

Marta Fernández
RMIT (Australia)

 <https://orcid.org/0000-0002-9301-094X>

Tom Bentley
RMIT (Australia)

 <https://orcid.org/0000-0002-4407-6440>

Early Evolution of an Innovation District: Origins and Evolution of MID and RMIT University's Social Innovation Precinct in Melbourne's City North

Abstract

The development of an urban innovation district requires a unique, densely populated site connecting knowledge-intensive institutions with public spaces, large businesses, startups and SMEs, social hubs, and cultural institutions. Based on conceptual frameworks in the field including urban development theory, quintuple helix model, entrepreneurship and open innovation models, this paper uses a case research study approach, the Melbourne Innovation District. The context is Melbourne's city centre immediately prior to and during Covid-19 recovery. The work analysed the vision and ambitions for the innovation district, the role of technology and enterprise in place-making and the impact of the pandemic in driving social innovation, the acceleration of demand for a 'wellbeing economy,' and incentives for collaboration between institutions. This work contributes to existing literature by examining the evolution and progress of Melbourne Innovation District as a case, and the influence of the 22@ district in Barcelona, highlights practical and strategic insights into how the Melbourne Innovation District formed and built capability for collective strategy in a knowledge-intensive urban settings, and the role of innovation ecosystems to develop dynamic, inclusive urban economies in the pandemic recovery era.

Through this work we observed the key elements for the success in the early development of an innovation district including: the consideration of the real costs of collaboration; the establishment early on of a common vision and a long-term aspiration; the importance of achieving critical mass; the scattered evidence base; the need for 'anchoring' project and backbone organisation; the fragmented governance environment; the need for persistence with an integrated vision, that is connected to the overall city strategy; the identification of practical innovations that feed each other and create momentum.

Keywords: innovation districts; urban development; social innovation; innovation ecosystem; MID universities; Technology, Melbourne

Els inicis d'un districte d'innovació: orígens i evolució del recinte d'innovació social de la Universitat MID i RMIT a la ciutat nord de Melbourne

Resum

El desenvolupament d'un districte urbà d'innovació requereix un lloc únic i densament poblat que connecti institucions intenses en coneixement amb espais públics, grans empreses, startups i pimes, centres socials i institucions culturals. Basat en marcs conceptuals que inclouen la teoria del desenvolupament urbà, el model de quintuple hèlix, l'emprenedoria i els models d'innovació oberta, aquest article utilitza un enfocament d'estudi de cas, el Melbourne Innovation District. El context és el centre de la ciutat de Melbourne immediatament abans i durant la recuperació de la Covid-19. El treball analitza la visió i les ambicions del districte de la innovació, el paper de la tecnologia i l'empresa en la creació de llocs i l'impacte de la pandèmia a l'hora d'impulsar la innovació social, l'acceleració de la demanda d'una "economia del benestar" i els incentius per a la col·laboració entre institucions. Aquest treball contribueix a la literatura existent examinant l'evolució i el progrés del districte d'innovació de Melbourne com a cas, i la influència del districte 22@ a Barcelona, destaca els coneixements pràctics i estratègics de com el districte d'innovació de Melbourne es va formar i construir la capacitat per a l'estratègia col·lectiva en un entorn urbà intensiu en coneixement i el paper dels ecosistemes d'innovació per desenvolupar economies urbanes dinàmiques i inclusives en l'era de la recuperació de la pandèmia. A través d'aquest treball hem observat els elements clau per a l'èxit en el desenvolupament primerenc d'un districte d'innovació que inclouen: la consideració dels costos reals de la col·laboració; l'establiment d'una visió comuna i una aspiració a llarg termini; la importància d'aconseguir una massa crítica; la base d'evidència dispersa; la necessitat de consolidació del projecte i l'organització vertebradora; l'entorn de govern fragmentat; la necessitat de persistència amb una visió integrada, connectada amb l'estratègia global de la ciutat; la identificació d'innovacions pràctiques que s'alimenten mútuament i creen impuls.

Paraules clau: districtes d'innovació, desenvolupament urbà, innovació social, ecosistema d'innovació, MID, universitats, tecnologia, Melbourne

Los inicios de un distrito de innovación: orígenes y evolución del recinto de innovación social de la Universidad MID y RMIT en la Ciudad Norte de Melbourne

Resumen

El desarrollo de un distrito urbano de innovación requiere un lugar único y densamente poblado, que conecte instituciones intensivas en conocimiento con espacios públicos, grandes empresas, startups y pymes, centros sociales, e instituciones culturales. El artículo utiliza un enfoque de estudio de caso, el Melbourne Innovation District, y se basa en marcos conceptuales que incluyen la teoría del desarrollo urbano basado en conocimiento, el modelo de hélix quintuple, el emprendimiento y los modelos de innovación abierta. El contexto es el centro de la ciudad de Melbourne inmediatamente antes y durante la recuperación del COVID-19. El trabajo analiza la visión y las ambiciones del distrito de la innovación, el papel de la tecnología y la empresa en la creación de espacios, y el impacto de la pandemia en incentivar innovación social, acelerar la demanda de una "economía del bienestar", e incentivos para la colaboración entre instituciones. Este trabajo contribuye a la literatura existente sobre el tema, examinando la evolución y el progreso del Melbourne Innovation District como estudio de caso, y la influencia del distrito 22@Barcelona. Se resaltan aspectos clave prácticos y estratégicos sobre cómo el Melbourne Innovation District se formó y creó capacidades de estrategia colectiva en entornos urbanos intensivos en conocimiento, y el rol de los ecosistemas de innovación en el desarrollo de economías urbanas inclusivas, dinámicas, durante la era de recuperación de la pandemia. A través de este trabajo observamos los elementos clave para el éxito de estadios iniciales de desarrollo de un distrito de innovación, incluyendo: la consideración de los costes reales de colaboración; el establecimiento temprano de una visión común y una aspiración de largo plazo; la importancia de conseguir una masa crítica, la base de evidencia empírica dispersa; la necesidad de consolidar el proyecto y la organización vertebradora, el entorno de gobernanza fragmentado; la necesidad de lograr persistencia con una visión integrada conectada con la estrategia urbana general; la identificación de innovaciones prácticas que se retroalimenten y creen impulso.

Palabras clave: distritos de innovación, desarrollo urbano, innovación social, ecosistema de innovación, MID, universidades, tecnología, Melbourne.

Corresponding author: e-mail: marta.fernandez@rmit.edu.au

Received 30 September 2021 - Accepted 22 March 2022

This is an Open Access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-No Derivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use and distribution, provided the original work is properly cited, and is not altered or transformed in any way.

1. Introduction

Urban innovation districts have grown to be critical tools for economic development for urban planners and local authorities. This approach to urban development has shown to provide a mechanism that enables job creation, entrepreneurship, and acceleration of knowledge transfer (Kayanan 2021). The success of the 22@ Innovation District in Barcelona, Medellin Innovation District in Colombia and Boston have paved the way to an innovative approach for city making.

Brooking Institution policy paper in 2014 defines innovation districts as “geographic areas where leading-edge anchor institutions and companies cluster and connect with startups, business incubators and accelerators. They are also physically compact, transit-accessible and technically-wired and offer mixed-use housing, office and retail” (Wagner 2014). Therefore, the purpose of the innovation district is to drive sustainable, effective, and inclusive development. Innovation district success is predicated in the need to create spaces suitable to live, work and play, which is what differentiates them from the more traditional concept of a business cluster.

Innovation districts are established in well-defined geographical areas (Kayanan 2021) which could be formalised through legislatively approved boundaries such as 22@ in Barcelona (Ajuntament de Barcelona 2020) or through more loose planning such as Detroit Innovation District (New Economy Initiative 2014). They are close to urban centres to benefit from the advantages of city life, infrastructure, place identity, high density, walkability, diversity, and authenticity. (Esmailpoorarabia et al. 2020)

The case analysed in this work is the initiation and early strategy to create an urban innovation district in a specific area of Melbourne. The work studied the conditions of success and the need

for urban and social innovation in a wider international context. The case of MID considers the emergence and evolution of an innovation district formed by three institutional partners, and the conditions necessary for it to achieve progress towards its goals in the context of rapidly changing economic, technological, and urban conditions, influenced by the impact of the pandemic. This research aims to consider the practical lessons learnt from the experiences of Barcelona's 22@ district and draw conclusions for future strategies and collaboration between different cities and districts.

