.
Powering Australia Industry Growth Centre (2023)	∘ The program provides up to $14 million for the foundation of the Powering Australia Industry Growth Centre. The Centre will aim to grow Australia's renewables technologies industry and establish Australia as a leader in renewables technologies.

4.2.2 What RMIT already does

RMIT is supporting the transition to a clean economy through:

- **The Vocational Education Built Environment and Sustainability cluster** teaches programs in: Building, Surveying and Land Management, Building Design, Electrical, Plumbing, Carpentry, Refrigeration and Instrumentation. These programs are market leaders and in high demand due to their offer of access to high quality practice-based teaching and equipment, industry partnership and clear pathways and connections to further study and research.

Case study: Improving sustainability in the construction sector

RMIT is creating three new units that combine to form a stackable Certificate IV qualification in Sustainable Building Design. The training packages respond to immediate skills needs in the clean economy and support a transition to more sustainable construction and manufacturing practices under the government's Clean Economy Workforce Capability Building Fund.

- **Reliable Affordable Clean Energy for 2030 (RACE for 2030):** Focused on customer-centred clean energy transition, RACE for 2030 will drive energy innovation that aims to cut bills and carbon emissions of Australian households and businesses. RMIT is a partner of this industry-led research effort which includes cutting edge research and technology development to boost Australian business energy productivity, integrate distributed energy resources into the grid, reduce energy bills for consumers, enhance energy reliability and cut carbon emissions.
- **Electric Vehicle Living Lab:** RMIT hosts the first electric vehicle research facility of its kind in the southern hemisphere. This is a major project bringing government, university, and industry partners together around the expertise and infrastructure needed to support widespread adoption of electric vehicles in Victoria. With transport responsible for around 25% of greenhouse gas emissions in Victoria, electrification of transport is critical for tackling climate change, as well as creating new jobs in low-carbon industries.
- **Victorian Circular Activator (VCA):** The VCA supports organisations by partnering in applied research, supporting upskilling and venture creation programs and providing a dedicated space and support community for circular economy technologies and innovators.
- **The Circular Economy Hub (CEH):** The circular economy aims to transform the current mindset of the take-make-waste linear model towards circularity, where waste and pollution is eliminated through good design, and the life of existing materials are prolonged through new and innovative ways of repairing, reusing and remanufacturing. CEH is a cross-disciplinary, industry-engaged network of around 60 researchers and experts across the University working on circular economy research across Australia and internationally. The CEH's cross-disciplinary nature supports empirical approaches to holistic and systemic engagement across research partnerships, expanding the university's impact and expertise on CE. It also supports the emergence of a new capability-building platform across micro-credentials, executive training, vocational and higher educational outcomes.
- **Industrial Transformation Research Hub:** RMIT is leading a new ARC Industrial Transformation Research Hub for Transformation of Reclaimed Waste Resources to

Engineered Materials and Solutions for a Circular Economy (TREMS). The Hub will focus on reducing landfill waste and transforming reclaimed waste into new materials for use in construction and other manufacturing sectors. It draws on expertise across multiple disciplines including civil, chemical, materials and construction engineering, artificial intelligence, behavioural sciences, environmental procurements and policies and standards.

- **School of Architecture and Urban Design:** RMIT ranks highly among the world's top universities for the study of architecture; a ranking that highlights our ongoing commitment to designing better ways of living in our complex and rapidly changing world**.**
- **Sustainable Technologies and Systems Impact Platform** conducts research that leverages sustainable technologies and systems to solve national and global environmental, social and economic challenges in the areas of energy, water, food, circular economy and pollution mitigation. It is a catalyst for test-bedding, innovation and translation. It aims to produce impactful outcomes through the development and translation of innovative, cutting-edge solutions that are aligned with national and global priorities, including those articulated in the UN Sustainable Development Goals (SDGs).
- **Urban Futures Enabling Impact platform** is already assisting the public and private sectors to transform how cities are planned, built, and governed to achieve healthy sustainable urban development.
- In the Social Innovation Precinct Area, RMIT hosts the Melbourne Secretariat for the **UN Global Compact**, dedicated to advancing the UN Sustainable Development Goals.

RMIT is also a major contributor to a number of Cooperative Research Centres (CRCs) and Australian Research Council (ARC) Centres responsible for delivering clean economy research

- CRC for Reliable Affordable Clean Energy for 2030
- Fight Food Waste CRC
- Food Agility Cooperative Research Centre
- Future Fuels CRC
- Trusted Autonomous Systems CRC
- SmartCrete CRC
- iMOVE CRC
- ARC Centre of Excellence for Environmental Decisions
- ARC Centre of Excellence in Future Low-Energy Electronics Technologies (FLEET)
- ARC Training Centre for the Transformation of Australia’s Biosolids Resource
- Industrial Transformation Research Hub for Transformation of Reclaimed Waste Resources to Engineered Materials and Solutions for a Circular Economy (TREMS)

4.2.3 Future programs and uses

The renewal of the City North Social Innovation Precinct represents a unique opportunity to scale up training, research and innovation space and programs within a living lab for inclusive sustainable urban renewal. This activity will directly support the City of Melbourne’s Zero Carbon Job Cluster by focusing clean economy skills development in the heart of the city.

Electrification Centre of Excellence

RMIT has proposed a $3.5million investment from the Victorian Government's Workforce Training and Innovation Fund (WTIF) for an **Electrification Centre of Excellence**. The centre will focus on building electrification capabilities for a Clean Economy, contributing to Victoria's decarbonisation ambitions, and prioritise the students facing equity-based barriers from training (such as women, Indigenous communities, those with disabilities) in clean energy occupations.

The Electrification Centre of Excellence (CoE) will:

- Partner with industry to increase the number of apprenticeships that RMIT and other public TAFEs) offer in occupations with current labour shortages, such as electricians, plumbers, and refrigeration mechanics (delivering on the need for 4,000 electricians (commercial and residential), 2,400 gas plumbers, and 500 air conditioning and refrigeration mechanics by 2025).
- Work with partners, industry, other TAFE institutions, utilising evidence-based applied research, to co-design and deliver targeted and high-quality learning in core skills for occupations identified as having shortages and needed for the success Victoria's decarbonisation agenda, such as, electricians across all grades (commercial and residential), gas fitters, plumbers, air conditioning and refrigeration mechanics,
- Investigate a co-joint appointment offer that incentivises high-quality electrician and electrotechnology and construction professionals to bring real-world expertise and industry relevant expertise to the CoE
- Work with partners, embed required capabilities needed for electrification within existing courses that support key occupation pathways.
- Work with partners to apply new offers that help bridge gaps in skills in existing workforces.
- Work with partners and industry to diversify cohorts interested in pursuing occupations required for the next generation in the clean energy workforce.

Scaling up inclusive clean economy innovation

The precinct redevelopment will allow RMIT to scale up access and support for sustainable technology innovation and entrepreneurship including:

- Space for start-ups, researchers, students, businesses, not for profits, government and investors to collaborate.
- Laboratory space for testing new-small scale clean technology.
- Connecting with local retail and hospitality businesses to pilot circular initiatives and scaling these approaches through RMIT's industry networks.
- Low-cost co-working space for green start-ups.
- Workforce training in circular economy and waste, sustainable design and construction.

Living lab

Making the precinct a living lab for smart, sustainable urban planning and climate change adaptation, including:

- Leveraging RMIT's research capabilities in circular construction, low carbon materials and IA and building management to test and expose students to new technologies and approaches.
- Partnering with City of Melbourne on initiatives such as Retrofit Labs to demonstrate adaptive building re-use and adaptive capacity of new building design.
- Celebrating Aboriginal knowledge of sustainable practices and ecology through establishment of a green Innovation spine.
- Working with the City of Melbourne to improve water management
- Leading by example through sustainable design and precinct-level planning for energy generation and local grid management, waste and circularity, greening and heat management and apply principles of indigenous ecology.

4.3 Supporting future engineering, computing and manufacturing

Growing digital and engineering skills and industry partnerships to contribute to innovation across sectors. Supporting the pivot from traditional manufacturing to tech-enabled future manufacturing and reskilling workers. Providing inclusive access to digital skills.

Engineering, technology and digital skills will continue to be essential in the future of work. The development of robotics, automation, AI and data driven insights will drive business transformation in increasingly practical ways.

The demand for digital skills is high in Australia. An estimated 70% of new job listings in Australia require a high level of digital skills. This will grow as technology integration across sectors continues, with an estimated 33% of employers reporting they had bought new technology due to the pandemic[11]. Melbourne is second in the Asia-Pacific for new software headquarters set up in the last six years and is home to more than half of Australia's top 20 technology companies.

The National Skills Commission estimated that the Victorian engineering workforce will grow rapidly, requiring an additional 8,315 workers by 2026[12]. RMIT is Victoria's largest provider of Engineering Higher Education, and creates pathways into these occupations through Vocational Education in engineering, technology and computing. For example, RMIT's dual degree partnership with high-performing Indian university, BITS Pilani also offers a new pathway to skilled migration in the engineering field, alongside rigorous qualifications recognised in both Australia and India.

Robotics and automation continue to make Australia's manufacturing processes more efficient and cost-effective, using tailored machines and complex computer programs to increase output and develop higher quality products. By focusing on these technology-enabled, high-value-added activities, RMIT can contribute to Victorian strengths in workforce training, innovation, and design, to meet critical industry and public needs in areas ranging from construction to medical manufacturing and aviation.

4.3.1 Alignment to government policy

Victorian Skills Plan (2022)	◦ Identifies that digital transformation across all industries has driven the demand for workers, including engineers, with relevant skills. It outlines priorities to upskill the existing workforce and build the next-generation workforce with digital know-how to meet the future demand of the industry. ◦ Highlights substantial changes currently underway in the manufacturing sector, driven by the increasing use of new technologies such as 3D printing, digital twinning, advanced robotics and automation. It notes that manufacturing workers across all areas will need to build new tech skills to remain competitive, and that there is likely to be particularly strong demand for highly skilled engineering graduates (which account for a relatively small, but critical part of the sector).
Cyber Defence Centre (Victorian Budget 2023)	◦ Committed $34.7million over 2 years to review and strengthen the cyber defence systems across the Victorian public sector, and uplift response capabilities for cyber incidents with the creation of a new Cyber Defence Centre

[11] National Skills Commission

[12] National Skills Commission, Deloitte Access Economics analysis

Victorian Government Digital Strategy (2021)	• Aims to create fairer and more accessible digital services, especially for cohorts with poor digital access, disability, low incomes or culturally or linguistically diverse backgrounds. Also outlines the need to build a digital-ready public sector and thriving digital economy. The state government intends to fulfill these goals by supporting the digital education of Victorians, creating a digitally fit workforce across core industries and creating an attractive environment for start-ups and digital innovation. The Victorian government has thus far invested in several programs to realise these objectives, including: • The Digital Jobs program which aims to build the state's digital workforce by training and upskilling Victorians[13] • The State Government has provided significant investment into digital and entrepreneurship skills as evidenced by the establishment of the $60 million start-up initiative, LaunchVic. • The University of Melbourne recently developed the Melbourne Connect Innovation Precinct in Carlton[14]
Victoria Cyber Strategy (2021)	• Recognises the importance of cyber security risk and the need to develop capabilities within the industry. The strategy aims to generate jobs for Victorians in cyber risk management and provide support for local cyber start-ups to develop and up-scale, thus boosting local economies
Made in Victoria 2030 (2022)	• Sets out the government's vision to reskill and invest in the manufacturing industry in a range of priority areas, including: zero and low emission technology, health technology, food manufacturing, defence, aerospace and space manufacturing, and digital and advanced technology. The 2023-24 Victorian Budget committed $26.8M in funding to establish an Industry R&D Infrastructure Fund, a Manufacturing and Industry Sovereignty Fund, and to support Victoria's defence manufacturing industry
Advanced Manufacturing Growth Fund (2018)	• The Australian Government is investing $50 million to support businesses in transitioning away from traditional manufacturing processes, specifically in Victoria and South Australia. This includes helping businesses adopt more sustainable practices and embrace innovative technologies like additive manufacturing.
Future Made in Australia Skills Plan (2021)	• Includes additional 20,000 university places allocated (in part) to IT (2,275) and engineering (1,738) • The delivery of 180,000 fee-free TAFE and vocational education places, in the critical skill shortage areas: technology, construction, manufacturing, and defence
National Skills Agreement (2022)	• Includes funding to establish TAFE Centres of Excellence to partner with industry, universities, and governments to address critical challenges in our economy such as transition to a clean economy, manufacturing and sovereign capability and care and support
Women in STEM Cadetships and Advanced Apprenticeships Program (2020)	• Provides funding for new and existing participants to have more time to complete their science, technology, engineering and maths qualification while simultaneously continuing their career

