



Parkville Precinct Strategic Plan

Health, Research and Education



July 2005

This report contains 81 pages



Table of Contents

1	Executive Summary	6
2	Recommendations	12
3	Introduction	15
3.1	Background to the project	15
3.2	Terms of reference	18
3.3	Project approach	18
3.4	Related projects and activities	19
4	The Precinct	20
4.1	The history of Parkville	20
4.2	Parkville today	22
4.3	Parkville in the future	29
5	Foundation Strengths	30
5.1	Integrated healthcare, education and research	30
5.2	Cooperativity	31
5.3	Centrality and connectivity	33
6	Policy Context	37
6.1	Creativity and innovation	37
6.2	State Government health policies	39
6.3	Planning and developmental controls	41
7	Strategic Opportunities	43
7.1	National and international recognition	43
7.2	Basic, translational and clinical research	44
7.3	Integrated cancer services	45
7.4	Incubation and commercialisation	46
7.5	Clusters, integration, efficiencies and synergies	47



8	Parkville Precinct Strategy for Integrated Health, Research and Education	48
8.1	Strengthening the Precinct	48
8.2	The Vision – fully integrated health, research, and education, with an emphasis on translational research	49
8.3	Precinct integration	50
8.4	Precinct development	52
9	Cancer as a Key Current Opportunity	58
9.1	An integrated multidisciplinary care approach	59
9.2	Current cancer strengths	60
9.3	Relocation of the Peter MacCallum Cancer Centre	61
10	Redevelopment of the former Dental Hospital site	63
10.1	Precinct opportunity	63
10.2	Issues for site redevelopment	64
10.3	Options for redevelopment	65
10.4	Assessment of options	65
11	Other Key Issues	68
11.1	Planning for change	68
11.2	Infrastructure integration	68
11.3	Transport, traffic and access	69
11.4	Communication and promotion	72
12	Achieving the Strategy	74
12.1	Outcomes and benefits	74
12.2	Challenges	75
12.3	Implementation	75
A	Consultations List	76
B	Grattan Street Development Concepts	77



List of Acronyms

ARI	Austin Research Institute
AGRF	Australian Genome Research Institute
Bio21 Australia	Bio21 Australia Limited
BEI	Bionic Ear Institute
BMN	BioMelbourne Network
CBD	Central Business District
CCV	The Cancer Council Victoria
CSF	Cancer Services Framework
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CTA	Cancer Trials Australia
CTV	Clinical Trials Victoria
DHS	Department of Human Services
DIIRD	Department of Innovation, Industry and Regional Development
DOI	Department of Infrastructure
DSE	Department of Sustainability and Environment
ESD	Ecologically Sustainable Development
FDH	Former Dental Hospital
GDP	Gross Domestic Product
GTAC	Gene Technology Access Centre
GVT	Growing Victoria Together
HFI	Howard Florey Institute
ICS	Integrated Cancer Services
ICT	Information Communications and Technology
LICR	Ludwig Institute for Cancer Research
LPPF	Local Planning Policy Framework
MCC	Melbourne City Council
MCRI	Murdoch Children's Research Institute
MH	Melbourne Health
MHRI	Mental Health Research Institute
MMC	Monash Medical Centre
MPS	Melbourne Planning Scheme



MTFC	Ministerial Taskforce for Cancer
NCCC	Northern Central City Corridor Strategy (Draft)
NARI	National Ageing Research Institute
NI	Neuroscience Institute
NSV	Neurosciences Victoria
OECD	Organisation for Economic Co-operation and Development
Peter Mac	Peter MacCallum Cancer Centre
PMG	Project Management Group
PSC	Project Steering Committee
R&D	Research and Development
RBMRL	Rotary Bone Marrow Research Laboratories
RCH	Royal Children's Hospital
RDH	Royal Dental Hospital
RMH	Royal Melbourne Hospital – City Campus
RVEEH	Royal Victorian Eye and Ear Hospital
RWH	Royal Women's Hospital
SME	Small to Medium Enterprises
SPPF	State Planning Policy Framework
STI	Science Technology and Innovation
TAFE	Training and Further Education
UoM	University of Melbourne
VCP	Victorian College of Pharmacy – Monash University
VIDRL	Victorian Infectious Diseases Reference Laboratory
WEHI	Walter and Eliza Hall Institute of Medical Research



1 Executive Summary

- 1 The Parkville Precinct (the Precinct) is a major cluster of medical and biotechnology research, education and healthcare delivery in Victoria. Collaboration to drive innovation within the Precinct is vital to its ongoing status as a world-class biomedical precinct, and its contribution to high levels of health, social and economic benefits for the State.
- 2 In October 2004, the Victorian Government commissioned the development of a ten year strategic plan for the Precinct, with a focus on the biomedical research, education and healthcare institutions in the vicinity of Parkville. The purpose of the Parkville Precinct Strategic Plan (the Strategic Plan) is to inform and guide long term planning and development of the Precinct, particularly taking into account the future of the former Dental Hospital site, masterplanning for the Royal Melbourne Hospital – City Campus and other specific development requirements of stakeholders in the Precinct.

Parkville as a Precinct

- 3 The Parkville area has a rich history of learning, healthcare and welfare leading to its current position as a leading centre for healthcare, education and biomedical research. Significantly, these activities have coexisted successfully for many decades with the surrounding residential community.
- 4 Parkville has a number of well-established health, research and education institutions recognised nationally, and internationally, all of which form a key component of the Precinct concept.
- 5 The University of Melbourne plays a central role in education, research and research training. The medical research organisations in Parkville include Walter and Eliza Hall Institute of Medical Research, Ludwig Institute for Cancer Research Murdoch Children's Research Institute, Howard Florey Institute, Commonwealth Scientific and Industrial Research Organisation and Victorian College of Pharmacy – Monash University. The healthcare and clinical research organisations include the Royal Melbourne Hospital, Royal Women's Hospital and Royal Children's Hospital. CSL Limited is a major Australian biotechnology company located in Parkville.
- 6 Whilst this Strategic Plan is focussed on Parkville, it is not intended to imply that this Precinct is solely responsible for Victoria's pre-eminence in healthcare, medical research, education and biotechnology. Institutions from other regions of Melbourne also play an important role and many have strong collaborative links with the Precinct, especially those close by, such as the Peter MacCallum Cancer Centre, St Vincent's Hospital, St Vincent's Institute and the Cancer Council of Victoria.

Foundation Strengths

- 7 The Precinct has strong and well established links between its healthcare, education and research institutions. The relationships within the Precinct are often multi-



functional, with various agencies undertaking one or more roles within the Precinct. The availability of key research facilities, co-located within or near major hospitals, enables an integrated approach to medical research, education and healthcare.

- 8 Another distinguishing feature is the Precinct's network of collaborative research relationships, described by members as cooperativity. Bio21 Australia plays a key role in coordinating activities of the Precinct. The BioMelbourne Network helps facilitate networking on a state-wide basis.
- 9 The Precinct also occupies a highly strategic location on the northern edge of Melbourne's Central Business District. Parkville's central location within Melbourne and its connections to key infrastructure and complementary research centres across the metropolitan area are underlying competitive strengths.

Strategic Opportunities

- 10 There are a number of strategic opportunities for the Precinct to build on its foundation strengths. International recognition and collaboration are key to achieving the Victorian State Government's vision of becoming one of the world's top five biotechnology locations by 2010. The juxtaposition of research, education and healthcare institutions in Parkville, many with strong individual international reputations and strong linkages to other precincts within Victoria and interstate, positions the Precinct to play an important role helping Victoria achieve its top five vision.
- 11 For the purposes of this Strategic Plan, *biomedical* refers to studies of the natural sciences (such as biology, biochemistry and biophysics) relevant to health and medicine; *translational research* refers to research directed to transferring basic (laboratory) and applied research discoveries into the clinic as new diagnostic treatments or preventative measures; *clinical research* refers to patient based studies and clinical trials designed to test and develop new diagnostics to evaluate and improve treatment; and *bioinformatics* refers to the computational tools used to manage large volumes of research data of either laboratory or clinical origin.
- 12 Translational research is the bridge between basic research (also referred to as discovery research) and clinical research and is one of the main drivers accelerating biomedical progress. Parkville is well placed to focus on translational research through the fostering of partnerships within the Precinct, and with other research, academic and clinical institutions across Victoria.
- 13 The establishment of eight Integrated Cancer Services across Victoria and a focus on the delivery of best practice care according to agreed standards for each of the ten major tumour streams creates strategic opportunities to provide critical mass for a strong translational research direction in cancer.
- 14 In particular, the establishment of the Western and Central Melbourne Metropolitan Integrated Cancer Service, including amongst others the Royal Melbourne Hospital, Royal Women's Hospital and the Peter MacCallum Cancer Centre, provides an opportunity for developing links that promote the rapid uptake of research into clinical



practice. Opportunities for links that inform researchers about practical care issues along the patient care continuum also provide useful feedback opportunities for further research.

- 15 There is also potential for the development of a commercial biotechnology precinct in close proximity. Biotechnology is a dynamic sector that requires a foundation strong in research, but with a focus on creating commercial products and services. CSL Limited, Bio21 Australia and its members and the Bio21 Institute already play significant roles in providing a commercialisation focus, and the Precinct provides an ideal environment for further growth in the incubation and commercialisation of related technologies.
- 16 The Precinct is strongly positioned to take advantage of its institutions, established linkages, advanced infrastructure and supportive environment. As a leading cluster of biomedical activity, it has the potential for continued growth and development in translating medical research into clinical practice, leading to improved health outcomes driving increased economic benefit for Victoria.

Vision of Integrated Healthcare, Research and Education

- 17 Given the current strengths of the Precinct and considering its strategic opportunities, the vision agreed by Government and stakeholders for the Parkville Precinct is:

A Precinct that integrates world class healthcare, research and education to rapidly translate research discoveries into clinical practice, nurture life sciences and biotechnology development and drive economic growth in Victoria.

- 18 Key elements identified as important for achieving this vision include:

Attraction and retention of the best talent in biomedical research, education and healthcare delivery.

Further investment in world class facilities for research, education and clinical care.

Enhancement of integration and co-ordination, by strengthening linkages between the major healthcare, research and education organisations within the Precinct and whole-of-precinct planning for significant sites.

Fostering adaptability and innovation, and centres of creativity and excellence which lead to biotechnology incubation and development.

Realisation of the opportunity currently afforded by the proximity of key institutions to facilitate a focus on cancer related translational research, education, treatment and prevention leading to the formation of a world class cancer centre.



- 19 It is important that physical growth and development builds on the existing strengths of the Precinct and its institutions and, at the same time, preserves the acknowledged heritage, amenity and character of Parkville.
- 20 A network body is required to help guide the strategic development of the Precinct consistent with the objectives of Precinct integration and coordination. This body should represent the health services, research and education functions within the Precinct. The emphasis should be on the development or extension of existing structures and collaborative networks, rather than the establishment of any new body. In this regard, specific consideration should be given to the ability of Bio21 Australia to be developed to undertake this role.
- 21 Planning of significant sites should be consistent with the achievement of the Precinct vision. Specific sites considered of immediate strategic significance are the former Dental Hospital and the Royal Melbourne Hospital – City Campus sites in the South Parkville zone. These are suitable for further development of translational research and health services. Additionally the North Parkville zone can support development of associated health services and research.
- 22 A specific priority is to accommodate the growth requirements of the existing research institutes. The Royal Melbourne Hospital zone west of the Walter and Eliza Hall Institute of Medical Research (WEHI) should be redeveloped with the objective of establishing a research zone capable of multiple uses, including the further major development of WEHI, and of improving research and clinical services connectivity within the Precinct.
- 23 There is also a need to support the extension of the biomedical research, education and healthcare continuum through incubation and commercialisation facilities. The establishment and growth of biotechnology enterprises, particularly start-up companies, should be encouraged and facilitated in the vicinity of the Precinct. Specific areas recommended for consideration are the mixed use areas of South Carlton, North and West Melbourne and the Central Business District. These would supplement the existing Incubator Facility of the Bio21 Institute to support companies as they move to their next stages of growth.

Cancer as a Key Opportunity

- 24 A strategic priority for the Precinct is to build on its current strengths in cancer research and treatment. This should be extended to enhance comprehensive translational cancer research, education, prevention and patient care, with state-wide linkages and applicability.
- 25 The presence within a small geographical area of the UoM and three major teaching hospitals (the Royal Melbourne Hospital, Royal Women's Hospital, and the Royal Children's Hospital), internationally recognised research institutes such as the Walter and Eliza Hall Institute of Medical Research and the Ludwig Institute for Cancer Research, together with the proximity of the Peter MacCallum Cancer Centre and the Cancer Council of Victoria, provide the basis for collaboration which should link with



other major metropolitan and regional cancer services in Victoria and lead to the formation of a world class state-wide cancer service.

- 26 Options for the redevelopment of Peter Mac are currently under consideration. The Department of Human Services has committed to work with the Peter MacCallum Cancer Centre and associated stakeholders to undertake service and capital planning to prepare a business case on a number of options for redevelopment of the Peter MacCallum Cancer Centre, including a move to a new purpose-built facility on an appropriate site adjacent to the Royal Melbourne Hospital – City Campus.
- 27 The option of moving the Peter MacCallum Cancer Centre to such a location within the Precinct has the significant advantage of being adjacent to the University of Melbourne, a cluster of world class research institutes that focus on cancer and three major teaching hospitals. The opportunity provided by such co-location in Parkville is not available elsewhere in Melbourne or Australia.