The City of Melbourne

Melbourne is the capital of the state of Victoria in South-East Australia. A diverse international city of more than five million, its high quality of living has attracted people from around the world, with an economy powered by migration, real estate, healthcare, finance, and international education (City of Melbourne 2022).

The city's evolution since its foundation has created a compelling mix of factors which have contributed to its urban economy, social mix, and urban infrastructure — with a classic “grid” Central Business District (CBD), and widely distributed suburbs and local government areas (City of Melbourne 2022).

Before the pandemic, Melbourne was one of the world's fastest-growing industrialised cities, with an average annual growth rate of 100,000-250,000 people per year over the last eight years (Population Australia 2022).

From the 1950s onwards, Melbourne and Victoria began to see a second significant wave of overseas migrants whose various cultures, networks and languages contributed to the growth of a dynamic and creative urban economy. Furthermore, the industrial restructuring of the 1980s

allowed the city to successfully self-renew the economy through education, the arts, healthcare, finance, and retail industries. (Victoria State Government 2021)

Although now internationally known for its quality of life, by the 2010s Melbourne was already facing globally recognised challenges related to the environment, inequality, economic renewal, and social needs.

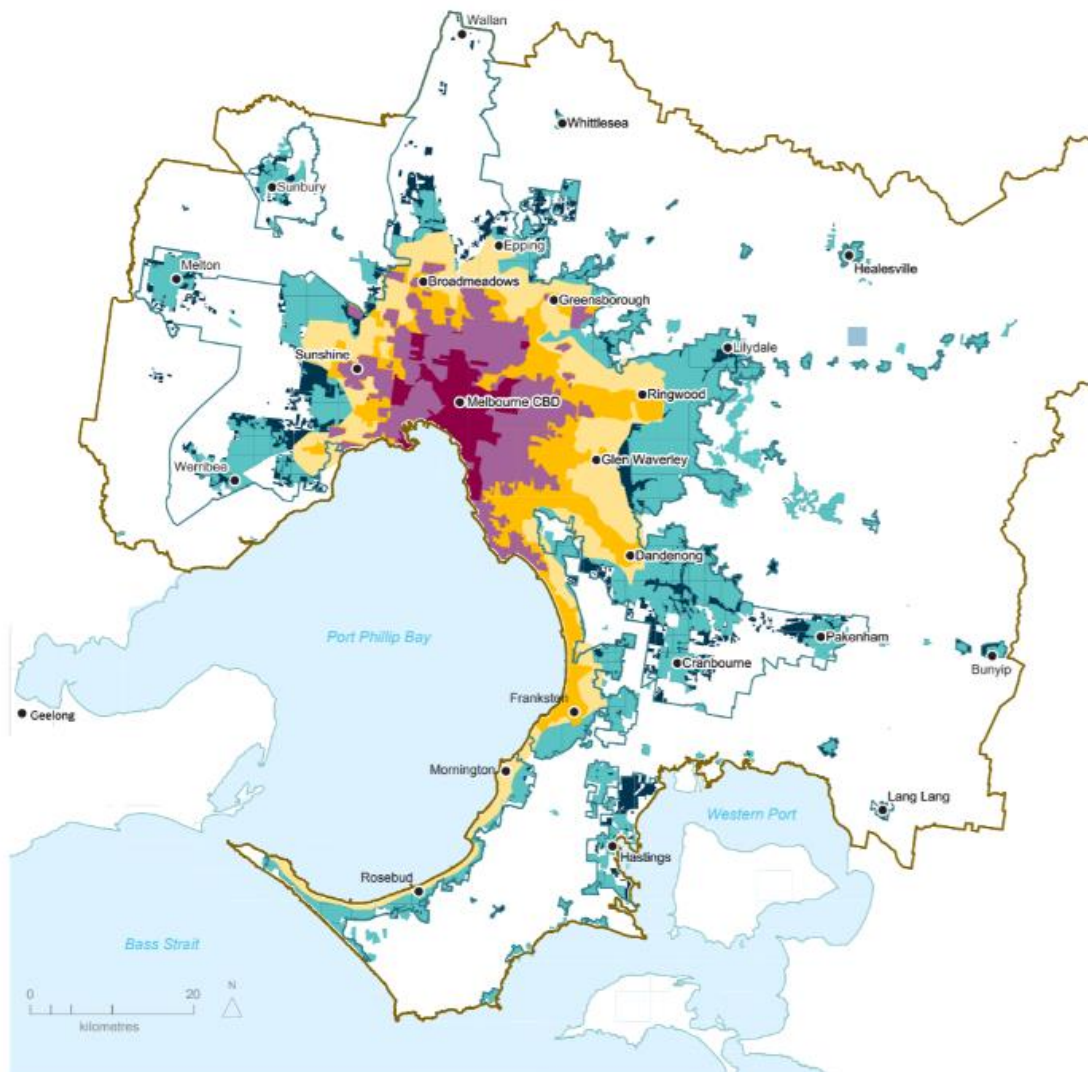
Population growth, construction and urban infrastructure development are key drivers of economic development for Melbourne's economy, but also pose challenges related to the balance, sustainability, and inclusiveness of the path of growth (SGS Lab 2022).

In 2017 the Victorian State Government set out an ambitious strategic metropolitan growth plan (Victoria State Government 2021). Plan Melbourne 2017-2050 aims to integrate long-term land use, infrastructure, and transport with its vision to support jobs and growth, while building on Melbourne's city brand of distinctiveness, liveability, and sustainability. In addition, large-scale infrastructure investments including a metro rail tunnel, the Suburban Rail Loop connecting existing stations with new regions in the city's suburbs, and an under-river road tunnel to better connect western suburbs with the central city are also in planning phase.

Over the last three decades, Melbourne's city centre, based around the relatively small population in the "grid", and surrounded by a cluster of inner-city neighbourhoods, has undergone a real-estate and culture-fuelled transformation, with large-scale development of apartment housing and commercial real estate (hotels, offices, retail shopping) dominating the central core of the city, and surrounding neighbourhoods transformed by the redevelopment of former textile, manufacturing, warehousing and logistics precincts into a varied mix of

increasingly expensive, urban neighbourhoods connected by the creative, digital and food economies (Victoria State Government 2021).

FIGURE 1. Melbourne urban growth



Source: Victoria State Government (2016).

Australian cities have increasingly begun to invest and brand themselves with the help of innovation districts, to establish a knowledge and innovation economy and project a distinctive international reputation.

2. Methodology

Innovation districts can be transformative and impactful places and have the potential to address a wide range of socio-economic challenges. Innovation districts require the combination of many disparate elements and a long period of time for developing a well-formed vision, for planning and for the consolidation of the district as a successful area for productive, sustainable, and inclusive development. Given their early stages of development in many cases it is difficult to make definitive quantitative assessment of their success or failure. This paper adopts a qualitative case-based approach to explore the early evolution and development of the Melbourne Innovation District.

RMIT University is one of the three founding partners of the MID since its inception and as such the university has been instrumental in developing the vision and advancing the establishment of the district. This work analyses the journey and evolution from 2016 to 2022 and the key elements that came into play from as well as the challenges identified during the early stages of development. To illustrate this journey, we use a case-oriented research approach. Insights are drawn from research conducted by RMIT University.

