Study Tour to Brisbane August 25th - 27th 2014 and Melbourne - August 28th

Report prepared by Dr Ian Town, Principal Advisor

Christchurch Central Development Unit

September 10th 2014

Background

The study tour to Brisbane provided another opportunity to explore aspects of Academic Health Sciences Systems, this time in Queensland. Earlier tours have included Melbourne and Sydney. A number of commentators had noted recent capital projects of interest in Brisbane including the Translational Research Institute (TRI) and the Queensland Medical Research Institute (QMRI).

Delegation details and host briefing notes are provided as **Appendix A.**

Monday August 25th – Princess Alexandra Hospital (PAH) and Translational Research Institute (TRI)

The visit was hosted by Dr Richard Ashby, former Emergency Department Physician and now Chief Executive of Metro South Health which has responsibility for the Princess Alexander Hospital and associated facilities.

The history of academic health sciences discussions was summarised by the Chair of Diamantina Health Partnership, Dr David Thiele, who oversees the key governance group. Along with Dr Ashby and UQ he has guided the TRI project which now has its own Board, (outgoing) CE Professor Fraser, and COO Dr Kate Johnston.

The building is fabulous, costing some $350M and with an annual opex of around $25M met by the founding partners. The building is not full and has space for expansion earmarked. Design elements are of international standard with core facilities, lecture theatre and commercial premises. The layout is flexible with the laboratories and write up areas able to be adapted in response to changing needs. Write up space and communal spaces are again flexible. The laboratories are run separately by the respective institutions but shared occupancy is envisaged and will be encouraged.

The Health Authority has also helped develop a new clinical research facility attached to the hospital, which is just being commissioned. It has both outpatient type space and facilities for invasive monitoring and overnight stays if required. The management and cost-sharing approach is still being worked out.

We also toured the PAH hospital including the refurbished molecular imaging suite which is about to install PET-MRI facilities.

Tuesday August 26th – ICON Cancer Care and ROQ, Gold Coast Hospital

This visit came about following the approach by a consortium led by the Verde Property Group in 2014 (including equity partner, ICON Cancer Care and the Amber Infrastructure Group). Mr Stephen Gosling assisted and help set up the visits to ICON head office in Brisbane and tours to the ICON Cancer Care facility on the Gold Coast and the new Gold Coast Hospital and Medical School (Griffith University).

The facilities were excellent. The ICON facility provides Cancer Care on a private basis with an emphasis on comprehensive, personalised care that is unlikely to be achieved in the public system. Research is a key deliverable (see below).

ICON are partnering increasingly with ROQ a private provider of radiation oncology services. ROQ operates a private service for publically funded patients referred for radiotherapy – a new model of delivery. ROQ has an impressive mission and values, new equipment and a long term commitment to excellence. They estimate services are being delivered at a 40% cost saving due to their greater efficiencies.

They are expanding and aim to become a leading Australian provider of radiation oncology services. They have training placements and continue to be actively involved in research through their foundation ORA. They participate in Australasian investigator-led trials through the Trans-Tasman radiation oncology group (TROG).

Meeting with ICON/ROQ and Clinicians

At the end of the day we had a round table meeting/discussion with the ICON team, ROQ and two affiliated clinicians working with ICON.

The ICON group, through its charitable foundation, is heavily involved in clinical trials in oncology. They are a leading Australasian provider with a strong commitment to quality, winning the best clinical trials site in Australia in 2013. Currently there are 75 studies underway across 17 different cancer types. Their specialist advisory committee vets all clinical trials and reviews ethics issues and study quality prior to acceptance.

Researchers at the University of Queensland Medical School are also engaged through their Visiting MO positions at ICON. Associate Professor Paul Mainwaring discussed the current place of clinical cancer genomics in personalising treatment.

Wednesday August 27th – University of Queensland Medical School

Meeting with Professor N Fisk, Dean Faculty of Medicine and Behavioural Sciences

Professor Fisk outlined the current landscape in Brisbane as regards the Academic Health Sciences System. He noted that progress has been steady and that southern and northern metro health districts and academic institutions are now being merged under an NHMRC Area of Research Excellence.

He noted the history of the two major new research institutes the TRI and QMRI which have both received millions of state, commonwealth and philanthropic funding. Both operate with independent Boards and CEs on which he represents the Faculty/University. Issues arise around funding as both institutes have their own management structures which have to be funded by the partners. This is an expensive model for the University.

Master planning has occurred for both the southern and northern campuses and the language and overall approach is echoed by the master planning advice. In both cases the planning approach is being followed, as funding becomes available.

Thursday August 28th – Tim O'Meara GE Australia/NZ Research Director

Tim is the key contact within GE for R & D opportunities. He was instrumental in establishing a collaboration agreement between the University of Otago and GE Healthcare in the area of CT scanning. He has also approached the CDHB to ascertain their interests. Naturally GE see both the University and CDHB as long term strategic partners. I briefed him on the Health Precinct project and the long term ambition to establish strategic partnerships with a range of health technology companies. I also briefed him on the Centre of Research Excellence concept and the feasibility study that is underway.

He will be following up with key senior staff and is planning for senior colleagues to visit New Zealand in October. He is enthusiastic about the opportunities not only in health care but across the range of GE business units.

Additional Meetings (Melbourne)

1. Professor Glenn Bowes – Associate Dean (External Relations, University of Melbourne Medical School)
2. Mr Max Rogers (Advisor to the Dean, University of Melbourne Medical School)
3. Professor John Wilson (Head of Cystic Fibrosis and lead on the integrated medical record project, Monash University and Prince Alfred Hospital)

Impressions

1. As in Victoria, the Queensland State Government has invested heavily in health related research facilities and staff over the last decade.
2. The Commonwealth Government has often matched state grants for new facilities.
3. Philanthropy plays a major part in the funding of buildings and research programmes.
4. Multi-party research institutes create some tensions for shareholders in terms of governance and operating costs.
5. Clinical research facilities are often incorporated into hospital premises.
6. Private providers of clinical oncology and radiation oncology services are a significant element of health care services in Queensland.
7. Teaching/training and research are considered as key features of contracts for private providers.
8. GE Healthcare research represents a major opportunity for private sector engagement in Christchurch with an established collaboration agreement.

Dr Ian Town

(on behalf of study group)

Appendix A:

Briefing Notes for Hosts

Background

The Health Precinct is one of the platforms for the rebuild of the Central Business District of Christchurch following the earthquakes in September 2010 and February 2011. The rebuild of Christchurch is being led by the Christchurch Central Development Unit (CCDU) part of the Government Department – the Canterbury Earthquake Recovery Authority (CERA) established by the Crown to manage the recovery.

The Central City Blueprint launched in 2012 divides the city into a number of precincts framed to the east by green space, to the south by low density campus-style precincts and to the southwest by Hagley Park http://ccdu.govt.nz/the-plan

In early 2013 the Crown announced a major rebuild of Christchurch Hospital would be funded with a capital expenditure envelope of around $600M (including new facilities at Burwood Hospital).

The Health Precinct proposal http://ccdu.govt.nz/projects-and-precincts/health-precinct envisages a world class complex being established initially along the southern bank of the Avon River with the closure of Oxford Terrace creating a traffic free campus style development bringing together outpatients facilities plus teaching and research activities undertaken by the Canterbury District Health Board (CDHB), the Christchurch Polytechnic Institute of technology (CPIT), the University of Otago, Christchurch (UOC) and the University of Canterbury (UC).

The overall strategy is outlined in the Christchurch Health Precinct Master Planning advice which was developed by a consortium led by BVN Donovan Hill based in Sydney with support from Jasmax and CERA/CCDU. The functional brief is based loosely on the Academic Health Sciences Model based on incorporating thinking in Australia and referenced by the NHMRC Australia.

Since the release of that Master Planning advice, strategic planning has evolved and has been simplified to take account of immediate priorities. The anchor development will be the rebuild of the acute tertiary hospital on its existing site opposite Hagley Park. To the east health research and education facilities will be constructed (see schematic below). At this stage it is hoped that a master developer will build the facility and that the institutions will lease space having helped design and fit-out the space.

On May 21st the institutions signed a Collaboration Agreement and have since established an Advisory Council to provide oversight of the Precinct development.

Delegation Membership and Expectations

The names of those joining the delegation are as follows:

- Professor Ian Town, Principal Advisor, CCDU
- Professor Peter Joyce, Dean, University of Otago, Christchurch
- Sheila McBreen-Kerr, Manager, Investment Facilitation, CCDU
- Dr Cathy Andrew, Head of Nursing & Human Services, CPIT
- Stella Ward, Executive Lead Innovation and Research, CDHB

All of the delegation members are involved with the Health Precinct either through their work with the CERA/CCDU team or as a representative of their institutions working in partnership to deliver on the Precinct objectives.