[13] Department of Jobs, Precincts and Regions, Digital Jobs, 2022

[14] University of Melbourne, Melbourne Connect: Australia's newest innovation precinct comes to life, 2021 <https://www.unimelb.edu.au/newsroom/news/2021/april/melbourne-connect-australias-newest-innovation-precinct-comes-to-life>

Industry Growth Program (Federal Budget 2023/24)	◦ Supports early-stage businesses in their most challenging development phase ◦ Projects in the following priority areas of the National Reconstruction Fund will be eligible for the Industry Growth Program: renewables and low emissions technologies; medical science; transport; value-add in the agriculture, forestry and fisheries sectors; value-add in resources; defence capability and enabling capabilities
Strengthening Australia's Science, Technology, Engineering and Mathematics Capabilities (Federal Budget 2023/24)	◦ Supports the boosting of Australia's capability, capacity and outreach in science, technology, engineering and mathematics, including funding for national STEM education and engagement programs to increase science engagement

4.3.2 What RMIT already does

RMIT is a leading contributor to research-driven innovation and to workforce development in this sector and can be instrumental in this ecosystem's future development through existing capability in City North and particular strengths in design and research translation. RMIT's unique positioning as a dual-sector institution with HE and VE qualifications enables the university to offer inclusive access to upskilling to a wide range of manufacturing workers.

- **Higher Education:** RMIT's STEM College has significant expertise in delivery across data science, artificial intelligence, and cloud systems and security. RMIT has higher education engineering offerings spanning civil and mechanical, electrical, and chemical, aerospace, biomedical and environmental engineering, with significant capability and infrastructure supporting these programs in City North.

Case Study: Apple Foundation Program

RMIT and Apple launched the Apple Foundation Program in 2023, which provides a four-week program to upskill on the Swift programming language. Students collaborate in a challenge-based learning environment to prototype an original app idea using the Apple iOS ecosystem. The world-class learning and design program offers an overview of the skills to become an iOS developer, while simultaneously introducing students to highly sought-after transferable skills, including:

- Design Thinking
- User Research
- User Interface and User Experience design
- Xcode
- Storytelling
- Presentation and pitching of ideas

- **Vocational Education:** RMIT has a broad suite of Vocational programs spanning engineering, electrical and telecommunications, mechanical and aerospace, and building and trades. The Future Technologies cluster includes a range of programs including ICT and a new Industry 4.0 area at certificate, diploma, and sub-bachelor levels.

Case Study: Centre for Additive Manufacturing (RCAM)

RMIT's Centre for Additive Manufacturing (RCAM) is a leading multi-disciplinary centre focused on industrial additive manufacturing technology. The centre's manufacturing expertise in design, materials, modelling and laser technologies enables it to support manufacturing across a range of industry sectors including aerospace, biomedical, automotive, mining and energy.

The Centre's main facility, the **Advanced Manufacturing Hub,** created in partnership with Siemens and Festo Didactics, provides students and researchers access to simulated manufacturing equipment. Employees can gain skills in industrial software applications, digital systems and process automation, and practical, problem-solving approaches in advanced manufacturing for Industry 4.0.

The hub was launched alongside Victorian Government funded trial of an advanced apprenticeship-style new dual-sector Associate Degree in Digital Technologies (Industry 4.0) showing the potential of combining vocation training and research infrastructure.

- **RMIT's Blockchain Innovation Hub** focuses on crypto-economics, business strategy and adaptation to blockchain technologies, mapping the blockchain economy, and identifying the public policy challenges with this new technology. RMIT ranked 2nd globally across all universities for the impact of its blockchain research.

Case Study: Architectural Robotics Lab

RMIT's Architectural Robotics Lab is an example of the innovative applications of robotics in the engineering and architectural sector. It is an applied research group that explores the application and implications of robotics to architectural design, building fabrication, assembly and construction. The lab operates to provide both speculative research and the application of that research to industry projects.

- **The Australian Steel Manufacturing Research Hub** is working on breakthrough process and product innovations to enable the Australian steel industry to improve its global competitiveness. By ensuring sector-wide industry representation and collaboration with leading Universities, the hub will deliver economic and environmental benefits and ensure the nation's future research capacity in the field. The RMIT team is responsible for the theoretical modelling of fundamental molecular mechanisms of biomolecular adsorption to functional surfaces.
- **The ARC Automated Decision-Making Lab** creates the knowledge and strategies necessary for responsible, ethical, and inclusive automated decision-making in partnership with 8 other universities.
- **The ARC Training Centre in Fire Retardant Materials and Safety Technologies** aims to train a cohort of industry-focused researchers to improve the fire safety of lightweight materials and structures and fire protection systems. The key focus of RMIT's involvement in this centre are micro-engineered flame retardants, integrating flame retardants with structural materials, and multi-scale computational models for fire propagation.

- **The ARC Training Centre in Lightweight Automotive Structures (ATLAS)** aims to accelerate the transformation of Australia's automotive industry through new research capabilities in lightweight automotive structures design and manufacture. Administered through RMIT University, ATLAS brings together Deakin University, Australian National University, lead industry partner Ford Motor Company and a further 12 local and international partner organisations including the CSIRO to address the challenges in lightweighting.

4.3.3 Future programs and uses

- Enhancing access to in-demand engineering and technology occupations through innovative lifelong learning models such as higher apprenticeships, industry-embedded degrees and microcredentials. For example, RMIT is partnering with leading engineering organisations to develop a pilot to design a **Degree Apprenticeship program in Systems Engineering**; a work-integrated learning program combining a paid employment contract with a higher education qualification (earn-while-you-learn). The pilot is opening up new ways for industry to provide opportunities for young Australians who might not be considering university studies.
- Scaling up delivery of engineering and computing programs across VE and HE.
- Expanding **skills training in future manufacturing** processes. As a dual-sector University, RMIT is uniquely positioned to offer both HE and VE qualifications to reskill workers disrupted by the transition of the manufacturing industry.
- Continued partner co-investment and improved access to **leading edge equipment** for research, demonstration and industry collaboration.
- Housing less space-intensive **virtual labs and digital prototyping infrastructure** which will complement more space-intensive equipment and machinery at Fishermans Bend. Building strategic connections between the two precincts through research and strategic industry partnerships in defence, aviation, and other key sectors.
- Creating connections with the Cremorne Digital Hub including connecting hub members with opportunities in Asia.

4.4 Leveraging deep technology for inclusive innovation

Growing capability and applying emerging technologies including quantum computing, biofabrication and nanotechnology to solve challenges across sectors. Bringing together design, prototyping and translation facilities.

Over the coming decades, advanced research in deep technology will help to transform the global economy, driving productivity growth and innovation and changing the skills that workers need. Technologies such as quantum computing, nanotechnology and bioengineering cut across pre-existing industries and disciplines and thus lend themselves to innovative cross-disciplinary institutions such as RMIT. RMIT is a leading contributor to innovation in emerging technologies and can support the ecosystem's future development by connecting it with existing strengths in design and technology translation. Embedding deep technologies at the core of the Social Innovation Precinct will drive innovation, research, translation, skills development and start-up incubation across all domains.

4.4.1 Alignment to government policy

Breakthrough Victoria Fund (2021)	• The landmark $2 billion Breakthrough Victoria Fund will bridge the gap between discovery and commercialisation, and mobilise innovation in areas such as: health and life sciences; agri-food; advanced manufacturing; clean economy; digital technologies
Critical Technologies Statement (Federal Budget 2023/24)	• The Federal Budget 2023/24 supports the development of critical technologies in Australia to drive economic growth, boost technology industries and support the creation of new jobs • The technology fields on the list are: advanced manufacturing and materials; artificial intelligence (AI); advanced information and communication; quantum; autonomous systems, robotics, positioning, timing and sensing; biotechnologies; clean energy generation and storage.

4.4.2 What we already do

RMIT leads a number of technology innovation initiatives which can be leveraged to support the tech-advancement of the Victorian economy:

- **RMIT Activator** is a start-up incubator creating value and delivering impact through applied innovation and entrepreneurship challenges, experiences, and networks.
- **MedTech Actuator:** RMIT is a founding partner of the MedTech Actuator, which was established to provide bespoke acceleration for MedTech, HealthTech and Deep Technology ventures. It connects the region's broad ecosystem to empower founders to grow the next wave of MedTech, HealthTech start-ups in Australia and the Asia Pacific.

Case Study: Biofabrication and Tissue Engineering (BiTE) research group

This facility offers immense opportunities for engineering and manufacturing fully functional, biocompatible tissue constructs and devices for repairing or replacing lost human body tissue functions. BiTE works with the Aikenhead Centre for Medical Discovery based in St Vincent's Hospital Melbourne, a research and development hub where researchers, clinicians, engineers, and industry partners collaborate to advance 3D bio-printing technology.

- RMIT's team in in the **ARC Centre of Excellence in Optical Microcombs for Breakthrough Science (COMBS)** is using technology – called the optical frequency comb – to drive society-wide transformations in the fields of biomedical imaging, communications, precision measurement and astronomy. This is done through partnering with scientific and industrial end-users to create new approaches and solutions in the biomedical imaging, communications, precision measurement and astronomy.
- **The ARC Industrial Transformation Training Centre in Additive Biomanufacturing** works collaboratively to develop advanced bioprinters, bioinks, and 3D printed clinical tools. The RMIT team is focused on innovative approaches for clinical uses of additive manufacturing.
- RMIT is a core partner of the **ARC Centre of Excellence for Quantum Computation and Communication Technology** which aims to implement quantum processors able to run error-corrected algorithms and transfer information across networks with absolute security. It is a world leader in the race to build a quantum computer in silicon and undertakes world-class research in optical quantum computing and quantum information technologies.
- RMIT University is a node of **the ARC Centre of Excellence for Transformative Meta-Optical Systems (TMOS)**. TMOS will develop the next generation of miniaturised optical systems with functionalities beyond what is conceivable today. By harnessing the disruptive concept of meta-optics, the centre aims to overcome complex challenges in light generation, manipulation and detection at the nanoscale.

Case Study: Micro Nano Research Facility (MNRF):

RMIT has operated cleanroom fabrication and metrology facilities for over 30 years and operates the MNRF, a comprehensive facility for design, modelling, fabrication, packaging and characterisation of micro and nano scale devices. The facility houses nine laboratories and is one of Australia's most sophisticated nanotechnology research centres.