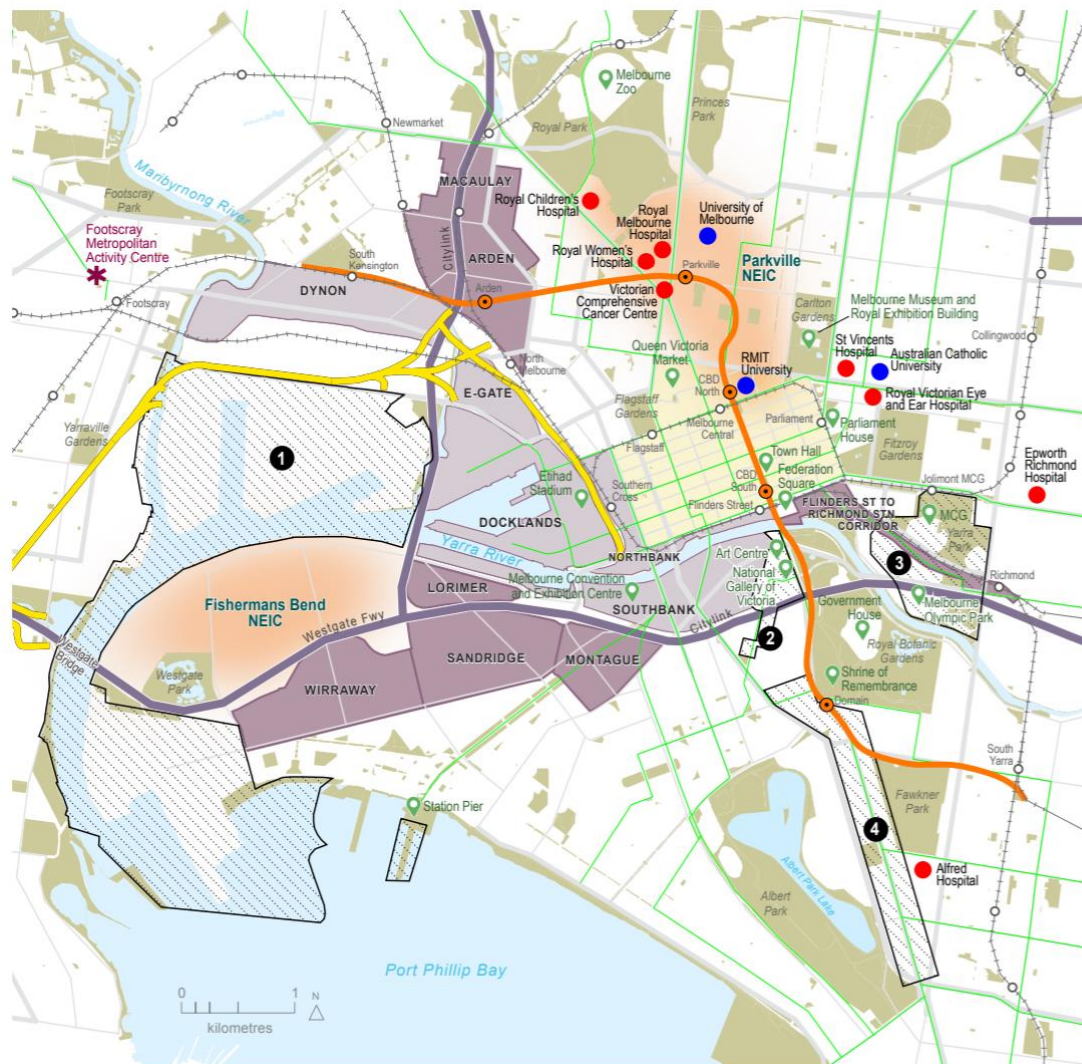
3. The Melbourne Innovation District (MID) case

3.1. Overview

The early history of the MID shows that creating the conditions for innovation to thrive requires a complex mixture of risk taking, technical expertise, opportunity, social and economic context, and a clear vision that motivates the range of stakeholders required to create capability, legitimacy, and momentum for the project.

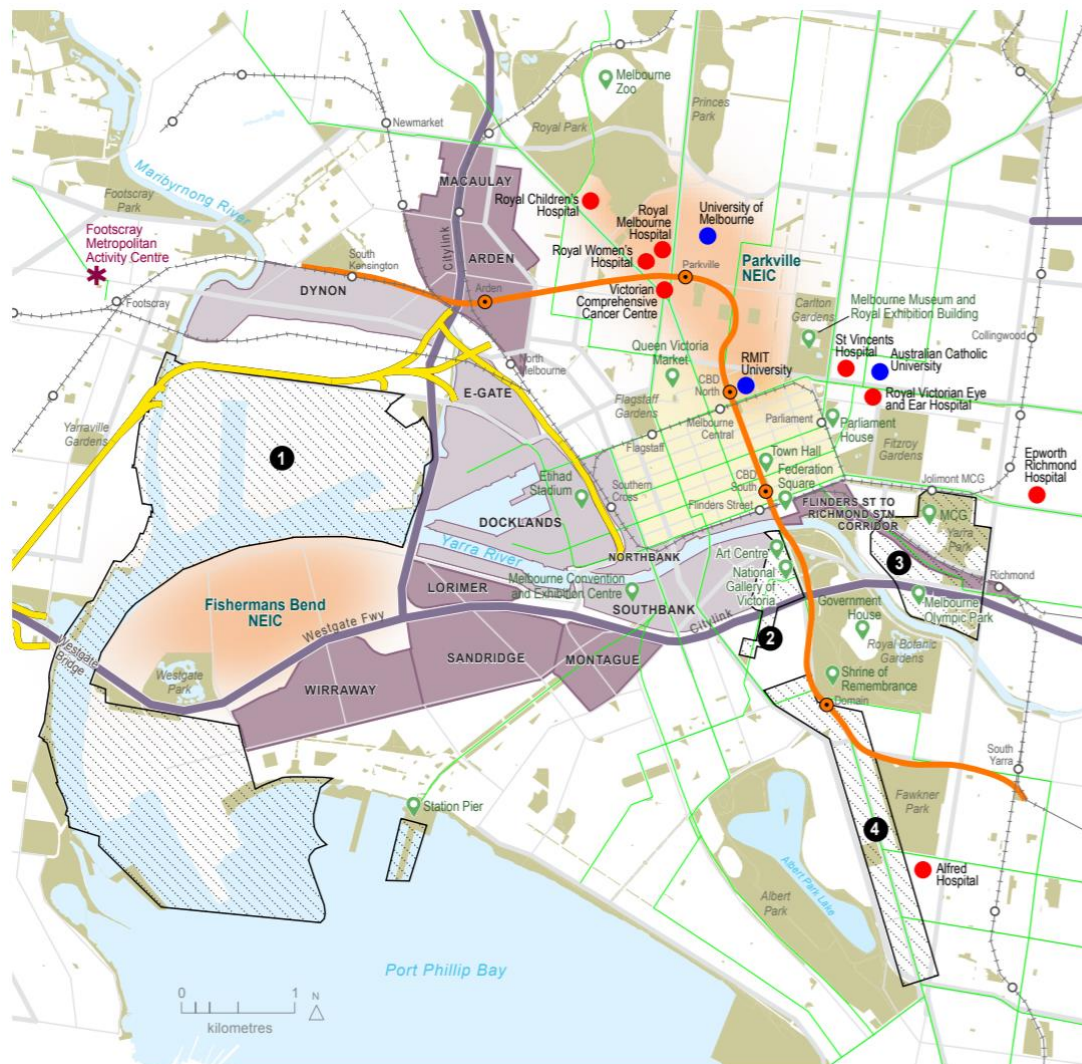
The focus of our project is a district in Melbourne's City North, adjacent to the CBD grid and spanning across four local government border lines, whose net area incorporates a unique collection of institutions and public realm infrastructure, including:

- The Royal Melbourne Institute of Technology (RMIT University) began as a Working Men's College dedicated to developing a “skilled hand and a cultivated mind.” It was founded in a single building on the city edges in 1878 and now occupies more than one hundred buildings and around 6% of Melbourne's city centre real estate. RMIT currently has almost 100,000 students from Melbourne to Vietnam and Barcelona.
- The University of Melbourne — Australia's leading academic institution — has a classic university campus as well as buildings in the surrounding neighbourhoods.
- Royal Melbourne Hospital, The Royal Women's Hospital, Royal Children's Hospital, Comprehensive Cancer Centre, Parkville Biomedical Precinct, The Walter, and Eliza Hall Institute of Medical Research in Parkville.
- Royal Exhibition Building (world heritage cultural precinct), State Library Victoria.
- Victorian Trades Hall and labour movement sites.
- Queen Victoria Market, the largest open-air market site in the southern hemisphere, is Melbourne's most visited attraction.