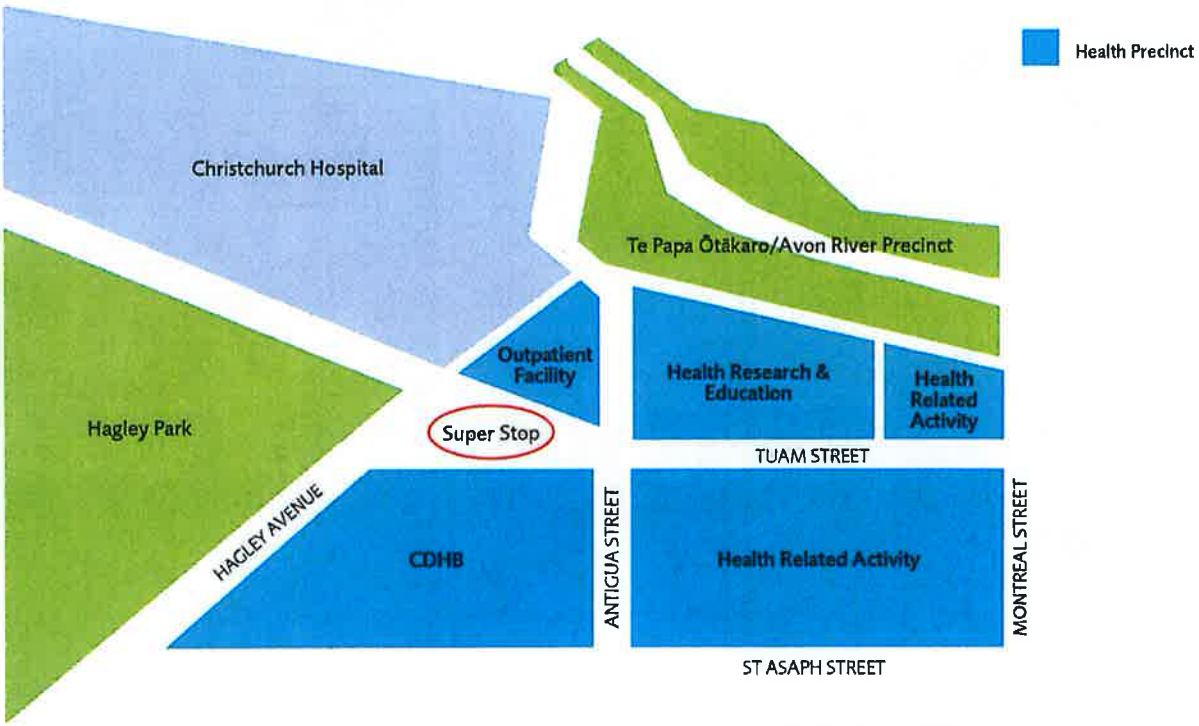
The overarching aim of the study tour to Brisbane is to understand the strategy and implementation issues of leading Australian examples of similar precincts/projects.

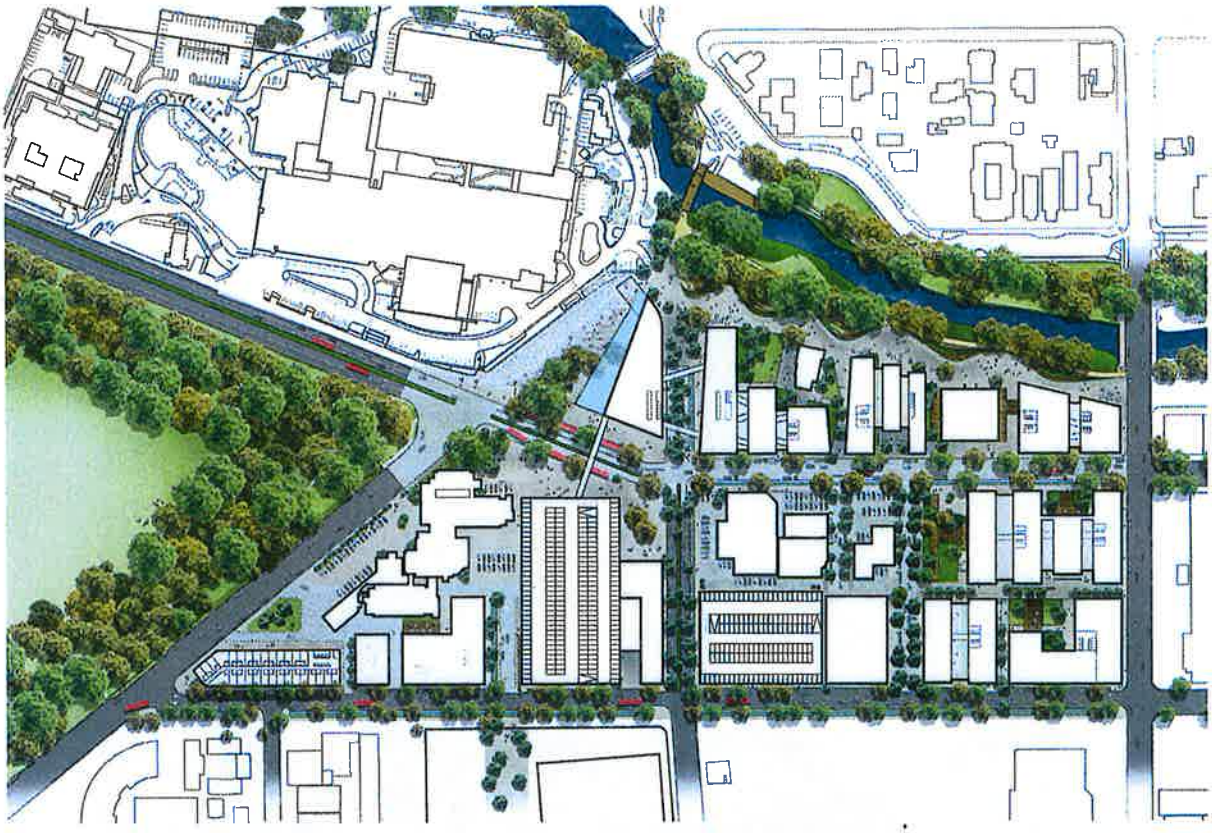
The specific goals of the tour are to investigate:

- Research precinct development
- Design elements – including specific building designs that promote collaboration
- Development and commercial options for the capital investment
- The range of governance models to consider and their strengths and weaknesses
- The policy and health services issues especially from a State/Commonwealth perspective
- Possible direct links with Brisbane based Institutes
- The role that the ICON group plays in cancer services and research

Schematic Diagram of the Health Precinct

Proposed Health Precinct





Master Planning Schematic

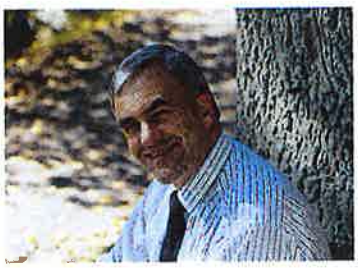
Biographies of Delegation Members

Ian Town

Ian Town is an independent management consultant specialising in health and higher education. He has been retained by the Christchurch Earthquake Recovery Authority (CERA) to provide advice on the development of the Health Precinct, one of the anchor projects being managed by the Central City Development Unit (CCDU). Ian, a physician by training, was formerly the Deputy Vice-Chancellor at the University of Canterbury.

Peter Joyce

Professor Peter Joyce has been the Dean of the University of Otago, Christchurch since 2006. Previously he was Professor and Head of Department of Psychological Medicine, University of Otago, Christchurch, since 1986. His major research interests have been in the areas of bipolar disorder, depression, and eating disorders. He is committed to the vision statement of the University of Otago, Christchurch of "A research-led campus with an international reputation for excellence".



Sheila McBreen –Kerr

Sheila McBreen-Kerr is the Manager, Investment Facilitation for the Canterbury Earthquake Recovery Authority. She leads a team who attract and retain investment and business to the region. This includes the facilitation of public and private opportunities in the Health Precinct with a view to securing economic and health outcomes up lift for the region.

Cathy Andrew

Cathy Andrew is Head of Nursing and Human Services at Christchurch Polytechnic Institute of Technology and has oversight of the health portfolio. Cathy has worked as a nurse and educator in a range of practice areas including mental health and critical care in New Zealand and the United Kingdom. Her research interests are around individual and family responses to crisis, and nursing education. Cathy is also Director of Nursing for the nursing pathway at the University of Canterbury and is a non-executive director for a large community nursing provider.

Stella Ward

Stella trained as a speech language therapist and has worked in the public health system, private practice, education and welfare. Since moving to Allied Health leadership roles Stella has been involved in fostering excellence in clinical standards, research and innovation, quality and patient safety. She established the role of Executive Director of Allied Health for Canterbury and West Coast which she has held since May 2010. As part of the Executive Management Teams of West Coast and CDHB, Stella has a number of Executive Portfolios that include the Christchurch Health Precinct; Health Innovation and Chair of the West Coast Clinical Board and the West Coast Alliance Leadership Team. She is also currently the Chair of the South Island and National Allied Health groups.