4.4.3 Future programs and uses

The Social Innovation Precinct has the potential to connect RMIT strengths in deep technology research capabilities with practical applications and workforce training including:

- Skills brokerage between PhD graduates and key sectors in need

- Continued **partner co-investment and improved access to leading edge equipment** for research, demonstration and industry collaboration. Partner access to leading edge research infrastructure to encourage innovation and enterprise transformation
- Incubation and capacity-building of **new ventures** at RMIT (building on work of RMIT Activator and MedTech Actuator)
- Scaling a cloud computing hub, including the Amazon Web Services Cloud Innovation Centre and RMIT's sector-leading RACE facility.

4.5 Connecting for regional impact

Harnessing Melbourne's Asia connectivity for regional impact. Driving solutions to the challenges of the future through regional collaboration and innovation. Growing a landing pad for international talent and investment.

The challenges of transforming approaches to social care and wellbeing, decarbonisation, and ensuring the workforce of the future has the digital and technology capability to respond to the challenges of tomorrow are global and regional challenges. International collaboration and investment are critical to securing the skills, capabilities and technology to drive change and contribute to long-term, sustainable economic growth. RMIT's decades-long connection and investment has positioned the Social Innovation Precinct in City North to readily connect with Asia and the world.

Regional connectivity and collaboration cuts across each of the Precinct's focus areas. Deeply embedding regional connectivity ensures Melbourne can capitalise on its position as Australia's most innovative city and act as a premiere destination for high-end international investment.

The precinct sits at the geographical heart of Melbourne's thriving community of deep Asia expertise. Many of Melbourne's most prominent Asia-focused centres, including Asia Society Australia, Asialink, the APEC Study Centre, Save the Children and Oxfam are located in the area. The Parkville Precinct's well-established position as a globally connected and respected biomedical hub, further cements the City North Social Innovation Precinct's natural position as a place of regional engagement and connectivity.

RMIT's commitment to be a leading university of impact in the Asia Pacific by 2031 is driving a renewed focus on connecting RMIT's research and innovation expertise internationally, tapping into alumni and exploring new opportunities for regional engagement. In 2023, RMIT was acknowledged by the Times Higher Education's global impact rankings as a leading global institution for reducing inequalities, securing decent employment, and partnering for the Sustainable Development Goals. This commitment is two-way – deeper international partnerships are in Australia and in the Asia Pacific, with City North's social care, smart and sustainable city and digital technology focus positioned to attract inbound investment, research and partnerships. City North can grow as both a landing pad and launching pad for innovative, high-tech trade and investment.

4.5.1 Alignment to Government Policy

Victoria International Investment Strategy (2022)	• Focuses on attracting global companies from emerging and growth industries that are crucial to growing the state's economy and creating jobs.

- Aims to connect foreign investors and global companies with our priority precincts and thriving regions and leverage the skills and expertise of businesses right around the world to play a role in priorities such as major infrastructure, waste management and decarbonisation.

4.5.2 What RMIT already does

The precinct sits in the heart of a thriving community of deep Asia expertise and experience, focussed on achieving sustainable, positive impact in addressing global challenges. Key RMIT vehicles for regional impact include:

- **Asia Trade and Innovation Hub:** Established with the support of the Victorian Higher Education State Investment Fund (VHESIF), the Asia Trade and Innovation Hub (ATIH) is a physical and digital 'front door' for economic and social engagement with Asia. Located on the edge of the City North Precinct, the Hub harnesses the expertise of RMIT and the Asia Society Australia, connecting with the Victorian business community.

Case Study: Asia Trade and Innovation Hub

ATIH's August 2022 report "Strengthening Victoria's Connections with Southeast Asia - Trade and Investment Opportunities" — provided a roadmap for business and government to deepen Victoria's relationships in Southeast Asia following Covid-19 disruptions. By highlighting opportunities in Southeast Asia for Victorian businesses in areas such as digital transformation and green industries of the future, the report outlines how Victoria can increase two-way trade and investment, while reinforcing the global and cross-cutting nature of City North's focus areas.

- **APEC Study Centre:** The APEC Study Centre champions Australian economic priorities across the Asia Pacific, recognising increased trade and development leads to improved prosperity for all people across the region. The APEC Study Centre's applied research approach to addressing key regional economic issues links evidence to practical and creative international trade solutions.
- **Australia Vietnam Policy Institute:** Established jointly by RMIT, Asia Society Australia, Asialink and the Australia-Vietnam Leadership Dialogue, the Australia Vietnam Policy Institute (AVPI) is Australia's first policy institute focused on Vietnam. It is a partnered public policy hub centred around engagement, collaboration and impact. Through research and expert insights, the AVPI helps to advance a cooperative and secure environment for business and investment.
- **RMIT Vietnam:** RMIT University Vietnam brings a world-class education and globalised study environment from Melbourne to the heart of Asia. It is Vietnam's leading international university and plays a key role in meeting Vietnam's education and skills needs, contributing to increased trade and investment opportunities.
- **RMIT Europe:** RMIT's Europe hub in Barcelona, Spain, is the gateway for European research, industry, government and enterprise to innovation and talent in Australia and Asia.
- **RMIT-BITS Pilani partnership:** RMIT has partnered with high-performing Indian university, BITS Pilani, to offer Australia's first dual degree program with an Indian university. Four bachelor level degrees, all in engineering fields, are offered with the first two years in India

and final two years in Melbourne. The partnership also offers joint PhDs and aims to have 1,500 students from India studying in Melbourne by 2030.

- **RMIT alumni:** RMIT alumni are assets spread across the region able to act as connectors and ambassadors for Melbourne and Victoria, and use networks to develop new trade, innovation and research opportunities. RMIT's 60,000 alumni in Singapore account for approximately one per cent of the workforce - an unrivalled asset in this global technology and innovation hub.

4.5.3 Future programs and uses

RMIT will use the Social Innovation Precinct to enhance two-way connectivity between Melbourne and the region as follows:

- The Asia Trade and Innovation Hub to become the Melbourne heart of RMIT's **network of industry-connected centres across Southeast Asia**.
- More Victorian businesses able to successfully access trade opportunities in Asia through growth in **Asia Trade and Innovation Hub's research, public policy and impact**-focussed offerings
- RMIT's new multi-year **Commitments to Vietnam and Singapore**, strategically designed to enhance City North's connectivity to Asia through alignment of research, innovation and education focus and implementation plans
- **RMIT-BITS Pilani partnership** to strengthen engineering capability, skills and industry partnerships in India through a new international student pathway at both undergraduate and PhD level.
- The Precinct's projected increased student and staff activity to include increased opportunities for student and academic mobility between Melbourne and Asia.
- The Precinct's social innovation focus acts as a positive differentiator, creating a **natural landing pad** for incoming regional research, investment and knowledge partners in clean economy, future manufacturing, social care and wellbeing and digital transformation.
- **Partnerships** with strategic NGO partners, including international NGO partners, to include innovative approaches to address global challenges, including meeting UN Sustainable Development Goals.

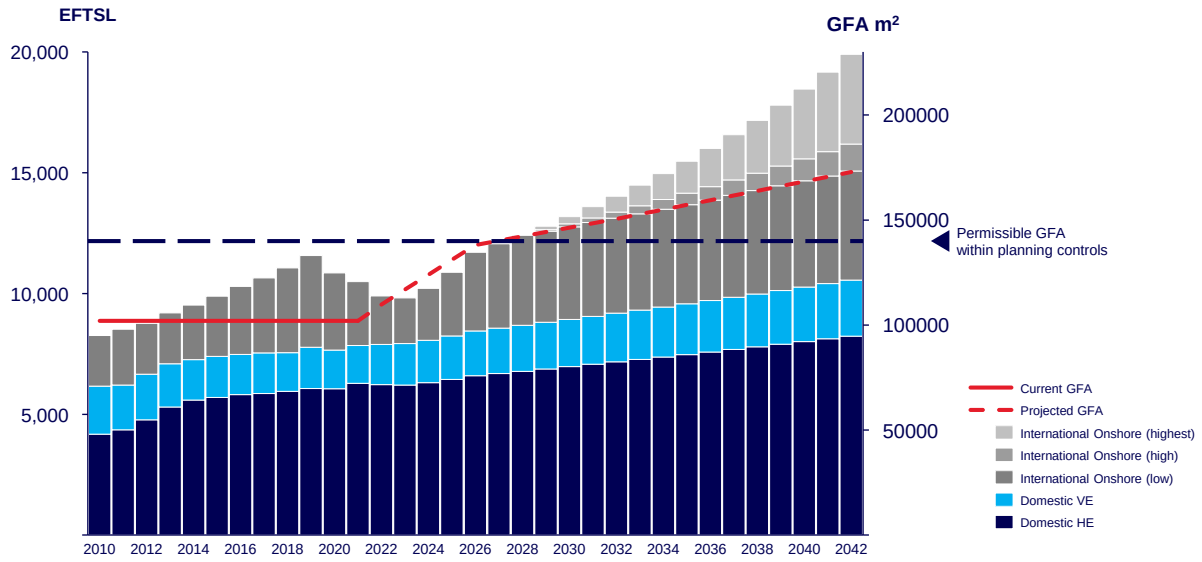
5. Space needs

The precinct currently houses in-demand disciplines which will grow significantly in line with community and industry needs. As enrolment demand grows, RMIT is committed to providing high value face-to-face learning experiences, retaining practical vocational education offerings, and fostering RMIT's signature active, authentic and applied pedagogy.

5.1 Future space needs

Given the 20-year time frame, RMIT has taken a top-down approach to estimating space demand, coupled with a long life-loose fit approach to precinct and building design which will allow for flexibility in future program locations. The site currently houses a number of in-demand and growing disciplines including diplomas in Nursing, Youth Work, Community Services, certificates in IT, Cyber, Electrical, Plumbing, and Refrigeration, as well as diplomas through to Masters in Engineering, Design and Architecture (see Appendix B:). RMIT expects to retain a mix similar to the current disciplines in line with the precinct vision. There is limited scope for online teaching in these vocational and highly practical programs. Therefore, few space reductions are expected as a result of blended teaching, coupled with RMIT's pedagogical commitment to high-value face to face experiences.

Figure 13: Projected RMIT City North student load (EFTSL) and projected space needs based on lowest student demand scenario



Source: Deloitte Access Economics, RMIT analysis

As shown in Figure 13 above, the space demand estimate is 173,000m² GFA by 2042. Current planning controls would allow for approximately 140,000 m² GFA.

Space demand assumes:

- **A student load of 15,000 EFTSL by 2042** – the lowest bound externally validated demand estimate as shown in Figure 13.