FIGURE 2. Melbourne Central City Source

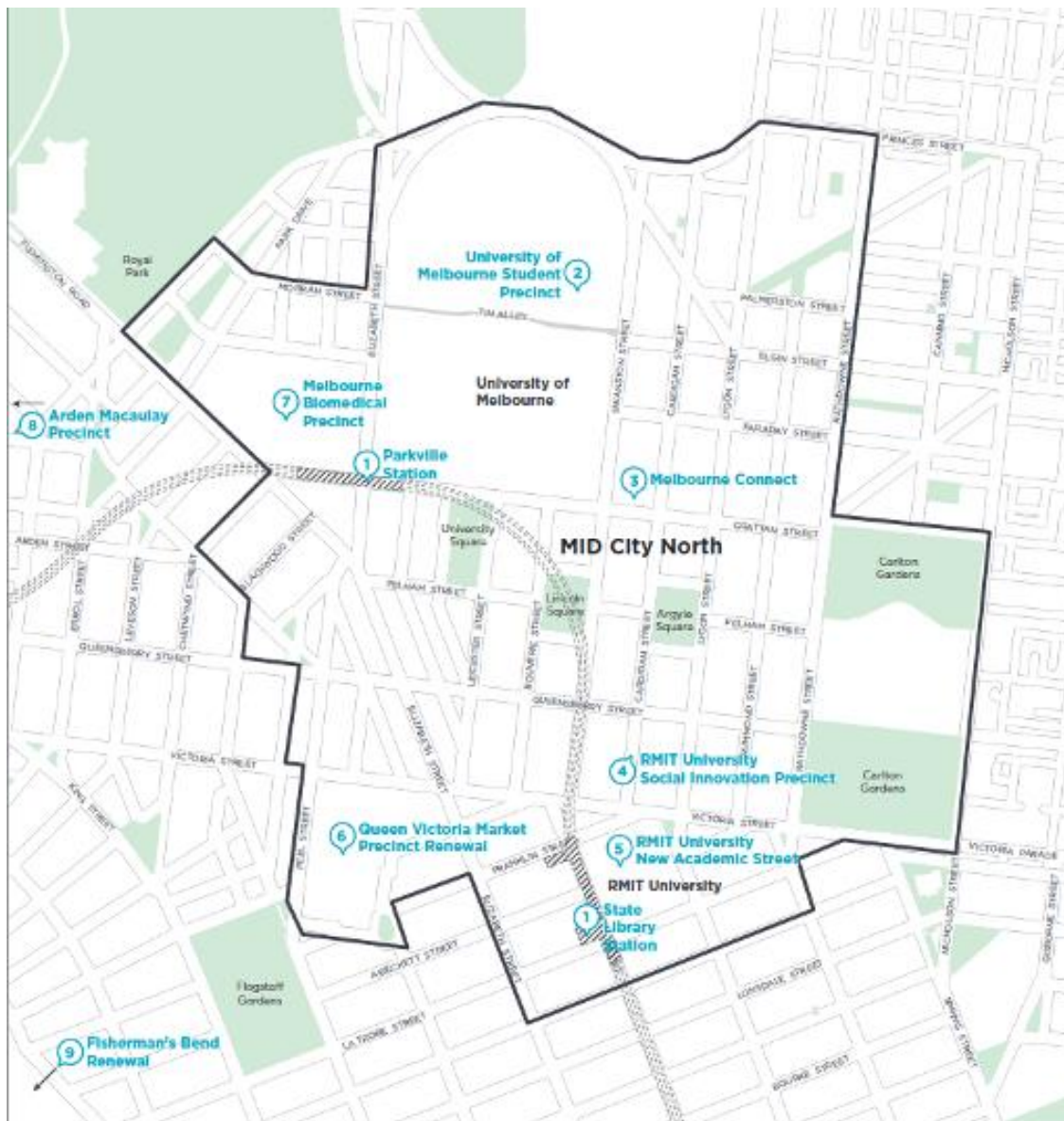
Source: Victoria State Government (2017).

The City North area is in fact a collection of distinct, specific campuses, including some created in Melbourne's original mid-19th urban plan and others which have developed more organically and recently.

FIGURE 3. City North along with other key urban districts

Source: City of Melbourne (2019).

This public and academic presence interacts with a changing set of relationships with the private sector, another key ingredient for successful innovation as defined by the Triple Helix model.

FIGURE 4. City North

Source: Author's own.

3.2. Combination of Innovation assets

This district has combined and connected a range of activities and innovation assets that would never all be planned alongside each other today, but collectively represents enormous potential to generate innovation with economic, social, and public value. The important question is 'how?'

A challenge to urban development is whether the default path of economic and infrastructure growth by reshaping the city over time will coherently address the long-term needs and potential of the Victorian community, by generating innovation that will help to create new jobs and enterprises and also develop the services, solutions and shared environments needed to meet growing social needs and environmental pressures.

In 2016 the City of Melbourne, RMIT and University of Melbourne began discussion about the potential to work together as three “anchor institutions”, given their significant presence, activity, and infrastructure in the City North area, to form a joint vision and goal to focus the evolution of the district and serve as a catalyst for economic and community activity.

A driver of this approach was the growth of commercial real estate development, building apartment towers and dedicated student accommodation, and changing the mix of activities in the City North neighbourhoods, while replacing many buildings which had, in past decades, housed a broader mix of civil society, non-profit, small and medium sized enterprises (City of Melbourne 2022).

As universities with large numbers of international students and high concentrations of research and technology-intensive innovation became a growing part of the city economy, knowledge-intensive industry sectors including finance, media, law, and health also intensified their demand for skilled workers, innovation capability, and fit-for-purpose urban environments. The three partners saw the potential to influence the future shape of the city for the benefit of the common good, and to strengthen partnerships and shared platforms that would extend Melbourne’s ability to innovate amidst changing economic and social conditions.

3.3. Barcelona 22@ as Inspiration

Innovation districts are an example of an economic development strategy that brings together the concept of open innovation, highlighting the positive impact that organisations derive from collaboration in research and development with other external parties (Chesbrough 2004), with the financial and economic advantages evident from sustainable real estate (Read and Sanderford 2017) development. Innovation districts connect the theory of innovation to the practice of economic development, infrastructure investment, urban design, and land use planning (Read 2016).

A key point of stimulus and intervention for Melbourne's Innovation District is the formation and evolution of Barcelona's innovation district, 22@, and the evolving mix of university, technology, industry and civic partnerships within it.

The 22@ district was established at the end of the 20th century, in two hundred hectares of formerly industrial land in the eastern part of the city. The industrial heritage of the area has been preserved and now hosts the core of the first urban innovation district in the world (22@Network 2022). Over the last 20 years the 22@ has evolved to become an exemplar of urban development that seeks to attract the key actors of the knowledge economy, private sector, public sector, universities, and the community.

Key features of the district that inspired the MID include:

- Promoting mixed land use for residential, commercial, research, startup, and green infrastructure
- Connecting to the city centre and major transport nodes through solid public transport infrastructure

- Including a strong presence of academic institutions
- Promoting research and development and knowledge intensive activities
- Creating the conditions for the development of an innovation ecosystem
- Supporting digital infrastructure

RMIT, as an anchor institution of the Melbourne Innovation District, has experienced first-hand in Barcelona the impact on growth and development through immersion in an innovation district thanks to its hub in Europe in the heart of 22@ Innovation District and has worked to apply the lessons and connections back into Melbourne. The mission of RMIT Europe is to make a positive economic and social contribution to the people, communities, and region where it operates. Sustainable Urban Development is one of RMIT Europe's areas of focus (RMIT Europe 2022).

The Australian university hub moved to the 22@ district in 2017. Since then, it has doubled in size and attracted more than EUR15m of research income. RMIT Europe has established deep links with stakeholders in the district to develop projects that drive inclusive growth and connect Melbourne, Vietnam and Barcelona in topics related to Sustainable Urban Development.

An example of such projects is RECETAS, a project led by IS-Global which is a private-public research centre in the district. The five-year project focuses on re-imagining environments for connection and engagement and testing social prescription of natural spaces. The project will address loneliness for urban dwellers by encouraging access to nature and providing social structures to improve health and mental wellbeing and reduce loneliness. The project is encouraging investments in nature-based solutions and green infrastructure which not only address the adverse consequences of urbanisation on environmental systems in our cities but

also promote health and wellbeing (EU Publications Office 2021). The project will run demonstration projects both in Barcelona and Melbourne¹.