Appendix B

Programme for Monday 25th August

Visit to MSHHS Research Institute

Monday, August 25, 2014

Venue:

Translational Research Institute – 3rd Floor – Meeting Room 3000

Contacts on the day:

Dr Kate Johnston, Chief Operations Officer & Ms Emma Lee

Annette Crawford , Executive Support Officer, Chief Executive MSHHS - 0412 936087

9.00 am	Dr Richard Ashby to meet delegation/discussion
9.30 am	Dr David Theile Snr/Ms Areti Gavrilidis – Centres Health Research & Diamantina Health Partners Presentation
10.00 am	Dr David Watson/ Dr Kate Johnston – Translational Research Institute (incorporating TRI tour – conducted by Kate (COO)
10.45 am	***Morning Tea***
11.00 am	Mr Gunther de Greaves – De Stravis – presentation on Health Research Precincts
12.00 noon	Tour of the PAH Molecular Imaging Suite (Dr Susanne Jeavons)

Attendees:

Dr Richard Ashby	Health Service Chief Executive Metro South Health
Dr David Theile Snr	Chair, Diamantina Health Partners
Ms Areti Gavrilidis	Executive Consultant, Diamantina Health Partners & Director Research and Ethics Centres for Health Research
Dr David Watson	Chair, Translational Research Institute Board
Dr Kate Johnston	Chief Operations Officer, TRI
Mr Gunther de Greaves	Director, De Stravis
Dr Susanne Jeavons	– Director, Radiology

Appendix C

Programme for August 26th

Canterbury Earthquake Recovery Authority |
Site visit and meeting - 26 August 2014 | 9.30 – 3.00pm

CERA Delegates:	Dr Ian Town, Sheila McBreen-Kerr, Dr Cathy Andrew, Professor Peter Joyce, Ms Stella Ward
Icon Cancer Care:	Dr Brett Robinson, Managing Director & CEO, Stuart Giles, Director and Founding Chairman, Dr James Morton, Director, Haemato-Oncologist, A/Prof. Paul Mainwaring, Medical Oncologist, Maryanne Hargraves, GM Clinical Services, Chris Samin, Clinic Manager, Fiona Jonker, GM Medical Services, Chris Lowndes, CFO and Company Secretary
Radiation Oncology Queensland:	Mark Middleton, CEO, A/Prof. Michael Poulsen, Director
Icon Cancer Foundation:	Janet Moore, GM Research
Verde property:	Stephen Gosling

Time	Activity	Lead
8.00 – 9.15am	**Meet and transfer** ▪ Brett Robinson and Mark Middleton to meet delegates in the foyer of the Hilton Hotel Brisbane and travel to Icon Cancer Care Southport	Brett Robinson 0488 050 777 Mark Middleton
9.30am	**Site tour | Icon Cancer Care Southport** ▪ Welcome and introduction ▪ Our capability and vision, experience and example of a modern ambulatory cancer centre ▪ Innovative ways of treating and supporting ambulatory patients and their families	Chris Samin Maryanne Hargraves
10.30am	**Morning tea**	
10.45	**Transfer**	Brett Robinson, Mark Middleton
11.00 – 11.45am	**Radiation Oncology | Gold Coast University Hospital** ▪ Public, private partnership	Brett Robinson, Mark Middleton
12.00 – 1.15pm	**Transfer** ▪ Gold Coast to Icon Cancer Care Offices, 11 Camford Street, Milton, Brisbane	
1.30 – 1.45pm	**Lunch meeting and discussion to address the specific goals of the tour** ▪ Research precinct development ▪ Design elements – including specific building designs that promote collaboration ▪ Development and commercial options for the capital investment ▪ The range of governance models to consider and their strengths and weaknesses ▪ The policy and health services issues especially from a State/Commonwealth perspective ▪ Possible direct links with Brisbane based Institutes	Dr Ian Town
1.45pm 2.00pm 2.15pm 2.35pm	**The role that Icon Cancer Care plays in cancer services and research** ▪ Medical Oncology and Haematology services – The Icon model ▪ Radiation Oncology services - ROQ ▪ Research activities - Medical Oncology – Icon Cancer Foundation - Radiation Oncology – Oncology Research Australia (ORA) ▪ Personalised Cancer Medicine 2014	Dr Brett Robinson Stuart Giles Dr James Morton Mark Middleton A/Prof. Michael Poulsen Janet Moore A/Prof. Michael Poulsen A/Prof. Paul Mainwaring
2.50 – 3.00 pm	**Close**	

Appendix D

Powerpoint Presentations

Christchurch Presentation

Dr David Theile

David Theile
25 August 2014


ANOTHER LIONS PROJECT
LIONS RESEARCH CENTRE


21/10/2003

TRI Partners

Queensland Government | Princess Alexandra Hospital

The University Of Queensland | SCHOOL OF MEDICINE

QUT ihbi Institute of Health and Biomedical Innovation

Mater Research

The University Of Queensland | DIAMANTINA INSTITUTE

Christchurch Presentation

Areti Gavrilidis

Areti Gavrilidis
25 August 2016

PAH Centres for Health Research

- Established 1997/98
- Inaugural Chair – Dr Don Cameron

"One of our challenges is to continue to support the successful groups, strongly, while fostering research more widely."

CHR Annual Report 1998

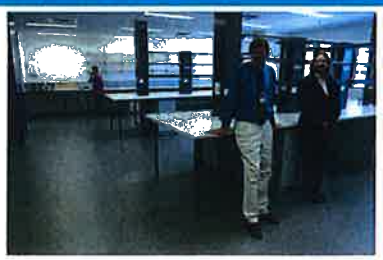
Centres for Health Research 1998

1. Planning for research activities in the new hospital
2. Informing the hospital community of what research is occurring on site with a view to fostering internal collaborations
3. Providing a basis for talking to outside organisations for potential funding & partnerships

Key Service Areas

- Academic developments
  - Training & education programs – clinical research
  - Mentoring young investigators
- Research planning, development, support and facilitation
- Grants, business & facilities management
- Human Research Ethics Committee
  - Monitoring
- Research Governance
- Communication and marketing

R-wing 2002 -



Not all lab-researchers were housed in R-wing

PAH CHR was housed in Bld 35

Research Infrastructure 2004

- Modern research laboratories
- Facilities for clinical research
- Tissue Banks
- The Queensland Clinical Trials Centre
- The Australian Kidney Trials Network
- Human Research Ethics Committee
- BRF/ access UQ AREC

Translational Research Hub 2004

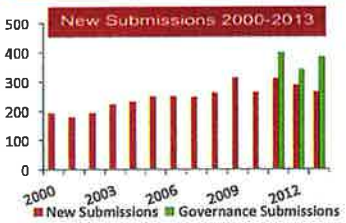
....in response to the document ***"Queensland's future – building on the Smart State"***. ....we will confine our remarks to medical research .... and **propose the development of a Translational Research Hub for Queensland.**

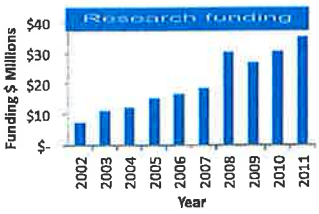
1998-2012

The clear focus of the research effort however is on Translational Research. .....translates the most current knowledge into best clinical practice and systems of care .... **Princess Alexandra Hospital is ideally positioned to undertake such Translational Research** given the nature of the Hospital, ...

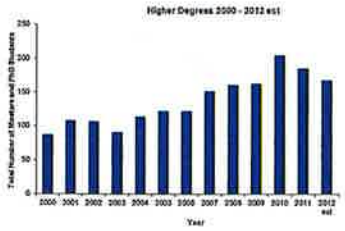
PAH CHR Annual Research Report 2004

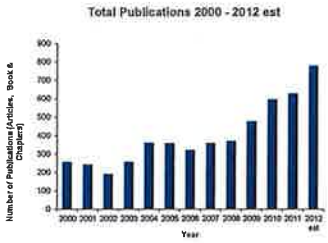
Metrics 2000-2013





Metrics 2000-2012





2013 Centres for Health Research Team

Located
TRI
PAH Campus

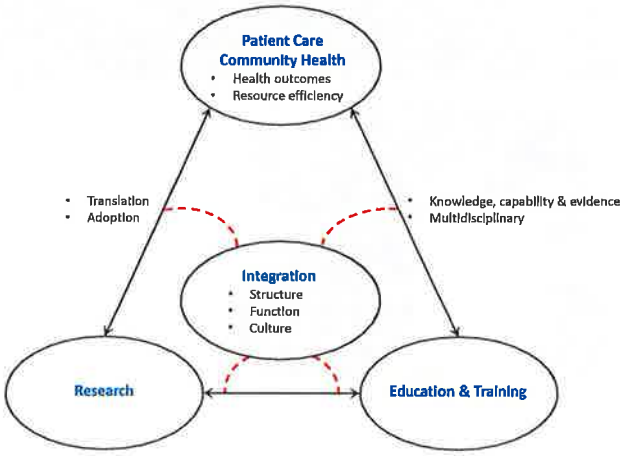
Servicing
Local PAH Campus
Metro South HHS
State and National

CLINICAL DELIVERY

TEACHING

RESEARCH

Academic Health Science Entities



Entity Designations

- Academic Health Centres (USA, Europe)
- Academic Health Science Centres (UK, Canada, Australia)
- Academic Health Science Networks (UK, Canada)
- Academic Health Science Systems (USA, Singapore)

Diamantina Health Partners

- Translational Research Institute
- Princess Alexandra Hospital
- Mater Health Services
- The University of Queensland
- Queensland University of Technology

Brisbane Diamantina Health Partners

- Metro North Hospital and Health Service
- Metro South Hospital and Health Service
- Mater Health Services
- Children's Health Queensland Hospital and Health Service
- Translational Research Institute
- QIMR Berghofer Medical Research Institute
- The University of Queensland
- Queensland University of Technology

Health & Knowledge Precincts

DESTRAVIS GROUP

Prepared for :

Metro South Health

Presented by :