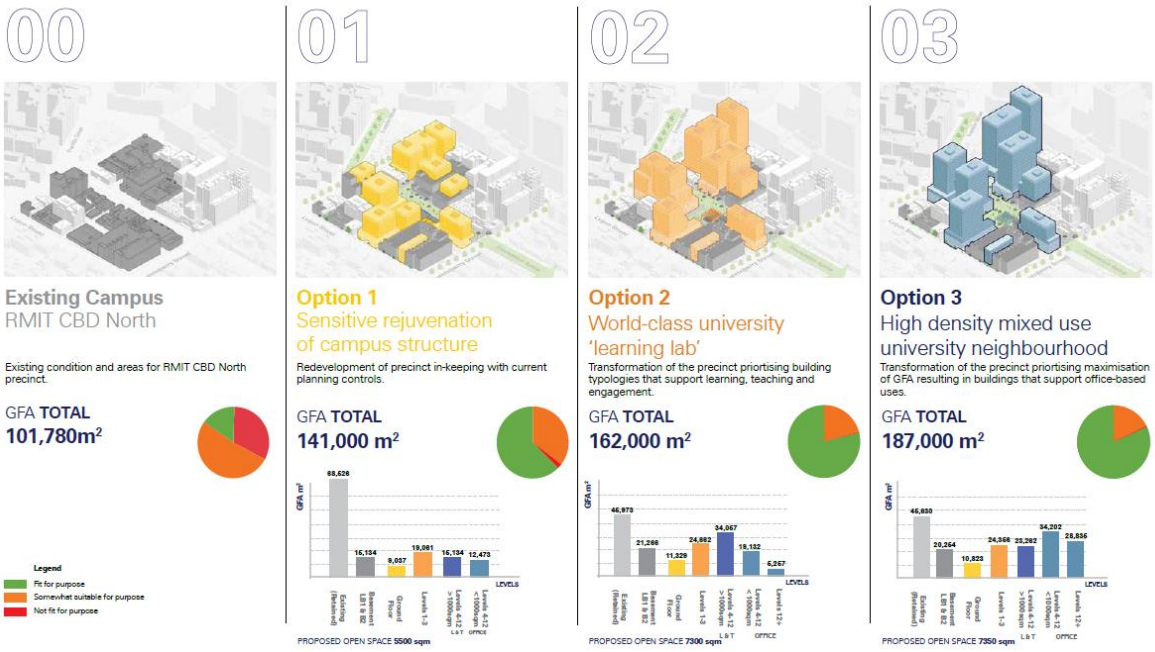
- **An average space per EFTSL of 11.7m²/EFTSL** – which is still below the Australian Technology Universities average and would allow for an increase in research, partnership and student and community experience space on the precinct.
- **Maintaining a proportionate student load in City North**. The RMIT City Campus student load is 82% of RMIT student load (EFTSL) for all Melbourne Metro Campuses (Brunswick, Bundoora and City). City North precinct student load is 27% of RMIT City Campus student load (EFTSL). RMIT has taken a conservative assumption to retain the same proportion of students on the site despite City North representing the largest development opportunity for RMIT in the city. Potential to shift load between campuses has not been modelled as it was not within the masterplan scope. All load estimates exclude fully online students.

5.2 Options development

Design options for City North were developed and assessed in line with thorough stakeholder engagement, industry best practice and the objectives agreed with government (see Attachment 1: Masterplan design proposal).

Three design options were prepared which vary in typology and space available (Figure 14).

Figure 14: Design options



Source: MGS Architects, RMIT MASTERPLAN OPTIONS REPORT

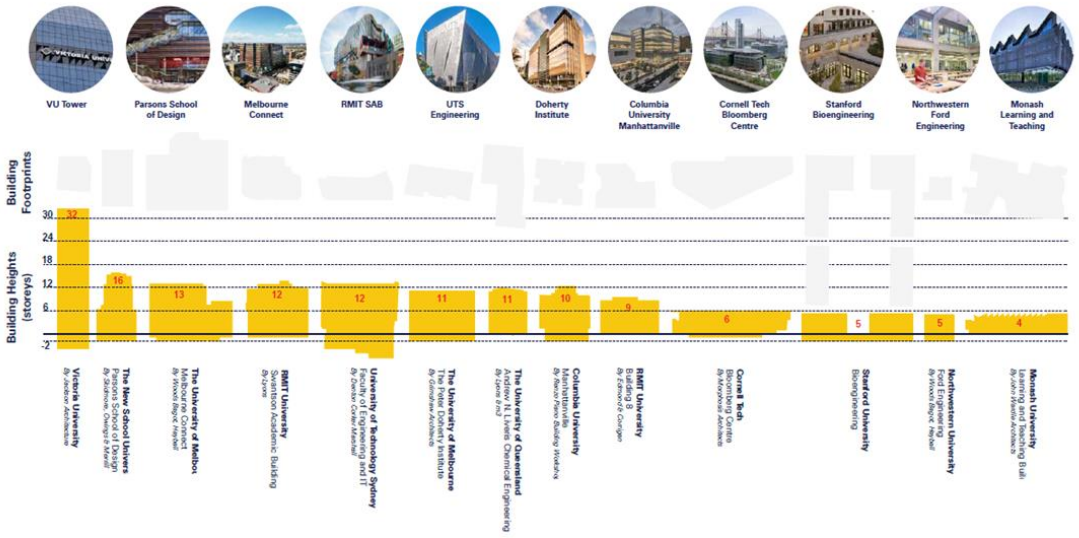
The preferred design option (Option 2) maximises the available land by developing buildings with higher Gross Floor Areas (GFA) while being sensitive to the surrounding area and the most suitable typology for an educational precinct. Option 3 has more gross floor area, but requires significantly increased height, and the change to podium and tower typology means less space suitable for education purposes.

Building heights have been benchmarked against world-leading university buildings within similarly urban locations

Figure 15).

The only outlier in this group is the recently constructed VU tower. Victoria University's block mode teaching limits daytime movement and has enabled a taller building.

Figure 15: Building height benchmarks



Source: MGS Architects, RMIT MASTERPLAN PROPOSAL REPORT 2022

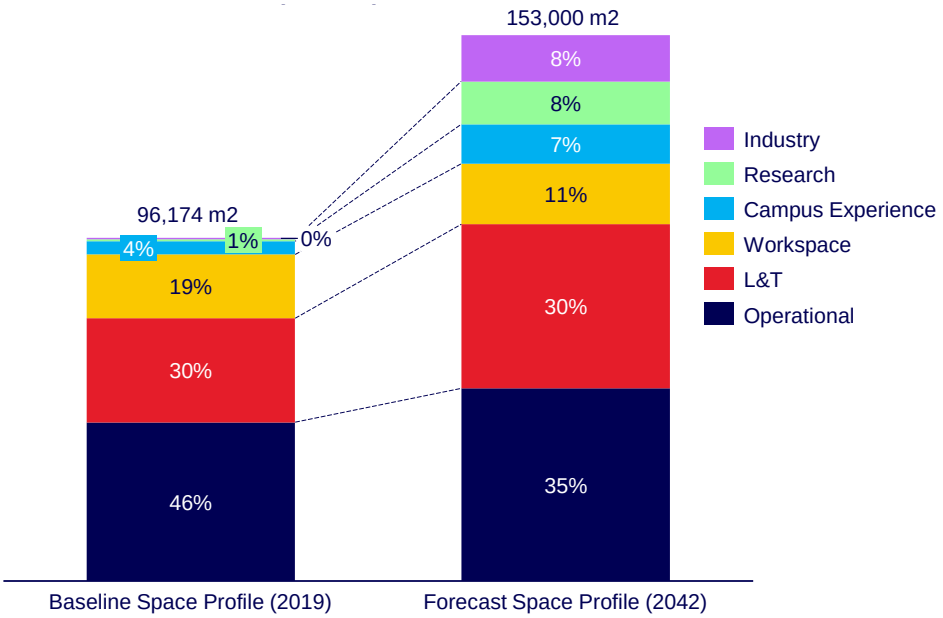
Within the preferred option (option 2), space can be made available for complementary uses within buildings, subject to further analysis and design consideration. Collocation and interactive uses of the precinct space for prototyping, community engagement and cross-sector partnership are integral to the precinct vision: this is an area for further consultation and collaboration with government.

5.3 Space mix and efficiency

As explored in the previous section, the Social Innovation Precinct will enable skills and innovation development across three key sectors: social care and wellbeing, clean economy and future engineering, computing and manufacturing. The design will increase space available for collaboration and collocation of industry and start-ups, joint prototyping spaces for digital health and low carbon technologies, hands on teaching and learning experiences for nursing, social care, engineering, design and workforce training.

RMIT is committed to a precinct design which reflects new ways of working and learning and privileges space that drives interaction, student and community experience and industry engagement. The proposed space mix (Figure 16) will see reduced allocations for workspace, and increased allocations for research, industry partnership and campus experience. Campus experience space includes retail and hospitality offerings which would complement increased activation and new public spaces.

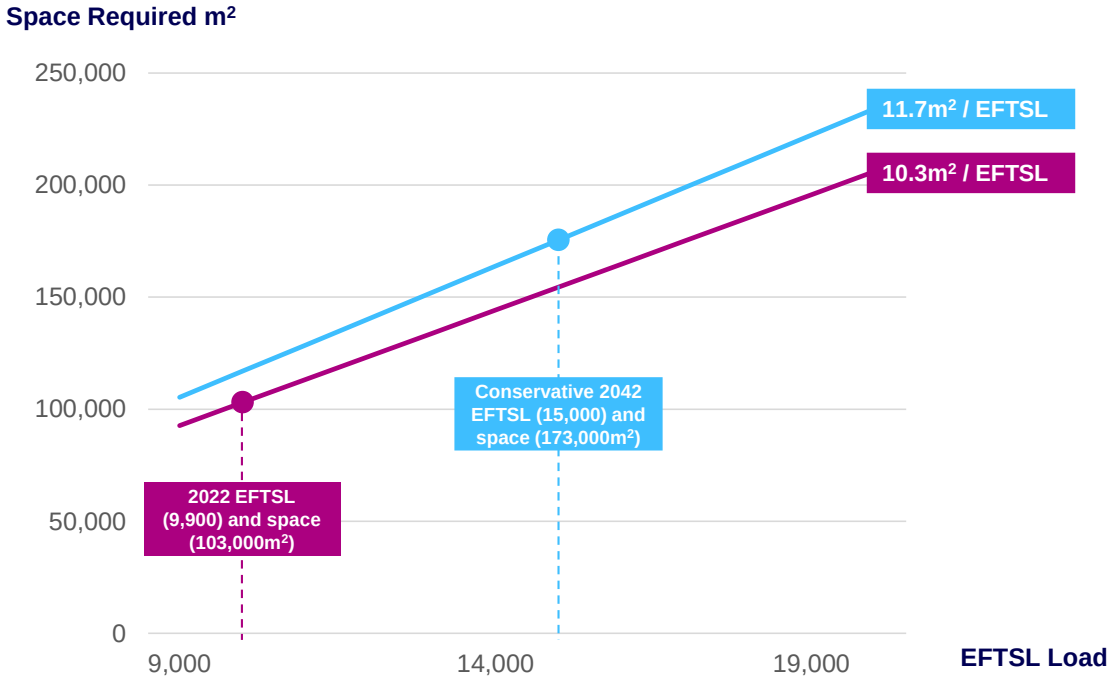
Figure 16: Current and future space mix (Room Area)



Source: RMIT analysis

Figure 17 shows the relationship between expected load and space per EFTSL. While RMIT's target is 11.7m²/EFTSL, the ultimate space requirement will depend primarily on projected student numbers in the precinct, space mix and usage.