Former Dental Hospital Site Redevelopment

- 28 The availability of the former Dental Hospital site provides a catalytic opportunity for the Precinct. Considered as an integrated component of a larger sub-precinct including Royal Melbourne Hospital – City Campus, the new Royal Women’s Hospital and neighbouring research institutes, the former Dental Hospital site has the potential to reinforce and strengthen the Precinct as a leading health, research and education location within Victoria and Australia as well as creating an iconic signature for the Precinct.
- 29 It is recommended that the former Dental Hospital site be redeveloped in an integrated manner with the Royal Melbourne Hospital – City Campus and the new Royal Women’s Hospital to accommodate a focus on cancer related translational research, including education, treatment and prevention. This should capitalise on its strategic position and maximise opportunities for physical linkage between clinical services and research, and functional integration with surrounding activities.
- 30 In order for this to occur, a change is required to the Crown reservation on the former Dental Hospital site, which currently restricts its use to dental hospital and dental school purposes.
- 31 Effective integration of the former Dental Hospital site with the Royal Melbourne Hospital – City Campus and the new Royal Women’s Hospital also requires partial or full closure of Grattan Street. As such, a critical requirement of the planning of the former Dental Hospital site redevelopment is a detailed transport study to identify and implement alternative transport, traffic and access strategies.

Planning and Communication

- 32 The key directions and recommendations of the Strategic Plan should be taken forward within various planning provisions. In particular, the draft Structure Plan, under



preparation to support the Strategic Plan, should be considered for introduction into the Melbourne Planning Scheme.

- 33 The benefits and efficiencies of integration, co-location and coordinated Precinct development should be realised through the sharing of infrastructure and facilities where appropriate, such as common clinical services, platform technologies, laboratory space, major specialist equipment, animal breeding and housing, information and communications technologies, emergency planning strategies, car parking and conference facilities.
- 34 The implications of intensification of the Precinct should be considered as a critical part of all relevant metropolitan or state planning studies, particularly with regard to transport, traffic and access within, through and around the Precinct.
- 35 A communication strategy is also required to promote the Precinct to stakeholders and communities within the Precinct, throughout Victoria, Australia and internationally.

Outcomes and Benefits

- 36 The planning horizon for the Strategic Plan is a perspective of ten years and beyond. The recommendations made address both current and medium term opportunities as well as positioning the Precinct and Government for effective decision making over the longer term. The Strategic Plan seeks both economic and social benefits for:
 - The Victorian community – through the provision of more effective evidence-based health services;
 - Industry and enterprise – through economic returns on intellectual property, job creation, product development and commercialisation, and the flow on attraction of funds, talent and industry; and
 - The research, education and healthcare community in Parkville – by increasing the opportunities for world class translational research and development.
- 37 These outcomes are pivotal to Victoria becoming one of the world's top five biotechnology locations as well as being recognised as a leading provider of integrated cancer care.



2 Recommendations

Overall vision

1. *That the vision adopted for the Parkville Precinct is:

a Precinct that integrates world class healthcare, research and education to rapidly translate research discoveries into clinical practice, nurture life sciences and biotechnology development, and drive economic growth in Victoria.*
2. *That future development of the Precinct is consistent with the vision of integrated healthcare, research and education.*
3. *That the strategic development of the Precinct is guided by a network body representing the health services, research and education functions within the Precinct, and that this body is charged with facilitating Precinct integration and co-ordination.*
4. *That the capacity of Bio21 Australia to undertake the role of the network body be considered.*
5. *That designation of the hospitals within the Precinct as University Hospitals be considered to further enhance Precinct coordination and integration.*

Precinct development

6. *That planning for all significant sites be undertaken in a manner consistent with the Precinct vision.*
7. *That the former Dental Hospital site Crown reservation be changed to an appropriate public use designation to take advantage of the opportunity created by bringing together Precinct strengths in healthcare, research and education.*
8. *That the Royal Melbourne Hospital area between the Walter and Eliza Hall Institute of Medical Research (WEHI) and the Bio21 Institute be redeveloped with the objectives of establishing a research area capable of multiple uses, including a major extension of WEHI, and of improving connectivity for research across the Precinct.*
9. *That a masterplan be developed for key sites in the South Parkville zone including the Royal Children's Hospital, Bio21 Institute, new Royal Women's Hospital, Royal Melbourne Hospital – City Campus and the former Dental Hospital site. Further, that discussions are held with the University of Melbourne regarding the integration of its future plans for the new Medical School within the South Parkville zone.*



10. *That if accommodation becomes available through the planned redevelopment of the Royal Children's Hospital, the opportunity for this accommodation to support further integration of healthcare, research and education be considered.*
11. *That growth in incubation and commercialisation activities associated with the Precinct be provided for and further encouraged through planning policies and other initiatives that facilitate the establishment or expansion of these activities, particularly in the mixed use areas of South Carlton, North and West Melbourne and the Central Business District.*

Cancer as a current opportunity

12. *That the South Parkville zone's current strengths be further developed to establish an integrated cancer research, treatment, education and prevention capability.*
13. *That the Peter MacCallum Cancer Centre be relocated to an appropriate site adjacent to the Royal Melbourne Hospital – City Campus, to take advantage of the strong benefits of co-location and sharing of cancer services with other clinical and research services in the South Parkville zone.*

Former Dental Hospital site redevelopment

14. *That the former Dental Hospital site be designated for integrated translational research and healthcare and redeveloped in a way that enables the Peter MacCallum Cancer Centre to be relocated adjacent to the Royal Melbourne Hospital – City Campus.*
15. *That the former Dental Hospital site be redeveloped as part of a coordinated masterplan for the South Parkville zone which enables physical integration with the Royal Melbourne Hospital – City Campus site and the new Royal Women's Hospital.*
16. *That more effective integration of the former Dental Hospital site with the Royal Melbourne Hospital – City Campus site and the new Royal Women's Hospital would be enabled by partial or full closure of Grattan Street. For this to occur, alternative transport, traffic and access strategies will need to be identified and implemented.*

Planning and communication

17. *That the key directions and recommendations of the Parkville Precinct Strategic Plan be taken forward in all relevant planning processes. In particular, that the Draft Structure Plan, consistent with the Strategic Plan, be considered for introduction into the Melbourne Planning Scheme.*



18. *That the benefits and efficiencies of integration be realised through sharing of infrastructure and facilities where appropriate such as common clinical services, platform technologies, laboratory space, major specialist equipment, animal breeding and housing, ICT, emergency planning strategies, car parking and conference facilities.*
19. *That transport, traffic and access implications of the intensification of the Precinct be considered in all relevant state, metropolitan and local planning studies.*
20. *That a communication strategy be developed to promote the Precinct to stakeholders and communities within the Precinct, throughout all Victoria, Australia and internationally.*



3 Introduction

- 38 In October 2004, the Victorian Government commissioned the development of a ten year strategic plan for the Parkville Precinct, with a focus on biomedical research, education and healthcare activities in the vicinity of the Parkville area. The primary purpose of the Parkville Precinct Strategic Plan (the Strategic Plan) is to inform and guide long term planning and development of the Precinct, particularly taking into account the future of the FDH site, masterplanning for the RMH site and other specific development requirements of stakeholders to the Precinct.
- 39 The Government's policy directions, such as outlined in *Growing Victoria Together*¹, the *Metropolitan Health Strategy*² and the *Innovation Statement*,³ provide a clear framework to guide the development of the Strategic Plan. *Growing Victoria Together* provides the overarching framework and establishes relevant goals and priorities for Victoria as a State that has:
- a thriving economy;
 - quality health and education services;
 - a healthy environment;
 - caring communities; and
 - a vibrant democracy.

3.1 Background to the project

- 40 The Precinct is directly northwest of Melbourne's CBD and is home to the UoM and some of Victoria's leading hospitals, medical research institutes and commercial biotechnology organisations. It is generally regarded as one of Australia's leading biomedical clusters. The Precinct also contains heritage residential areas, urban parkland, playing fields, a golf course, the Melbourne Zoo, the Melbourne Juvenile Justice Centre and the site for the 2006 Commonwealth Games Village.
- 41 The Bio21 Project, agreed to in 2000 by the Victorian State Government with the UoM, RMH and WEHI, was established to foster economic development in biotechnology. The Project was seen as an opportunity to share facilities and expertise in research, education and healthcare. The original agreement provided for an overarching body, now called Bio21 Australia Ltd, to request on behalf of the UoM the addition of the FDH site to the Bio21 Project, subject to a business plan acceptable to Government.

¹ Victorian Government. *Growing Victoria Together, A Vision for Victoria to 2010 and Beyond*, 2002

² Victorian Government. *Directions for your health system Metropolitan Health Strategy*, 2003

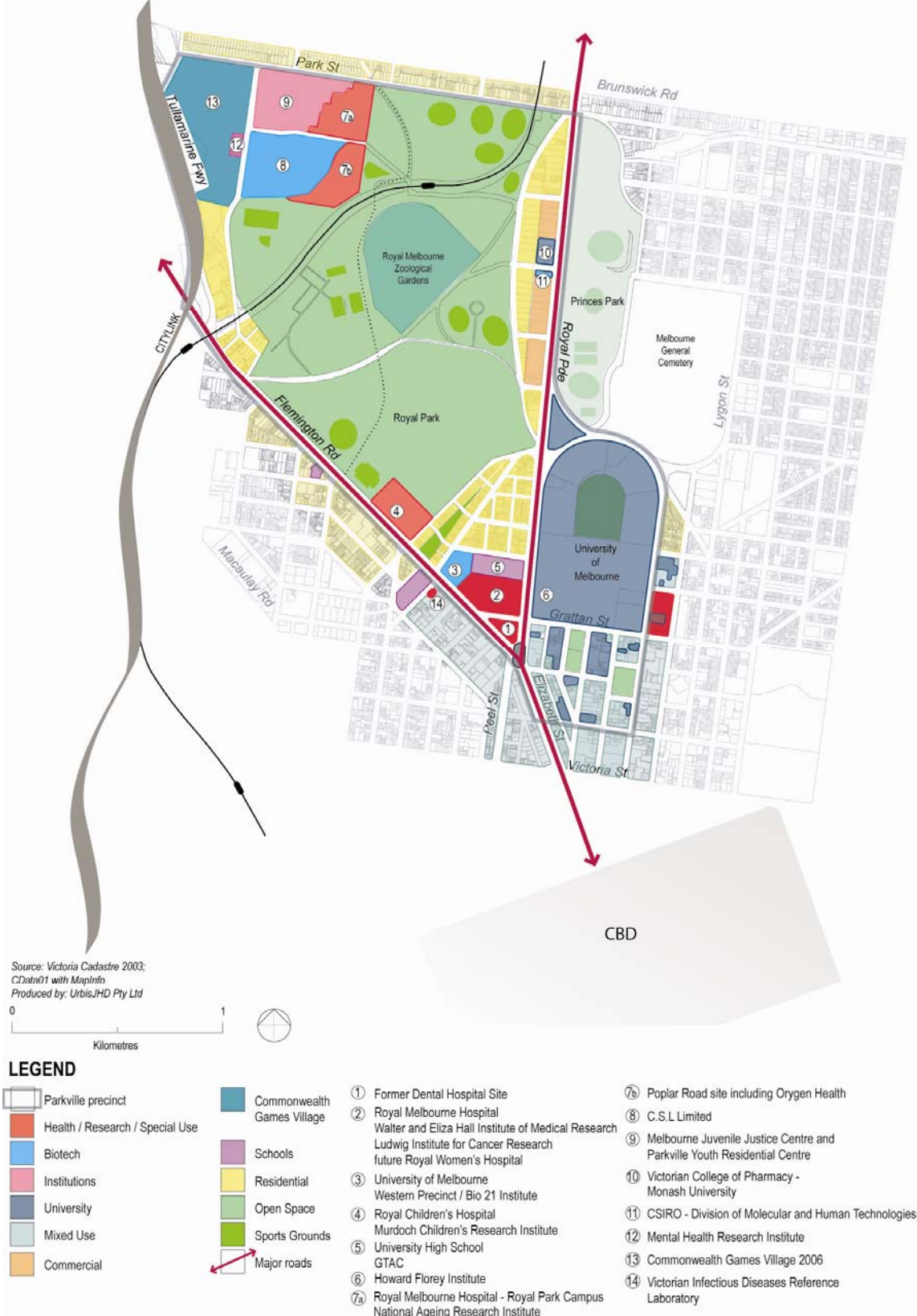
³ Victorian Government. *Victorian Government Innovation Statement, Victorians. Bright Ideas. Brilliant Future.*, 2004



- 42 The Precinct is highly developed, offering little opportunity for large scale expansion. Within the Precinct lies the FDH site, which occupies a 0.88Ha triangular area bounded by Grattan Street, Royal Parade and Flemington Road.
- 43 The FDH site is a significant piece of land in the Precinct. It is permanently reserved land for the purposes of a dental hospital and dental school and is subject to the provisions of the *Crown Land (Reserves) Act 1978*. The land has been held in the joint names of the UoM and the Royal Dental Hospital of Melbourne (part of Dental Health Services Victoria). With the development of a new Dental Hospital and teaching facility in Swanston Street, Carlton, the FDH site is to become available for redevelopment.
- 44 A key purpose of the Strategic Plan is to develop a vision for the Precinct that guides:
- Long term planning for the development of the Precinct;
 - Specific planning for the future use of the FDH site;
 - Assessment of future Government investment in major developments within the Precinct; and
 - Stakeholders regarding future developments, both physical and functional, within the Precinct.
- 45 The scope of the Strategic Plan includes the research, education and healthcare delivery functions, within Parkville and its surrounds, together with specific consideration about the future use of the FDH site and its relationship with the Bio21 Project. It does not include consideration of existing residential areas or public parkland in Parkville. The plan on the following page identifies the major land use areas within scope. The locations of specific institutions in the Precinct are illustrated later in this report in Section 4.2.



