

# LEIGHTON PROPERTIES' GREEN LIGHT ON ANN STREET

CLIENT : Leighton Properties  
 MAIN CONSTRUCTION COMPANY : Thiess Pty Ltd  
 PROJECT END VALUE : \$210 Million  
 COMPLETION : November 2012  
 ARCHITECTS : ML Design  
 STRUCTURAL AND CIVIL ENGINEERS : Robert Bird  
 BUILDING CERTIFIER : Philip Chun



**Image this page** Official opening of King George Central in December. L-R Leighton Properties Queensland General Manager, Brian McGuckin; Leighton Properties Managing Director, Mark Gray; Brisbane Lord Mayor, Cr Graham Quirk; and CPA Fund Manager, Charles Moore

When across the industry the news was doom, gloom and Global Financial Collapse, Leighton Properties was the only commercial property developer to break ground and proceed with a new project. The reward for that optimism is the stunning King George Central (KGC), a Six Star Green Star A-Grade commercial building in the City Hall precinct, which combines sensitivity for the heritage elements of its surroundings with leading sustainable construction design and fitout.

“It was a site we had under option, which we elected to do ourselves in 2008, right on the cusp of the GFC,” explained Leighton Properties Managing Director Mark Gray.

“King George Central was the first commercial development in Australia to commence after the GFC. We were able to make it go ahead through our sound financial structure and capital partner relationships – it was quite a milestone for that to occur, and it started to give some confidence to the market that commercial development could still go ahead.”

Located in the centre of the city at 145 Ann Street, proof of the wisdom of proceeding with the 27-storey tower was rapidly forthcoming, with the securing of GHD as the anchor tenant shortly before ground works commenced. The project was also purchased by an institutional buyer in 2009 (the Commonwealth Property Office Fund

(CPA), and this secured its delivery. “Deft planning and careful negotiation meant we were able to keep this project alive in the early days, despite the credit crunch. KGC is further proof of Leighton Properties’ reputation and our track record in delivering quality commercial properties, even in difficult times,” said Mark.

“A total of six tenants have signed lease agreements of over 90% of the area within the building and some, such as GHD and Credit Union Australia, are already in occupation. Demand has remained buoyant throughout the construction period with strong interest in the remaining three floors.”

With the project’s Six Star Green Star design offering long-term energy efficiency, and the location in the vibrant CBD providing a diversity of nearby amenities including public transport and new apartment opportunities, the entire project embodies forward-thinking and the spirit of the new urban Brisbane.

“King George Central has everything the market is seeking,” said Mark.

“In terms of investment quality, stakeholders are protecting their investment in terms of energy costs. King George Central represents a 30 percent reduction in average energy costs, achieved through good design and technology. Generally, we are improving the value inherent in the (built) asset. “Because developers are doing more of the Five Star

Green Star and Six Star Green Star projects, the cost of the technology and energy efficient materials is reducing, and that’s been passed through. What used to be an added cost to do those Green Star projects is now more affordable.”

Leighton Properties took a pure developer role on the project – developing the resource, managing the selection of builder, then once the project was sold, maintaining the role of tenanting the project and overseeing the final construction stages. Construction was undertaken by Thiess, who won the contract by open tender.

Thiess have a substantial track record of recent Green Star construction achievements, with their combination of engineering expertise and building skills delivering projects such as The Ark in Sydney, 400 George Street in Brisbane and the Royal North Shore Hospital in Sydney.

King George Central was also applauded by the National Heart Foundation for its adoption of ‘Healthy by Design’ principles – Australia’s first commercial building to do so. The ‘Healthy by Design’ concept provides guidelines around seating, signage and lighting of common areas; clear access and directions for pedestrians, cyclists and public transport users; comprehensive end-of-trip facilities; and the exclusion of designated smoking areas.

Brisbane’s Lord Mayor, Cr Graham Quirk, officially opened the building in December 2012, welcoming it as another significant addition to the rejuvenation of Brisbane’s geographic heart.

This is the fifth Leighton Properties project to achieve Six Star Green Star certification from the Green Building Council of Australia, with King George Central now joining Green Square North Tower and HQ in Fortitude Valley as showcases of the company’s forward-thinking in building for the new millennium Brisbane. This positive approach to development uses design and technology to satisfy the triple bottom line - paying dividends for people, the planet and for financial profitability.