Figure 17: Space required at different assumptions of EFTSL and space per EFTSL



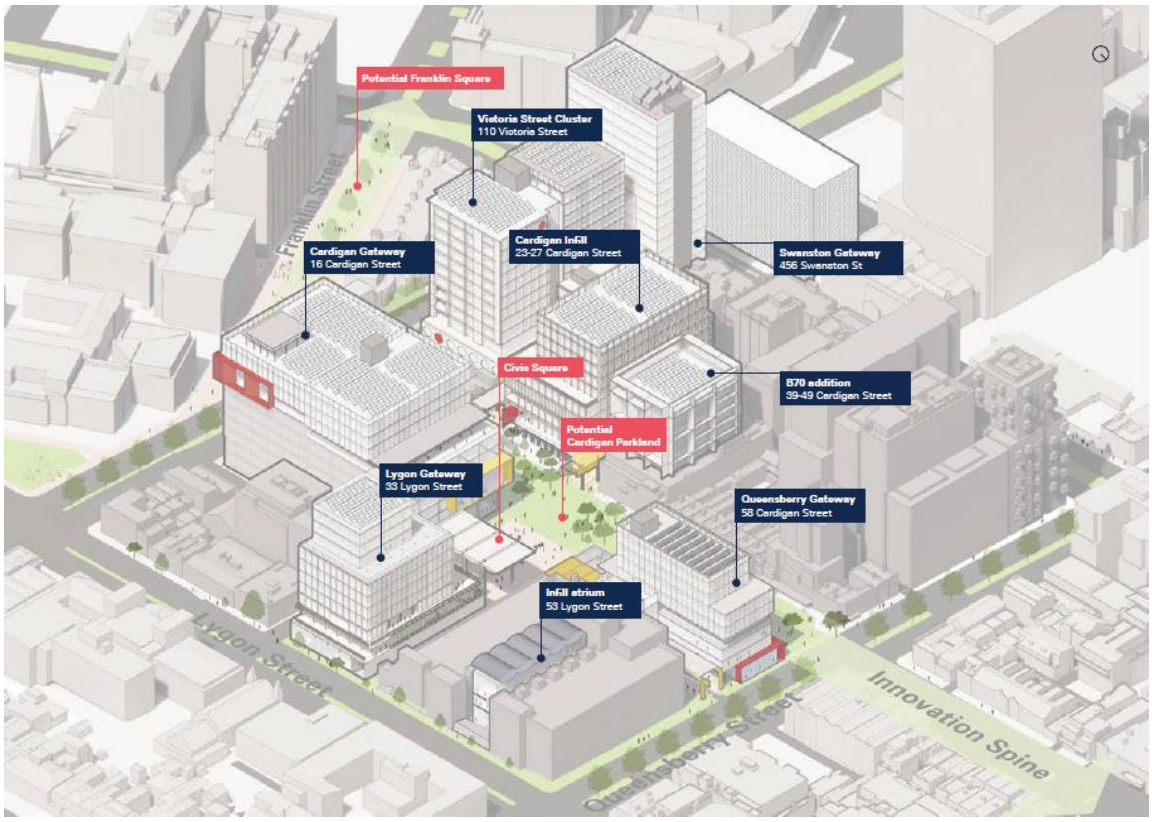
Source: RMIT analysis

6. A plan for transformation

As this proposal has outlined, the City North site has been earmarked for innovation use by the City and State governments for several years. A planning scheme amendment process to formalise this intention is imminent, building on a shared vision of the Melbourne's City North district, to foster the innovation economy and extend access to it across Melbourne's community. Based on this, the Masterplan Design Proposal (Figure 18) assumes that current planning controls would be revised to promote innovation uses while maintaining a scale of development appropriate to the character and scale of the area.

A set of built form design principles were established through a collaborative process, forming the basis for the preparation of indicative designs. After testing and evaluating planning options at three scales, the Masterplan Proposal recommends a level of development that can balance growth in mixed use innovation activity with a suitable level of public open space, made possible by the consolidation of existing fragmented land parcels into a series of development blocks that can be staged over time, allowing the precinct to evolve (refer to Attachment 1: Masterplan design proposal for the full Masterplan Design Proposal, which includes a detailed description of design principles and options investigated).

Figure 18: Masterplan design proposal



Source: MGS Architects, RMIT MASTERPLAN PROPOSAL REPORT 2022

In addition to enabling the precinct to make a substantial contribution to the State's future economic growth and development through skills and innovation in key priority areas, the Masterplan Proposal positions the City North site to serve as a catalyst for the initiation of Melbourne's Innovation Spine. With the support of the City of Melbourne and the ongoing partnership of the State Government, the

Innovation Spine will encourage students, workers and residents to discover and engage with the rich variety of institutions and industry located in Melbourne's inner north – joining up these destinations to tell a wider story of the city's legacy (and future) of innovation and civic partnership. The transformation of the precinct's heart into public open space will deliver a significant Civic Square for City North, and position this section of Cardigan Street as the first, pivotal link in the broader Innovation Spine, forging stronger connections between the CBD and Parkville.

The Masterplan Proposal identifies a staged approach to precinct renewal to be progressed gradually over the program period. The precinct's underutilised, inflexible buildings will be replaced with adaptive, flexible and loose-fit spaces that can respond to different spatial and programmatic requirements over time. This will combine with a significant uplift in open green space through reclamation and transformation of existing roadways and streetscapes, including the creation of three new public spaces.

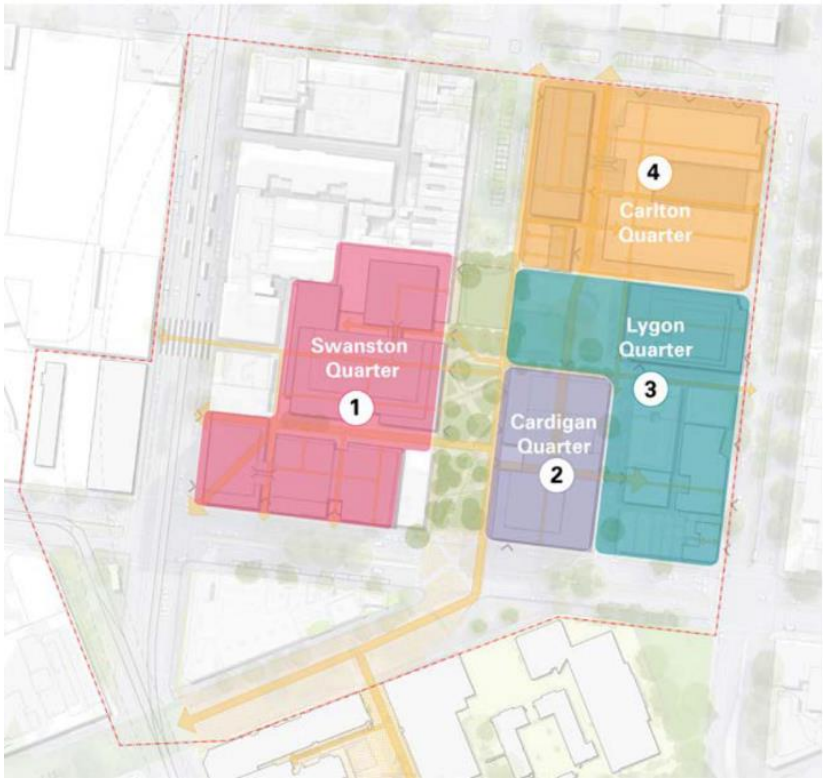
Two key moves underpin the proposed transformation of the City North Social Innovation Precinct:

- **Four Quarters:** Consolidation of developable land into four distinct quarters, creating critical mass for development, at an appropriate scale to ensure the precinct's amenity is conserved.
- **Central Civic Square and Melbourne Innovation Spine:** Creation of a central civic square for use by RMIT and the broader community, forming a key link and catalyst for the Melbourne Innovation Spine. The spine will connect places and people within the ecosystem of Melbourne Innovation Districts. The spine includes pedestrianising part of Cardigan Street and could ultimately connect Queen Victoria Market to University Square and beyond. This will create a walkable link between key innovation and cultural assets such as the State Library and Trades Hall.

6.1 Four Quarters

The Masterplan Proposal for City North is organised into four quarters that are interconnected by an accessible pedestrian network and active ground level uses, designed to invite participation and encourage discovery (Figure 19).

Figure 19: City North Social Innovation Precinct – Four Quarters concept



Source: MGS Architects, RMIT MASTERPLAN PROPOSAL REPORT 2022

Each quarter would be designed with its own distinctive urban character and vision that relates to its place, role and context within the City North precinct. In partnership with First Nations leaders and RMIT's Indigenous Engagement team, the potential for naming these quarters in ways aligned to the precinct's indigenous heritage, can be further considered.

1. Swanston Quarter: The Swanston Quarter provides an interconnected vertical campus experience that showcases the University to the City and draws visitors into the precinct via a prominent campus gateway.

2. Cardigan Quarter: Located opposite the proposed State Library Metro Station, the Cardigan Quarter will act as a significant precinct gateway along the Innovation Spine, stitching together Franklin Street to its south and Carlton's high quality open spaces to its north.

3. Lygon Quarter: Located within the heart of the campus, the Lygon Quarter provides an active, central open space, supported by a series of sports, recreation, retail and hospitality uses and activities.

4. Carlton Quarter: The Carlton Quarter transitions between the scale of the CBD and the surrounding Carlton context, re-purposing existing built form with a renewed, contemporary education focus.

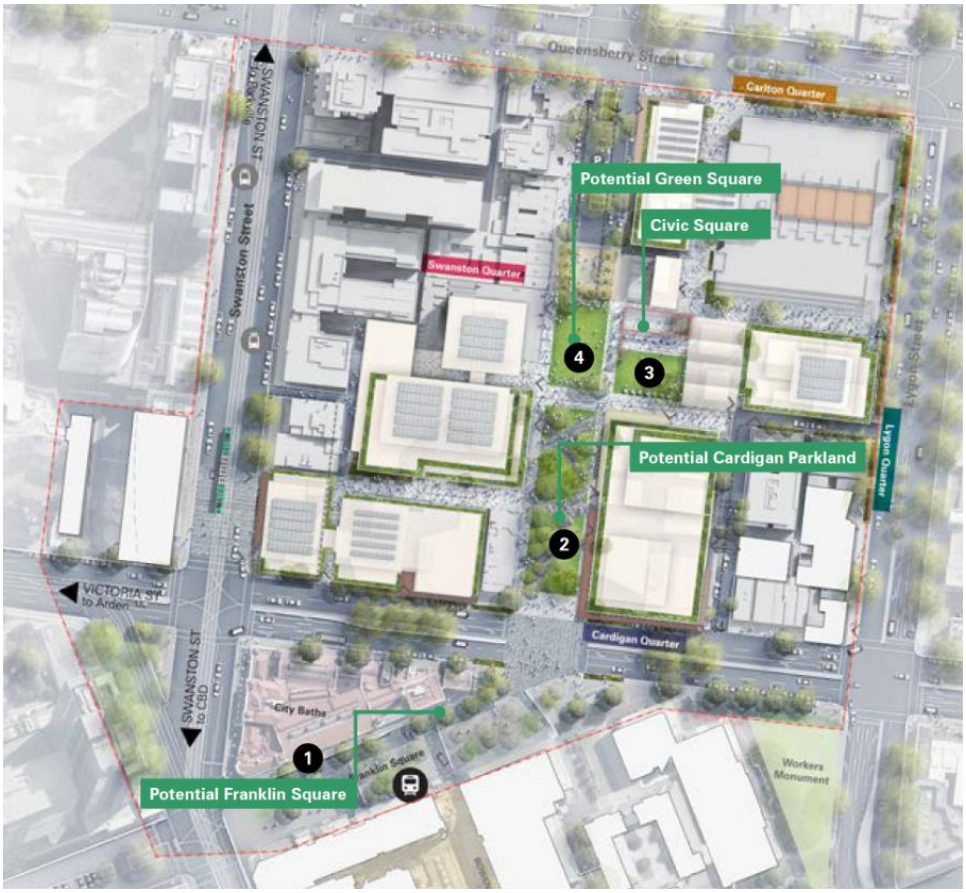
Further detail on the masterplan options considered is described in Attachment 1: Masterplan design proposal.

6.2 Central Civic Square and Melbourne Innovation Spine

City North's Central Civic Square and the transformation of Cardigan Street will serve as a catalyst for the delivery of the Melbourne Innovation Spine, a suite of targeted public realm improvements designed to unify and connect a variety of innovation destinations, encouraging public engagement with Melbourne's innovation landscape.

