

# 2017 AUSTRALIAN CONSTRUCTION ACHIEVEMENT AWARD

## VICTORIAN COMPREHENSIVE CANCER CENTRE



VCCC Aerial Photo. Image: Peter Bennetts, courtesy of Plenary Group





VCCC Atrium Spiral Stair. Image: Peter Bennetts, courtesy of Plenary Group

## CLIENT

Government of Victoria, Department of Health and Human Services

## PLENARY HEALTH CONSORTIUM

Plenary Group – Project Sponsor, Equity Investor, Financial Arranger

Grocon PCL Joint Venture – Design Build Contractor

Honeywell – Facility Manager

## CONTRACT TYPE

Design Build Finance Maintain (DBFM) project procured under a Public-Private Partnership (PPP)

## DURATION

Commenced: December 2011

Completed: June 2016

## SIZE

130,000sqm (including carpark)

## CONSULTANTS

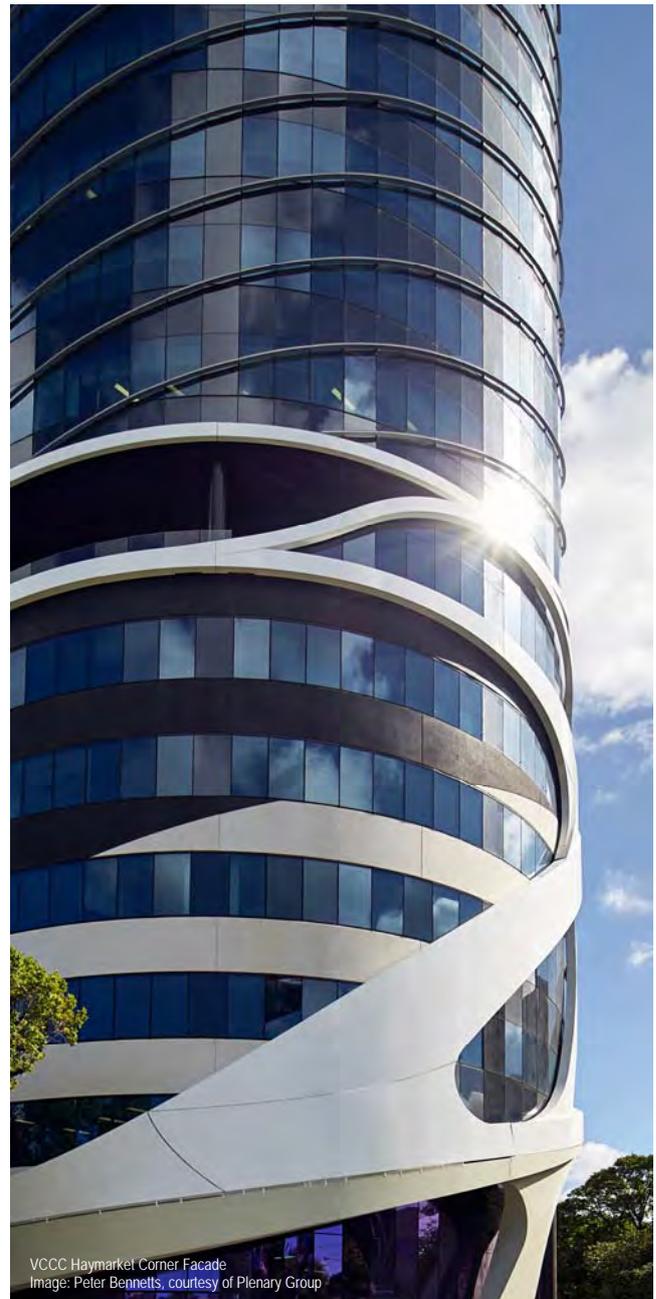
Architects: Silver Thomas Hanley and Design Inc. (STHDI) Joint Venture with McBride Charles Ryan

Services: Lehr Consultants International, SPP Group, Wood and Grieve Engineers

Structural: Bonacci Group

Accreditation: AMEC

Equipment: HealthKare Intelligence (HKI)



VCCC Haymarket Corner Facade  
Image: Peter Bennetts, courtesy of Plenary Group

## PROJECT OVERVIEW

The Victorian Comprehensive Cancer Centre (VCCC) is a purpose-built centre-of-excellence for cancer research, treatment, education and care. Its vision is to save lives by connecting the world's best in cancer research, education, treatment and care.