Gunther De Graeve
Managing Director
25 August 2014

Health & Knowledge Precinct

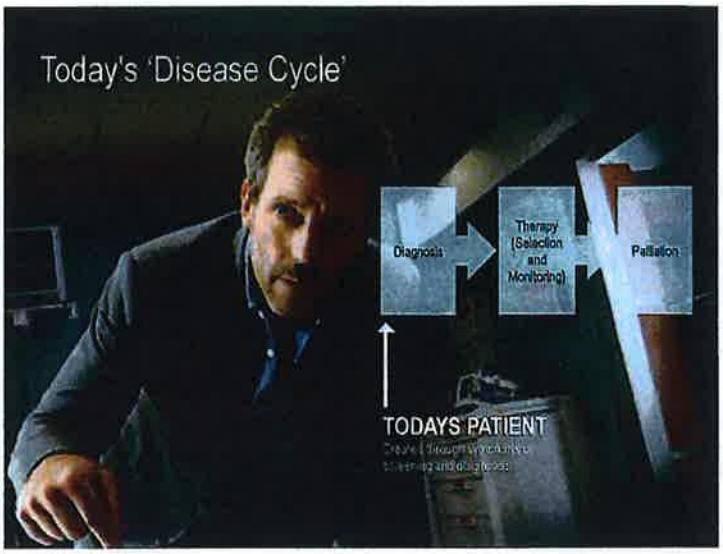
Health & Knowledge Precinct

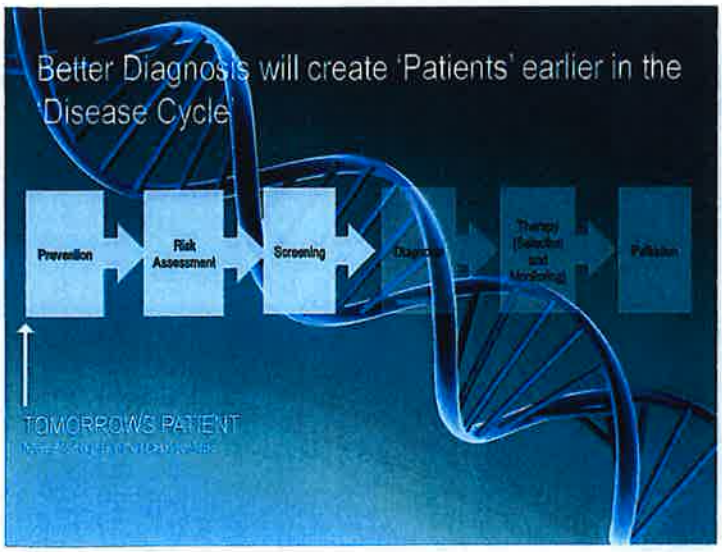
Health & Knowledge Precinct

Health & Knowledge Precinct

Future trends

Changing patient journey





Health & Knowledge Precinct

Future trends

Changing (technology) collaborative team

The team of today

Pathologist
Radiologist
Oncologist
Surgeon
Nurse
Pharmacist

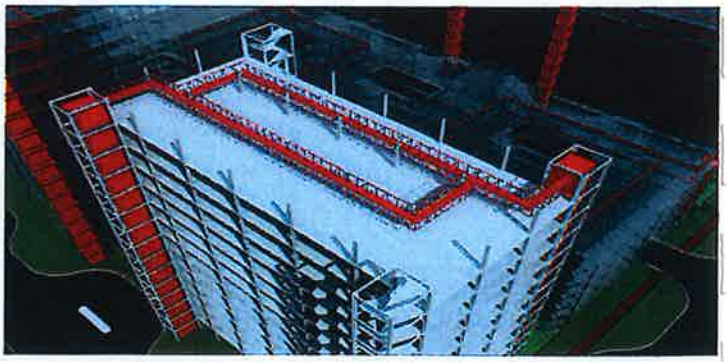
The high tech team of tomorrow

Medical Roboticist Custom Implant Organ Designer Molecular Pathologist Super Radiology Technician Simulation Engineer Genetic Pharmacologist

Health & Knowledge Precinct

Future trends

Flexible & adaptable infrastructure



Health & Knowledge Precinct

Future trends

Hospital of the future

1. The human approach: Build a **familiar environment** ensuring safety comfort and privacy
2. **Integration within the city**: An "open hospital" connected to urban life and echoing the **form and scale** of the city's structures and landscape
3. Sociability: **Receptive to cultural and social events** and shared community values
4. Organisation: **Operational efficiency** and patient focus **providing high quality medical care**
5. **Interactivity**: Network of diagnostic and care services throughout the health economy
6. Appropriateness: **Equip with latest technology** for acute care **and provide hotel standards of comfort** for recovery
7. Reliability: Importance on efficiency, respect for the patient and **encourage human interaction** and dialogue
8. Innovation: Flexible and **able to embrace change** without impinging on the characteristics of the architectural structure
9. Research: **Centre for clinical and scientific development**
10. Education and Training: **Centre for** health **education, research and professional training**

10 Commandments for the model hospital of the future – Renzo Piano

The Academic Medical Centre of the Future - Andy Black 2010 (unpublished)

Health & Knowledge Precinct

Underlying principle: Triple helix & social networks

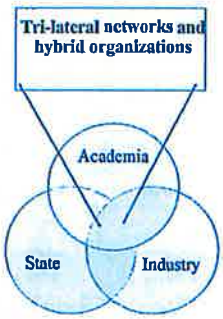
Triple Helix

The concept of the Triple Helix argues innovation and economic development in the Knowledge Society requires the emergence of new institutions that support a university-industry-government relationship (replacing the industry-government dyad of the industrial economy).

There are three possible configurations of the Triple Helix relationship:

a) Statist – government drives the relationship
b) Laissez-faire – industry drives the relationship, government and academia are simply support systems
c) Balanced – universities and other knowledge institutions act in partnership with government and industry.

Evolving out of Schumpeter's notion of innovation dynamics, the Triple Helix posits **a creative renewal of the university** (and other knowledge institutions) – **to become the Entrepreneurial University** that takes a pro-active stance in putting knowledge to use and presumes an interactive rather than linear model of innovation.



Economic Clusters

Importantly, a cluster is not simply composed of a group of similar businesses – for example car manufacturers – as this would be better understood as a sector. Instead, clusters represent fully formed 'economies' incorporating the various intertwined stakeholders...

Public bodies often play a coordination role, driving clusters through partnership building as well as providing practical support such as infrastructure or funding. Universities and other knowledge institutions provide research expertise that both informs industry and reacts to its needs - promoting innovation...

The presence of other actors such as financial institutions and media organisations can be pivotal in a cluster's success, providing financial support and high levels of visibility to improve overall outputs. (Eurocity 2009)

Social Networks

Dense networks bring numerous rewards. Dense and relatively homogenous networks make it easiest for individuals to coordinate with each other to help one another... Homogeneity among supervisors and mentors, however, increases the risk of "groupthink" or intellectual stagnation in the long term... Simply put, close neighbours often come with redundant knowledge and opportunities... Sparse networks are possibly more efficient means of transferring social capital and information to address complex problems, particularly among advanced researchers (Sherran et al 2009)

Positions &Scientific Network Role
Post-doctoral Researcher - Newcomers
Senior Researcher - Continuants
Emeritus Professor - Terminants
Research Students - Transients
Braun, Glanzel & Schubert 2001

Health & Knowledge Precinct

International examples

22@Barcelona

Before creating the 22@District, the Ajuntament de Barcelona, a society of the Barcelona City Council, asked a question: What measures can be taken to improve and increase the interactions between the international community and the local firms and institutions in Barcelona?... **This innovative regeneration project has created new employment, housing and live-work spaces through five knowledge-intensive clusters:** Information and Computer Technology (ICT), Media, Bio-Medical, Energy, and Design... The five clusters within the district are not only placed strategically near each other, but near the city center as well. The proximity of the clusters to each other fosters interaction among them and the proximity of the clusters to the city center creates opportunities for results to be shared on a larger scale.

Boston Waterfront Innovation District

The Boston Waterfront Innovation District, conceived in 2010, acknowledges the tenuous nature of entrepreneurs' lives and [seeks to] nurture them through their "Work, Live, Play" strategy..."Work" is founded on the idea that "people in clusters innovate at a quicker rate, sharing technologies and knowledge easier" and that "ideas need a tight ecosystem". Thus the district seeks to cluster people and firms to innovate faster and ultimately spur economic growth..."Live" and "Play," making the district an attractive place to be.