The Masterplan Proposal enables the delivery of a central civic square able to be used by both RMIT and the broader community, envisaging a space that can cater for events of up to 500 people, contributing to an additional 7,500m2 of new public open space delivered through urban renewal of City North (Figure 20).

Figure 20: City North Social Innovation Precinct – Proposed public realm



Source: MGS Architects, RMIT MASTERPLAN PROPOSAL REPORT 2022

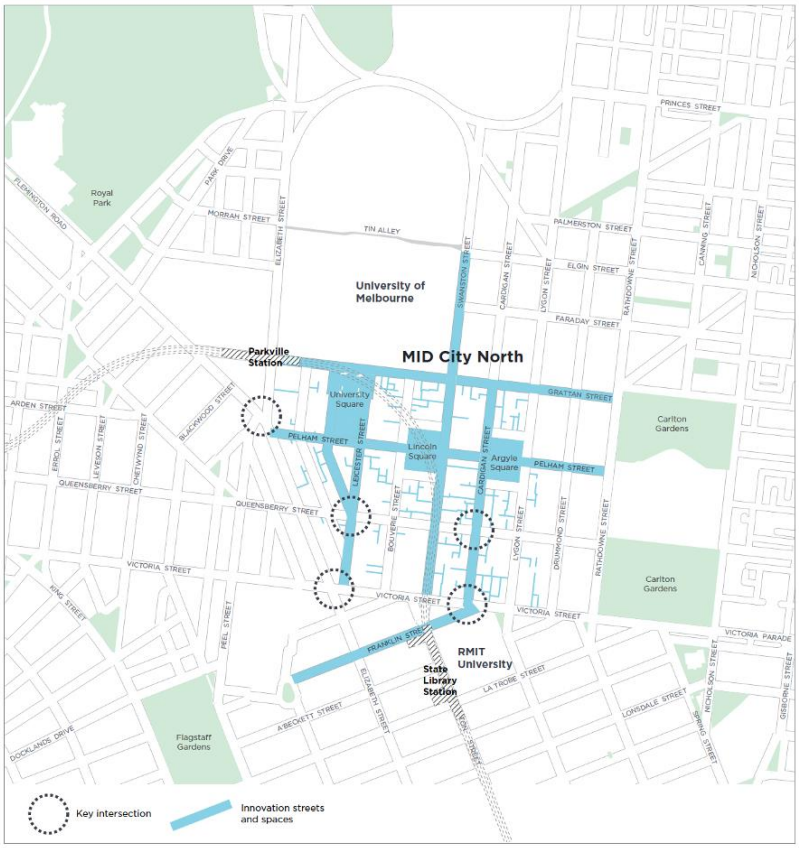
As part of a long-held ambition to create an 'Innovation Spine' connecting Queen Victoria Market, RMIT and the University of Melbourne, the City of Melbourne is exploring the pedestrianisation of Franklin Street and the southern half of Cardigan Street. The pedestrianisation of Cardigan Street provides the opportunity for City North's new Central Civic Square to become a key meeting place along the spine, adding to the precinct's identity.

The City of Melbourne MID Public Realm Opportunities Plan (2020) observes the potential offered by Cardigan Street:

> *The southern end of Cardigan Street directly connects with Melbourne Metro, RMIT University's New Academic Street. Further north it connects with Argyle Square, University of Melbourne's Carlton Connect and City of Melbourne's Kathleen Syme Library.*
>
> *There is potential for significant changes to pedestrianise the street, establish test sites and other innovation spaces and new infrastructure along the length of Cardigan Street.*
>
> *By reducing parking, consolidating lanes of traffic, and repurposing central median strips, there could be an increase in public open spaces and an opportunity to integrate new public uses along the street.*

The concept of an 'Innovation Spine' reimagines the role of streets and spaces in the broader City North area as prime locations for testing and engagement (Figure 21).

Figure 21: Key streets, intersections and places of MID City North



Source: City of Melbourne MID Public Realm Opportunities Plan (2020)

These streets and spaces have been identified as demonstrating potential for temporary activation due to their idleness or under-utilisation, high visibility to passers-by and logistical feasibility to accommodate testing and engagement activity.

Innovation streets are also key connecting streets within the district, linking significant destinations (including MID partner properties) or public open space. As they are typically 30 metres wide, they have extensive, but often under-utilised, on-street parking and substantial amounts of space for increased pedestrianisation and public use.

The Melbourne Innovation Spine will support innovation and knowledge activities, much of which relies on face-to-face interaction between people in the district (Figure 22). There is a strong relationship between connectivity and productivity, which is why dense urban centres are so important to the economic prosperity of cities. The large number of people located in close proximity to each other allows ideas to be quickly generated, refined into knowledge and put to work solving complex problems.

Figure 22: Proposed Innovation Spine concept

Queen Victoria Market Precinct Redevelopment

Potential Franklin Street East

Potential Cardigan Street Spine

University Square

Figure 2.5 Innovation Spine map
Source: MGS Architects

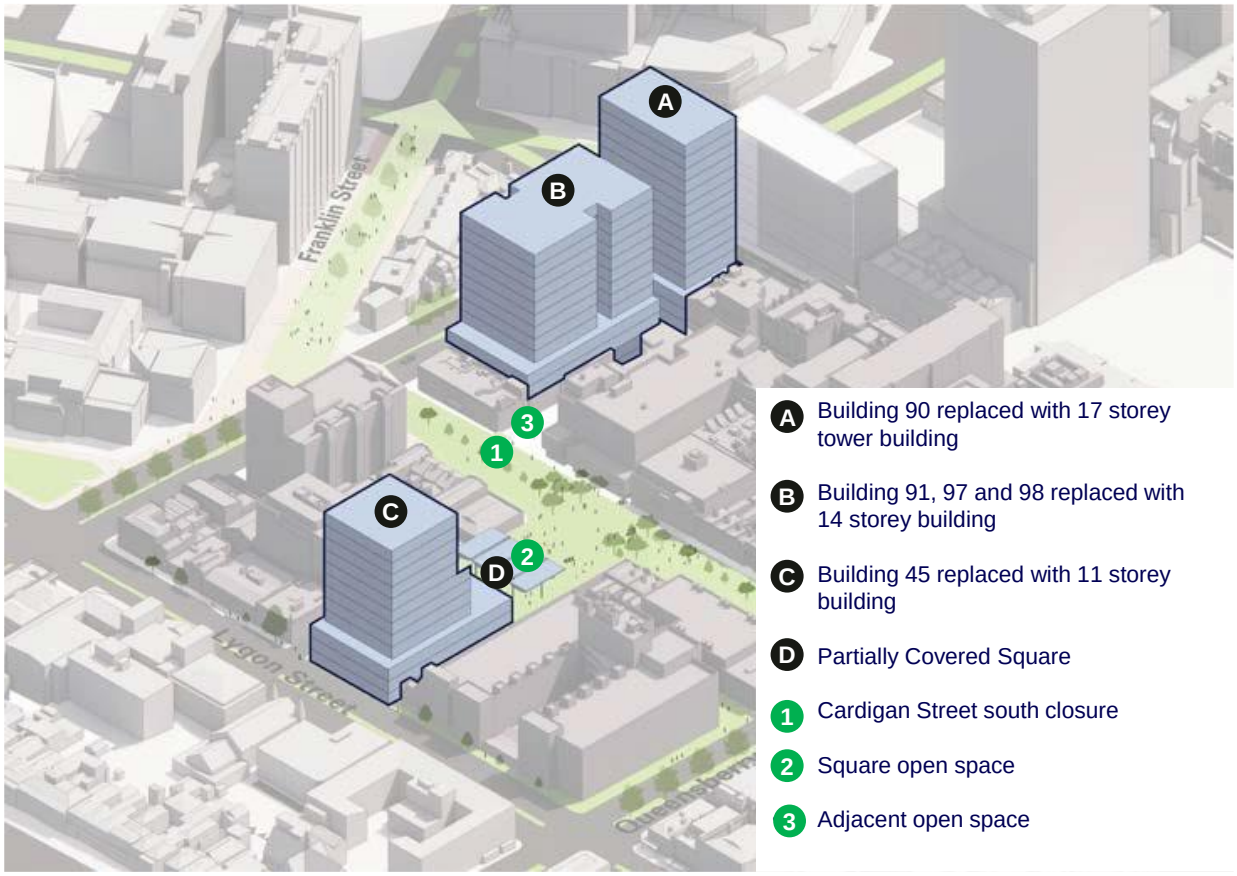
Source: MGS Architects, RMIT MASTERPLAN PROPOSAL REPORT 2022

The Melbourne Innovation Spine will enhance linkages to innovation and cultural assets such as the State Library and Trades Hall, increasing community benefit from new public transport infrastructure.

6.3 Staging and implementation

The design proposal suggests that the first phase of redevelopment focus on core learning and teaching facilities at the intersection of the Victoria and Swanston Streets. This phase will also deliver a central square in the heart of the campus activated by a new learning hub replacing Building 45. Below ground services, infrastructure and key sustainability moves precinct-wide would need to be incorporated as part of the initial redevelopment. Car parking could be consolidated into a new basement below the B45 redevelopment as shown in Figure 23 below.

Figure 23: Suggested Phase 1 implementation



Source: Adapted from MSG Architects, RMIT MASTERPLAN PROPOSAL REPORT 2022

Prior to large scale urban transformation, a series of early wins and ‘activation’ programs would support incubation, connection and growth of the existing City North innovation ecosystem. Light touch adaptive reuse of buildings would foster innovation through the provision of flexible workspace, start-up spaces and community centres. The temporary closures of streets could also enable greater community use and opportunities to showcase social innovation in practice to the broader community.

7. Delivering economic benefits

Successful transformation of the City North site into a world leading social innovation precinct could achieve a multitude of benefits for the State of Victoria.

The City North Masterplan Proposal shows the benefits that could be achieved by the incremental redevelopment of RMIT and Minister owned land holdings under current and possible future planning controls. It explores the outcomes of an integrated, precinct-wide approach that considers not only the development of freehold land and the benefits of collocating vocational skills delivery with industry innovation and community engagement activities, but how this could be supported by wider placemaking and public realm improvements, positioning the precinct to sustain the future growth of a dynamic and engaging social innovation ecosystem.

The transformed social innovation precinct will draw learners, workers and the wider community to the area, encouraging participation and engagement. This will take many forms – from gaining skills through vocational and higher education, to attendance at the precinct's program of events, or simply enjoying the area's revitalised public spaces and hospitality. Start-ups, entrepreneurs and social innovators will benefit from the precinct's affordable workspaces and prototyping facilities to test ideas and new ventures.

The convening power of major institutions will attract thought leaders to work alongside the public as the precinct's social innovation ecosystem comes together to address societal issues, generating new and transformative approaches to contemporary challenges. Deloitte Access Economics has independently estimated the economic value of the preferred masterplan option as compared to a do-nothing base case.