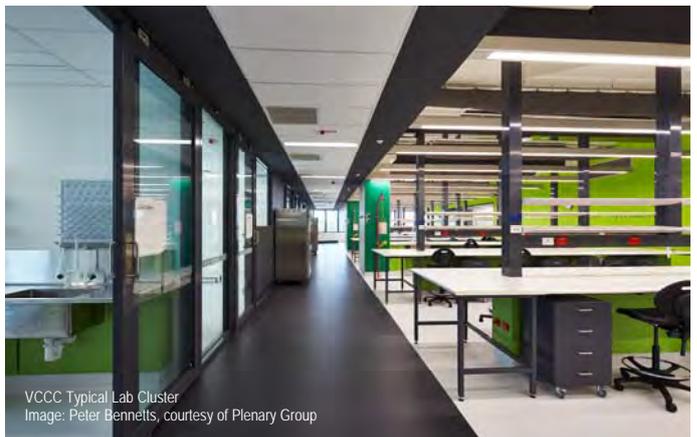
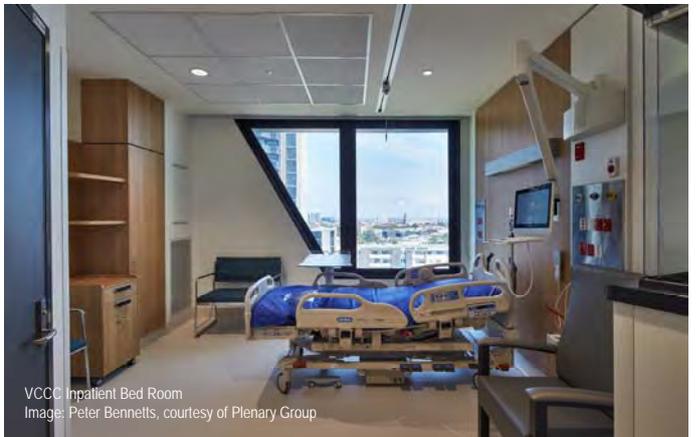
The A\$1 billion, 130,000-square-metre centre is home to cancer research, clinical services and educational facilities for Peter MacCallum Cancer Centre, Melbourne Health and the University of Melbourne.

Located in Melbourne's prestigious Parkville Biomedical Precinct the VCCC aimed to become one of the top facilities of its kind in the world – an aim that has been realised.

## SCOPE

The VCCC facility has a building area of approximately 130,000sqm with 6 levels below ground and 14 levels above ground and includes:

- 6 operating theatres and 2 procedure rooms;
- 96 inpatient bed rooms;
- 110 chemotherapy medical and surgical same day beds and chairs;
- 24 chairs in the clinical trials unit;
- 97 consulting rooms;
- 9 radiation therapy bunkers;
- One cyclotron that produces radioactive isotopes for clinical, industry and scientific research;
- 21 rooms dedicated to imaging equipment such as: CT's, PET/CT's, SPECT CT's, angiography, fluoroscopy, digital X-Ray's, MRI's, ultrasound and mammography;
- 25,000m<sup>2</sup> of research space (for up to 1,200 researchers) including 10 purpose-built research laboratory clusters;
- Education and training facilities including 47 seminar/meeting spaces and a large lecture theatre with 388 seats;
- 680 basement car park spaces for public and staff over 4 levels along with 400 bicycle parking spaces;
- 16 serviced apartments for patients traveling to the facility from longer distances;
- 2 link bridges connecting 3 levels of the Royal Melbourne Hospital (RMH) to the VCCC;
- 1,350sqm of retail space including retail pharmacy and multiple cafés;
- A data centre dedicated to the facility including campus links to surrounding sites: RMH, WEHI, Bio21, the Royal Women's, and the 258 Queensbury St. Data Centre; and
- 7,080sqm in shell space for future expansion.