For more information visit website, [www.leightonproperties.com.au](http://www.leightonproperties.com.au)





## WEAVING FRESH VISION INTO THE URBAN FABRIC

In their design concepts for King George Central, ML Design has struck an intelligent and sensitive balance between Brisbane's ever-evolving urban fabric, its heritage, and forward-looking sustainability measures. Situated on the south-east side of Ann Street, the development delivers approximately 29 000m<sup>2</sup> of PCA A-Grade net lettable office space over 26 tower office levels, and co-exists within the original grounds of the heritage-listed Ann Street Presbyterian Church.

"The architectural 'grain' of Ann Street consists of a complex and eclectic language of heritage and more recently, commercial office buildings. The design for King George Central intentionally interacts with the surrounding context, actively contributing to Brisbane's 'public' realm," said ML Design Architectural + Operations Director, Steve Child.

"The ground plane extends unimpeded from Ann Street alignment, augmenting the full width of the pedestrian zone and allowing barrier-free access to the various ground plane amenities. These zones are further activated through the inclusion of boutique style foyer cafe."

"The facade envelope of the tower has been consciously 'sculptured' within its volume at the south west lower levels to preserve critical street views to the existing heritage-listed church and in doing so, has facilitated

the provision of an external colonnade defining transition between the main office entry foyer, the church administration office entry foyer, and the church proper. The glass facade at ground floor is clear and permeable to both accentuate ground plane interaction and further enhance the linkage between the church and its lower arrival forecourt. A 2 level glass enclosure 'link' connects the tower and the church 3rd transept."

"The plan form of the tower is refreshingly uncomplicated - a simple square with clear, defined lines obeying the structural grid enable elevation treatments to be proportioned across three bays on each facade plane." "A deliberate design decision was made to provide a crisp, clean external skin with accentuated verticality. This concept has been refined through inclusion of modularised curtain wall units incorporating double glazed performance vision panels, in shadow boxes and prefinished composite cladding spandrel panels. The performance design of the facade has been augmented with semi-elliptical vertical and horizontal solar shades."

"A portion of the south west facade has been extended outside the square geometry, towards King George Square, and has been cleverly articulated to both provide deferment to the City Hall clock tower opposing the site and wrap 'up and over' the rooftop, delivering a signature crowning element to the built form. This rooftop architectural device is

complemented with full width horizontal louvres to the uppermost portion of the south east facade and a floating horizontal capping plane to terminate the remaining three facades at the roof line."

King George Central has been designed to a GBCA Six Star Green Star Office Design V2 rating. Some of the sustainability initiatives incorporated includes carpark demand sharing, on site rainwater + greywater collection and reuse; gas fired co-generation plant; reduced light power densities; and incorporation of steel with 90% post-consumer recycled content.

ML Design is one of Queensland's leading architectural practices, delivering exceptional master planning, urban design, architecture and interior design solutions across all development sectors both around Australia and internationally. Other recent showcases of their capabilities include Browns Plains Village Square (QLD); Waters Edge Stage 1 + 2 residential project, Brisbane; Rotana Hotels - Yas Island, Abu Dhabi (UAE); UQ GPN4 building (QLD); and the Danga Bay Vision Plan, Danga Bay, Johor Bahru, Malaysia.

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## GREENER WAYS WITH WATER

One of the keys to achieving high Green Star ratings is excellence in hydraulics, which is exactly what D&F Plumbing (Trading As Norris Group) specialise in. This is why Thiess engaged the company to undertake the Hydraulic Services for their King George Central project as a Design and Construct package, with the commercial development aiming to achieve a Six Star Green Star Office Design V2 rating in design to as-built.

The scope of works D&F carried out went from top to bottom of the project, including sub-soil drainage works, and stormwater systems including syphonic systems to capture rainwater from various roofs and terraces. They also designed and installed separate sanitary plumbing systems in grey and blackwater; tradewaste plumbing; domestic hot, cold and warm water reticulation; separate Fire Hose Reel Service and the Fire Hydrant System; and the natural gas service.

The Natural Gas High Pressure System to the building services the retail tenants, hot water generation plants at various levels, the co-generation

plant and absorption chiller. To maximise occupant safety and minimise risk, the Natural Gas system runs in a fire rated ventilated duct complete with gas detection sensors with automatic shutdown.

“The building incorporates a Greywater Harvesting Treatment Plant, which provides recycled greywater for toilet and urinal flushing,” said D&F Plumbing Managing Director, Darren Norris.

“The water supply reticulation includes an extensive water metering system to satisfy all the requirements of Green Star and the local authority’s water meter policies. The systems are fully integrated into the Building Management System and Automatic Meter Reading System.”

D&F has been delivering excellent hydraulic and gas-fitting solutions for 28 years, with numerous major projects to their credit, including Brisbane Square, the Mater Children’s Hospital, the Queensland Institute for Medical Research building at RBH, the Six Star Green Star Energex Riverside commercial development at Newstead, and the UQ- CSIRO laboratories.