Land Use Context Plan





3.2 Terms of reference

- 46 The terms of reference for the project comprise:
- *Deliverable One:* A Strategic Precinct Plan for the development of the Precinct which takes into account the objectives associated with Victoria's pre-eminent health, research and tertiary education precinct and its contributions to innovation and economic development;
 - *Deliverable Two:* An agreed range of appropriate future uses for the FDH site and a preliminary evaluation of the attributes of the possible uses for the FDH site;
 - *Deliverable Three:* An implementation framework which would enable Government to consider detailed proposals for the development of key sites within the Precinct;
 - *Deliverable Four:* A communication strategy to ensure the consideration of the Strategic Precinct Plan in future Precinct developments; and
 - *Deliverable Five:* A Draft Specialised Activity Centre Structure Plan in accordance with *Melbourne 2030*.
- 47 This report covers the project Deliverables One and Two. The Implementation Framework (i.e. Deliverable Three), Communication Strategy (i.e. Deliverable Four) and Draft Specialised Activity Centre Structure Plan (i.e. Deliverable Five) are the subject of separate reports. However, it should be noted that these associated plans have been developed in conjunction with the Strategic Plan.

3.3 Project approach

- 48 The Department of Innovation, Industry and Regional Development (DIIRD) and Department of Human Services (DHS) have jointly sponsored the project to develop a strategic plan for the Precinct. A consortium led by KPMG and UrbisJHD and including BatesSmart and Hyder Consulting was appointed in October 2004 to develop the strategic plan.
- 49 The development of this Strategic Plan has been overseen by a Project Steering Committee (PSC) comprising individuals associated with the Precinct, senior government officers, and an independent chair. A Project Management Group (PMG) comprising representatives of DIIRD, DHS and other government departments managed the wider Government issues and the day-to-day aspects including the project consultants, and reported regularly to the PSC.
- 50 The project methodology applied for the development of this report involved an inception phase to establish agreement for the various project particulars as well as the expectations of all parties. This was followed by a review of both the Precinct's physical and non-physical characteristics and an examination of the FDH site including the identification of criteria that could be used to assess proposals for the future use and development of the site.



- 51 A detailed investigation of the fabric of the Precinct was undertaken, including an examination of the opportunities presented by the Precinct and the constraints which may prevent the Precinct from reaching its full potential. This informed an analysis of the key issues and strategic directions for the Precinct.
- 52 The development of the Strategic Plan has involved extensive consultation with a relevant stakeholders both on and off the Precinct. The names of those consulted are included in **Attachment A**. Relevant literature including masterplans, strategic plans and policy documents were also reviewed as part of this project and are referenced accordingly.

3.4 Related projects and activities

- 53 Related projects that were being undertaken at the time of developing the Precinct Plan are outlined below and considered further in the relevant sections of the report:
- Relocation of the RWH;
 - Masterplanning for UoM;
 - Redevelopment of the RCH;
 - Feasibility studies for the expansion of WEHI and HFI;
 - Considerations regarding the future of the Mental Health Research Institute (MHRI), Brain Research Institute, National Stroke Research Institute and the establishment of a Neuroscience Institute; and
 - Ministerial Taskforce for Cancer (MTFC).



4 The Precinct

- 54 This section outlines the positioning of the health, research and education institutions in the Precinct in the broader context of Parkville's history, heritage and residential amenity.

4.1 The history of Parkville

- 55 Since European settlement, Parkville has had a colourful history with the area originally being reserved for parkland in 1854.⁴ Areas of the park were later converted to urban purposes following population increases associated with the gold rush. Following the gold rush, further excisions occurred for the creation of three residential areas, described as Parkville North, South and West. Land was also excised for an experimental farm (now CSL site) and a zoological garden, (now the Melbourne Zoo) and for the Acclimatisation Society in the middle of the park.⁵
- 56 Of the residential areas, the linear-shaped North Parkville was developed first and was characterised by large allotments resulting from the Government's requirement for 99 ft frontages. Some of these lots still contain notable Queen Anne Federation Style houses.⁶
- 57 The South Parkville residential area has smaller lots than North Parkville and was built on a part of the former park that originally contained a showground used by the Port Phillip Farmers Association and Melbourne Council market for horses, pigs, cattle, hay and corn. The old market site was also used, in later years, to accommodate several key institutions including University High School (1929), the RMH (1944) and the Royal Dental Hospital in 1963.⁷
- 58 The smaller area of West Parkville, near the Flemington Bridge railway station, developed after the North and South Parkville residential areas and has a less formal layout and less recognised heritage significance.
- 59 During both World Wars, Parkville was used to accommodate army camps. After the Second World War, the collection of army huts known as "Camp Pell" was used to house families that had been evicted in the Victorian Housing Commission slum reclamation program. Camp Pell was closed and dismantled in the late 1950s. From this time, Government started to provide infrastructure and recreation facilities in various parts of Royal Park.

⁴ Lewis ,H. *South Parkville*, The Parkville Association, 1996

⁵ <http://www.arts.monash.edu.au/ncas/multimedia/gazetteer/list/parkville.html>, 2005

⁶ Ibid.

⁷ Ibid.



- 60 The RMH has been a key healthcare institute in the Parkville area for decades. The hospital had its origins operating from a cottage in the 1830s. In 1846 the Melbourne Hospital was constructed on the corner of Lonsdale and Swanston Streets. The hospital was rebuilt on this site in 1912. Overcrowding was a constant problem and in 1929 it was decided to build a new hospital alongside the UoM at Parkville. Construction of the RMH commenced in 1941 on land that was originally part of the market site. Following its completion, the hospital was occupied by the United States Army until 1944.⁸
- 61 Several of Parkville's high-profile research institutions have a long association with the Precinct. WEHI was founded in 1915 by the Walter and Eliza Hall Trust, in association with the Melbourne Hospital and the UoM, and moved to Parkville following the relocation of the RMH.⁹ Established in 1971, the HFI has laboratories at the UoM campus in Parkville and is now headquartered in the National Neuroscience Facility in Grattan Street. The Melbourne branch of the LICR was established at Parkville in 1980.¹⁰
- 62 The northern campus of RMH, now known as the Royal Park Campus, has long been a part of Parkville. This was originally the site of the Immigrants Aid Society's Home for the Destitute (1882) and later became known as Mount Royal (1939). The first geriatric hospital in the southern hemisphere opened here in 1955 and, in 1975, the hospital joined with the UoM to establish the National Ageing Research Institute (NARI). It is the only national medical research facility to focus on ageing - its causes, care and social implications.
- 63 Parkville's history is entwined with education, and in particular, with the UoM. The University has a long history in Parkville. Legislation establishing the University was introduced in 1852 and passed early in 1853 with classes commencing in 1855.¹¹ Initially the University comprised four faculties – mathematics, classics and ancient history, natural sciences and modern history, literature and political economy. In 1857 law was introduced, followed by medicine and engineering in the early 1860s. In the years to 1945, the University played two principal roles – firstly, to provide education and professional training, and secondly, as a significant site for research and research training, being the first Australian university to award the PhD degree, in 1947.
- 64 The role of the University changed significantly after World War Two when demand for a wider range of tertiary education increased substantially. The injection of Commonwealth funding enabled the University to transform into the modern-day UoM.
- 65 The 1980s and 1990s saw the University amalgamate with a number of tertiary colleges to broaden its teaching and research base. The University has developed a stronger international outlook in recent years, and now with many international

⁸ <http://www.arts.monash.edu.au/ncas/multimedia/gazetteer/list/parkville.html>, July 2005

⁹ <http://nobelprize.org/medicine/articles/wehi/>, July 2005

¹⁰ <http://ludwig.edu.au/>, July 2005

¹¹ <http://www.unimelb.edu.au/about/history/index.html>, July 2005



connections forged since 1988, including educating large numbers of overseas students and offering a variety of outreach programs.

- 66 Through a brief exploration of Parkville's history it can be seen that the area has a rich history in healthcare, education and research. Significantly, these activities have coexisted successfully with the surrounding residential precincts. The unique function and character of Parkville is perhaps best summed up by Benjamin¹²,

From the beginning, the Park provided the sites for institutions of learning and welfare, the University first, then an "industrial school" and a place of shelter for the aged or destitute next. Colleges grew up close to the University, and later hospitals, for the benefits of the students as much of the patients. The Park and the University became the joint sources of most public institutions in Parkville.

4.2 Parkville today

- 67 Parkville's history as a centre for health, education and research has laid the foundation for the present-day Precinct, which is recognised as being one of the country's leading biomedical centres.
- 68 Key features of Parkville's economic and demographic profile include:¹³
- a resident population of approximately 5,422 people, which represents about 10% of the total population in the City of Melbourne;
 - a workforce population of 23,707, of which, 60% (14,292) are employed in health services and 16% (3,940) in education, demonstrating the importance of these sectors to the Precinct; and
 - a tertiary student population of 35,000, with full-time University or Training and Further Education (TAFE) students accounting for nearly 44% of the resident population.
- 69 A high proportion of Parkville residents (24%) also work in Parkville. Of the residents that work outside Parkville, 70% work close by in the City of Melbourne. Many Parkville residents walk to work (6%), although the majority (55%) commute by car.¹⁴
- 70 The physical characteristics of Parkville also highlight its unique and specialised function. Parkville has a total area of approximately 345 hectares and some 32% of this is built space. Of this, 30% has been developed for the purposes of education, whilst private accommodation accounts for 28%, and medical accommodation 22%.

¹² Benjamin, E. *Parkville*, Parkville Productions, 1969

¹³ City of Melbourne. *Melbourne Suburbs Economic and Demographic Profile*, November 2003

¹⁴ Ibid.



The 68% of land in Parkville that is not developed is predominantly accounted for by Royal Park.¹⁵

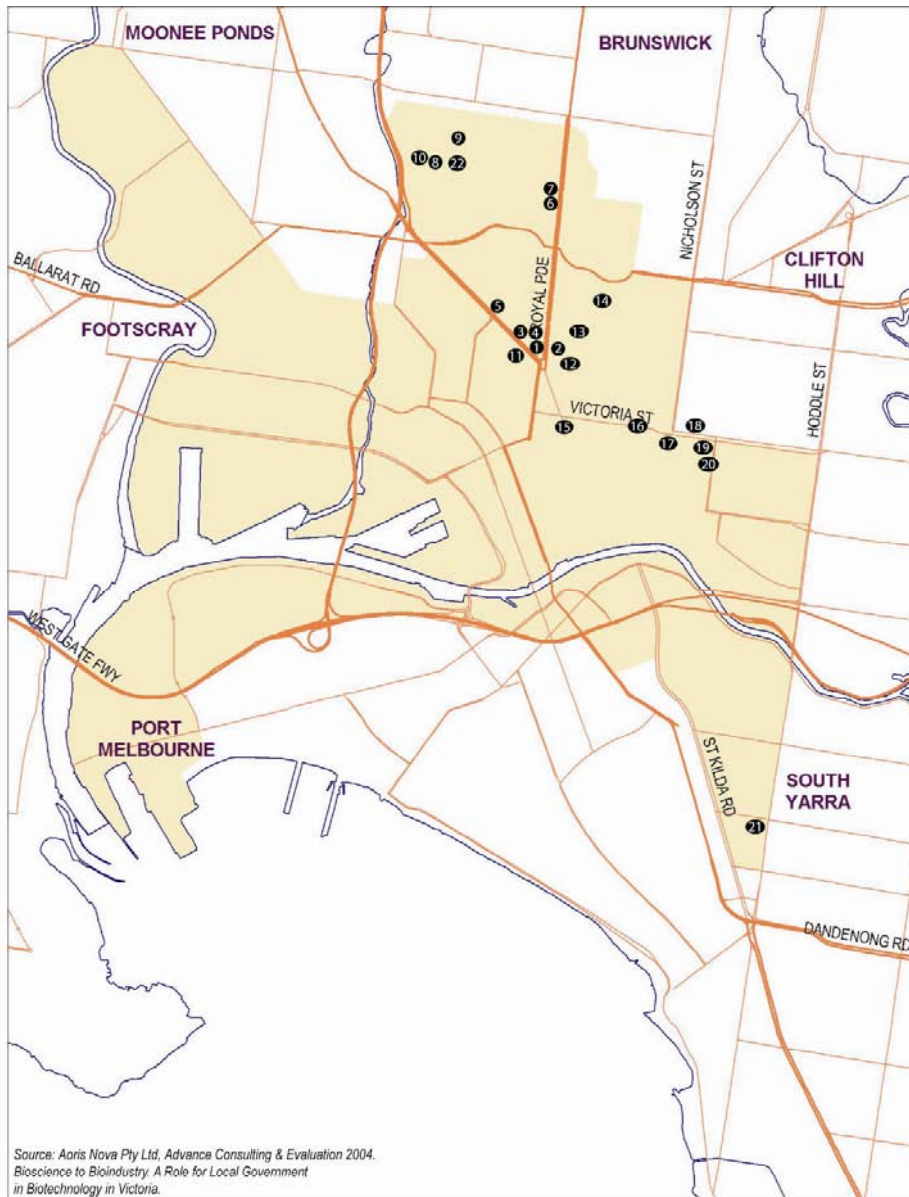
- 71 There are approximately 6,374 off-street car parking spaces within Parkville comprising one commercial car park providing 1,000 spaces as well as 32 private car parks with 3,850 spaces and 366 residential car parks providing 1,515 car spaces.¹⁶

