

A HEALTHY START

The Ballarat Regional Integrated Cancer Centre will provide a new regional radiation oncology service integrated with medical oncology, supportive care and other key services in the region.

CONSTRUCTION MANAGER : Leighton Contractors
CLIENT : Ballarat Health Services and Department of Health
PROJECT MANAGER : Johnstaff Projects
ARCHITECT : Billard Leece Partnership Pty Ltd
ENGINEERS : JMP Consulting Engineers, Mckenzie Group,
BG&E Facade Consultants, BRT Consulting Pty Ltd
SURVEYORS : Slattery Australia Pty Ltd
PROJECT END VALUE : \$55 Million



Below The new Ballarat Regional Integrated Cancer Centre in Victoria under construction.



While the cancer treatment services in Ballarat have served the community well over the years, the existing facilities have been unable to cope with increasing demand. In response, the Federal and State governments have provided funding to build the Ballarat Regional Integrated Cancer Centre (BRICC) at the Ballarat Base Hospital. This development will provide a new regional radiation oncology service integrated with medical oncology, supportive care and other key services in the region.

Leighton Contractors has been engaged by Ballarat Health Services (BHS) as the Construction Manager for the BRICC project. The project involves the construction of a five storey reinforced concrete building incorporating four radiation bunkers at ground level and the refurbishment of an existing two-storey brick building dating from the 1920s. Also included in the project are the upgrading of the site-wide electrical supply infrastructure, a new 1MW diesel generator, substation and associated electrical reticulation throughout the hospital.

Construction began in February 2011 and is expected to be completed by the end of 2012, with the first patients to be treated in the new centre in early 2013. As Construction Manager, Leighton Contractors' role has included:

- Establishment of temporary buildings and access ways to enable continuing healthcare operations on the hospital campus
- Relocation of service connections to adjacent buildings to enable continuity of operations during the construction period
- Management of the construction of new buildings and the refurbishment of existing buildings and infrastructure
- Management of existing and installation of new electrical infrastructure
- Testing, commissioning and handover of the completed works.

The BRICC project has been delivered largely on an existing car park site, with all works taking place within a tight footprint adjacent to the operating hospital. Coordination, interaction and interface between construction works and day-to-day hospital operations along with careful logistics management have been critical to delivering the project.

For the electrical infrastructure works, detailed and careful planning in conjunction with Ballarat Health Services and consulting staff was undertaken to ensure that the electrical supply was transferred from the existing to the new circuits seamlessly and with minimal interruption to normal hospital operations.

During the course of the BRICC project, Leighton Contractors rolled out its award-winning Construction Safety Essentials program, which is a campaign against known critical risks in the construction industry. The Construction Safety Essentials are designed to give the highest level of confidence that all critical risks are being identified and controlled in accordance with the requirements specified.

Meeting the requirements of the Construction Safety Essentials presented the trade contractors on the BRICC project with some challenges, as it requires higher levels of risk elimination and control than are customary in the industry. However, extensive consultation and training have brought the trade contractors on board with the program and the results have been demonstrated by significant improvements in the project's safety performance.

For more information contact Leighton Contractors Pty Limited, Level 1, 5 Queens Road Melbourne VIC 3004, phone 03 9228 7700, fax 03 9228 3000

IN CONTROL

Below System Insight's extensive work on the Ballarat Regional Integrated Cancer Centre project.

Systems Insight is an Australian company, based in the south-eastern suburbs of Melbourne. The company specialises in the design and manufacture of electrical control systems for use in commercial and industrial emergency power generation and co-generation applications. During their years of operation, Systems Insight has developed a significant portfolio of projects and clients, including many high profile corporate customers. Their success in the industry is attributed to a simple but key emphasis on providing high quality products and services, with a goal to maintain complete customer satisfaction.

Systems Insight has over 16 years of direct association with Ballarat Hospital, including servicing and maintenance of the Emergency Power Generators. They have maintained a close involvement in the current project which involves the upgrade of the Hospital's electrical systems, from concept documentation through to training on the new system.

Systems Insight has actively participated in the development of the project, including the work done by BRT Service Engineers, who prepared a Services Master Plan for the supporting infrastructure.

The entire Hospital site has undergone major electrical services upgrades, including the primary electrical reticulation system, which has been replaced down to the level of local distribution panels. A major factor and complexity in implementing the upgrades was that all work needed to be carried out whilst maintaining a fully functional hospital.

The upgrades have provided an extensive increase in the capacity of incoming power supplies and new internal power reticulation equipment has been installed throughout the site. Key improvements include introduction of a new High Voltage ring feeder system and installation of new Main Switchboards and synchronising sub-boards. These improvements are based on providing the highest level of reliability and redundancy, whilst also making allowances for future growth. The design also includes provision to maintain the electrical services equipment without impact to the normal operation of hospital services.

Systems Insight's main role has been to provide new control systems for control

and monitoring of the site-wide electrical system (SWES), newly installed throughout the Hospital.

This includes new emergency power generators, upgrade of existing generators and the installation of new electrical control panels for the generators. These state of the art electrical control systems will automatically start and stop the generators in response to unexpected power outages, or when maintenance needs to be carried out on the electrical distribution systems. The intelligent control system automatically manages the connection and reticulation of emergency power supply throughout the Hospital.

Although the new power management system is fully automated, one of its key features is how well it is monitored. This is essential, so that any alarm can be acknowledged and addressed before the system is required to operate in either a partial or full power failure. In response to this requirement, Systems Insight has installed and engineered colour touch-screen panels to provide operators with a simple and direct graphical interface with the site-wide electrical system.