Their skills and understanding of the entire hydraulics picture gives them the capability to undertake extremely complex and demanding projects, such as industry and laboratory projects, where safety, hygiene, reliability, efficiency and quality are paramount requirements.

As well as the full spectrum of standard and Green hydraulics systems and gas systems, D&F can design and install customised hydraulic fire protection and suppression systems, drainage systems from sewers, residential drainage and civil drainage works, including extremely large scale projects.

It is the details they add to their systems which sets them apart, such as the controlled diversion drainage system incorporated into the syphonic rainwater harvesting and reuse systems for Baulderstone’s Brisbane Square project. Harvested rainwater is collected for storage in tanks constructed beneath the lift shaft core. This water is then returned to roof tanks, treated for reuse and distributed down throughout the building for amenities flushing, constructed below the lift shaft core.

The controlled diversion systems is linked into the BMS, and has sensors which ensure that excess water from the basement tank is diverted into the Brisbane sewerage system through stormwater drainage microtunnels constructed beneath the plaza and landscaping.

With their knowledge of the range of ecologically responsible materials available in the market, including piping, fixtures and fittings, as well as the latest technological advances in all aspects of hydraulics-related equipment, from pumps to monitoring systems and treatment plants, D&F are able to bring to any project the kind of know-how which contributes significant benefits in terms of both water and energy efficiency.

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## ESD, MECHANICAL, ELECTRICAL, FIRE & BMU CONSULTANTS

Commencement Date: April 2008

Completion Date: June 2012

Client: Leighton Properties

Building Owner: Colonial First State Global Asset Management

Developer: Leighton Properties

Architect: ML Design

Builder: Thiess

Capital Value: \$170 million

**The King George Central (KGC) project in Brisbane's CBD has recently been completed, KGC boasts 28 levels and 28,000m<sup>2</sup> of A-Grade office space.**

Appointed by Leighton Properties as the ESD, mechanical, electrical and fire building services consultants for the development, Floth was required to deliver sustainable building solutions to achieve the targeted green ratings.

Floth was presented with a number of building challenges including the small physical size of the building site and how to best utilise the space. Floth presented a solution which saw the building services designed to maximise the floor net leasable

area, without compromising the energy efficient design capable of achieving the 5 Star NABERS rating desired by the client.

In order to deliver sustainable and effective design solutions, that incorporate energy efficiency, Floth integrated a central plant, low temperature VAV air conditioning system into the overall design. This has proven to be cost effective as well as energy efficient solution for Property Council of Australia (PCA) Grade-A offices.

Floth project manager Ian Osborne said a number of design options were considered in the initial stages, however Floth's co-generation technology proved to be the most

space and cost efficient option. "Our primary objective was to reduce the buildings' carbon footprint by adopting good design principles. The gas powered co-generation plant incorporates the world's best practice system of independent energy generation," Mr Osborne said. "We used extensive 3D CAD modelling of the services design for the project which was another factor which has proven to be invaluable in minimising the spatial requirements of the services."

"The inclusion of a 1000kW capacity (generator rating) co-generation plant has further enhanced the reduction in CO<sub>2</sub> building emissions to 29kg CO<sub>2</sub>/m<sup>2</sup>/annum. This is 60 percent less than a building with a 5 Star rating"

The Floth team travelled to Austria to the test facility to supervise the two-day testing of the co-generation plant to monitor its performance and ensure the output of the unit will meet the building's running needs. The testing process provided the Floth team with the opportunity to test the thermal output of the unit, electrical output and the exhaust gases, with both reused for the absorption chiller for cooling of the building.

"It's very important that we make sure the unit is running to perfection before installing it into the building. This saves time, money and provides us, as well as the client, with the knowledge that once we hit the 'go' switch, the building will be provided with the output it needs to achieve the client's green targets," Mr Osborne said.

Floth has recently been successful earning KGC its 6 Star Green Star Office Design (V2) rating, through a combination of sustainable design features and successfully modelling the building to achieve a further 60 percent carbon reduction than a 5 Star NABERS rating.

Currently the building is targeting a 5 Star NABERS rating. The rating period is set for completion in mid 2014.

King George Central will be the first project in Australia to be publicly supported by the Heart Foundation. It will include the foundations Healthy by Design features such as a cycle centre with full end of trip facilities, a healthy choice cafe and user friendly stairwells running to all floors from the ground level.

*For more information contact Floth, phone 07 3252 0977, fax 07 3252 2499, website [www.floth.com.au](http://www.floth.com.au)*