*“There are not too many investments in medicine of this size, so it was important to get it right. The design Plenary Health provided for the VCCC is great – it is just right for the building’s iconic location and really makes a statement in Melbourne. It’s a truly transformative project.”*

John Brumby, Former Premier of Victoria



VCCC Flemington Road Elevation  
Image: Peter Bennetts, courtesy of Plenary Group

## TIME

The total duration of the design/build portion of the project, from inception to completion, extended over 72 months and included:

- Bid Duration: 18 months
- Financial Close: 30 November 2016
- Contract Close (award date): 9 December 2011
- Technical Completion: 15 March 2016
- Commercial Acceptance (Practical Completion): 14 June 2016

**The VCCC facility was completed on time and within budget.**

Notable events:

- The facility manager (Honeywell) transitioned into the facility months in advance of Commercial Acceptance to ensure it was ready to support the commercial operation on day one;
- The facility operator (Peter MacCallum Cancer Centre) and sub-tenants University of Melbourne and Melbourne Health gained access to the majority of the spaces in advance of their day one operation to ensure they were trained in their new environment;
- The construction of the facility was completed on time and within budget; and
- The first patients were transferred into the new facility on 23 June 2016 as planned, only nine days after Commercial Acceptance was achieved.

## DESIGN

Grocon PCL held the design build responsibility within the Plenary Health consortium.

The design development process consisted of three design stages whereby each design stage was comprised of collaborative design meetings between Plenary Group, Grocon PCL (and consultants), the Department of Health and Human Services (and consultants) and facility operator Peter Mac.

The first two design stages were split into a minimum of three rounds of user group meetings for each of the 56 departments within the facility to finalise departmental layouts and fit-out requirements. Design stage 3 was limited to the submission of 'issued for construction' detailed drawings for the State and facility operator to review and comment on prior to construction.

The design development process commenced early 2012 and was substantially completed by the end of 2015. Throughout the course of the project, more than 600 collaborative meetings were held with the facility operator, the State, and the State's consultants prior to finalising the design.



One of the key requirements of the project was that the VCCC facility was to be built being capable of accreditation by the relevant regulatory bodies: Office of Gene Technology Regulator (OGTR), Therapeutic Goods Administrator (TGA), ARPANSA, and Department of Health Radiation Protection Branch.

During the design development process, specialist accreditation consultants provided their advice on the design from architectural and building services perspectives. This ensured that the fundamentals of the building design were compliant with the stringent regulatory requirements of the various accreditation authorities.

A process known as 'pharmaceutical validation' was then adopted as the basis to test the built environment against the various accreditation requirements. This validation process formed the basis for ensuring compliance of the various pharmaceutical facilities within the VCCC, as well as providing an industry best-practice method for testing the non-pharmaceutical research facilities.

The validation process undertaken by the builder tested architectural features and building services performance of the areas requiring accreditation to ensure that when the relevant licenses were sought by the facility operator they were obtained with ease.



Throughout the design development process, strict adherence to the requirements of the output specifications and bid documentation was maintained while flagging any potential deviances to the client along for review and formal sign-off along the way.

## WORKPLACE HEALTH AND SAFETY

Safety is a core value and fundamental to Grocon PCL's decision-making. Grocon PCL is committed to driving a safety culture change to become industry leaders in safety to achieve our goal of 'zero harm'. Grocon PCL recognises that the wellbeing of people employed at work and people affected by our activities is a major priority and must be addressed during all activities performed during construction.

At the end of the project in June 2016, and with over 5.7 million man hours works, the project's LTIFR (Total Lost Time Injury Frequency Rate) (rolling 12 month) was 0.0.

During the construction of the facility, key initiatives in eliminating safety hazards were as follows:

- Prefabricated ring beam formwork to reduce work on-site at the perimeter of the structure;
- Prefabricated riser modules for services to reduce work in riser shafts where there are traditionally difficult to access spaces;
- Prefabricated plant rooms to reduce work on-site in hard to access spaces;
- Self-climbing perimeter screen system that allowed the installation of precast façade panels and curtain wall system to enclose the perimeter edge at all times;
- Internal cage scaffolding for the atrium to provide working platforms and reduce risk of falls from heights; and
- Safety interactions were performed by all the full-time staff to promote engagement with the sub trades and also promote the safety culture throughout the workplace.