Education

- 72 Like many international precincts, the Precinct enjoys the strength of a premier tertiary institution, the UoM. The University owns and occupies over 400,000sqm of space across 35 hectares in the Precinct used for the purposes of teaching, research and related functions. As well as University-owned premises, approximately 8,500sqm of space is exclusively occupied by University staff at RMH, the RWH and RCH for the purposes of medical education and research.
- 73 Undergraduate and postgraduate education is provided at the University, the VCP, and as well as associated medical research institutes and hospitals in the Precinct. Secondary school education is provided by University High School. The undergraduate and postgraduate education in the hospitals and research facilities is provided through a variety of forms, including wet and dry laboratory research, direct clinical observation and practice, seminars, wet and dry laboratory experience for research students, publication and database research.
- 74 UoM is a research-led university of high international standing and nurtures research excellence across a wide range of disciplines, including hospital based clinical academic departments. The University has strong connections in both education and research to many other organisations in the Precinct, including:
- RMH – via the Faculty of Medicine, Dentistry and Health Sciences;
 - RCH – via the Faculty of Medicine, Dentistry and Health Sciences;
 - WEHI – jointly founded by UoM and RMH, and recognised as a department of the University for the purposes of research training;
 - Bio 21 – as a founding member;
 - HFI – currently located at the south west end of the UoM site and in the Alan Gilbert building;
 - LICR – via the Department of Surgery;
 - CSIRO – via the Parkville Campus of the Division of Molecular and Human Technologies;
 - MHRI – via the Faculty of Medicine, Dentistry and Health Sciences; and

¹⁵ Ibid.

¹⁶ City of Melbourne. *Census of Land Use and Employment*, 2004



Source: Aoris Nova Pty Ltd, Advanca Consulting & Evaluation 2004.
 Bioscience to Bioindustry. A Role for Local Government
 in Biotechnology in Victoria.

LEGEND

● Research facility location

Map Ref Name

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> 1 Australian Genome Research Facility
Ludwig Institute for Cancer Research
Royal Melbourne Hospital - City Campus
Walter and Eliza Hall Institute of Medical Research
Royal Womens Hospital (under construction)
Rotary Bone Marrow Research Laboratories 2 University of Melbourne
Howard Florey Institute of Experimental Physiology & Medicine
Neurosciences Victoria
Arthritis Foundation of Victoria Centre for Rheumatic Diseases 3 University of Melbourne Western Precinct / Bio 21 Institute 4 GTAC, located at University High School 5 Murdoch Children's Research Institute
Royal Children's Hospital 6 CSIRO Division of Molecular and Human Technologies
CSIRO Mayfair (Legal and Commercial) | <ul style="list-style-type: none"> 7 Victorian College of Pharmacy - Monash University 8 CSL Limited 9 Royal Melbourne Hospital - Royal Park Campus
National Ageing Research Institute
World Health Organisation Collaborating Centre
for Influenza 10 Mental Health Research Institute 11 Victorian Infectious Diseases Reference Laboratory 12 Vision Metrology Services Unit 13 Micro-Analytical Research Centre 14 School of Audiology and Science Faculty (Optometry) 15 Australian Research Centre in Sex, Health and Society | <ul style="list-style-type: none"> 16 Cancer Council of Victoria 17 Centre for Behavioural Research in Cancer 18 St Vincent's Hospital
St Vincent's Institute
Bernard O'Brien Institute of Microsurgery
Centre for Eye Research Australia
Bone Marrow Transplant Unit 19 Bionic Ear Institute
Royal Victorian Eye and Ear Hospital 20 Peter MacCallum Cancer Centre 21 Alfred Medical Research and Education Precinct
Baker Heart Institute
MacFarlane Burnet Centre for Medical Research 22 Poplar Road Site including Orygen Health |
|--|--|--|

Location of Major Research Institutions in City of Melbourne



Precinct Activities Map



Source: Victoria Cadastre 2003;
CData01 with MapInfo
Produced by: Urbis/JHD Pty Ltd



LEGEND

- | | |
|--|--|
| <ul style="list-style-type: none"> ① Former Dental Hospital Site ② Royal Melbourne Hospital
Walter and Eliza Hall Institute of Medical Research
Ludwig Institute for Cancer Research
future Royal Women's Hospital ③ University of Melbourne
Western Precinct / Bio 21 Institute ④ Royal Children's Hospital
Murdoch Children's Research Institute ⑤ University High School
GTAC ⑥ Howard Florey Institute ⑦a Royal Melbourne Hospital - Royal Park Campus
National Ageing Research Institute | <ul style="list-style-type: none"> ⑦b Poplar Road site including Orygen Health ⑧ C.S.L Limited ⑨ Melbourne Juvenile Justice Centre and
Parkville Youth Residential Centre ⑩ Victorian College of Pharmacy -
Monash University ⑪ CSIRO - Division of Molecular and Human Technologies ⑫ Mental Health Research Institute ⑬ Commonwealth Games Village 2006 ⑭ Victorian Infectious Diseases Reference
Laboratory |
|--|--|



- Gene Technology Access Centre (GTAC) – located at University High School and linked closely with WEHI and the Department of Microbiology and Immunology.

75 Strong links also exist between UoM and off-precinct organisations including:

- Royal Dental Hospital Melbourne;
- Austin Health;
- St Vincent's Hospital;
- Peter Mac;
- The Cancer Council of Victoria (CCV);
- Royal Victorian Eye and Ear Hospital (RVEEH) – via the Ophthalmology and Otolaryngology Departments, the School of Audiology and the Faculty of Science (Optometry); and
- other teaching hospital members of Bio 21, including RWH via the Faculty of Medicine, Dentistry and Health Sciences.

76 In addition, there are links between the Precinct and a number of off-precinct education institutions, including Monash University, La Trobe University, RMIT University, Deakin University, and Kangan Batman TAFE.

Research organisations

77 A number of research institutions reside within the Precinct, ranging from large established organisations, such as WEHI, MCRI, HFI, and LICR, to smaller and more specialised organisations, such as MHRI, NARI, Australian Genome Research Facility (AGRF), Rotary Bone Marrow Research Laboratories (RBMRL), Victorian Infectious Diseases Reference Laboratory (VIDRL), and VCP.

78 Basic science, clinical, translational and epidemiological research in the Precinct extends across a range of biomedical speciality areas including cancer, neurosciences, molecular biology, genetics, infectious diseases, immunology, autoimmune and inflammatory disorders, chemical pathology, stem cells, protein science, structural biology, bioinformatics, cell biology, nutrition, epidemiology and behavioural science.

79 CSIRO and CSL have strong research and development capabilities.

- CSIRO Health Sciences and Nutrition develops therapeutics, diagnostic technologies and reagents for medical use, undertakes nutrition related research, partners with industry to deliver research outcomes and advises governments. CSIRO also collaborates with the UoM in provision of PhD programs and has close links with the LICR, WEHI and Neurosciences Victoria (NSV).
- CSL develops, manufactures, markets and distributes human pharmaceutical and biological products – including vaccines, antivenoms, plasma products and pharmaceuticals.

80 There are also a number of research organisations close to the Precinct, including:



- St Vincent's Institute;
- Bionic Ear Institute (BEI); and
- Cancer Council Victoria (CCV).

Research support organisations

- 81 A number of the biomedical institutions in the Precinct are members of collaborative agencies that provide support functions for research, such as shared platform technologies, commercialisation advice, industry linkages, venture capital sourcing, regulatory consultancy, partnership and collaboration facilitation. The collaborative agencies include:
- Bio21 Australia;
 - Neurosciences Victoria (NSV);
 - Cancer Trials Australia (CTA);
 - Clinical Trials Victoria (CTV); and
 - BioMelbourne Network, in terms of state-wide relationships.
- 82 These agencies play a significant role in fostering connections between institutions and promoting a 'bench to bedside' approach to health and medical research.

Health services

- 83 The Precinct encompasses three major health services – Melbourne Health, the RWH and RCH. Together three hospitals in the Precinct which are part of these health services provide a comprehensive range of health services, including tertiary and specialist services on a state-wide basis and secondary services to the north-western area of Melbourne. Research and education services are integral parts of all three health services. Each is affiliated with the UoM as a clinical school.
- 84 Melbourne Health has services on three sites in the Precinct: RMH – City Campus (referred to in this document as RMH) with frontages on Flemington Road, Grattan Street and Royal Parade (acute services); RMH – Royal Park campus (sub-acute and aged care services); and the Poplar Rd site in Parkville where ORYGEN Youth Health is situated.
- 85 The RWH will move from its current location in Grattan Street, Carlton, to Flemington Road, Parkville, in 2008. The new RWH will be co-located with RMH in a purpose-built facility. The current RWH site is adjacent to the new Dental Hospital in Swanston Street, Carlton and opposite the UoM.
- 86 The Victorian Government announced in May 2005 the redevelopment of the RCH as a new world-class facility. Planning for the redevelopment is currently underway. Options for the location of the new facility are being considered, with Government to announce a decision by the end of 2005. RCH is currently located on the corner of



Gatehouse Street and Flemington Road, with additional buildings on the east side of Gatehouse Street. The RCH site abuts Royal Park and includes the MCRI. A helipad is currently located adjacent to RCH.

- 87 Significant health service and other linkages exist outside the Precinct, to various Precinct stakeholders including Peter Mac, CCV, St Vincent's Hospital, RVEEH, Western Health, and Austin Health.
- 88 Private hospital services are provided by Melbourne Private Hospital at RMH on Royal Parade, and the relocation of RWH to Flemington Road will include Francis Perry House.

Recreation

- 89 Royal Park is approximately 188 hectares and provides a range of active and passive recreational amenities in a bushland setting. Key facilities include the Melbourne Zoo, the State Hockey and Netball Centre, as well as numerous sporting fields. There are also tennis courts, baseball fields and the nine-hole Royal Park Golf Course.
- 90 A range of recreation facilities, including an indoor recreation centre and gymnasium, athletics track and swimming pool are also located at the UoM.

Heritage

- 91 The heritage characteristics of the Precinct can be largely attributed to its eclectic history, its cultural importance as a residential area and its association with the education and healthcare of Victorians. In a physical sense many examples remain of Parkville's history, most notably its residential areas but also remnants of the former market, the US Army occupation and the numerous educational, research and administration buildings located at the UoM.
- 92 The heritage value of individual properties and of areas is acknowledged and protected by various statutory and non-statutory instruments including the Melbourne Planning Scheme, the Victorian Heritage Register and the National Trust.
- 93 The Parkville area also has a long established cultural heritage linked to the treatment of patients and the undertaking of research. However, unlike residential areas which can be adapted over time to changing living needs, hospitals and related facilities are not as adaptable. The changing nature of healthcare provision and associated research has seen the evolution and replacement of much of the historical building stock to continually provide Victorians with premier healthcare and research facilities.

Amenity

- 94 Parkville's residents, students and workers enjoy a high level of amenity resulting from the area's attractive built and natural environment, its outstanding heritage and



residential character, and its history of development as a leading centre for healthcare, research and education.

- 95 In a dynamic mixed-use area such as Parkville, the preservation of amenity is an ever-present issue that needs to be factored into all planning and development decisions. One of Parkville's great strengths is that it is a highly attractive place to live, work or study. It is an imperative that this quality is preserved as the Precinct grows and evolves.

4.3 Parkville in the future

- 96 Parkville is a dynamic precinct that will continue to change over time as healthcare, research and education, and their interrelationships, grow and evolve. Continued development of the Precinct is essential if it is to continue as a pre-eminent location for these activities, as well as meet the specific future needs of its research institutes, the hospitals and the University.
- 97 Development of the Precinct will have an impact on the number of students, researchers and practitioners, and their accommodation requirements, in the area. The current Land Use Planning study being undertaken by the University is considering future requirements for research and educational facilities in the area. The outcomes of this exercise are anticipated to be finalised in late 2005.
- 98 Development of the Precinct is also likely to have significant impacts upon existing infrastructure, including public transport and the road network's ability to accommodate such growth.
- 99 It is important that strategic planning for the Precinct considers the functional and physical accommodation needs of the institutions in the Precinct, as well the implications for supporting facilities and infrastructure.