Projects such as RECETAS illustrate the possibilities enabled by proximity to key stakeholders, government, industry, academia, and community. The project was born in the innovation district and capitalises on the local network and reach of project partners to drive international cooperation and widespread impact. RECETAS exemplifies the ‘quintuple helix’ innovation model, which considers not only the presence of key stakeholders but also places the natural environment and the economy as drivers of knowledge production and innovation (Carayannis, Barth and Campbell 2012). The global networks of the district organisations can enrich local innovation ecosystems while these organisations make their presence in the district a core part of their global strategy.

Innovation districts have a key role to play in driving the socioecological transition of society and the economy that is now required, particularly as society and governments embark on the post-Covid recovery journey. Economic factors are consistently emphasised as the primary driver of innovation district success; however, we are increasingly also seeing the importance of social and environmental factors.

The vision

Despite Melbourne’s history of visionary urban thinking and planning during specific moments, the city collectively did not have the level of integrated, urban planning as is illustrated by Barcelona’s 22@ experience.

¹ RECETAS is supported by European Commission funding and the National Health and Medical Research Council in Australia

Melbourne has a city administration elected to govern the central metropolitan area of the Central Business District, the Docklands, and surrounding areas, including the riverfront district and sports precinct incorporating the city's world-famous cricket, tennis, and football facilities.

The Victorian State Government also plays a powerful, long-term role in shaping and funding public infrastructure and urban planning across the whole state. As the shape and mix of the city have changed, in particular as former industrial sites and locations dotted around the edges of the city centre have been repurposed, regenerated and moved away from their 20th century industrial uses, strategic urban planning by both state and city governments has played an increasingly important role (Boddy 2000) .

Since 2014 the Victorian government has pursued a long-term metropolitan plan for the wider city area using major infrastructure investment as a driver of growth, jobs, and quality of life across the whole city and the broader region. A new set of major transport infrastructure investments — metro rail networks and road links — has created new opportunities for the innovation economy in Melbourne (Infrastructure Victoria 2016).

However, in relation specifically to the City North area of Melbourne, for accidental reasons, the governance, planning and strategic pursuit of innovation and development across the district area were not 'joined up' or coherent, despite the clustering of highly significant institutions, development sites and activities. The scope of the wider 'innovation district' runs *between* different institutions and actors, and across varying civic and administrative responsibilities.

These actors include the city government, major universities, public and private healthcare, biomedical and pharmaceutical research institutes, community sector Non-Governmental Organisations, private corporations, and state agencies.

For some decades, the Victorian government and other actors have been investing in the development of a university, health, and biomedical research precinct around Parkville, adjacent to City North.

But while these sectors and domains have seen growth in reputation and activity, it was not so clear how the full constellation of activities and connections would feed a future innovation strategy for Victoria's broader economy. This challenge was intensified further by the impact of the Covid-19 pandemic as it amplified the demand for technologies, services and enterprises that could meet community needs for wellbeing and safety, alongside sustainable livelihoods, and essential services.

The role of the two major Melbourne universities, RMIT and the University of Melbourne, in the development of the district is critical for its success, as universities play a key role in place-making for an innovation district (Pancholi et al. 2020). Recent studies reveal that universities:

- a) Have a role of facilitators through societal integration in innovation districts.
- b) Function as platforms for collaboration and exchange of knowledge by adopting extroverted and collaborative approaches.
- c) Help in developing a sense of trust within the community and establishing innovation districts as democratic, cohesive, and prosperous localities.
- d) Contribute to socio-cultural and organisational maturity of innovation districts.

By 2015 there was a compelling opportunity for the City North district to function as a driver for a more ambitious shared innovation strategy. It was also clear that existing urban development pressures, focused on the development of commercial real estate and apartment

towers for inner city residents and international students, were at risk of overtaking and distorting the wider conditions and diversity of spaces and uses required for innovation systems to flourish.

In this context, the task was to generate a shared strategy to identify, connect and grow the innovation ecosystem of the various institutions, players, and assets, and to win collective support and participation for a longer-term development process. Over time this would build a shared framework at a district-wide level and help to bring about key investments and planning interventions designed to enhance the long-term potential of the area when the opportunity arose.

3.4. The strategy

Informed by this context, and by the lessons and example of 22@, the Melbourne Innovation Districts partnership was established in August 2017, initiated by the two universities together with the City of Melbourne, and launched by the Lord Mayor and two Vice Chancellors at a busy cafe in the shared City North neighbourhood.

The partnership relied on the principles of collaboration and co-development, and evolved from discussions, workshops, and exploratory dialogues conducted during 2016-17 (including visits from former and current directors of 22@ Josep-Miquel Piqué and David Martinez, to act as expert provocateurs for the process).

The initial strategy used the profile and connections of the three partner institutions to help forge a visible agenda and encourage interest and momentum for the medium-term objectives of 'MID City North' to develop.

From its inception the agenda intentionally put the potential of research-intensive, technology-driven sectors of the economy such as biomedical, engineering, computing and “deep technology” *alongside* the public realm and social innovation dimensions of the district, focusing on the future skills and the societal needs required for an inclusive, innovation-driven economy that could contribute to wellbeing and sustainability.

While these were unfamiliar components of an innovation economy agenda in Australia at the time, in the years since 2017 they have become increasingly central to the discussion, intensified by the impacts of the pandemic, and changing societal priorities.

The MID strategy pursued a visible presence, building shared intent, and using public conversation and programming to connect different activities and spaces together across the district. These actions also encouraged the formation of networks and shared opportunities, feeding an appetite for more structured and scalable collaboration over time.

A partnership board with two members from each of the three founding institutions, supported by a small, flexible team of project officers, was the minimal organisational structure for this initial phase.

The MID partnership made active use of student, creative and academic project networks, regularly undertaking studio projects and cross-institutional studio collaborations to stimulate imagination about the possible futures of the district and the ways in which public design, science, art, and technology innovations could stimulate new possibilities for the future of the city.

During this early stage of exploration, mapping and connecting, it quickly became apparent that a pathway to a more structured, medium-term set of commitments was needed, supported by

evidence, international reference points and economic data. A fit-for-purpose institutional structure would be needed to help drive a distinctive, robust strategic direction and actively facilitate the innovation ecosystem relationships that would flesh out the initial vision and develop capabilities to support its evolution.

After some months of initial exploration and mapping of innovation activities, the partners decided to pursue this structured approach to strategy development by participating in an international collaboration program, curated by the Massachusetts Institute of Technology (MIT), the Regional Entrepreneurship Acceleration Program (MIT Office of Innovation 2022).

Alongside its global profile and network reach, this program had the virtue of offering connections to an international network of cities and regions pursuing similar pathways for innovation and entrepreneurial growth, and promoted a cross-sector, “systems perspective” on the mix of policies, entrepreneurial institutions and private sector involvement that could successfully mature and scale innovation ecosystems in 21st century city regions.

Joining this program required a joint commitment by the three founding MID partners to participate in a two-year program of work, including series of week-long workshops with teams from a wide range of other countries, along with analysis, capacity-building and team planning in Melbourne. The approach also required the inclusion of entrepreneurs, corporate partners, and policymakers to construct an effective ecosystem for Melbourne’s strategy.

These roles were addressed by partnering with Launch Vic, the state government’s startup innovation agency, and through connections and collaboration with leading firms with a growing interest in Melbourne’s digital and innovation economy, including Salesforce and Cisco.

During 2018 to 2019 period, MID formed a connection the Global Institute for Innovation Districts (GIID), formed by Julie Wagner out of her program of work on urban innovation districts at the Brookings Institution, to further test, sharpen and benchmark Melbourne's evolving approach. During the same period, the City of Melbourne collaborated with the MID partners and other local stakeholders to develop a City North Opportunities Plan (City of Melbourne 2019).

This public realm activation plan focused on the characteristics and potential of the area, the mix of tenures, uses and public spaces, and the importance of encouraging diverse participation and activities in the building and shared precinct spaces, along with the importance of developing public transport and active transport opportunities to encourage community access and participation across the district.

4. The results and Discussion

4.1. Prototyping as a pathway to scale

Building on these foundations, the MID partners created a series of "working prototypes" of the innovation environments, teams and collaborations that could shape, influence, and realise the full-scale possibilities of the wider innovation district.

