



**energex**

## A BRIGHTER FUTURE

DEVELOPER : TradeCoast Central  
MAIN CONSTRUCTION COMPANY : McNab Constructions  
PROJECT END VALUE : \$50 Million  
COMPLETION : September 2011  
ARCHITECTS : Sparc\* Architects  
STRUCTURAL ENGINEER : Morgan Consulting Engineers  
CIVIL ENGINEER : Lambert and Rehbin  
SITE AREA : 5.2ha



TradeCoast Central in Queensland is a joint venture between TradeCoast Central and the Brisbane City Council. The Project is the redevelopment of the former Brisbane Airport as a Masterplanned Commercial and Industrial Community.

Work started on site in 2006 and over the last 6 years more than 150,000 square metres of industrial facilities and 20,000 square metres of office space has been constructed.

The goal with the Energex Distribution Centre project was to provide a new facility for Energex that would cater for future growth and development. Energex were relocating from another facility, which they had occupied for many years, that had grown ad hoc based on specific needs and space available.

TradeCoast Central has a strong sustainable focus and because of this they are always trialing new techniques and materials to ensure provision of the most sustainable building possible within commercial reality. This could be something as minor as changing the way waste is dealt with on site or as large as introducing the use of green cement and recycled content steel in construction – both of which were incorporated into the Energex Distribution Centre project.

The Reception and Teapoint is clad with timber from recycled power poles. This is an interesting highlight of the project as the poles were once used by Energex in the field and have now come full circle.

The Energex Distribution Centre was the first project registered for Green Star accreditation under the GBCA Industrial Version 1 Tool. Being the first project of its kind meant there were no resources available to show what had been achieved in the past in order to successfully receive a rating. This resulted in some difficulty for the Project Team.

Some highlights that facilitated the Green Star rating were:

- Lighting Techniques: The Energex site uses energy efficient lights
- Air-conditioning: The variable refrigerant volume air-conditioning system allows each unit to operate independently and increases or decreases operation to meet the required conditions.
- Double-glazing: The glass panels for the windows were double-glazed to better insulate the building reducing the need to heat and cool the building.
- Alternative roofing: Special roofing was installed which consists of a high solar reflective material that reduces the transfer of heat into the building.

The master planned estate is developing at a rapid rate and apart from Energex, it is already home to several other major Australian and International occupiers including the Volgren Bus Factory, BlueScope Steel, Followmont Transport, Schnieder / Clipsal, Pacific Brands, Australian Aerospace, EB Games, Enerflex and Reece .

TradeCoast Central Industrial estate was the perfect choice for the new Energex Distribution Centre due to its easy access to major arterial roads along with TradeCoast central's commitment to Ecologically Sustainable Design implemented throughout the estate.

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# STORAGE SOLUTIONS

Skye Concepts specialise in warehouse storage solutions along with materials handling. For the EnergeX Distribution Centre project, Skye Concepts provided various storage systems that were able to cater for both small and large items.

The specially selected storage systems included pallet racking, cantilever, long span shelving and cable racking all of which bear the Kardex Stow brand, which is of European origin. All Kardex Stow racking meet the required standards worldwide and are thoroughly tested in independent laboratories to comply with the stringent FEM standard.

The four main storage systems used for the EnergeX Project are explained below:

Selective Pallet Racking is an extremely common and cost effective way to utilise available storage space whilst providing easy access to pallets and handling. This type of racking was ideal for the EnergeX Distribution Centre as they required flexibility and speed of operation. One of the benefits of Selective Pallet Racking is that it's designed to handle most pallet sizes and weight. The wide range of uprights allows the construction to go as high as 30 metres. The EnergeX project reached 9 metres. Heavy duty, custom made work benches were also constructed for this product.

Cantilever Racking is the solution to storing bulky items such as pipes and other long length products. Cantilever is available in single or double-sided configurations and is serviceable by any type of forklift. The double-sided rack provides maximum storage capacity, easy access to products and sufficient chain management, thus reducing possible damage to goods.

The fully adjustable Long Span Shelving system is designed for the storage of medium to heavy duty loads, non-palletised goods and offers the benefit of easy assembly, and a variety of shelf types such as steel, mesh and timber.

Cable racking is designed to hold reels of cable ranging from 200 – 1000kg. Skye Concepts works closely with their clients throughout all stages including design, layout to supply, installation and certification for Occupational Health and Safety Standards. They offer an ongoing commitment to providing technical support and back up service on all their projects.

Skye Concepts receives quality support through their European suppliers, all of which have had many years of experience in this innovative and demanding marketplace.

All products are accredited by the highest safety and design standards available in the world today and embrace Australian Standards AS4084 as well. Skye Concepts provides a complete storage solution that includes materials handling and other ancillary equipment to suit any requirement. The team works closely with suppliers of new and quality used fork trucks and other material handling equipment in order to provide their customers with a complete storage solution.

The company's vision is to supply smart, new and innovative storage systems to fill a niche in the current marketplace using the newest and ever developing technology. The products on offer from Skye Concepts are versatile and available to clients throughout Australia.

**SKYE CONCEPTS PTY LTD**

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## A SMOOTH FITOUT

**B**ojac Interior Linings provided the interior fitout for the Energex Distribution Centre project in Queensland. The fitout included walls, ceilings and doors. With a team of ten staff, Bojac Interior Linings spent close to two months on the project and supplied 39 doors, approximately 3000m<sup>2</sup> of walls and over 1500m<sup>2</sup> of ceilings.

The company also installed the timber feature ceilings and walls in the reception area and the timber slat wall in the kitchen area. These walls were made of recycled timber batons which was in line with the environmental nature of the Energex Distribution Centre project.