5 Foundation Strengths

- 100 The Precinct is acknowledged as one of Australia's leading centres for medical and bioscientific research, education, clinical practice, clinical trials and development of pharmaceuticals and biotechnology products.
- 101 This is based around the presence of a number of well-established healthcare, research and education institutions recognised nationally, and internationally, all of which form a key component of the Precinct concept. These institutions include the UoM, RMH, WEHI, LICR, RCH, HFI, CSIRO, VCP and CSL, who together have established centres of excellence in areas including Cancer, Immunology, Diabetes, Neuroscience, and Infectious Diseases.
- 102 Whilst this strategic planning exercise is focussed on institutions physically located in the Precinct, it is recognised that biomedical institutions from other areas of Victoria are also vital to the State's pre-eminence in medical and biotechnology research and development and medical services delivery.
- 103 Parkville is one of six dedicated biotechnology precincts, alongside the Alfred Medical Research Precinct, Monash Health Research Precinct, Austin Precinct, and the Werribee and Bundoora campuses. All these precincts enjoy strong linkages between Victorian universities, research institutes and hospitals.

5.1 Integrated healthcare, education and research

- 104 The Precinct has well established links between its healthcare, education and research institutions. The relationships amongst these institutions are often multi-functional, with various agencies undertaking one or more roles within the Precinct in terms of research, education and healthcare. There is also considerable interplay between these institutions, government agencies and industry.
- 105 A significant feature of the Precinct is the strong relationship between the UoM and each of the three major tertiary hospitals in the Precinct – RMH, RWH and RCH. As part of three metropolitan health services, these hospitals provide local and state-wide medical, surgical and other health services. Basic, applied and clinical research including clinical trials are conducted through the hospital divisions, departments and units, and through University departments and co-located research institutes. Undergraduate and postgraduate health professional training is also provided in hospitals, through their relationships with the UoM and other relevant institutions.
- 106 The availability of a number of key research facilities, co-located within or near the hospitals, provides the opportunity for a 'laboratory bench to hospital bed' approach to medical research. These include the facilities at WEHI, LICR, the RBMRC, MCRI and HFI, many of which are affiliated with hospitals and universities, including the UoM.
- 107 The relationships between the UoM, the major teaching hospitals and the research institutes in the Precinct provide the basis for further developing, housing and trialling



cutting edge technologies and treatments that flow from international developments. This also takes advantage of Victoria's world-class medical research, leading to improved health outcomes for patients and the wider community, and improved education for health professionals.

- 108 The UoM Faculty of Medicine, Dentistry and Health Sciences, and its affiliated institutes provide a culture of research excellence and research led clinical teaching to the three major tertiary hospitals. This culture is highly valued by the health services in supporting high quality patient care and best practice including cutting edge developments and treatments essential to a world class health service. The UoM and affiliated institutes benefit by having access to a concentration of clinical excellence, facilities and patients for research and clinical teaching. This mutual benefit delivers a sustainable standard of excellence in the health workforce and ensures that best practice healthcare is available to the Australian community.

5.2 Cooperativity

- 109 Another distinguishing strength of the Precinct is its network of collaborative research relationships, described by some members as its 'cooperativity'.
- 110 The Bio21 Project was established in 2000 by the UoM, RMH, WEHI and the Victorian Government to promote excellence in education, in basic and clinical research, and to foster biotechnology development in Parkville and its environs.
- 111 The Bio21 Project is managed through Bio21 Australia, a not-for-profit company, with membership including all the major tertiary hospitals and biomedical research institutions in Parkville and the Austin research precinct. Bio21 Australia fosters the goals of the Bio21 Project by promoting interaction and collaboration between its members. The founding members are the UoM, RMH and WEHI. The members have ongoing roles as guarantors and special roles in governance, as secured through its constitution.
- 112 The Bio21 Molecular Science and Biotechnology Institute was recently established by the UoM as a major bioscience and technology initiative of the Bio21 Project. Its objectives include to:
- create a synergistic environment which encourages interactive, collaborative research and the cross-fertilisation of technologies through sharing of expertise and access to the Bio21-supported facilities;
 - create a financially viable biotechnology precinct and to facilitate the development and commercialisation of biotechnology research;
 - develop the expertise and human resources to underpin future innovation in the Australian biotechnology industry, increase the skills base and generate new jobs;
 - in co-operation with universities and others, support education in research and in the business of biotechnology leading to a variety of biotechnology-related career options; and



- promote community awareness and provide community education on new and emerging biotechnologies.

113 Key achievements through Bio21 Australia and the Bio21 Project since 2000 include:

- establishment of new laboratories at RMH for the WEHI/LICR Joint Proteomics Facility;
- the building and commissioning of the Bio21 Institute by the UoM;
- establishment of the High Throughput Chemical Screening facility at La Trobe by WEHI;
- acquisition of an 800 MHz Nuclear Magnetic Resonance (NMR) spectrometer at the Bio21 Institute;
- the Molecular Medicine Informatics Model, with Melbourne Health as the lead organisation, involving collaboration with a group of hospitals facilitating sharing of data critically important to clinical research in fields such as cancer, diabetes and epilepsy (RMH);
- enhanced sharing and management of bioresources with three interacting facilities with micro-isolators holding specially protected mouse species (St Vincent's Hospital, Austin Research Institute and Department of Medicine – RMH);
- a nanolitre protein crystallisation facility of wide value in proteomic research across the cluster (CSIRO, WEHI and Austin Research Institute (ARI)); and
- building capacity for human cellular diagnosis and therapy related to pancreatic islet cell transplantation for diabetes (St Vincent's Institute, WEHI and RMH).

114 There has been over \$30M of biotechnology-related activity across the Bio21 Australia cluster in 2003-2004. Further initiatives are in progress to enhance expertise in commercialisation across the cluster.¹⁷

115 The BioMelbourne Network (BMN) helps facilitate networking across the state. It was founded as a leadership forum to promote the specific interests of the Victorian biotechnology sector. By establishing collaborations between the Victorian Government, business leaders and the biotechnology sector, BMN facilitates industry development and global connections to capitalise on international commercial opportunities.¹⁸

116 Notwithstanding the collaboration and integration that does occur, many of the individual institutions have and need strong independent identities. Organisations such as the UoM, Peter Mac, RMH, WEHI, LICR, and HFI have recognition both in Australia and overseas. This recognition is important to these organisations are to attract of funding and investments. The preservation of individual identities such as these will be important in the further development of the Precinct.

¹⁷ Bio21 Australia Pty Ltd. *Annual Report 2003/2004*

¹⁸ <http://biomelbourne.org/aboutus.98.html>, July 2005

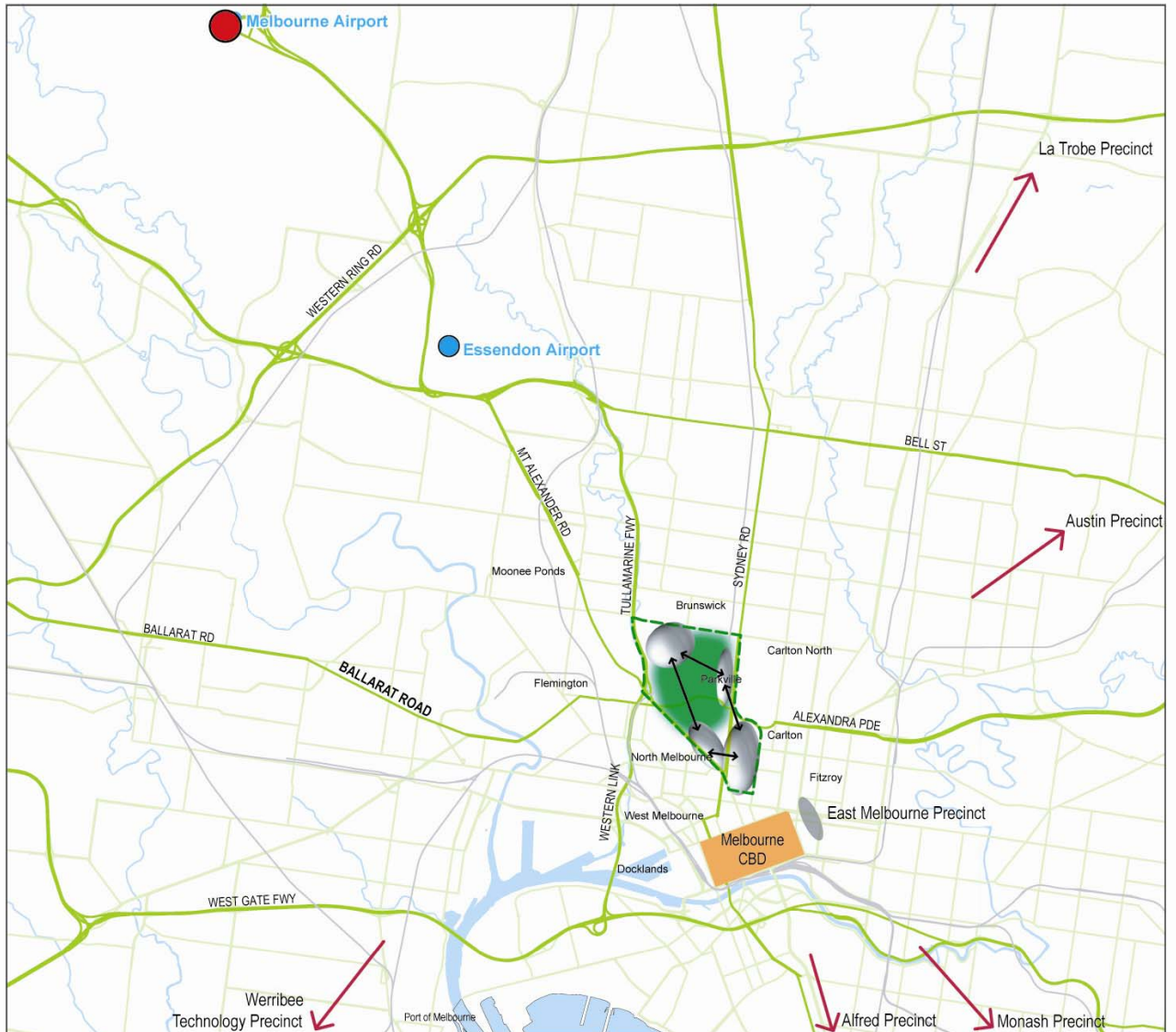


5.3 Centrality and connectivity

- 117 The Precinct occupies a highly strategic location on the northern edge of Melbourne's CBD. Parkville's central location within Melbourne and its connectedness to key infrastructure and complementary biomedical and research centres across the metropolitan area is an underlying and competitive strength.
- 118 Parkville is well-served by primary and secondary arterial roads in Swanston Street, Royal Parade / Elizabeth Street, Flemington Road and Grattan Street. It is well integrated into the public transport system, particularly the tram network.
- 119 Parkville includes and is adjacent to a number of high-amenity and intact heritage residential areas. The adjoining suburbs of Carlton, North Melbourne and Brunswick also offer diversified housing and lifestyle opportunities.
- 120 Among the defining features of Parkville are its attractive built and natural environments, and rich cultural life that has grown from the association with the University and the migrant history of Melbourne's inner northern suburbs. These factors have combined to make Parkville, and adjoining Carlton, one of the most vibrant and interesting places in Melbourne. This is exemplified by Lygon Street in Carlton, which is one of the State's premier retail attractions with numerous Italian-influenced cafes and restaurants supported by fashion boutiques and a range of entertainment offerings.
- 121 In recent years changes in North Melbourne have driven the reinvigoration of the traditional Errol Street shopping strip. This process is expected to continue on the back of development of activities in the Precinct.
- 122 Parkville also has a very close physical and functional relationship with the Melbourne CBD, with Swanston Street and Elizabeth Street providing strong linkages. Swanston Street is particularly significant because it supports an "education axis", linking the UoM, RMIT University and the Victorian College of the Arts.
- 123 Parkville is also close to the Melbourne Docklands and Spencer Street Station on the western edge of central Melbourne. This area is set to become a significant knowledge and innovation centre supported by the emergence of Comtechport at Docklands, the redevelopment of the Spencer Street Station, and the introduction of the fast train services to regional Victoria. Docklands will also provide high-quality housing options suitable for many people working or studying within the Precinct.