For example, the early stages of the MID partnership saw many discussions of the potential for testing new technologies and data analysis methods, and the City of Melbourne established a 5G technology testbed in the district area aligned with a broader testing network extending to the eastern part of the central city (City of Melbourne 2019).

The University of Melbourne also explored a series of activities that would feed into its establishment of a Science Gallery in the district as part of a dedicated precinct building,

Melbourne Connect, which the University built and launched on the site of a former women's hospital. This site forms a crucial point in the growing, district-wide network of innovation activities.

All of these activities formed part of an intentional approach to the activation, prototyping, network-building and showcasing of best practice examples across the world, designed to flesh out and build on the original vision for the innovation district which was to promote an innovation system that underpins an inclusive, sustainable urban development while adapting to changing opportunities and evidence base about which activities, investments and interventions could best create value at specific moments.

This stage of the strategy was focused on creating test beds, forums, entrepreneurial programs, and hubs that could successfully co-exist and connect with each other and grow into broader organisations over time. An example of this prototyping approach is the Open Talent program, conceived in Boston during the REAP program, and created by the two Melbourne universities with Launch Vic to help prepare science and technology graduates for entrepreneurial pathways. This generated incredibly positive initial outcomes and encouraged further collaboration among the universities, state agencies and technology industry partners.

As a final example, during 2018, RMIT established a Social Innovation Hub in a building formerly occupied by Red Cross Australia and now by the University of Melbourne, located near University Square in the heart of the district area, to provide a shared, prototyping space and co-location for various teams working on RMIT's social innovation and precinct program. Teams and initiatives housed here include the Centre for Innovative Justice, which generates new service designs, policy reforms and educational interventions through collaboration with

legal service providers, citizens and users of justice services, governments, and justice system partners.

Another example is the Health Transformation Lab, co-funded with Cisco, which experiments with new interventions, possibilities, and breakthrough collaborations in health.

Overall, these phases led to a strategic framework grounded in the distinctive history of this urban district of Melbourne and its potential to apply and leverage its assets and capabilities in key domains of innovation.

There was a clear opportunity in Melbourne to develop a compelling and coherent innovation district across an urban area already highly populated with activity and infrastructure but whose potential had been underutilised due to an absence of connections, coherence, and innovative shared leadership.

Urban and university innovation districts around the world are often associated with city-edge greenfield sites, or with the redevelopment of large-scale, self-contained former industrial sites such as manufacturing centres. In this case, Melbourne's Innovation District in City North represented a distributed collection of activities,

The results of the REAP program work confirmed both the need for a clear, distinctive identity and focus on innovation capabilities and the opportunity to put these at the heart of Melbourne's CBD North innovation strategy. Analysis and discussion of these assets led to a shared focus on three specific areas, and their potential combination in a Melbourne-based innovation ecosystem:

- Deep tech (biomedical, engineering, data science, digital infrastructure).
- Social innovation (community needs).
- Wellbeing-focused economy (addressing health and wellbeing, creating pathways and opportunities for inclusive economic development).

This focus created a clear opportunity to articulate the potential for inclusive economic growth and the need for innovations that will be scaled through commercial, social, and public pathways to increase the resilience of Victoria's and Melbourne's economies.

Following the completion of the REAP program in 2019, the clear conclusion and call-out arising from the shared work was the need for a dedicated resolute "backbone organisation" to progress the next phase of work and develop the capability for implementing the activities, infrastructure and connections that would lead to cumulative impact and investment in the north of the CBD. At the end of 2019, the partners worked together on a business case and proposals for modest investment in this backbone organisation.

4.2. Dealing with disruption – impact of the Covid 19 pandemic

In early 2020, global disruption intervened. The arrival of COVID-19 prompted widespread economic and social crisis together with pervasive uncertainty about the future environments for social and economic life. All three MID partners were thrown into emergency management, making crisis decisions in real time, transferring tens of thousands of staff and students to remote working, closing city campus sites, providing emergency support to businesses,

stranded international students, homeless people, and many others, and working to restructure budgets and infrastructure plans to reflect an unknown set of conditions.

The City of Melbourne lost an estimated 15% of its jobs during 2020, compared to 9% across the state of Victoria (Faculty of Business and Economics 2022). Universities, one of the key employers and drivers of wider economic activity in the city, lost thousands of jobs as national borders closed, existing international students were unable to access campus and new students stopped enrolling, and universities were forced to restructure their budgets and operations and lay off thousands of workers in response to plunging revenues (City of Melbourne 2022).

Melbourne's lockdown in 2020-2021, one of the longest and most severe anywhere in the world (BBC 2021), had dramatic effects on the CBD, including shop and hospitality venue closures resulting from the decline in citizens able to visit, access and spend time or money in them.

As in all other cities around the world, the extended impact of COVID-19 transmission and the measures put in place to contain and counter it widened social and economic inequality, through factors such as a higher risk for people with underlying health conditions; increased financial risk of those in insecure employment and housing; varying impact of local lockdowns and physical restrictions on people working in exposed, service-intensive occupations, and the compounding effects of restricted learning, access to technology, and social strain on mental health and relationships.

As the pandemic has progressed, the challenges of economic inequality have become even more apparent, and the role of our institutions in addressing it is beginning to be debated more urgently (KPMG 2021).

In the face of the initial emergency, the three MID partners agreed to keep their partnership using existing financial resources while suspending any further investment in the shared organisation or infrastructure. They continued to meet regularly, share experiences, and identify practical opportunities to support each other to meet the immediate pressures caused by the pandemic.

As 2020 progressed, questions about how to shape the future re-emerged. The importance of the long-term issues and focus with which MID began – social innovation, inclusive economic development, and the application of deep technology and scientific knowledge to collective problems – was reinforced by the challenges exposed by the pandemic.

Rather than relying on finance-driven real estate development and open channels of international migration to fuel urban development, cities now face the challenge of attracting people back into their centres; they need to offer safe, interesting, and valuable experiences that create a reason to travel out of the neighbourhood and home-based routines adopted by tens of millions of people.

Melbourne's health and biomedical infrastructure was pressed into more intensive service, and the infectious disease expertise accumulated over decades in Melbourne's Parkville and City North precincts became crucial to mobilising vaccination campaigns and guiding public health measures.

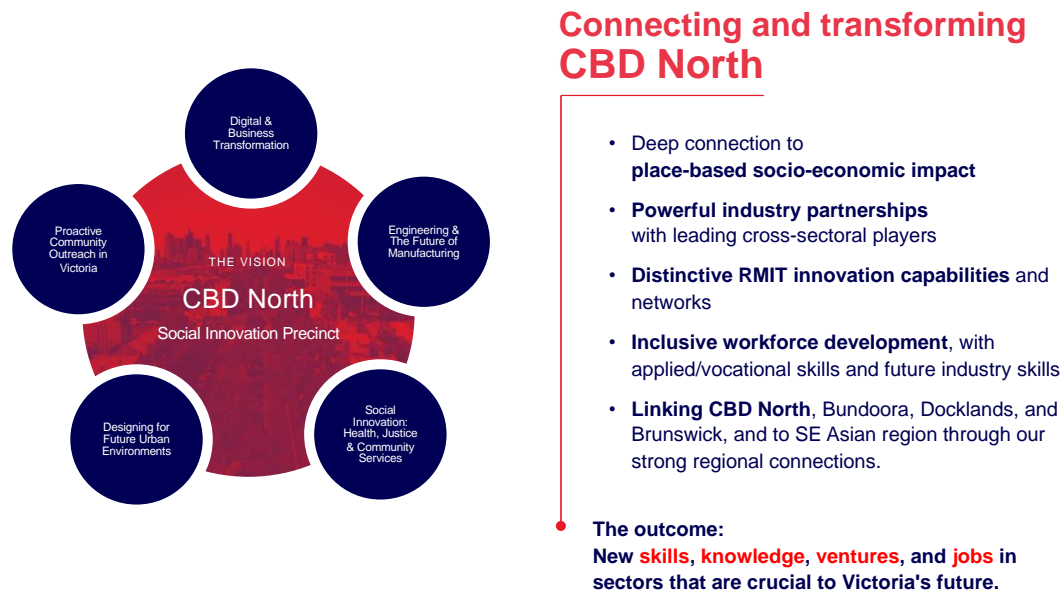
At the same time, the City of Melbourne mobilised to ensure homeless people were not left on the streets during the emergency, and the two universities worked together with local charities to help stranded international students unable to access emergency national welfare payments to find food and mental health support through Victoria's extended periods of lockdown.