University of California, San Francisco Mission Bay

Key learning's from UCSF Mission Bay

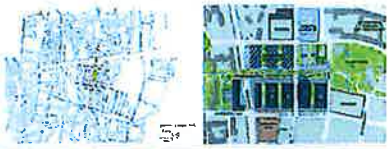
- Level of philanthropic involvement in the U.S.
- Importance of public transport / connectivity to (nearby) CBD
- Pull of UCSF – new hospital as an anchor to spur surrounding entrepreneurial development
- Large site with strategic plan for long term development
- Important role San Francisco Redevelopment Agency in overall planning

Cambridge Biomedical Campus

- Combines world-class biomedical research, patient care and education on a single site
- Physical realisation of the vision shared by Cambridge University Hospital, the NHS Foundation Trust and Cambridge University.
- Campus doubled in size – 40 acre research development quarter
- Key infrastructure developments – major road, bus and train links
- Cambridge University Hospital – major tertiary hospital, with 1100 beds across all clinical services
- The Forum – key development – private hospital, education centre, hotel (no public capital)

Karolinska University Hospital

- Europe's largest and best facility in the making
- Designed to a flexible and adaptable system.
- Integrated in the urban context



Health Sciences Campus Gasthuisberg – University Leuven

- daily 40,000 patients, visitors and staff
- 2000 beds
- Research institutes
- Translational institutes
- Health mall
- Residential
- Commercial offices
- Care Hotel
- Hotel
- Catering
- Highway connectivity
- 6500 parking
- Public square instead of entrance hall
- Off site warehousing-on-site distribution

Erasmus University Medical Centre, Rotterdam

- affiliated with Erasmus University and home to its faculty of medicine, to the "largest and one of the most authoritative scientific University Medical Centers in Europe."
- 1320 beds

Located in MUSEUM PARK

- Erasmus Medical centre, Erasmus research and Erasmus university
- Paridands according to 1927 design
- Open air museum - Several artworks across the park

There are a number of museums located in the vicinity of the park, hence the name:

- The Netherlands Architecture Institute (NAI)
- Museum Boijmans Van Beuningen
- The Chabot Museum
- The Kunsthal
- Villa Sonneveld
- Natuurhistorisch Museum Rotterdam

St-Olav's Hospital, Trondheim, Norway

A 1000-bed acute hospital designed to totally integrate within the historic European city fabric by use of smart technology.

Knowledge communities

Goals - Objectives

Biopolis

Well-known pharmaceutical companies such as Abbott, GSK and Novartis, as well as researchers from the private and public sectors have made Biopolis their home.

Procter & Gamble (P&G), the world's leading consumer health giant, has taken up the entire Phase 4 of the Biopolis for its Singapore Innovation Centre. The S$250 million Innovation Centre will undertake strategic upstream corporate research through collaborative research with A*STAR, focusing on new innovations for consumers.

The development of Biopolis was undertaken in 5 phases.

Phase 1 cost S$500 million to build and was launched in 2003. It provides 200,000sqm of research space which is now home to more than 2,000 scientists, researchers, technicians and administrators. The research community is fully supported by state-of-the-art infrastructure and services catering to the full spectrum of biomedical R&D activities.

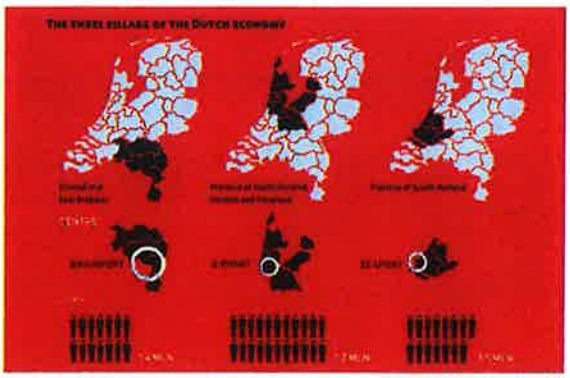
Phase 2 was officially opened in 2008. The additional 37,000sqm of built-up area comprises two buildings – Neuros and Immunos.

Phase 3 was completed in January 2011. The 41,500sqm facility is set to tap on the synergies of the Biopolis cluster and support world-class research programmes in clinical and translational research as well as medical technology research.

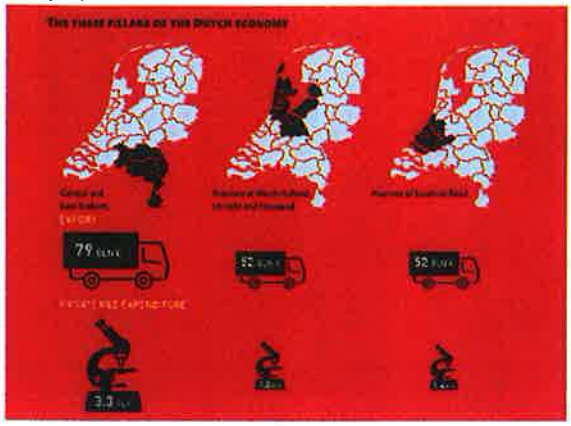
Development for phases 4 and 5 are currently underway and slated to be completed in 2013. Phase 4 has been taken up by Procter & Gamble for its Singapore Innovation Centre, whilst Phase 5 will provide 48,152sqm of biomedical research facility for additional laboratory space, including ready-fitted laboratories (ie Shell-plus laboratory) which caters to biomedical SMEs and start-ups through saving the companies time and resources during their initial setup phase.

Brainport, Netherlands

Brainport, Netherlands



Brainport, Netherlands



Brainport, Netherlands

Brainport, Netherlands

- Brainport has become a regional symbol for prosperity, wealth and economic stability and continuous growth in the midst of an economic downturn.
- It has attracted more R&D investment from industry during the post GFC years than prior and as such is reconfirming that the region is geared up to deliver the jobs and economic strength required in the future.
- The model has now proven to be so successful that the European Commissioner for Innovation Mr Hahn declared Brainport to be the role-model to be applied in other regions throughout Europe, since it would provide a cornerstone to bring the European region back to financial prosperity.
- The university involved in Brainport, the TU Eindhoven has been raked for four consecutive years as the global number one in aligning its research in with industry.

Knowledge communities

Diamantina Knowledge Precinct

Diamantina Knowledge Precinct, Brisbane

The Knowledge Precinct will be a ***globally recognised leading health, research and academic community*** where wellbeing is pursued through a continuum of care, translation of research and training and education.

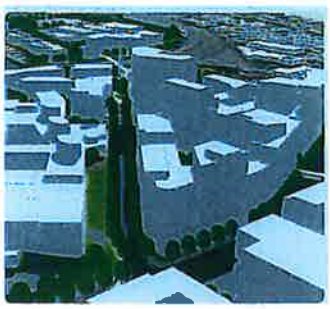
This will be achieved through intra-institutional and interdisciplinary innovation in technology, and interaction supported by a diversity of ***employment, public infrastructure, lifestyle and entertainment*** opportunities.

Diamantina Knowledge Precinct, Brisbane

Diamantina Knowledge Precinct, Brisbane

Diamantina Knowledge Precinct, Brisbane

Diamantina Knowledge Precinct, Brisbane



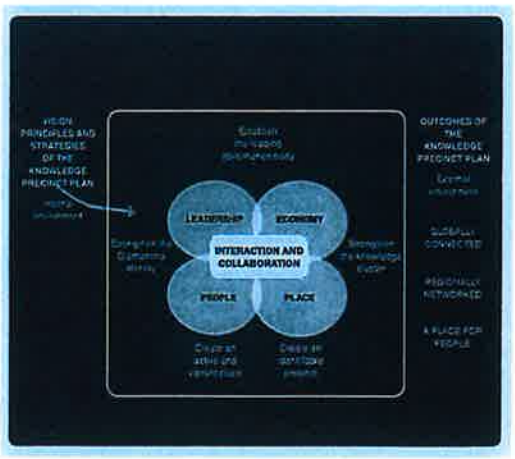
Diamantina Knowledge Precinct, Brisbane

- Diamantina Knowledge Precinct Plan was developed in 2009
- Creation of Knowledge Precinct endorsed as a proven economic generators of cities
- A master plan to accommodate co-location of industry partners in health-science knowledge precinct
- Up to 800,000 square meter of floor space or an equivalent of $4 Billion staged development potential
-
- The Plan identifies a **mixed health-science environment** accommodating:
  - specialised health services provision (Tertiary-level),
  - private health services,
  - medical research,
  - translational research,
  - pharmaceutical production,
  - affordable high quality living,
  - city living,
  - short stay accommodation,
  - social amenities,
  - retail provisions
  - public transport nodes,
  - interactive meeting spaces

Diamantina Knowledge Precinct, Brisbane

LEADERSHIP	'Leadership' is perhaps best understood as the Triple Helix of Government, Industry and Academia where traditionally the role of government is to provide the leadership, bringing together key partners to create a knowledge community.
ECONOMY	'Economy' is the required critical mass that enables the knowledge community to be self-sustaining. It requires a level of integration within the knowledge community so that it's not just a collection of disparate organizations but that each member has some level of commonality with others.
PLACE	'Place' is an environment that encourages interaction between the community members, supporting both the specific activities of each while also providing opportunity of efficient collaboration
PEOPLE	'People' is the aggregate of the human resources within the knowledge community, critically for many the intellectual capital that allows them to contribute is generated in their professional and industry networks.

Diamantina Knowledge Precinct, Brisbane



Diamantina Knowledge Precinct, Brisbane

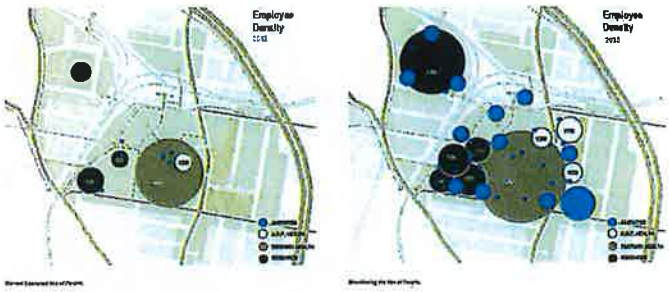
Interaction and Collaboration

- A variety of interaction
  - As a whole, the Precinct does not lack resources to achieve innovation.
- What the Precinct lacks is interaction
  - Interaction should be seen as the spark that is required to start the overall process. The great minds are obstructed from meeting and mingling because there is no amenity to meet in a professional environment where collaboration is the focus.
  - It will require all levels of the community to participate and hence the importance of the spatial planning and development of the Precinct to act as the greatest enabler of interaction.
  - The sharing of facilities and other resources would bring mutual benefit to all knowledge generators in the Precinct.