VCCC Self-Climbing Perimeter Screen  
Image: courtesy of Grocon PCL

## CONTRIBUTION TO THE AUSTRALIAN ECONOMY

The VCCC project was declared as a Strategic Project by the Victorian State Government under the Victorian Industry Participation Policy (VIIPP). As such, Grocon PCL was required to lodge a Local Industry Development Plan (LIDP). Consequently, all sub contractors and suppliers engaged by Grocon PCL were required to report on the implications for local industry, suppliers and employment associated with their individual scopes of work.

The outcomes achieved at the end of the project:

- 91.9% local content achieved (Australia and New Zealand);
- 2,084 New full-time equivalent local jobs were created;
- 3,950 existing full-time equivalent jobs were retained;
- 185 new apprenticeships were created; and
- 151 existing apprenticeships were retained.

All outcomes have been reviewed throughout the project and the final submission was signed-off by Industry Capability Network (Victoria) which is an independent organisation funded by the Victorian Government to administer the VIIPP.

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## ENVIRONMENT AND HERITAGE

Amid the constraints of being located adjacent to two operating health care facilities and within a landlocked construction site by major arterial roads, VCCC experienced no environmental incidents and had minimal impact (noise and vibration) on the local community.

## INDUSTRIAL RELATIONS

Throughout the 54-month construction period, the project was delivered without any industrial actions or industrial disputes. This is a testament to the proactive site management measures by the project team in the areas of safety, the safety committee's active engagement in the project, and the labour force consultation process that took place during the delivery of the project.

## COMMUNITY ENGAGEMENT

During the design development phase, periodic town hall presentations were arranged through the client to ensure the staff and public were kept informed on the development of the facility. The presentations consisted of design and construction updates and included question and answer periods for the general public to become more informed.

Separately, the project team kept the communities adjacent to the site updated on the progress of the project through periodic letter drops informing them of construction activities that were planned to occur.

During construction in 2015, the VCCC was opened to the general public for special preview tours as part of the Open House Melbourne city-wide event. This event aimed to 'connect people with good design and architecture in the city.'

## INTERFACES WITH ADJACENT FACILITIES

The VCCC project interfaces with the adjacent facilities in the Parkville medical precinct through the following means:

- Two link bridges connecting three levels of the VCCC across Grattan Street with the existing Royal Melbourne Hospital for integration of key clinical services connected at Level 2, 6 and 7;
- Connection to the existing oxygen feed in the Royal Melbourne Hospital;
- Connection of the pneumatic tube system within the VCCC to the existing Royal Melbourne Hospital for clinical/lab services; and
- Wired Area Network fibre links to precinct partners: RMH, WEHI, Bio21, the Royal Women's, and the 258 Queensbury St. Data Centre to allow for seamless connectivity and integration.



## TRAINING AND DEVELOPMENT INITIATIVES

At the peak of construction, Grocon PCL had a project workforce in excess of 1,750 people, and during the course of the project over 9,000 people were inducted to work on-site.

Internally, Grocon PCL undertook training and development initiatives that included:

- Certificate III & IV in WHS training for supervisors;
- Emergency Management training (including drills) emergency drills;
- Working at heights training;
- High performance site management training hosted by Master Builders Association of Victoria for many of the full-time staff;
- 185 new apprenticeships were created over the course of the project; and
- Grocon QSE and OH&S training for all staff.

Externally, Grocon PCL delivered the end user training for all medical and research equipment purchased for the VCCC facility. In total, there were more than 200 training groups, each with multiple modules that were conducted with the end users and they were delivered over a compressed four month period starting in March 2016 and ending with "go live" training sessions ending in June 2016.

**At the peak of construction, Grocon PCL had a project workforce in excess of 1,750 people.**

*"Having spaces that give people being treated for cancer dignity, comfort and a sense of the broader world is so important. Whether it's the floor-to-ceiling windows, the wonderful roof-top garden or the many light filled open spaces, the VCCC will ensure patients and their loved ones have a bridge to the outside world. I am so proud that those who are having treatment for cancer, or supporting somebody they love that has cancer, will do so in one of the most beautiful buildings, with our best and brightest minds and wonderful health workforce."*

The Hon. Jill Hennessy MP, Victorian Minister for Health