Moving into 2021 the underlying themes and challenges posed by MID's early agenda became increasingly urgent and widespread for the "recovery" agenda of Victoria's economy and society, including meeting collective needs, supporting adaptive, cross-community collaboration, creating jobs and lifelong learning opportunities under changed economic and physical conditions, developing innovations that apply deep technology expertise and digital service infrastructure to meet shared needs.

As the crisis developed, the role of governments in underpinning economic security and innovation systems also became clearer. The Victorian State Government committed \$350m to an investment fund for universities (Premier of Victoria 2021) designed to support infrastructure, innovation, and applied research to help weather the effects of the crisis and contribute to recovery.

4.3. A breakthrough – RMIT Social Innovation Precinct

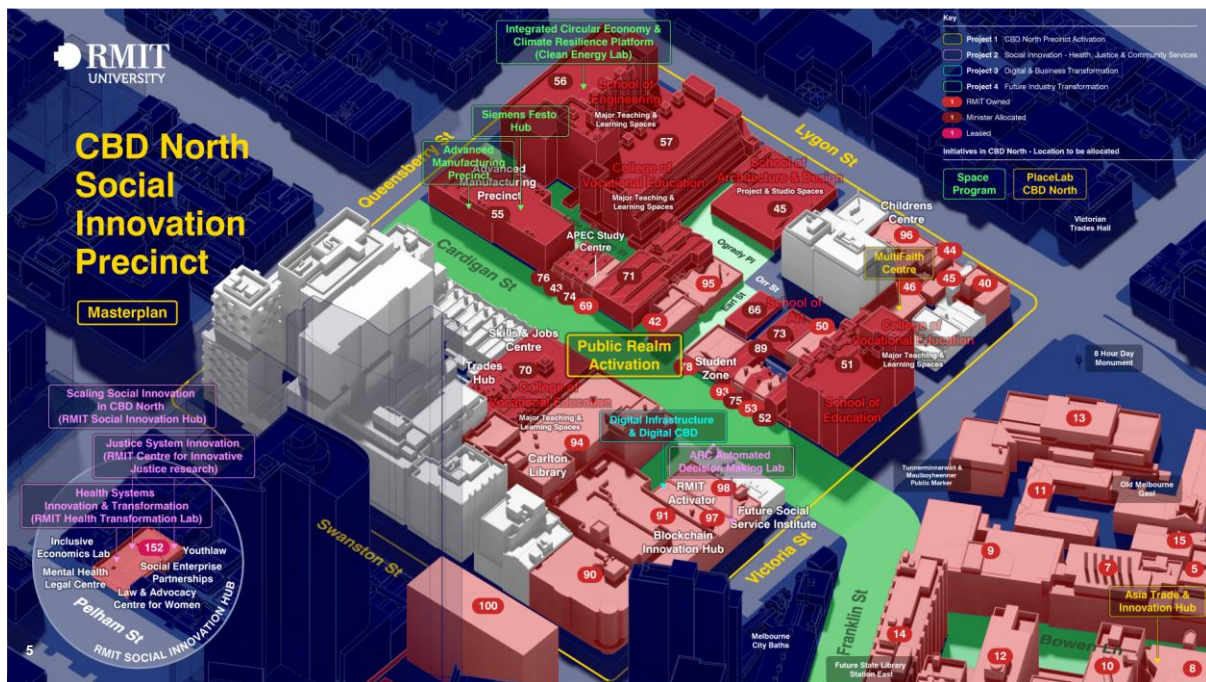
In this context, RMIT put forward a proposal to create a "social innovation precinct" in the heart of the City North innovation district, designed to build on its distinctive location and mix of capabilities, and to adapt and develop RMIT's established strengths by combining expertise, technology, industry partnerships and cross-community collaborations to develop an innovation cluster to create solutions for future wellbeing and opportunity for future generations.

FIGURE 5. RMIT Social Innovation Precinct

4
Source: Author's own.

Building on the work of the MID partnership, RMIT proposed a two-year work program to the state government based on shared master-planning for the future of a whole city block, offering a vital missing piece in the evolution of the wider district, with a dedicated long-term focus on social innovation, connecting industry hubs and social innovation teams with the growing ecosystem of lifelong learning and community participation.

The vision outlined in the proposal is for an innovation precinct, the size of a city block, which acts as a key jigsaw piece in the wider district, able to function as a catalyst and critical mass for social innovation and bring together wider partnerships, create inclusive pathways to lifelong learning and industry development.

FIGURE 6. RMIT Precinct mix and connection to ‘green spine’ and public transport networks

Source: Author's own.

This vision is possible because of the unique mix of buildings, tenures and activities on this site and the mix of accidental and shared purpose that has influenced its development, along with its proximity to critical campus and precinct infrastructure.

The set of buildings and public spaces contained within this block are owned respectively by RMIT and the Victorian government and has been maintained for the purposes of vocational training, research, student, and community support. Many of these buildings are now in need of modernisation or replacement, and the block offers the opportunity to redesign and progressively redevelop welcoming and accessible spaces and infrastructure for a diverse community to access opportunities for lifelong learning and be involved in developing future wellbeing solutions.

In late 2021, despite the challenges and uncertainties caused by the COVID pandemic, the MID partnership has evolved into a coherent shared identity brought together by a compelling

collective challenge. The social and wellbeing dimensions of urban development have been brought to the forefront of the innovation agenda by the pandemic, alongside the development of new enterprises and workforce skills driven by scientific and technical innovation.

It will be some years before we see the full realisation of Melbourne's City North innovation district and the unfolding vision of the RMIT Social Innovation Precinct. The progress of the agenda over the last five years illustrates some of the lessons and challenges in developing innovation districts and systems in complex urban environments.

5. Conclusions

Innovation districts can be transformative and sustainable urban places and have the potential to address a wide range of social, environmental, and economic opportunities. National and regional governments are investing capital and resources in them, and public-private partnerships are being used to fund high density, mixed-use, urban development projects.

The early history of the MID shows that creating the conditions for innovation to thrive requires a complex mixture of risk taking, technical expertise, opportunity, social and economic context, and a clear vision that motivates the range of stakeholders required to create capability, legitimacy, and momentum for the project.

Some of the key lessons learnt in the development of the MID include:

a) Costs of collaboration

Current networked and data-rich environments create opportunities for 'ecosystem' strategies that link together different organisations and participants. However, effective collaboration still requires focused, persistent effort and careful, disciplined work overtime. These are genuine

costs and must be borne consistently by the leading organisations in any innovation strategy to make progress.

b) Common vision and long-term aspiration

Forming a common vision and long-term aspiration that drive all stakeholders in the same direction can be critical to overcoming transactional costs and fragmentation of the status quo. A long-term commitment to social purpose and civic identity can play an influential part in driving collaborative behaviour, but this needs to be expressed and defined in terms that go beyond institutional function and status.

c) Difficulty of achieving critical mass

The social and physical systems needed for innovation in urban places can be difficult to gather and despite proliferating network connections, establishing critical mass is difficult and challenging. A clear understanding of the scale required for critical mass in innovation ecosystems, and the different levels of scale that can be connected and combined within, is vital to developing strategies for their development. Visibility and status among industry and institutional leaders and in public policy decision-making is necessary to form the coalitions and investment proposals that enable precinct development. However, without critical mass of participation in key domains of practice, including community participation, innovation ecosystems will not develop or flourish in designated precinct locations.

d) Dispersed evidence base

The diverse sources of specialist knowledge and evidence relating to an innovation district of this kind are disparate and dispersed, making it challenging to unite and deploy them in pursuit of a coherent strategic agenda. Many innovation districts focus on startups and

commercialisation, while social innovation and placemaking draw on different bodies of knowledge and skill. Bringing together the skills, evidence and evaluation methods needed to build credibility and insight for such an agenda requires dedicated entrepreneurial effort and expertise.

e) Need for “anchoring” project and backbone organisation

As found in other urban district scale developments, successful evolution of the long-term agenda requires “anchor” partners who can provide long-term confidence and orientation to the agenda while also encouraging interaction and connections between a diverse network of players and participants.