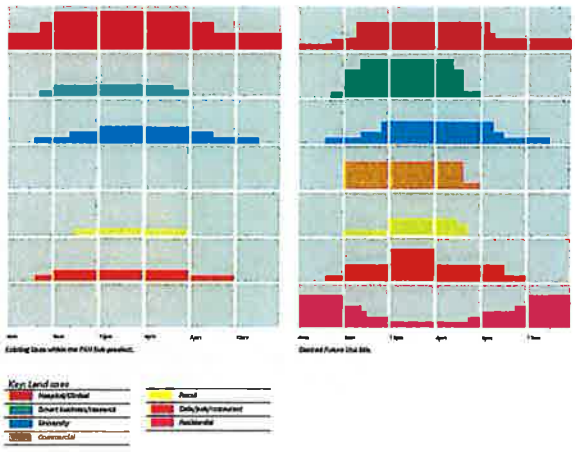
- The Precinct will require a variety of interactions to enable the knowledge community.
- In essence, any obstacle to interaction should be removed whether it is organisational, spatial or social.

Diamantina Knowledge Precinct, Brisbane
Land Use

Diamantina Knowledge Precinct, Brisbane
Employee Numbers



Diamantina Knowledge Precinct, Brisbane
Activity



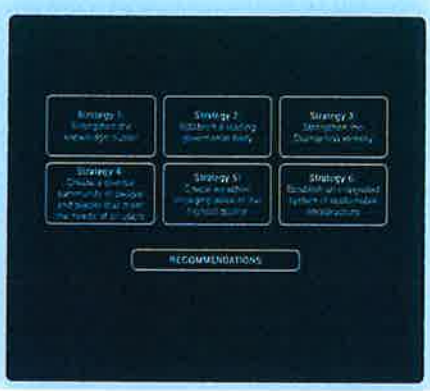
Knowledge communities

Strategies

Precinct Strategies

PRECINCT STRATEGIES

- Precinct Strategies are the strategic drivers that aim to reposition and shape the Precinct as a world class knowledge hub
- Recommendations identify specific actions for Dutton Park



Precinct Strategies

PRECINCT STRATEGY 1

STRENGTHEN THE KNOWLEDGE CLUSTER

Strengthen the position of Dutton Park

- Change in service models
- Change in professions
- Change in infrastructure
- Change in physical environment

Precinct Strategies

PRECINCT STRATEGY 1

STRENGTHEN THE KNOWLEDGE CLUSTER

Continuity of Leadership

- Attract the best resources and leaders in the field.
- Attract the research grants and operational funding for research and development.
- Attract the private investments that lead to economic strengths and the establishments of a knowledge industry.
- Attract the possibility for interaction.
- Leaders want to interact with other leaders for personal and professional reasons.

Precinct Strategies

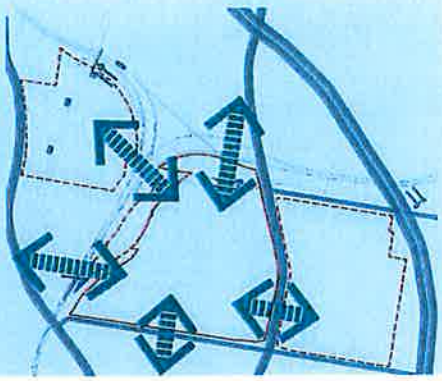
PRECINCT STRATEGY 1
STRENGTHEN THE KNOWLEDGE CLUSTER

Key Knowledge Generators

- The presence of these Key Knowledge Generators provides the stability and confidence to other tiers of knowledge generators and their presence acts as an anchor to attract the business, the institutions and its people.

Critical Mass

- The Dutton Park Precinct has reached its point of critical mass and can now focus on maximising its effect by strengthening the cluster through economic development and expansion of its Knowledge assets.

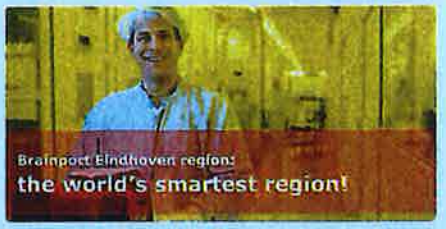


Precinct Strategies

PRECINCT STRATEGY 2
ESTABLISH A LEADING GOVERNANCE BODY

Idea of the Triple Helix and Smart Clusters

- Change in service models
- Change in professions
- Change in infrastructure
- Change in physical environment



Key to the success of Brainport is the intensive 'triple helix' cooperation between trade and industry, knowledge and educational institutes and the authorities. The adaption of this governance model is the seedbed for many public-private (R&D) partnerships. Representatives of the key stakeholders make up the of the triple helix are formally united in the "Brainport Foundation" whose executive organisation is a development company "Brainport Development"

Precinct Strategies

PRECINCT STRATEGY 2
ESTABLISH A LEADING GOVERNANCE BODY

Idea of the Triple Helix and Smart Clusters

- Change in service models
- Change in professions
- Change in infrastructure
- Change in physical environment

"Governance is a tool not an obstacle; a positive not a negative. It is a way of doing good business and, therefore, is a good way to do business.
Too much has been made for too long of compliance and not enough of the performance benefits of governance. Not enough focus has been given to governance in the context of developing companies, despite them making up most of the business landscape."

Andrew Douglas FAICD Managing Director Nexus Executive Services
Opinion Good governance is good business, 2.1.2003, Australian Institute of Company Directors Magazine

Precinct Strategies

PRECINCT STRATEGY 3
STRENGTHEN THE DIAMANTINA IDENTITY

Empowerment of Individuals

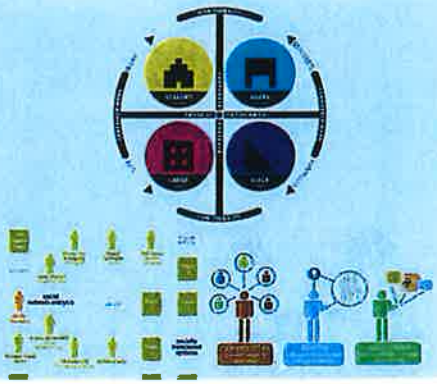
- They need to be encouraged by a formal structure that communicates the vision, the objectives and the processes and protocols of interaction

Create the Diamantina Identity

- The Precinct requires a recognisable culture for its people and environment, based on the culture of the Diamantina Health Partners

Removal of barriers to interaction

- The Precinct lacks the basic ingredients to allow interconnection



Precinct Strategies

PRECINCT STRATEGY 3

STRENGTHEN THE DIAMANTINA IDENTITY

- The identity would facilitate and stream line recognition and possibly enhance the reputation of the 'hot spot'. The Diamantina culture and identity can further be reinforced by the creation of a physical identity through the appeal and quality of the built environment.
- Although the physical environment adds little to the legitimacy of the interaction, the built environment would create a sense of recognition and will further contribute in great measure to the interactions by providing the space for this to occur.

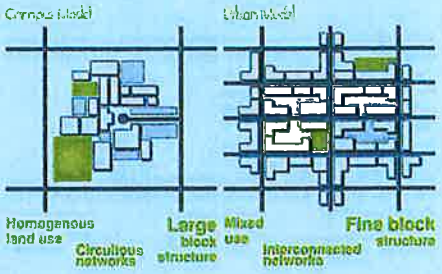
Precinct Strategies

PRECINCT STRATEGY 4

ESTABLISH THE FRAMEWORK FOR A DIVERSE AND ACTIVE INNER-CITY PRECINCT THAT MEETS THE NEEDS OF A WIDE RANGE OF PEOPLE AND ORGANISATIONS

Framework Elements

- Strategic context
- Urban structure
- Built Form
- Movement networks
- Public realm



Precinct Strategies

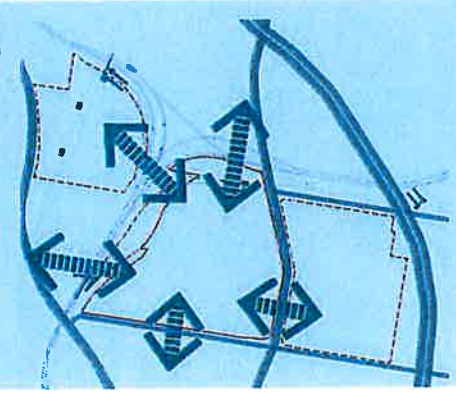
PRECINCT STRATEGY 4

ESTABLISH THE FRAMEWORK FOR A DIVERSE AND ACTIVE INNER-CITY PRECINCT THAT MEETS THE NEEDS OF A WIDE RANGE OF PEOPLE AND ORGANISATIONS

Precinct Structure

Connect the Sub-precincts

- Critical mass of knowledge industries
- Access to a wider range of services and facilities
- Integrate with neighbouring areas



Precinct Strategies

PRECINCT STRATEGY 4

ESTABLISH THE FRAMEWORK FOR A DIVERSE AND ACTIVE INNER-CITY PRECINCT THAT MEETS THE NEEDS OF A WIDE RANGE OF PEOPLE AND ORGANISATIONS