Metropolitan Context



LEGEND

- | | | | |
|--|--------------------|--|---------------|
| | Parkville Precinct | | Main Road |
| | Melbourne CBD | | Major Highway |
| | Airport | | River |
| | | | Water Body |

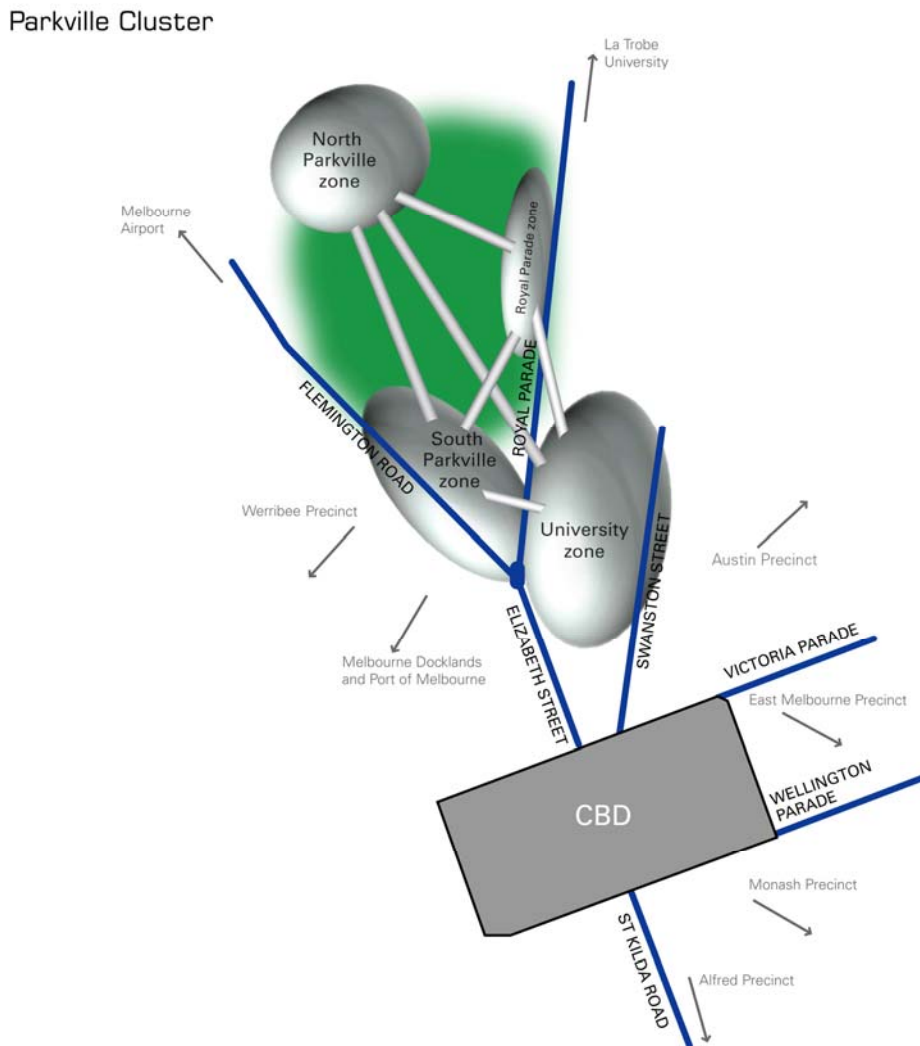
Scale: 1 : 100,000



Source: CData01 with MapInfo
Produced by: UrbisJHD Pty Ltd



124 The Precinct Zone Plan below depicts four broad zones of like activity within the Precinct, as well as their proximity to the CBD.



125 The four zones are described further below.

- North Parkville Zone including:
 - Royal Melbourne Hospital - Royal Park Campus;
 - the Poplar Road site;
 - CSL;
 - MHRI; and
 - Juvenile Justice Centre, including the Parkville Youth Residential Centre.



- South Parkville Zone including:
 - FDH site;
 - RMH City Campus site including WEHI;
 - LICR;
 - UoM Western Precinct, including the Bio21 Institute;
 - new RWH, under construction;
 - RCH;
 - VIDRL (Melbourne Health);
 - Land surrounding the Haymarket roundabout; and
 - areas of North Melbourne.
- Royal Parade Zone including:
 - VCP;
 - CSIRO (Parkville Campus); and
 - surrounding commercial buildings.
- University Zone including:
 - UoM;
 - current RWH site;
 - RDH; and
 - adjacent areas of South Carlton.



6 Policy Context

126 The development of the Strategic Plan is guided by Government and community objectives, with specific reference to innovation and health policies, as well as planning and developmental controls.

127 The key overarching policy framework is *Growing Victoria Together*.¹⁹ This outlines a ten year vision that articulates what is important to, and the priorities set by, the Victorian Government in its efforts to build a better society. The Government's vision is that by 2010 Victoria will have further strengthened its performance in the following ten areas:

- 1 *More quality jobs and thriving, innovative industries across Victoria*
- 2 *Growing and linking all of Victoria*
- 3 *High quality, accessible health and community services*
- 4 *High quality education and training for lifelong learning*
- 5 *Protecting the environment for future generations*
- 6 *Efficient use of natural resources*
- 7 *Building friendly, confident and safe communities*
- 8 *A fairer society that reduces disadvantage and respects diversity*
- 9 *Greater public participation and more accountable government*
- 10 *Sound financial management.*

6.1 Creativity and innovation

128 Creativity and innovation are essential in a global economy where knowledge is the key to competitiveness. A key goal of *Growing Victoria Together* is:

More quality jobs and thriving, innovative industries across Victoria.

129 The Victorian Government *Innovation Statement*²⁰ outlines how Victoria can become a leader in innovation by building on existing strengths in areas such as medical research, biotechnology and manufacturing. The cornerstone of the Innovation

¹⁹ Victorian Government. *Growing Victoria Together, A Vision for Victoria to 2010 and Beyond*, 2002

²⁰ Victorian Government. *Victorian Government Innovation Statement, Victorians. Bright Ideas. Brilliant Future.*, 2004



Statement is Science Technology and Innovation (STI) Second Generation. STI Second Generation will provide funding of \$310M over the next five years, which brings the Government's total commitment to building Victoria as the Innovative State to more than \$900M since 1999.

130 Worldwide, innovation is recognised as the single most important ingredient in a successful modern economy, delivering high rates of return on investment and driving economic growth. Victoria already leads the way in many aspects of innovation including biotechnology. The Victorian Government recognises that business and industry are the essential elements in converting knowledge and ideas into commercial products for the global market.

131 The Victorian Government's *Innovation Economy Policy*²¹ makes Victoria one of few places in the world to develop a comprehensive and detailed innovation policy. The Policy aims to drive innovation by improving Victoria's performance in the following key areas:

- building an educated and highly skilled workforce;
- becoming a leader in knowledge creation and innovation;
- developing linkages, clusters and networks to become a more integrated and networked local economy;
- fostering high levels of enterprise formation and business growth;
- becoming a globally focused and internationally integrated economy; and
- creating a business environment and infrastructure base that facilitates business success.

132 The *Biotechnology Strategic Development Plan*²² further sets out Government's commitment to innovation and creation, specifically in the area of biotechnology. The vision identified for biotechnology in Victoria is:

By 2010 Victoria is recognised as one of the world's top five biotechnology locations for the vibrancy of its industry and quality of its research.

133 The *Biotechnology Strategic Development Plan* identifies that Victoria is home to one third of Australia's biotechnology companies, including Australia's largest, CSL Limited, and that the industry base is growing rapidly with the backing of venture capital and other investments. It states that one of Victoria's greatest strengths in biotechnology capability is the co-location of key research and education organisations, hospitals and industry in a number of precincts of research and education excellence. These precincts include Parkville as well as the Monash Health Research Precinct, the Alfred

²¹ Victorian Government. *Victorian Government Innovation Statement, Victorians. Bright Ideas. Brilliant Future.*, 2004

²² Victorian Government. *Biotechnology Strategic Development Plan 2004-2007*, 2004



Medical Research and Education Precinct, Bundoora, the Austin Precinct and Werribee.

134 The initiatives in the 2004 Strategy are designed to:

- improve connectivity;
- facilitate increased investment in Victorian biotechnology;
- attract and develop skills in strategic areas; and
- improve access to platform technologies and build infrastructure in specific areas of the product value chain, meet gaps and provide focus for international investment.

6.2 State Government health policies

135 The key health policy currently being implemented across Melbourne is the *Metropolitan Health Strategy*²³. It has significant relevance to all three of the major healthcare campuses in the Precinct, specifically:

- establishment of a number of geographically-based Integrated Cancer Services in metropolitan and regional Victoria and the introduction of evidence-based standards of care for frequently occurring cancers;
- co-location or affiliation of specialist hospitals with general tertiary hospitals; and
- increased use of ambulatory care modes of service delivery.

136 Commitments of the *Metropolitan Health Strategy* include:

- rebuilding the RWH adjacent to the RMH;
- undertaking detailed planning for the RCH redevelopment;
- exploring options for the co-location of Peter Mac with a general tertiary hospital;
- planning for the development of co-located ambulatory care facilities at RMH;
- redeveloping the RMH - Royal Park campus as a Centre Promoting Health Independence; and
- undertaking detailed planning for the Poplar Road site to establish the future of the site for associated services including ORYGEN Youth Health.

137 The *Cancer Services Framework for Victoria*²⁴ was released in 2003 and advises on:

- mix and location of cancer services to meet future requirements in Victoria;

²³ Victorian Government. *Directions for your health system Metropolitan Health Strategy*, 2003

²⁴ The Collaboration for Cancer Outcomes Research and Evaluation (CORE). *Victorian Cancer Services Framework and future directions for Peter Mac*, 2003



- future directions for Peter Mac, including the need for it to relocate to meet its development requirements; and
 - consideration of a cancer service system and the relationship with non-acute health and other relevant services.
- 138 The framework aims to ensure the right treatment and support is provided to patients as early as possible in their cancer journey. The reforms are being delivered through two mechanisms:
- Integrated Cancer Services (ICS) – to support improvements in integration and coordination of services within a geographic area. There are three metropolitan and five regional ICS. Parkville is within the Western and Central ICS, incorporating RMH, RWH, RCH, Western Health, Peter Mac, Mercy Werribee Hospital and St Vincent's Health.
 - Tumour Streams – Clinical care and treatment will be delivered through ten tumour streams to reduce variations of care and promote best practice.
- 139 In November 2003, the State Government established a Ministerial Task Force for Cancer (MTFC) to provide strategic and clinical leadership across the state cancer services. The Taskforce's Action Plan *Towards better care for all cancer patients in Victoria (2005-06)* identifies nine priority action areas, within three strategic priorities:
1. *Improving Clinical Services*
 - Developing an integrated approach to cancer care;
 - Developing care through ten tumour streams; and
 - Developing state-wide approaches to service improvement.
 2. *Co-ordinating Cancer Research*
 - Developing a strategic approach to cancer research;
 - Developing and supporting cancer research, including the establishment of a Victorian Cancer Research Support and Development Agency; and
 - Translating knowledge from research into care and services.
 3. *Data/Information*
 - Improving data collection and information management;
 - Developing better reporting structures; and
 - Establishing benchmarks to lead best practice.



6.3 Planning and developmental controls

140 There are a number of State and Local Government planning controls that are relevant to the growth and development of the Precinct.

141 At the strategic level, the key policies are the *State Planning Policy Framework (SPPF)* which sets out planning policy in Victoria and *Melbourne 2030*²⁵. Some of the major policy directions in the SPPF relevant to the Precinct include:

- Business environment conducive to sustainable long-term economic growth;
- Efficient use of existing and new infrastructure;
- Integration of healthcare and education facilities with local and regional communities;
- Economic well-being with emphasis on the creation of opportunities for innovation and growth in the knowledge economy;
- Ecologically sustainable development including energy efficient building design;
- Protection of heritage and urban character;
- Quality urban design, safe physical and social environments;
- Protection and improvement of open space;
- More equitable distribution of social infrastructure;
- Better integration of land use and transport;
- Upgrading and expansion of the public transport system and supporting infrastructure;
- Promotion of sustainable transport modes – walking and cycling;
- Improvements to road safety and efficiency;
- Support for rich cultural environments; and
- Protection of biodiversity and ecosystems.

142 *Melbourne 2030* is the State Government's 30-year plan to manage growth and change across metropolitan Melbourne and the surrounding region. It contains nine directions that are each supported by a number of policies. The directions of *Melbourne 2030* are as follows:

- Direction 1 – A more compact city
- Direction 2 – Better management of metropolitan growth
- Direction 3 – Networks with the regional cities

²⁵ Victorian Government. *Melbourne 2030 – Planning for sustainable growth*, 2002



- Direction 4 – A more prosperous city
- Direction 5 – A great place to be
- Direction 6 – A fairer city
- Direction 7 – A greener city
- Direction 8 – Better transport links
- Direction 9 – Better planning decisions, careful management

- 143 These nine directions or key themes set the metropolitan context within which the detailed local planning for the future of the Precinct must be undertaken. The strategic location of the Precinct within metropolitan Melbourne, and the nature, role and mix of uses within the Precinct have been specifically recognised by *Melbourne 2030*.
- 144 The Precinct has been classified as a Specialised Activity Centre in recognition of the vital role it plays in Melbourne's economy. The policy stipulates that these centres should only contain uses that support and are consistent with the continued growth of their primary function. Mixed uses that complement the role of these centres are encouraged, but should not compete with nearby Principal or Major Activity Centres including Lygon Street. The policy also requires that future planning and development research precincts, including Parkville, should emphasise their ability to foster interaction between researchers and industry. This requires the provision of space so that new emerging applications can benefit from co-location.
- 145 Under Direction 1, Policy 1.1 is to: Build up activity centres as a focus for high-quality development, activity and living for the whole community.
- 146 Sitting beneath the SPPF and *Melbourne 2030* are a number of important Melbourne City Council strategic policies. These include City Plan 2010, which is the City's key planning policy document. It sets out directions and objectives, several of which are specific to Parkville healthcare, research and education activities.
- 147 In addition, the City of Melbourne Local Planning Policy Framework (LPPF) comprises the Municipal Strategic Statement and a series of Local Policies which are also of relevance to Parkville.