7.1 Economic benefits

The economic value of the City North precinct development has been estimated as follows

Benefits to Victoria:

- $2.71 billion added to the economy in discounted terms to 2070
- ~1,500 FTE by 2070

Benefit to the rest of Australia:

- $0.99 billion added to the economy in discounted terms to 2070
- ~700 FTE by 2070

These benefits are driven by:

- **Increased industry innovation –** an additional $52 million in R&D expenditure p.a. due to an increase in research and collaboration space, which can help tackle pressing societal issues by applying knowledge and connecting economic, physical and networking assets
- **Increased student and staff activity –** ability to house 15-20,000 EFTSL on the precinct by 2042 with additional associated teaching staff
- **Improved student skills and employment outcomes –** a 27% to 34% increase in lifetime earnings for the additional students taught

- **Increased commercial activity –** due to a greater level of open space and additional space for retail businesses to operate
- **Agglomeration –** connecting and collocating skilled workers has the potential to enhance productivity by strengthened sharing, matching and learning
- **Capital investment –** the capital expenditure provides a boost to the economy (particularly in the construction sector) and maximises the use of the land, while also maintaining appropriate urban character, density and height

There are also associated **non-market benefits** including:

- Better **precinct experience** for students and the community
- Improved **health outcomes** from health innovation
- Increased **sustainability** through a precinct which leads by example
- Greater **Indigenous recognition** through design which showcases the unique indigenous connection to the natural landscape

7.2 Costs

The **incremental capital cost** of developing the precinct over 20 years is **~$1.54 billion** in discounted terms. The proposal does not make any assumptions about the cost to government of delivery.

8. Next Steps

Over two years of work, involving wide ranging community and stakeholder engagement, expert advice and collaboration amongst the wider project teams, the proposal to develop the City North Social Innovation Precinct has reached a formative point.

This document proposes that the City North Social Innovation Precinct be realised through a staged urban renewal program, establishing it as the destination for a social innovation ecosystem, capable of meeting priority skills demand in key industry sectors, while contributing to and complementing Victoria's broader innovation capabilities.

Among project partners there is a broad support for the City North Social Innovation Precinct vision, combined with an equally broad willingness to progress. This is matched by a high-level support for the vision and future direction proposed by current and potential partners. The partners shown in Figure 24 have provided letters of endorsement expressing their support and interest in continued precinct partnership.

Figure 24: Partners expressing in principle support

This proposal is likely to be attractive to leading institutional infrastructure and real estate investors seeking to participate in potential funding and capital works. This interest has helped to establish the potential of the project and the necessary conditions under which the staged urban renewal of this key precinct could proceed.

RMIT proposes that the Victorian government commit to the advancement of a staged program of work, in partnership with RMIT, the City of Melbourne and other relevant precinct partners, to enable the skills-driven urban renewal of City North, as presented in this proposal. The essential steps in this staged work are:

1. Confirm a working governance and decision-making structure to progress the precinct partnership, including consideration of development and financing options, precinct governance, and approaches to investment and implementation to ensure effective delivery of precinct benefits and outcomes, delivering public value to government, RMIT and the community;
2. Collaborate on the preparation of reports and other analysis required to ensure key aspects of the program are considered and endorsed to progress through a stage-gated process which addresses the opportunities in a timely way, with whole of government visibility as required;
3. Connect and align with the planning for skills and tertiary education priorities, as defined through the Victorian Skills Plan, and other policies, to further define complementary uses and infrastructure for workforce development to increase the positive impact of the City North Social Innovation Precinct, leveraging and diversifying the strengths of the Parkville National Employment and Innovation Cluster and advancing skills training and innovation in key sectors;
4. Facilitate the establishment of appropriate urban and metropolitan planning settings in consultation with relevant government departments, City of Melbourne and other key stakeholders; and
5. Engage with relevant State transport agencies and City of Melbourne to consider and address wider precinct connectivity and pedestrian amenity issues, prioritising urban and public realm improvements including the City North Innovation Spine to ensure that the benefits of Melbourne Metro are fully realised and connecting the City North Social Innovation Precinct to the wider Parkville and City North District.

Attachment 1: Masterplan design proposal

City North Social Innovation Precinct Masterplan Proposal, December 2022, Prepared by MGS Architects

Attachment 2: Economic impact assessment

RMIT City North Social Innovation Precinct and Innovation Spine Economic impact assessment and sector case studies, Royal Melbourne Institute of Technology (November 2022), Prepared by Deloitte Access Economics

Appendix A: Scope and methodology

Project Scope

The project scope committed RMIT to undertake a range of activities, the outcomes of which are summarised within this document:

Project Scope	Reference in this document/appendix
Explore the potential to pursue footprint consolidation	The consolidation of existing building stock into a set of development blocks is described in this document. For further detail, please see: • Section 6: A plan for transformation • Attachment 1: Masterplan design proposal
Quantify RMIT's current and prospective land requirements Provide justification of RMIT's current and prospective land requirements	RMIT's current and future land requirements, and underpinning assumptions are outlined in the following sections: • Section 0. • Space needs • Attachment 1: Masterplan design proposal
Identify any surplus ministerial land	No surplus ministerial land has been identified through this process, however space for complementary government uses could be considered (see next row in this table). For further detail, please see: • Section 0. • Space needs • Attachment 1: Masterplan design proposal
Provide suggestions for complementary uses that would harmonise and advance existing City North strengths.	To date, no input has been provided by government on complementary uses, however this proposal highlights the potential for City North to house innovation, research and industry partnership opportunities above and beyond current uses. For further detail, please see: • Section 3. • A vision for social innovation • Section 4. Skills and innovation focus • Section 6: A plan for transformation • Attachment 1: Masterplan design proposal

Milestone 6b

The VHESIF Agreement requires the following deliverables for Milestone 6b. All elements described below are found in this document and the supplied attachments

Project Status Report *including evidence of achievement of the following Project Deliverables to the reasonable satisfaction of DJSIR, regarding the Masterplan and Innovation Spine proposal:*

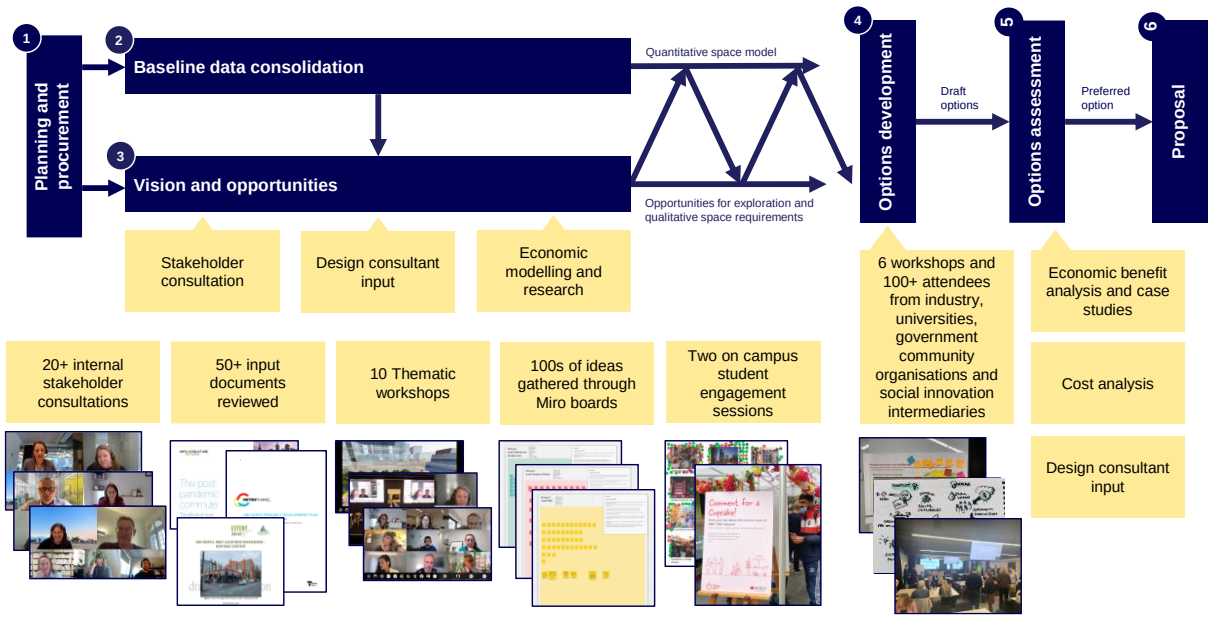
RMIT to provide:

- *Draft design and associated proposals, which will illustrate:*
- *what RMIT currently provides in CBD North and/or any proposed developments and/or additional services RMIT plans to deliver in the immediate future (including through the Victorian Higher Education State Investment Fund); and*
- *if relevant, any opportunities that would require a further investment from the Government to enable (whether financial or in-kind, such as free use of the site)*
- *Submission of a draft Masterplan and Innovation Spine proposal to DJSIR*

Project Methodology

RMIT has led a highly collaborative process to develop a 20-year vision and preferred design option as shown in Figure 25.

Figure 25: Masterplan proposal development methodology



Project Deliverables

Process Stage	Deliverable	Author	How to access
3	Vision and Opportunity Report	RMIT	Available on request
3	Vision and Opportunities Report	MGS Architects	Available on request
4, 5	Options Report	MGS Architects	Available on request
6	Current Minister-owned Building Snapshot	RMIT	Available on request
6	City North Analysis Validation Overview	RMIT	Available on request
6	Learning & Teaching Utilisation and Programs	RMIT	Available on request
6	Masterplan Design Report	MGS Architects	Attachment 1
6	Masterplan Appendices	◦ Movement and Place ◦ Bryce Raworth ◦ Urbis ◦ WSP ◦ Village Well ◦ Neighbourlytics	Available on request
6	Economic Impact Analysis Report	Deloitte Access Economics	Attachment 2
6	Cost Report	Turner & Townsend	Available on request
6	Partner letters of support	Various	Available on request

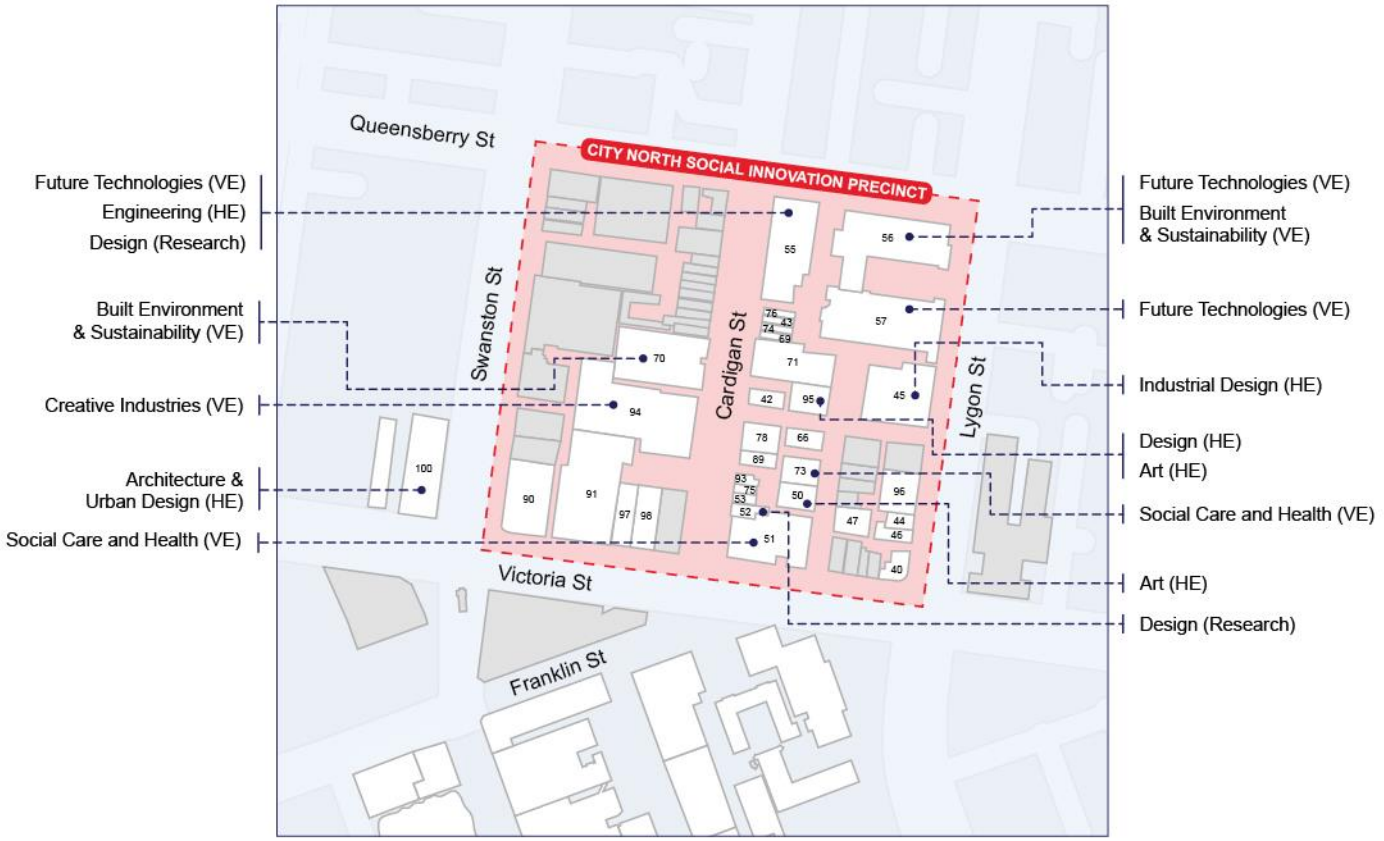
Appendix B: Alignment to government precincts