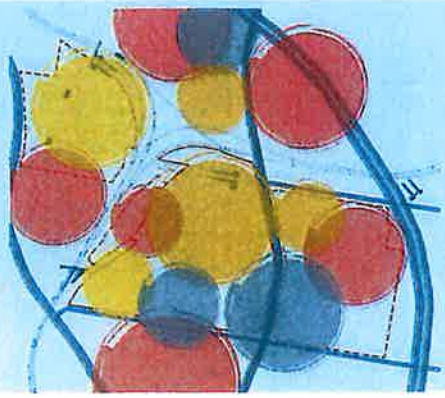
Precinct Structure

Establish a mixed use environment

- Clinical health
- Research and education
- Retail and commercial
- Community facilities and services

Establish an urban structure of distinctive places

- Community heart
- Clinical focus
- Ipswich Road commercial boulevard
- Buranda residential
- BRUV
- Tottenham Street and Centro
- Transit stations



Precinct Strategies

PRECINCT STRATEGY 4
ESTABLISH THE FRAMEWORK FOR A DIVERSE AND ACTIVE INNER-CITY PRECINCT THAT MEETS THE NEEDS OF A WIDE RANGE OF PEOPLE AND ORGANISATIONS

Precinct Structure

A Conceptual Precinct Structure

- Connected
- Mixed use
- Transit focussed
- Public realm focussed

Precinct Strategies

PRECINCT STRATEGY 5
CREATE AN ACTIVE, ENGAGING PLACE OF THE HIGHEST QUALITY

Placemaking Elements

- Urban Structure
- Built Form
- Movement networks
- Public realm

Precinct Strategies

PRECINCT STRATEGY 6
ESTABLISH AN INTEGRATED SYSTEM OF SUSTAINABLE INFRASTRUCTURE

Sustainable Utilities

- Integrated water cycle
- Sustainable energy supply
- Precinct-wide planning

- Encourage the use of public transport through movement networks and built form that activates access to rail and bus stations
- Improve internal access and movement through a finer grain of streets
- Provide safe pedestrian and cycle routes
- Reconfigure and redistribute parking
- Link movement networks across boundaries into adjacent communities
- Undertake water usage / waste water and energy audits
- Introduce whole of precinct infrastructure planning and management
- Investigate opportunities to reduce the load on regional water supplied and minimise water use (eg. through WSUD and harvesting of stormwater and wastewater for reuse)
- Investigate opportunities to reduce energy consumption and maximise whole of life cost savings

Knowledge communities

implementation

Diamantina Knowledge Precinct, Brisbane
Governance

Idea of the Triple Helix

The triple helix of government, academia and industry. These three players (of course there can be more) contribute differently to the smart community. Government often provides leadership and creates the possibility of the smart community's emergence, industry provides the basis of the activity but also infrastructure and funding. Academia provides both expertise but also the recruits into the community.

The Brainport initiative has quadrupled the economic output of its members thought this partnership. The entire economic success of Brainport depended on cooperation. This cooperation occurs at various levels, regionally and internationally; and involves:

- Top scientists from a wide range of disciplines;
- Knowledge industry and manufacturing industry;
- Producers, designers and marketers;
- And even between competitors who share ideas in the research phase of product development.

The Brainport smart community encourages open innovation and is now home to more than 90 companies and 8,000 researchers; developers and entrepreneurs are working together in the pursuit of new innovations and breakthroughs in technology and products.

Diamantina Knowledge Precinct, Brisbane
Governance

PRECINCT GOVERNANCE

"Health has become an overarching goal a joint responsibility of governments, businesses, communities and individuals. It determines what constitutes a successful society and a vibrant economy, as well as an individuals wellbeing. The aim of smart governance is to promote joint action on health among different groups – supranational, national and local governments, civil society organizations, the private sector and citizens."

Professor Ilona Kickbusch, Director of the Global Health Programme at the Graduate Institute of International and Development Studies in Geneva, Switzerland

Diamantina Knowledge Precinct, Brisbane
Staging

Diamantina Knowledge Precinct, Brisbane
Staging

Diamantina Knowledge Precinct, Brisbane
Economic growth scenario

medium growth scenario

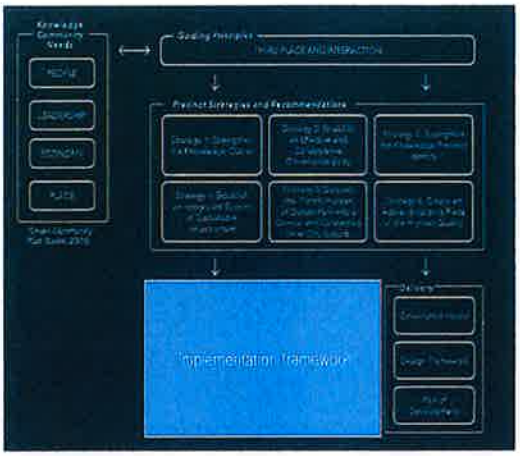
Development Potential

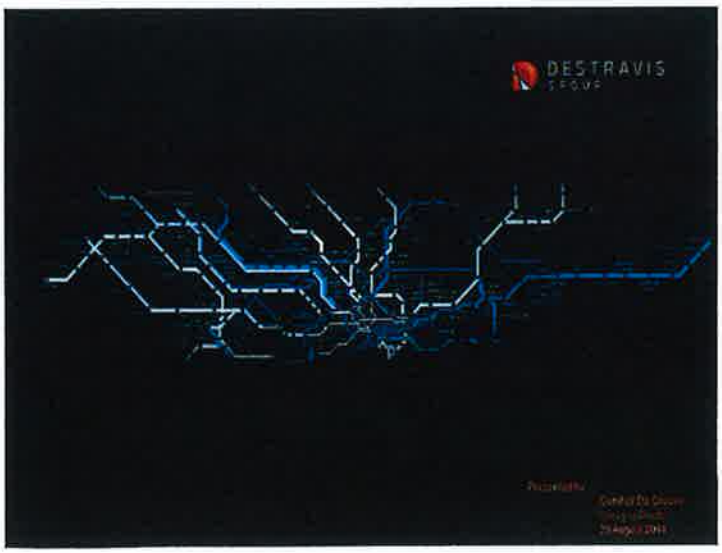
Lot	Lot size	Plot Ratio	GFA
Lot 3	16276	6.5-7	89,600 - 114,000m²
Lot 4	5638	6.0-8.0	15,000 - 20,200m²
Lot 5	8779	3.0-4.5	26,300 - 39,500m²
Lot 7	4565	3.0-4.5	13,700 - 20,500m²
Lot 9	6928	3.5-6.5	24,250 - 45,000m²
Lot 10	7964	3.5-6.5	27,875 - 51,750m²
Lot 13	3770	1.5-3.0	5770 - 10,100m²
Lot 14	4458	1.5-3.0	6,700 - 13,370m²
Lot 15	7244	1.5-3.0	10,850 - 21,700m²
Lot 17	4911	6.0 - 8.0	29,465 - 39,300m²
Lot 19	8076	to be advised	
TOTAL			333,910 - 375,420m²
m² increase			21,320 - 45,170m²

high growth scenario

Development Potential

Lot	Lot size	Plot Ratio	GFA
Lot 1	11461	7.0-8.0	80,227 - 91,688m2
Lot 2	8212	7.0-8.0	57,484 - 73,696m2
Lot 3	16276	6.5-7.0	89,500 - 114,000m²
Lot 4	5638	6.0-8.0	15,000 - 20,200m²
Lot 5	8779	3.0-4.5	26,300 - 39,500m²
Lot 7	4565	3.0-4.5	13,700 - 20,500m²
Lot 8	13340	7.0-8.0	93,380 - 106,680m2
Lot 9	6928	3.5-6.5	24,250 - 45,000m²
Lot 10	7964	3.5-6.5	27,875 - 51,760m²
Lot 13	3770	1.5-3.0	5770 - 10,100m²
Lot 14	4458	1.5-3.0	6,700 - 13,370m²
Lot 15	7244	1.5-3.0	10,850 - 21,700m²
Lot 17	4911	6.0 - 8.0	29,465 - 39,300m²
Lot 18	14 818	6.0-8.0	87,000 - 104,120m2
Lot 19	8076	to be advised	
TOTAL			559,232 - 761,796m²
m² increase			225,322 - 388,975m²





Presentation to Canterbury Earthquake Recovery Authority

August 2014

Agenda

- **Medical oncology and haematology services** – Icon Cancer Care overview, Dr Brett Robinson
- **Radiation oncology services** – Radiation Oncology Queensland, Mark Middleton
- **Research**
  - Medical oncology – Icon Cancer Foundation, Janet Moore
  - Radiation oncology – Oncology Research Australia, A/Prof Michael Poulsen
- **Personalised cancer medicine** – A/Prof Paul Mainwaring

Our mission and vision

Our mission

To provide exceptional, personalised cancer care to patients and their families

Our vision

To be the first-choice provider of cancer care in Australia

our values

Respect
for each other, our patients and the organisation

Teamwork
alongside each other, our doctors and our patients

Courage
the fortitude to make a difference

Innovation
- in treatment and research
- to remove roadblocks
- open to a new future

Compassion
remembering cancer is scary for patients and their families

Honesty
Integrity and transparency

Governance – Icon Board


Eric Dodd
Chairman & Independent Director


Prof Christine Bennett
Independent Director


Stuart Giles
Director (Founding Chairman)