7 Strategic Opportunities

148 There are a number of strategic opportunities for the Precinct to build on its foundation strengths and further the policy and community objectives outlined in the previous chapter. These are discussed further below, ranging from strengthening Australia's distinctive competence and recognition in health and medical research, to specific opportunities around co-located research facilities, integrated cancer services, incubation and commercialisation, and clustering to generate greater efficiencies and synergies.

7.1 National and international recognition

149 Australia has contributed significantly to global advances in health and medical research, including breakthroughs in treatments for stomach ulcers, development of vaccines against cervical cancer, discovery of lithium for the treatment of bipolar disorder, development of cochlear implants and global marketing of treatments for obstructive sleep apnoea. These advances have contributed to significant healthcare benefits for Australia, such as increasing life expectancy at birth from by 8 years over the period from 1960 to 1999. This ranked Australia the fourth highest lifespan in the world, equal with Canada and behind Sweden, Switzerland and Japan.²⁶

150 The Australian Government's review of investment in health and medical research (HMR) in 2003 identified that Australia produces a greater output of HMR compared to other types of intellectual property and that this output is higher than Australia's OECD peers relative to GDP, despite a lower level of overall investment. Australia produces 3% of OECD HMR output compared to only 1.6% of OECD economic output. Australian researchers are also highly successful in winning international awards and achieving global recognition by their peers²⁷.

151 Within this context, Parkville has a number of research, education and healthcare institutions, each with strong individual international reputations and strong linkages to the other precincts within Victoria. This positions Parkville to play an important role helping Victoria enhance its reputation in the international HMR sector through the provision of patient healthcare based on high quality basic, translational and clinical research.

152 An indicator of the Precinct's standing is evidenced by the levels of research funding attracted. As at March 2005, over \$112M in First and Second Generation STI funding had been allocated to research projects led by Parkville institutions.²⁸ The total value of these projects was estimated to be in the order of \$900M. Nearly \$100M of the STI

²⁶ Australian Society for Medical Research (prepared by Access Economics). *Exceptional Returns, The Value of Investing in Health R&D in Australia*, September 2003

²⁷ Investment Review of Health and Medical Research, Department of Health and Ageing, 2003

²⁸ Victorian Government. *Report on STI Funding*, July 2005



funds allocated were in the health sector, with a total estimated project value of over \$800M.

- 153 The Precinct has also established a strong base of research infrastructure and platform technologies. Operational infrastructure support funding for Victorian medical research institutes in Parkville in 2004/05 was in the order of \$14m, with a further \$2.4m allocated to institutions nearby in Fitzroy.
- 154 The value of Precinct activities is also evident in resulting incubation and commercialisation. In September 2003, 40% of Australia's biotechnology companies were based in Victoria. Collectively, these accounted for 38% of US patents granted to Australia, and attracted venture capital investment at a growth rate of 26% compared with a national downturn of 39%²⁹. The September 2003 *Biotechnology Industry Report* identified that the Precinct itself was home to some 2,000 researchers in life sciences and accounted for over \$200M in research funding. Recent trends indicate that this level of biotechnology activity continues to increase.
- 155 In addition to direct health cost returns and overall lifespan savings, there are significant indirect benefits (or 'multiplier effects') which result from these research activities. These 'ripple' benefits include creation of job opportunities and generation of additional revenue, as well as the retention and attraction of skilled professionals which further contribute to development of a vibrant and successful life sciences and biotechnology sector. The US Biotechnology Industry Organisation report in 2000 estimated that indirect jobs and revenue created through biotechnology can be as much as 2 or 3 times the direct benefit³⁰. The Australian Society for Medical Research report in 2003 estimated that annual rates of return for HMR investment lie between 1 and 5 times the direct expenditure.³¹
- 156 National and international recognition through strong collaboration and partnerships are vital to achieving the State's vision of becoming one of the world's top five biotechnology locations by 2010. This requires the enthusiasm and skill of people at the forefront of science and industry, and a strong research and development base in key strategic biomedical areas, both of which exist in Parkville.

7.2 Basic, translational and clinical research

- 157 For the purposes of this Strategic Plan, *biomedical* refers to studies of the natural sciences (such as biology, biochemistry and biophysics) relevant to health and medicine; *translational research* refers to research directed to transferring basic (laboratory) and applied research discoveries into the clinic as new diagnostic treatments or preventative measures; *clinical research* refers to patient based studies

²⁹ Victorian Government, *Victorian Biotechnology Industry Report*, September 2003

³⁰ Biotechnology Industry Organisation (prepared by Ernst & Young), *The Economic Contributions of the Biotechnology Industry to the US Economy*, May 2000

³¹ Australian Society for Medical Research (prepared by Access Economics). *Exceptional Returns, The Value of Investing in Health R&D in Australia*, September 2003



and clinical trials designed to test and develop new diagnostics to evaluate and improve treatment; and *bioinformatics* is the term used for computational tools to manage large volumes of research data of either laboratory or clinical origin.

- 158 A recent editorial in *Nature*³² outlines how one of the main themes in accelerating biomedical progress is the reengineering of the clinical research enterprise, placing a special emphasis on the need to promote translational research as:

the process of applying ideas, insights and discoveries generated through basic scientific inquiry to the prevention or treatment of human disease.

- 159 More specifically it is the process whereby basic science research findings are translated into new medical treatments, including diagnostic tools and pharmaceutical products; in other words, it is the translation ‘from benchtop to bedside’. Clinical capacity to trial new treatments and techniques is a critical step in the translational research process. Hence critical mass achieved by having more than one major acute hospital within the Precinct is an essential enabler along with connectivity to relevant research institutes.
- 160 The co-location of RMH and RWH, combined with the physical and operational connectivity with existing Precinct research institutes, provides a strong foundation to enable a basic, translational and clinical epidemiological research continuum. Health gains achieved by improving health outcomes will assist in reducing the burden of disease across the State, as well as creating other benefits associated with a leading international clinical and translational research program.
- 161 Scientific discoveries and translational research combined with changing styles of healthcare delivery necessitate an adaptive approach to any new centre of excellence. Planning and design concepts need to provide maximum flexibility for change including the structural framework and grid, services infrastructure and modular planning. The FDH site, as a ‘green-field’ site is a key strategic opportunity to develop a translational research complex co-located with the RMH and RWH complex. This is discussed further in Chapter Rec 13.

7.3 Integrated cancer services

- 162 Victoria’s existing stand-alone specialist cancer hospital is Peter Mac which, in its present location, is significantly constrained by its building fabric, site constraints and limited access to the full range of clinical services. These issues could all be addressed by relocation to a major tertiary hospital site, thereby enhancing the delivery and development of cancer services.
- 163 The Victorian Government’s MTFC has developed an overall vision for cancer care in Victoria and a state-wide strategy for improving outcomes for cancer patients. The integration of cancer services across the State requires cancer services to work

³² *Nature Medicine*. Vol10, No.9, September 2004



together to develop multi-disciplinary cancer care, connecting with a range of clinical specialists, nursing, allied health, and research and epidemiology groups. The integrated cancer service model focuses on meeting the care needs of defined geographical populations, with links to highly specialised cancer treatment sites. This allows the integration of clinical models, research activities, and prevention services that are informed by, and developed across whole communities to meet their cancer related needs.

- 164 The Western and Central Melbourne Metropolitan ICS incorporates the Precinct. This, together with the presence of RMH, RWH, RCH and Peter Mac, provides an opportunity for developing links that promote the rapid uptake of research into clinical practice. Additionally, opportunities for links that inform research institutes about practical care issues along the patient care continuum provide useful feedback opportunities for further research.

7.4 Incubation and commercialisation

- 165 There is potential for the development of a commercial / biotechnology precinct in close proximity. Biotechnology is a dynamic sector that requires a foundation strong in research, but with a focus on creating commercial products and services. Victoria is recognised globally for the quality and breadth of its biotechnology research. It leads the nation with 4 out of every 10 biotechnology companies based in the State.
- 166 In the period 2000 to 2002, 68 new biotechnology firms were formed in Victoria, with the majority of these start-ups operating in the field of human therapeutics, diagnostic products and services. Worldwide, biotechnology firms cluster around R&D institutes. With over 2,000 researchers in Parkville, and numerous internationally recognised research institutes, the Precinct provides an ideal environment for further growth for biotechnology companies.
- 167 An important link in the cycle of education, research and health services is incubation and commercialisation of related technologies. CSL and the Bio21 Institute are expected to play significant roles in providing a commercialisation focus in the Precinct. Further development of commercialisation in the Precinct requires enhanced space and facilities for developing companies within easy reach, increased private sector involvement, innovation and entrepreneurial activity.
- 168 Mixed uses areas of North Melbourne provide an opportunity to extend Precinct activities across Flemington Road for commercial biotechnology incubation and development. Other possible areas for such development include areas within West Melbourne, the La Trobe Technology Park and the Monash Strip in Clayton.
- 169 There could be substantial economic return if national and multi-national biotechnology or pharmaceutical companies could be attracted into commercial relationships with the Precinct, bring with them appropriate private capital investment in infrastructure and facilities. In particular, continuing involvement of major overseas companies in use of the research facilities of Parkville should be supported and encouraged. Such



development of the Precinct would provide economic spin-offs and create opportunities for support industries.

7.5 Clusters, integration, efficiencies and synergies

- 170 The Precinct is well positioned to benefit from its established linkages, advanced infrastructure and supportive environment. As a leading cluster of biomedical activity, it has the potential to stimulate business opportunities and support stakeholders to increase their international competitiveness.
- 171 Clusters are an extension of the collaborative process which provide an innovative way for businesses to maximise opportunities in today's global markets. The *Strategic Audits of Victorian Industry*, the *ICT Industry Plan*, the business statement *Building Tomorrow's Businesses Today*, and the *Innovation Statement*³³, all note that clusters can make a substantial contribution to the Victorian economy.
- 172 The Victorian Government is strongly committed to the development and promotion of clusters, and contributes towards the funding of several key clusters and precincts, including:
- Monash University Cluster for Biomedicine;
 - Alfred Medical Research and Education Precinct in Prahran;
 - Horsham Grains Technology Precinct; and
 - Bio21 Australia cluster centred in Parkville.³⁴
- 173 Significant benefits can be achieved through lower costs, better use of technology, improved access to specialised services and research and development, stronger international links and an environment that encourages innovation. Institutions operating in a cluster are in a better position to compete as they can:
- increase productivity through improved access to knowledge, ideas and skills offered by the local environment;
 - become more innovative through access to new ideas, shared experiences and supportive institutions in close proximity to their operations; and
 - become more competitive by reducing transaction costs, especially in relation to research and product development.

³³ Victorian Government. *Clusters. Victorian businesses working together in a global economy*, 2003

³⁴ Victorian Government. *Victorian Government Innovation Statement, Victorians. Bright Ideas. Brilliant Future.*, 2004



8 Parkville Precinct Strategy for Integrated Health, Research and Education

8.1 Strengthening the Precinct

- 174 Notwithstanding the strengths and opportunities outlined in the previous chapters, the standing of the Precinct is under increasing risk from national and international competition for both investment funds and key staff. A strategic approach to precinct planning is required to secure appropriate growth in expertise, facilities and amenities. Without the presence of a critical mass of collaborative relationships and biomedical infrastructure, the full potential of the Precinct to benefit the Victorian community and economy will not be realised.
- 175 Redevelopment of the FDH site in a way that supports the strategic objectives and opportunities of the Precinct and benefits the Precinct members as a whole is a specific and major challenge. The FDH site provides a key opportunity to develop the Precinct's capabilities in biomedical research, education and healthcare and should be considered in a way that enhances integration with the institutions nearby.
- 176 There is also a need for further investment in accommodation and research infrastructure. In particular, three major research institutes in the Precinct (WEHI, HFI and LICR) are seriously overcrowded and are considering a range of site locations for future growth.
- 177 Other more general issues that will require a strong strategic planning approach include:
- Decision making mechanisms which enable strengthening of the integration of biomedical research, education and healthcare;
 - Encouraging and fostering additional centres of creativity, innovation and excellence, in particular, the further extension of incubation and commercialisation activities to drive improved economic outcomes as well as healthcare outcomes;
 - Recognising and planning for changes that may occur over the next ten years;
 - Accommodating the projected intensity and activities of the workforce, student and residential communities in the Precinct;
 - Achieving greater scale and efficiencies through sharing of common infrastructure and facilities;
 - Managing transport and access into, through and around the Precinct in such a way that optimises movement both within the Precinct and the broader metropolitan area; and
 - Marketing and promotion of the Precinct's capabilities, talent and contribution to local, national and international communities, and in particular its role in working with other Victorian clusters and centres of excellence to achieve and further these outcomes.