Priority Precincts and National Employment and Innovation Clusters (NEICs) and RMIT Social Innovation Precinct at City North

Precinct	NEIC	Strengths / Focus areas	Relationship with RMIT Social Innovation Precinct
Arden		Urban renewal industry focus: Biomedical and health sciences, technology, life science, health and education sectors. *Source: DTP website*	Located just 2km from City North, Arden's new residents will be within walking distance, and 1 stop away from work and learning opportunities created at RMIT Social Innovation Precinct.
Dandenong	✓	The cluster has strengths in advanced manufacturing, health, education, wholesale trade, retail and transport, postal services and warehousing. *Source: Plan Melbourne*	Direct connection (via Metro), with potential for student placements and connection
Docklands		The precinct will house financial and professional services, Research and innovation, Retail, cultural and entertainment, Tertiary education. *Source: DTP website*	Docklands will be readily accessible from the City North and can be supported via the university contributing to precinct activation, and through potential cross-pollination of media capability between RMIT and the Docklands Studios as well as potential student placements
Cremorne		A vibrant and globally significant innovation and technology precinct, to deliver technology and innovation, digital skills development, and jobs creation *Source: RMIT*	Opportunities for digital innovation and capability at Cremorne to complement the digital infrastructure and capability in City North
Fishermans Bend	✓	Urban renewal industry focus: Fishermans Bend specialises in aerospace, defence research, manufacturing and transport and logistics industries. *Source: Plan Melbourne*	Opportunities for shared use of research infrastructure and industry collaboration spaces, and to complement larger, more space-intensive equipment and machinery at Fishermans Bend, while housing less space-intensive digital infrastructure at City North.
Footscray		New small-scale manufacturing and a health and education focus *Source: Footscray Opportunities and Directions Paper, 2021*	Short commute (via Metro), and potential for student placements in manufacturing and health
La Trobe	✓	The cluster has strengths in education, research, health and retail. *Source: Plan Melbourne*	Potential cross-pollination and collaboration in health innovation, research and delivery
Monash	✓	The cluster has leading education, health, research and commercialisation facilities *Source: Plan Melbourne*	Short commute (via Metro), potential cross-pollination and collaboration in health innovation, research and delivery
Parkville	✓	The cluster has education, research, health, professional and technical industries as well as significant parkland. *Source: Plan Melbourne*	City North is part of the Parkville NEIC. RMIT Social Innovation Precinct will complement and support the existing Parkville precinct focus.
Sunshine	✓	The cluster has the potential to build a critical mass of tertiary education, health-related training, health care, and retail and professional services, as well as facilitate private investment. *Source: Plan Melbourne*	Short commute (via Metro), potential cross-pollination and collaboration in health innovation, research and delivery
Werribee	✓	The cluster can build on its existing health, education and high-tech research jobs on the site of the former State Research Farm. *Source: Plan Melbourne*	Potential cross-pollination and collaboration in health innovation, research and delivery
Other regional locations			The Electrification Centre of Excellence has the potential to play a state-wide coordinating role for clean energy skills training. The catchment area, transport connections, and the scale and maturity of RMIT's vocational education offerings provide a unique opportunity,

Appendix C: Summary of current programs in City North

Figure 26: Summary of building uses in City North



HE Programs

BUILDING	PROGRAM CODE	PROGRAM	ENROLMENTS 2019	ENROLMENTS 2022
45	BH104	Bachelor of Industrial Design (Hons)	396	376
55	MC224	Master of Engineering (Manufacturing)	38	21
71	AD007	Ass Deg in Design (Furniture)	69	36
94	AD016	Ass Deg Prof Writing & Editing	238	220
94	AD017	Ass Deg Screen & Media Product	77	86
94	AD020	Ass Deg Interior Dec & Design	166	119
94	AD026	Ass Deg in Engineering Tech	729	778
94	BH116	Bachelor of App Sc (Surveying) (Hons)	239	167
94	BH117	Bachelor of Science (Geospatial Science) (Hon)	71	65
94	BP220	Bachelor of Comm (Journalism)	211	184
94	MC159	Master of Cyber Security	139	169
94	BP222	Bachelor of Comm (Prof Comm)	450	340
94	MC061	Master of Computer Science	71	10
94	MC208	Master of Information Technology	728	257
100	BH115	Bachelor of Interior Design (Honours)	458	462
100	BP250	Bachelor of Architectural Design	467	611
100	BP256	Bachelor of Landscape Architectural Des	281	211
100	MC163	Master of Architecture	377	371
100	MC172	Master of Landscape Architecture	261	199
100	MC193	Master of Urban Design	31	20
100	MC231	Master of Design Innovation and Tech	140	152
100	MC275	Master of Interior Design		41
56/57	BH077	Bachelor of Engineering (Civil and Infrastructure)	1122	1180
56/57	BH070	Bachelor of Engineering (Mechanical Engineering)	627	588
56/57	BH078	Bachelor of Engineering (Aerospace Engineering)	369	362
56/57	BH073	Bachelor of Engineering (Electrical and Electronic Engineering)	468	335
56/57	MC226	Grad Diploma in Engineering Management	310	139
56/57	BH080	Bachelor of Engineering (Environmental Engineering)	137	130
56/57	BH074	Bachelor of Engineering (Automotive Engineering)	122	111
56/57	BH072	Bachelor of Engineering (Computer and Network Engineering)	151	102
56/57	MC229	Master of Engineering (Sustainable Energy)	114	70
56/57	BH076	Bachelor of Engineering (Sustainable Systems Engineering	62	61
56/57	MC256	Master of Engineering (Robotics and Mechatronics Engineering)	56	34

56/57	MC235	Master of Engineering (Electronic Engineering)	106	33
56/57	MC225	Grad Diploma in Aviation	67	33
56/57	MC225	Master of Engineering (Aerospace and Aviation)	67	33
56/57	MC230	Master of Engineering (International Automotive Engineering)	82	28
56/57	MC234	Grad Diploma in Telecommunication Engineering	109	28
56/57	MC254	Master of Engineering (Environmental Engineering)	36	21
56/57	BH071	Bachelor of Engineering (Telecommunications Engineering)	33	16
56/57	BH071	Bachelor of Engineering (Electronic and Communication Engineering)	33	16
56/57	MR220	Grad Diploma in Electrical Engineering	16	8
56/57	GC034	Grad Certificate in Engineering Management	7	19
56/57	GC204	Grad Certificate in Mechanical Engineering	4	19
56/57	MC238	Master of Engineering (Airworthiness)	21	3
56/57	MC240	Master of Sustainable Practice	30	2
56/57	GC202	Grad Diploma in Sustainable Energy	1	19
56/57	GC200	Grad Certificate in Environment Engineering	1	6

VE Programs

BUILDING	PROGRAM CODE	PROGRAM	ENROLMENTS 2019	ENROLMENTS 2022
51	HLT54115	Diploma of Nursing	516	602
51	22313VIC	Certificate IV in Tertiary Preparation	225	341
51	22451VIC	Diploma of Teacher Education Preparation	88	237
51	MSL40116	Certificate IV in Laboratory Techniques	123	208
51	HLT43015	Certificate IV in Allied Health Assistance	184	204
51	CHC40413	Certificate IV in Youth Work	206	189
51	CHC43115	Certificate IV in Disability	110	154
51	CHC42015	Certificate IV in Community Services	133	146
51	CHC52015	Diploma of Community Services	30	143
51	HLT52015	Diploma of Remedial Massage	120	89
51	MSL50116	Diploma of Laboratory Technology	40	80
51	CHC40213	Certificate IV in Education Support	150	75
51	CHC50413	Diploma of Youth Work	49	53
51	CHC51115	Diploma of Financial Counselling	46	51
51	PSP50916	Diploma of Interpreting (LOTE-English)	100	40

51	CHC33015	Certificate III in Individual Support	22	28
51	PSP60816	Advanced Diploma of Translating	1	10
51	HLT47815	Certificate IV in Optical Dispensing	111	
70	CPC32413	Certificate III in Plumbing	406	443
70	CPC40110	Certificate IV in Building and Construction (Building)	95	30
70	22304VIC	Certificate II in Plumbing (Pre-apprenticeship)	102	15
70	CPC30211	Certificate III in Carpentry	59	4
56/57	UEE30811	Certificate III in Electrotechnology Electrician	524	414
56/57	ICT50115	Diploma of Information Technology	250	382
56/57	ICT50415	Diploma of Information Technology Networking	35	382
56/57	UEE32211	Cert III in Air-conditioning and Refrigeration	380	374
56/57	22479VIC	Advanced Diploma of Engineering (Civil Engineering)	285	242
56/57	22334VIC	Certificate IV in Cyber Security		236
56/57	UEE62111	Advanced Diploma of Engineering Technology – Electrical	154	115
56/57	UEE62111	Advanced Diploma of Engineering Technology	154	115
56/57	MEM60112	Advanced Diploma of Engineering (Aeronautical)	108	95
56/57	MEM60112	Advanced Diploma of Engineering (Mechanical)	108	95
56/57	22261VIC	Certificate II in Electrotechnology Studies (Pre-vocational)	190	86
56/57	UEE60411	Advanced Diploma of Computer Systems Engineering	112	76
56/57	UEE60411	Advanced Diploma of Computer Systems Engineering	112	76
56/57	UEE60211	Advanced Diploma of Electronics and Communications Engineering	54	55
56/57	CPP60116	Advanced Diploma of Surveying	57	38
56/57	UEE42211	Certificate IV in Instrumentation and Control	63	28
56/57	22460VIC	Diploma of Applied Technologies		10
56/57	UEE40411	Certificate IV in Electrical - Instrumentation	29	6
56/57	MEA60118	Diploma of Aviation Maintenance (Avionics)		5
56/57	MEA60218	Advanced Diploma of Aviation Maintenance		2
56/57	ICT20315	Certificate II in Telecommunications Technology	9	
56/57	ICT40415	Certificate IV in Information Technology Networking	115	
56/57	AHC40916	Cert IV in Conservation and Land Management	5	