Mike Horan
Independent Director


Dr Brett Robinson
Managing Director & Chief Executive Officer


Dr David Grimes
Director


Dr James Morton
Director


Marcus Darville
Director


Simon Pither
Director

icon cancer care

Governance – advisory groups

Medical Advisory Group

- Establish, monitor and maintain world class clinical standards
- Consider practice credentials, competence and performance for all VMOs and allied health professionals

Strategic Advisory Group

- Advise the CEO on strategies and initiatives to advance the objectives of the company and provide specific support, when requested

icon cancer care

Icon executive team


Brett Robinson
CEO


Maryanne Hargraves
GM Clinical Services


Teena Pisarev
GM Medical Services


Fiona Jonker
GM Pharmacy Services


Janet Moore
GM Research


Chris Lowndes
Chief Financial Officer


Anne Burrow
HR Manager


Sue Hawkins
Brand & Communication Manager

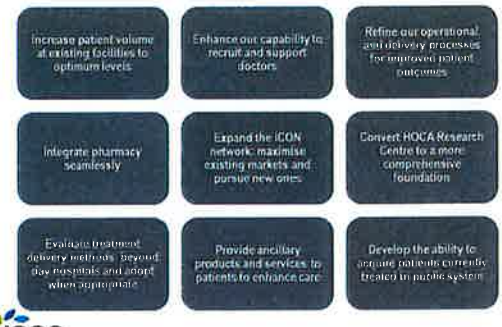

Ben Taylor
Chief Information & Planning Officer

- Australia's largest private provider of cancer care
- We manage more than 75,000 treatments each year
- We work with nearly 100 VMOs across our network and support the practices of more than 70.

icon cancer care

Integrated model of care

Our strategic priorities



How Icon differentiates itself

- Australia's largest private provider of day oncology care
- Single focus on cancer care – no competing priorities
- National reach and capability – able to support growth, innovation and scale while still focusing on core service: cancer care
- Equity and strategic leadership opportunities for independent specialists – a unique opportunity to be involved in delivery of hospital service
- Access for patients and clinicians to a wide variety of clinical trials through Icon Cancer Foundation
- Expanding into radiation oncology to provide a truly comprehensive cancer care service – even more seamless for patients.

Agenda

- **Medical oncology and haematology services** – Icon Cancer Care overview, Dr Brett Robinson
- **Radiation oncology services** – Radiation Oncology Queensland, Mark Middleton
- **Research**
  - Medical oncology – Icon Cancer Foundation, Janet Moore
  - Radiation oncology – Oncology Research Australia, A/Prof Michael Poulsen
- **Personalised cancer medicine** – A/Prof Paul Mainwaring

icon
cancer foundation

Research Opportunities

Mission

To connect patients with new and improved treatment options and exceptional personalised care whilst contributing to the global research community through supporting projects and philanthropic initiatives.

Vision

To be recognised as a national not for profit organisation that is a key contributor in shaping advancements in clinical research through clinical trials, and giving back to our patients and the community through our philanthropic activities.

The ICF Offering

ARCS "Best Clinical Trials Site Australia & New Zealand" 2013

Destination of choice for many pharmaceutical companies, a relationship fostered and strengthened through our continued success in the trials space

One of the most comprehensive clinical trials sites in Australia with over 75 studies investigating 17 different cancer types across Haematology & Medical Oncology spanning 1st, 2nd & 3rd line treatment options.

Exceptional study-start up performance with several 'first in world' / 'first in Asia Pac' setups across 2013 /2014.
Consistently outstanding recruitment & audit feedback.
"Best audit report ... in 9 years" – Janssen auditor

Sponsor connections & reputation

Industry placement

Cross campus operations

Research Committee Governance & oversight

Specialised staff & effective model

Quality focus

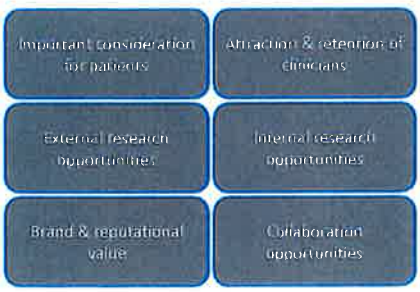
Centralised operations

Supportive services for patient care

Specialised ethics staff & efficient operations model

Skills, knowledge & experience

icon cancer care



Canterbury Earthquake Recovery Presentation
26th Ausgust 2014

Mark Middleton
CEO

Radiation Oncology Queensland

Structure

ROQ Shareholding

ROQ Enterprises

Toowoomba | Cairns | Gold Coast | Springfield | Greenslopes

Introduction to ROQ

- Over 100 combined years of establishing and managing Radiation Oncology facilities
- Why does this relationship work?
- Cohesive, complimentary, close and unparalleled knowledge

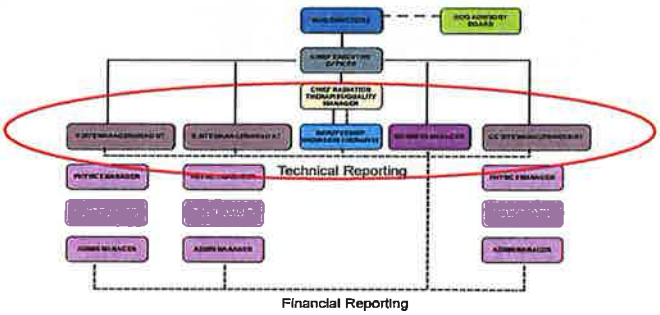
Introduction to ROQ

- Successful financial models for Public Private Partnerships
- Recognised leader in paperless/digital Radiation Oncology Environment
- First department to deliver high technology IMRT treatments to patients
- First regional centre to utilise IMRT, VMAT and IGRT

Introduction to ROQ

- Strong educational affiliations
- Research credentials: 38 peer reviewed publications since 2007. Trial participation
- BRW top 100 places to work – 2012 - 94th 2013 - 75th 2014 - ?

Structure



ROQ ORA - www.roq.net.au -

Value of PPPs

- No out-of-pockets for patients
- No waiting list (contractual obligation)
- Low wait times (ROQ has lowest wait times in QLD)
- Research and development benchmarks

ROQ ORA - www.roq.net.au -

Value of PPPs

- Education and training benchmarks
- Integration into large teaching hospitals
- Access to latest technology (ROQ has highest uptake of new technology in QLD)
- Significant savings to public health

ROQ ORA - www.roq.net.au -

Appendix E

Selection of Photographs

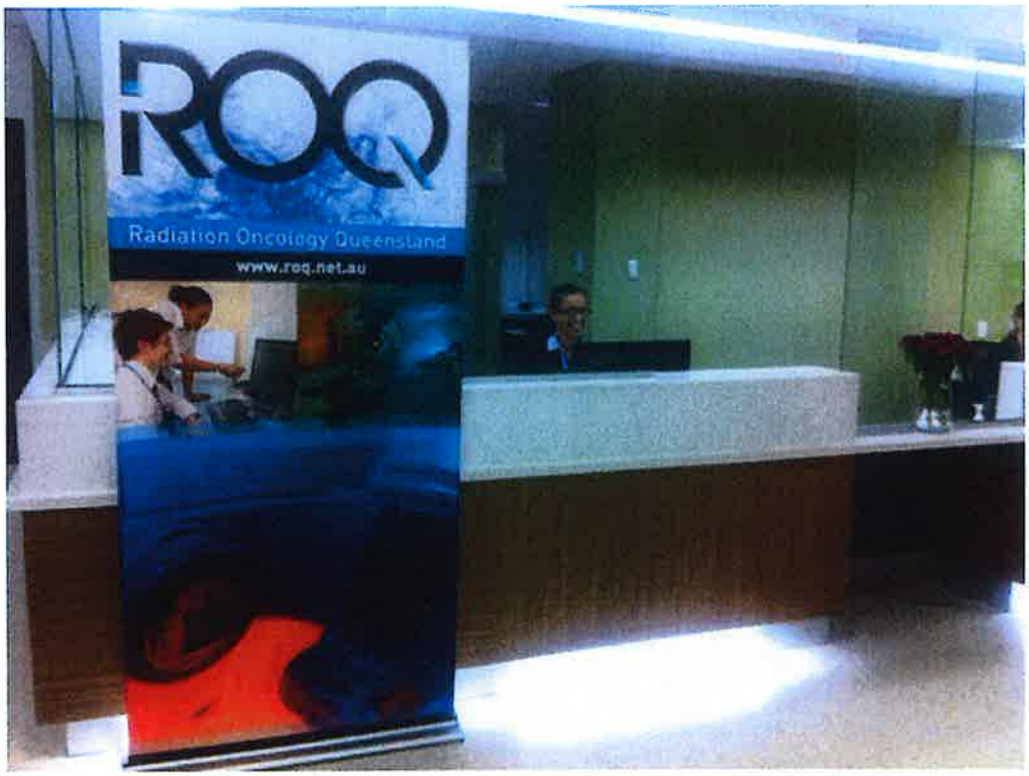
Translational Research Institute, Brisbane

Research Wing at Princess Alexandra Hospital, Brisbane

Clinic Research Area at PAH, Brisbane

Day Hospital Space ICON Cancer Care, Gold Coast, Queensland

Radiation Oncology Queensland (ROQ), Gold Coast Hospital



Linear Accelerator ROQ

Oral Health Building, University of Queensland Medical School