Forming a dedicated ‘backbone’ organisation, even if it is lean and light touch, to provide proactive curation, shared knowledge, programming of shared discussion and decision-making and a focal point for community awareness and participation, is vitally important. Without it, the costs of shared decision-making and coordination are far higher for the institutional partners involved.

f) Dealing with fragmented governance environment

The opportunity to create an effective innovation district in a densely populated, highly connected urban environment emerges in part because of the lack of unified control or established institutional hierarchy. However, the fragmented and distributed governance environment creates its own steep challenges of authorisation, investment, and coherence. While each set of players — state, city, universities, private sector, and community partners — bring their own specific forms of power and autonomy, the work of constructing coherent forums for collaborative decision-making and authorisation is intensive, and the pervasive

pressures of time and information management can undermine the pursuit of clear decision making and momentum.

- g) Need for persistence with an integrated vision, including how it fits in the overall city strategy

As a result of the factors outlined above, progressing the vision requires a persistent pursuit of an integrated vision which prioritises collaborative development of the long-term goal while pragmatically taking short-term opportunities to solve problems, win resources and create momentum.

Clarifying how specific precinct and district capabilities can align and contribute to the overall city strategy is also crucial for creating momentum and confidence in the wider agenda. Shaping the City of Melbourne's economic strategy with active contributions from the two universities assisted in this task.

- h) Look for practical innovations which feed each other and create momentum

At every point in the development of MID, practical measures that support people and teams to do better, work better, live better, or access new opportunities have supported the growth of the shared strategic objectives and encouraged the formation of trust, capability and a shared repertoire of activities and methods supporting the development of the wider ecosystem.

We believe this work contributes to understanding the ingredients required and the challenges to overcome in the early development of an innovation district. To do that we have analysed the origins, the vision, the strategy, the partners, the governance and what are the triggers of success.

We have shown that specific activities which encourage community participation in public spaces, experiment with applications of innovative technologies for everyday use, support the sharing of knowledge and ideas among the anchor partners and stimulate conversation and knowledge exchange across the wider district support both the community relevance of the district's activities and the sense of trust, legitimacy and optimism maintained by the network of participants.

We suggest as a future research line to consider the development of a model with quantitative data analysing the early phases of development of different Innovation Districts.

References

- 22@Network. 2022. "22@ Network Barcelona." <https://www.22network.net/>.
- Ajuntament de Barcelona. 2020. *Government Measure. A boost to 22@*. https://www.barcelonactiva.cat/documents/20124/259890/MG-Impulsem-22%40-EN-WEB_def.pdf/c969e58b-6989-1da7-9edf-621aa554a336?t=1607504071610.
- BBC. 2021. "Melbourne: Sixth lock down". <https://www.bbc.com/news/world-australia-58998418>.
- Boddy, Martin. 2000. "Technology, Innovation, and Regional Economic Development in the State of Victoria." *Environment and Planning C: Politics and Space* 18 (3): 301-319.
- Carayannis, Elias G., Thorsten D. Barth, and David F.J. Campbell. 2012. "The Quintuple Helix innovation model: global warming as a challenge and driver for innovation." *Journal of Innovation and Entrepreneurship* 1(2). doi: [10.1186/2192-5372-1-2](https://doi.org/10.1186/2192-5372-1-2).
- Chesbrough, Henry. 2004. "Managing Open Innovation." *Research-Technology Management* 47(1): 23-26. doi: [10.1080/08956308.2004.11671604](https://doi.org/10.1080/08956308.2004.11671604).
- City of Melbourne. 2019. "Emerging Technology Testbed." <https://participate.melbourne.vic.gov.au/emerging-tech-testbed>.
- City of Melbourne. 2019. "City North Opportunities Plan." <https://participate.melbourne.vic.gov.au/melbourne-innovation-districts/city-north-opportunities-plan>.
- City of Melbourne. 2022. *Economic impacts of Covid-19 on the City of Melbourne*. <https://www.melbourne.vic.gov.au/sitecollectiondocuments/economic-impacts-covid-19-summary.pdf>.

- Esmaeilpoorarabia, Niusha, Tan Yigitcanlara, Md. Kamruzzamanb, and Mirko Guaraldac. 2020. "How does the public engage with innovation districts? Societal impact assessment of Australian innovation districts." *Sustainable Cities and Society* 52: 101813. doi: [10.1016/j.scs.2019.101813](https://doi.org/10.1016/j.scs.2019.101813).
- EU Publications Office. 2021. *Cordis EU Research Results*. 16 September. <https://cordis.europa.eu/project/id/945095>.
- Faculty of Business and Economics, University of Melbourne. 2022. "Tracking Victoria's Covid-19 job losses". <https://fbe.unimelb.edu.au/newsroom/tracking-victorias-covid-19-job-losses>.
- Infrastructure Victoria. 2016. "Victoria's 30 year Infrastructure Strategy." Chrome https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/03/IV_30_Year_Strategy_WEB_V2.pdf
- Kayanan, Carla M. 2021. "A critique of innovation districts: Entrepreneurial living and the burden of shouldering urban development." *Environment and Planning A: Economy and Space* 54(1): 50-66. doi: [10.1177/0308518X211049445](https://doi.org/10.1177/0308518X211049445).
- KPMG. 2021. *Widening Divide in Melbourne*. <https://assets.kpmg/content/dam/kpmg/au/pdf/2021/widening-divide-in-melbourne-covid-19.pdf>.
- New Economy Initiative. 2014. "Detroit launches innovation district to spur job growth." Detroit. <https://neweconomyinitiative.org/detroit-launches-innovation-district-to-spur-job-growth/>.
- MIT Office of Innovation. 2022. "MIT Regional Entrepreneurship Acceleration Programme." <https://innovation.mit.edu/resource/mit-reap/>.
- Pancholi, Surabhi, Tan Yigitcanlar, Mirko Guaralda, Severine Mayere, Glenda Amayo Caldwell, and Richard Medland. 2020. "University and innovation district symbiosis in the context of placemaking: Insights from Australian cities." *Land Use Policy* 99: 105109. doi: [10.1016/j.landusepol.2020.105109](https://doi.org/10.1016/j.landusepol.2020.105109).
- Population Australia. 2022. "Population Australia." <https://www.population.net.au/melbourne-population/>.
- Premier of Victoria. 2021. "Backing Victorian Universities When They Need It Most." <https://www.premier.vic.gov.au/backing-victorian-universities-when-they-need-it-most>.
- Read, Dustin C. 2016. *Best Practices in Innovation District Planning and Development*. Herndon: NAIOP Research Foundation.
- Read, Dustin, and Drew Sanderford. 2017. "Innovation Districts at the Cross road of the Entrepreneurial City and the Sustainable City." *Journal of Sustainable Real Estate* 9(1): 131-152. doi: [10.1080/10835547.2017.12091895](https://doi.org/10.1080/10835547.2017.12091895).
- RMIT Europe. 2022. "RMIT Europe." <http://www.rmit.edu.eu/>.

SGS Lab. 2022. "Melbourne's Economic Profile." <https://www.sgsep.com.au/sgs-lab/melbournes-economic-profile>.

Victoria State Government. 2016. "Plan Melbourne." <https://planmelbourne.vic.gov.au/maps>.

Victoria State Government. 2017. "Plan Melbourne." https://planmelbourne.vic.gov.au/_data/assets/pdf_file/0004/376663/Map_4_Melbourne_central_city.pdf.

Victoria State Government. 2021. "Planning." 6 October. <https://www.planning.vic.gov.au/policy-and-strategy/planning-for-melbourne/plan-melbourne>.

Wagner, Katz. 2014. "The rise of innovation districts: A new geography of innovation in America." *Metropolitan Policy Program at Brookings*. Metropolitan Policy Program at Brookings, May. <http://www.brookings.edu/about/programs/metro/innovation-districts>.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-No Derivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use and distribution, provided the original work is properly cited, and is not altered or transformed in any way.