Systems Insight's prime objective was to keep the task of electrical services management as simple as possible, therefore keeping the system reliable and user-friendly. This enables operators to more easily perform their normal daily tasks of system supervision and operation. It's also important to provide an easy to navigate and intuitive interface to the electrical system that enables a clear overview and understanding. This is especially valuable during periods of utility mains failure when the facility is operating on its emergency power plant to maintain essential Hospital services.

Other recent projects carried out by Systems Insight include new generator control systems for Telstra Data Centre, Optus Exchanges (throughout Australia), TV Channel 9 Melbourne and Epworth Hospital.

They have also completed overseas projects in Kazakhstan, China and Thailand.

For more information contact Systems Insight Pty Ltd, 15 Eastlink Drive, Hallam, VIC, 3803, phone 03 9796-4002, fax 03 9796-4003, email: mail@systemsinsight.com.au



A COMMUNITY FOCUS

Below TJ Coutts Pty Ltd provided extensive electrical services to the Ballarat Regional Integrated Cancer Centre.



TJ Coutts have also installed a new infrastructure upgrade which features two new high voltage sub stations, emergency generator and 4 new main switchboards and automatic transfer switch/distribution boards throughout the hospital. These provide automatic switching between mains & generator (essential) power. The new system also allows for control & synchronisation of the generators in supplying power back into the electricity grid.

TJ Coutts Pty Ltd was established as an incorporated company in 1954 providing commercial and industrial electrical contracting with a focus on healthcare and education.

The team at TJ Coutts Pty Ltd are proud to be a part of this state-of-the-art facility which supports the health and wellbeing of the local community.



For more information contact **TJ Coutts Pty Ltd**, 4 Production Drive, Alredton, VIC 3350
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Web: www.tjcoutts.com.au

Receiving funding from both the Commonwealth and the State Government, the Ballarat Regional Integrated Cancer Centre commenced construction in 2011.

Securing the complete electrical installation contract on the Ballarat Regional Integrated Cancer Centre, TJ Coutts Pty Ltd provided extensive services including the nurse call systems and fire alarm services.

The new Centre incorporates an energy management system which allows full control of the lighting and air conditioning systems. The Hospital Building Management System is able to detect the occupancy of rooms/areas via movement sensors and accordingly turn the air conditioning off when areas are unoccupied. Photoelectric light level sensors and colour touch screen panels control the dimming and levels of light required in public areas.

Below ICE Engineering was the supplier of structural steel for this landmark project.



PROVIDING STRUCTURE

The Ballarat Regional Integrated Cancer Centre will span across six-stories and is located in Drummond Street North near Ballarat Health Services Base Hospital.

The building will support medical oncology, radiation oncology, administration and patient accommodation. The new design includes a revamped patient drop-off and collection area that will enable easier and safer access to the building. The Cancer Centre is also linked with existing hospital structures.

The heritage façades of the original hospital buildings have been retained as part of the design.

ICE Engineering was the supplier of structural steel for this landmark project. Approximately 175 tonne of material was used, ranging in sizes from 24 metres x 3.5 metres welded structures and 4.5 metres x 8.7 metres link way welded frames.

The hospital site was very small and presented some difficulty with the coordination of deliveries and the lifting of the steel. Lifting of the 24-metre truss, which weighs 10.7 tonne, needed to be coordinated with Vic Roads, a 300 tonne crane and traffic management, as Sturt Street needed to be closed off to lift it into place.

The federal government has allocated approximately \$42 million towards the Cancer Centre, while the state government has allocated around \$13 million.

ICE Engineering boasts a team of experienced engineers, boilermakers, fitters, ticket welders, machinists, designers, sheet workers, riggers and dogman. The company offers timely installation, competitive prices, leading technology and 3D design and drafting. Their extensive industry knowledge and experience allows them to undertake a wide variety of work in the metal industry.

For more information contact **ICE Engineering (VIC) Pty Ltd**, phone 03 5338 7022, website: www.iceengineering.com.au

TEAM WORK

Below B&E Trevena & Sons supplied mechanical services throughout the Ballarat Regional Integrated Cancer Centre.



B&E Trevena & Sons is privately owned by Neil Trevena, Jarrod Edwards and Mark Kermond and has built a solid reputation in Ballarat and regional Victoria. The company's success is built around their responsive customer focus and quality workmanship.

Their involvement in the Ballarat Regional Integrated Cancer Centre project was to supply mechanical services throughout the Centre including the supply and installation of major chiller and boiler plant, fan coil units, Mitsubishi VRF systems, fume cupboards, exhaust systems and heat recovery units.

The team has drawn on their extensive industry experience to pull together and provide

effective designs for the project. At times this proved difficult but the drafting team, together with the consultants, worked effectively to produce a very successful outcome.

B&E Trevena & Sons stated that all dealings with both Leighton Contractors (project managers) and Ballarat Health Services (client) have gone smoothly. "Leighton Contractors are very professional and any construction issues have been dealt with promptly and to the satisfaction of all parties," said Jarrod Edwards.

B&E Trevena & Sons employ a team of professional, technical and dedicated staff, which enables them to complete various

types of commercial & industrial mechanical services installations.

Their versatile workforce consists of project managers, estimators, mechanical plumbers, design draftsmen, administration and workshop staff.

With a focus on staff retention, B&E Trevena & Sons take pride in the fact that approximately 25% of their workforce have been with the company for more than ten years.

For more information contact B&E Trevena & Sons, Ballarat Victoria 3350, Jarrod Edwards, mobile: 0438 210 007

Ballarat Regional Integrated Cancer Centre, VIC