- 178 It will be difficult to predict all the advances in biomedical research, education and healthcare delivery over the next ten years, or all the areas of most pressing need. It is important that the Precinct institutions are encouraged to work together to sense and respond to evolving or emerging new directions. Strengthening the linkages between the institutions will enable appropriate creativity, innovation and excellence to develop and evolve.
- 179 While diversity and adaptability is to be encouraged, the activities for the Precinct need to be supported and directed with long term planning around specific areas of capability. Current areas of excellence in the Precinct include Cancer, Immunology, Diabetes, Neuroscience, and Infectious Diseases. The development and support of linkages between institutes involved in these areas are critical priorities going forward

8.2 The Vision – fully integrated health, research, and education, with an emphasis on translational research

- 180 In order to build on current strengths of the Precinct, and to maximise its strategic opportunities, the vision for the Parkville Precinct is:

A Precinct that integrates world class healthcare, research and education to rapidly translate research discoveries into clinical practice, nurture biotechnology development and drive economic growth in Victoria.

- 181 Key elements identified as important for achieving this vision include:

Attraction and retention of the best talent in biomedical research, education and healthcare.

Further investment in world class facilities for research, education and healthcare.

Enhancement of integration and co-ordination, by strengthening linkages between the major healthcare, research and education organisations within the Precinct and whole-of-precinct planning for significant sites.

Fostering adaptability and innovation, and centres of creativity and excellence which lead to biotechnology incubation and development.

Realisation of the opportunity currently afforded by the proximity of key institutions to facilitate a focus on cancer related translational research, education, treatment and, prevention leading to the formation of a world class cancer centre.



Rec 1. That the vision adopted for the Parkville Precinct is:

a Precinct that integrates world class healthcare, research and education to rapidly translate research discoveries into clinical practice, nurture life sciences and biotechnology development, and drive economic growth in Victoria.

Rec 2. That future development of the Precinct is consistent with the vision of integrated healthcare, research and education.

8.3 Precinct integration

- 182 The direction set in the Strategic Plan seeks to build on the strengths of the Precinct institutions and their various collaborations, specifically on focussing such activities for benefit to the Precinct and Victoria as a whole, as well as to the individual membership.
- 183 The Precinct is already home to a number of institutions that are acknowledged as leaders in their fields and have strong reputations for excellence. While there are already well developed relationships between many of these institutions, their presence in the one geographical precinct provides a unique opportunity to further strengthen their collective capability and capacity, through co-delivery of complementary or related services, and co-location or adjacent location of common facilities.
- 184 Such strong integration is required at both functional and physical levels, extending the interface between biomedical research, education and healthcare, and sharing of common facilities infrastructure and technologies for the full realisation of research based cancer services for Victoria. Examples of such sharing opportunities include research and clinical based facilities in genomics, bioinformatics and tissue markers.
- 185 Consideration therefore needs to be given to multi-level strategies that guide the strategic development of the Precinct, including site, facilities and infrastructure development.
- 186 In particular, a network body is required to help guide the strategic development of the Precinct consistent with the objectives of Precinct integration and co-ordination. This body should represent the health services, research and education functions within the Precinct, and its roles should include to:
- Provide leadership and promote the Precinct;
 - Develop and monitor the Precinct's collective vision;
 - Evaluate emerging requirements and address issues as they arise;
 - Consider and represent all stakeholder views;
 - Maintain strong communication channels with members;
 - Foster a culture of trust, collaboration and support; and
 - Seek funding for shared infrastructure.



- 187 In establishing such a body, the emphasis should be on the potential enhancement or extension of existing collaborative networks, rather than necessarily the establishment of a new entity. In this regard, specific consideration should be given to the capacity for Bio21 Australia to undertake this role. The current review of Bio21 Australia provides an opportunity to assess this capacity, and any changes that may be required to its charter.

Rec 3. That the strategic development of the Precinct is guided by a network body representing the health services, research and education functions within the Precinct, and that this body is charged with facilitating Precinct integration and co-ordination.

Rec 4. That the capacity of Bio21 Australia to undertake the role of the network body be considered.

- 188 A major advantage of the Precinct is the presence of strong teaching and research relationships between the UoM and the major hospitals – RMH, RWH and RCH. The further strengthening of these relationships through their designation as *University Hospitals* has the potential to enhance the co-ordination and integration objectives of the Precinct.
- 189 The term *University Hospital* generally refers to an institution affiliated with a university, which combines the services of a hospital with the education of medical students and with medical research³⁵. Many of the characteristics of such an affiliation are already present in major Victorian healthcare centres such as RMH, Austin Health, the Monash Medical Centre, St Vincent's and the Alfred, namely:
- the hospitals and affiliated university medical schools incorporate an explicit focus on clinical research and undergraduate, postgraduate and continuing education;
 - senior clinicians at the hospitals hold honorary academic titles at the university and senior university staff with clinical training hold honorary hospital titles; and
 - the hospitals and the university actively participate in clinical trials.
- 190 The strengthening of partnership arrangements between the UoM, the major teaching hospitals and the research institutes to support the continued evolution of a premier health care, research and education centre in association with the University has the potential to facilitate even greater levels of collaboration and integration consistent with the Precinct vision.

Rec 5. That designation of the hospitals within the Precinct as University Hospitals be considered to further enhance Precinct coordination and integration.

- 191 It is recognised that the designation of RMH, RWH and RCH as University Hospitals would have implications for other major teaching hospitals affiliated with either UoM or Monash University.

³⁵ See for example <http://en.wikipedia.org/>, Jul 2005



8.4 Precinct development

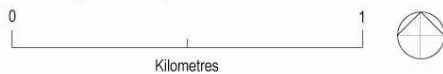
- 192 The Precinct is contained within an established urban area. As such, opportunities need to be identified for the Precinct to continue to grow and evolve. The ability to adapt and redevelop significant sites has the potential to contribute to the long term objectives of the Precinct and deliver substantial benefits to the State.
- 193 Development of these sites needs careful consideration to meet the needs of the healthcare, research and education activities and preserve the acknowledged heritage and amenity of the area.
- 194 A number of significant sites have been identified as opportunities to accommodate the continued growth of the Precinct, through re-use or redevelopment of areas and buildings within the identified sites. These have been regrouped into four zones as outlined below and illustrated on the following page.
- 195 Sites identified within the **North Parkville zone** that present opportunities include:
- RMH - Royal Park Campus;
 - Poplar Road site;
 - CSL site; and
 - MHRI site.
- 196 Sites identified within the **South Parkville zone** that present opportunities include:
- FDH site;
 - RMH - City Campus;
 - VIDRL site (Melbourne Health);
 - Commercial sites within North Melbourne in proximity to FDH, RMH and Bio21 Institute including sites which have frontage to Flemington Road; and
 - UoM western precinct surrounding the Bio21 Institute.
- 197 Sites identified within the **University zone** that present opportunities include:
- UoM sites;
 - adjacent commercial sites within South Carlton, including the sites fronting Haymarket roundabout; and
 - the current RWH site.



Strategic Sites



Source: Victoria Cadastre 2003;
CData01 with MapInfo
Produced by: UrbisJHD Pty Ltd



LEGEND

NORTH PARKVILLE zone:

- ② Royal Melbourne Hospital - Royal Park Campus
- ③ Poplar Road site including Orygen Health
- ⑨ Mental Health Research Institute

SOUTH PARKVILLE zone:

- ① Former Dental Hospital Site
Royal Melbourne Hospital - City Campus
- ④ Royal Children's Hospital
- ⑤ North Melbourne
- ⑦ University of Melbourne Western Precinct / Bio21 Institute

UNIVERSITY zone:

- ⑥ South Carlton
- ⑧ University of Melbourne



- 198 There will be an ongoing need to make informed decisions about precinct planning and development, particularly with respect to these sites, to ensure they maximise benefit for the overall Precinct and Victoria. It will be important that these decisions are made with an understanding of the Precinct-wide implications and that they support the achievement of the Precinct's vision and objectives as outlined in the Strategic Plan.

Rec 6. That planning for all significant sites be undertaken in a manner consistent with the Precinct vision.

- 199 The FDH site is a significant piece of land in the Precinct. It is permanently reserved land for the purposes of a dental hospital and dental school and is subject to the provisions of the *Crown Land (Reserves) Act 1978*. The land has been held in the joint names of the UoM and the Royal Dental Hospital of Melbourne (part of Dental Health Services Victoria). With the development of a new Dental Hospital and teaching facility in Swanston Street, Carlton, the FDH site is to become available for redevelopment.
- 200 The redevelopment of the FDH site should be considered jointly with ongoing development of the adjacent RMH together with the current planned development of RWH to ensure appropriate integration with the facilities and activities at these sites. In view of the restrictions of the current Crown reservation, a change to an appropriate public designation needs to occur.

Rec 7. That the former Dental Hospital site Crown reservation be changed to an appropriate public use designation to take advantage of the opportunity created by bringing together Precinct strengths in healthcare, research and education.

- 201 Three major research institutes in the Precinct have identified specific redevelopment or expansion needs to support their current and anticipated growth. These are the WEHI, HFI and LICR.
- 202 The RMH zone west of WEHI is considered to be a key opportunity for connecting research services across the Precinct. It could provide a strong research strip connecting the UoM across Royal Parade through WEHI to the Bio21 Institute that could support multiple uses, including major expansion of WEHI.
- 203 The establishment and location of a Neuroscience Institute including HFI, MHRl and two Austin Health based institutes is currently the subject of a separate study. Notwithstanding the results of this study, it is considered important that any Neuroscience Institute established should either be located in the Precinct or retain strong linkages to the Precinct.

Rec 8. That the Royal Melbourne Hospital area between the Walter and Eliza Hall Institute of Medical Research (WEHI) and the Bio21 Institute be redeveloped with the objectives of establishing a research area capable of multiple uses, including a major extension of WEHI, and of improving connectivity for research across the Precinct.



- 204 The South Parkville zone sites between the RCH and Royal Parade, including RCH, Bio21 Institute, new RWH, RMH and FDH, require careful planning to identify opportunities that can further integrate development of the South Parkville zone, and that support the future use of the FDH site as well as the requirements of the clinical and research zones and the University zone.
- 205 As a specific example, the planned development of the new Medical School by UoM should be considered in the context of the potential designation of RMH, RWH and RCH as *University Hospitals*. The new Medical School development should also explore site opportunities afforded by the South Parkville zone.

Rec 9. That a masterplan be developed for key sites in the South Parkville zone including the Royal Children's Hospital, Bio21 Institute, new Royal Women's Hospital, Royal Melbourne Hospital – City Campus and the former Dental Hospital site. Further, that discussions are held with the University of Melbourne regarding the integration of its future plans for the new Medical School within the South Parkville zone.

- 206 The planned redevelopment of RCH may also provide a range of opportunities to further support the Precinct vision. Depending on the location of the planned redevelopment, the potential opportunities could include:
- greater sharing of infrastructure between RCH, RMH and RWH;
 - stronger linkages to support basic, translational and clinical research and education at a general level as well as with a cancer focus;
 - closer integration of the MCRI into the research activities of the South Parkville zone; and
 - alternate uses of the current site, or other space becoming available, as a result of the RCH redevelopment.





Rec 10. That if accommodation becomes available through the planned redevelopment of the Royal Children's Hospital, the opportunity for this accommodation to support further integration of healthcare, research and education be considered.



Royal Melbourne Hospital Precinct Analysis



LEGEND

-  Research zone
-  Clinical zone
-  Clinical / Research zone
-  Bio 21 zone

Note:

The above diagram is a zonal representation of the primary focus of areas within the RMH site. This diagram is a graphic representation of the issues discussed in section 8 of this report. For specific locations of the institutions see map on page 26. The diagram is not representative of DHS master planning processes for the site. Subsequent to endorsement of this strategic plan, the appropriate State health capital planning processes will be undertaken.



- 207 There is also an identified need to further support the extension of the biomedical research, education and healthcare continuum through incubation and commercialisation facilities. The establishment of biotechnology enterprises should be encouraged in the vicinity of the Precinct, particularly to supplement the Incubator Facility of the Bio21 Institute for companies as they grow into next stages of development.
- 208 One of the objectives of the Bio21 Project is to 'create a financially viable biotechnology precinct and to facilitate the development and commercialisation of biotechnology research'.³⁶ The Bio21 Project is already achieving this in relation to its development and commercialisation objectives, with a number of the Bio21 Australia members having started biotechnology-related companies. Technology transfer and commercial development is also in evidence, with revenue of over \$16M in 2004 across the Bio21 Australia cluster being generated through collaborative development deals, research contracts and service contracts.
- 209 A conventional green-field R & D Park cannot be housed directly in the Precinct, rather it would need to have a dispersed form throughout adjacent urban areas in South Carlton and North and West Melbourne, within the CBD or at other more distant sites such as the La Trobe Technology Park or Clayton facilities. While conversion of some existing buildings in neighbouring areas should be possible, there may be a need for complete redevelopment of some sites as well.
- 210 Significant sites should be identified in areas suitable for commercial biotechnology uses, and information gathered on typical requirements for commercial biotech space – such as floor plate, wet/dry laboratory space, servicing and ICT requirements.

Rec 11. That growth in incubation and commercialisation activities associated with the Precinct be provided for and further encouraged through planning policies and other initiatives that facilitate the establishment or expansion of these activities, particularly in the mixed use areas of South Carlton, North and West Melbourne and the Central Business District.

³⁶ Bio21 Australia Ltd. *Annual Report 2003/2004*