Wayne from Bojac believes the ongoing success of his company comes from his dedicated and enthusiastic team of staff. Wayne said that the Energex Distribution Centre project ran smoothly mostly due to the great team he has. The company is based on the belief that their customers' needs are of the utmost importance and the entire team is committed to meeting those needs. As a result, a high percentage of Bojac Interior Linings business is from repeat customers and referrals.

Bojac Interior Linings specialise in suspended ceilings, plasterboard works, aluminium and glass partitioning along with shop and office fitouts. They work on both domestic and commercial projects of all sizes.

Some other recent projects Bojac Interior Linings has completed include the Marist College at Ashgrove, Kings College at St Lucia and the Masters Home Improvement Store at Springfield Lakes, Brisbane Lions AFL supporters club Springfield.

The work carried out by Bojac Interior Linings is of a high standard. Check out the gallery of completed works on their website for a better understanding of what this company has to offer.



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## AHEAD OF THE GAME

Riverside Electrical was employed on a design and construct basis for the Energen Distribution Centre project in Brisbane. Riverside Electrical were given an initial brief which covered the basic requirements for the project. This initial brief was amended due to the inclusion of the Green Building Council of Australia requirements. The design was based on availability of points achievable whilst keeping an economical focus in mind.

Riverside Electrical were excited to be a part of the Energen Distribution Centre project. Working closely with the builders and clients saw Riverside Electrical exceed expectations and perform at their highest possible standards. They embraced all of their experience and knowledge gained over many years and applied it directly to the Energen Distribution Centre development.

Riverside Electrical Pty Ltd is a Queensland based, design and construct company that has been undertaking electrical and data installations throughout Australia for the past 15 years.

The company has extensive experience in designing projects, including but not limited to, commercial buildings and warehouses, industrial factories, cold store facilities and multi storey residential. Their engineering staff are able to provide drawings and specifications for construction, and their estimating office provide budget estimates for feasibility studies in order to assist their clients with return on investment calculations as well as fixed lump sum quotations.

Energen's new logistics warehouse at TradeCoast Central has become the first building of its type in Australia to receive a 4 Star Green

Star Industrial Design v1 rating from the Green Building Council of Australia.

TradeCoast Central industrial estate was carefully selected for the new Energen Distribution Centre for a number of reasons, including easy access to major arterial roads, and due to its own commitment to Ecologically Sustainable Design that has been implemented throughout the estate.

With the Energen Distribution Centre complete, more than 80 staff and tonnes of equipment will be relocated to the new depot that spans over 52,000 square metres.

As part of the Green Star rating, the purpose-designed building incorporates features such as energy efficient lighting, specialised air-conditioning, and alternative roofing materials to reduce heat entering the building and double-glazing to assist with insulating the building.

Riverside Electrical used an advanced electrical automation system with building user interactions. This incorporated the integration of the lighting into the building management system with different scenarios pre-programmed depending on the time of day, month or year. There is voice automation announcement when lighting changes status and daylight harvesting cells to monitor in building occupancy lighting levels and adjust accordingly.

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# FROM START TO FINISH

The Energex Distribution Centre is located at the TradeCoast Central industrial precinct. It is located on the former Brisbane airport site adjacent to the Gateway Arterial Motorway in the suburb of Eagle Farm.

As part of this unique environmental precinct, the development connected to a number of area wide services that adhered to strict environmental standards. Services include a precinct supply of non-potable water, recycled irrigation water, potable water, low-pressure sewer rising main system and fire system water supply. The precinct operates a central building management system that monitors the energy and water consumption of all buildings within the estate through a

network of smart energy and water meters. Building operators have access to this via a precinct intranet system.

TradeCoast Central's location was almost undevelopable due to high water table conditions making it impossible to install a conventional gravity sewer system. It is a very large and flat site (130 ha). A conventional sewer would require deep excavation to achieve the correct gradient of the mains. The TradeCoast Central estate targeted Green development solutions and a sewer system that would have minimal impact on Council infrastructure. There was a general agreement with Brisbane Water that a pressure sewer system would be the best option to allow TradeCoast Central to be developed.

The TradeCoast Central development has flourished since the sewerage and drainage issues were resolved with state of the art buildings now being erected. Using an "Aquatec Low Pressure Sewer System" allowed for minimum excavation and eliminated the need for pumps to be installed on the mains. The use of a low pressure sewer system has little or no effect on the environment by eliminating leakage from the pipework into the ground. The integrated network has reduced peak demands on the Council's treatment plant by 75% compared to conventional gravity sewer systems.

Building Services Hydraulic Design Pty Ltd became a registered company in September 1997, A family owned company committed to providing a personal and professional hydraulic design service from concept stage through to project handover and beyond.

The Directors and senior staff have been involved collectively in the Plumbing and Building industry for more than 100 years, with all design staff having completed a trade certificate in the plumbing and gas-fitting industries.

The company has a wide range of experience on a variety of projects from tenancy fit-outs and island cottages through to large-scale industrial estates and high rise commercial & residential buildings.

Through dedication to the ideals of technical excellence and client service, Building Services Hydraulic Design Pty Ltd is rapidly establishing an extensive and loyal client base.

Some of the services Building Services Hydraulic Design offer are design, Documentation, Site Inspections, Contract Administration, Certification and Preparation of Stormwater Drainage, Rainwater Harvesting, Sanitary Plumbing and Drainage, Trade Waste Drainage, Fire Protection and Gas System Design just to name a few.

Building Services Hydraulic Design has the capacity to assist design teams on projects of all sizes, and various delivery types such as conventional tender packages, fast track documentation, design and construct. The company is committed to producing high quality documentation, on time and on budget.

With experience in projects of all sizes from tenancy fit-outs to documentation and supervision of contracts with a hydraulic services value of more than \$12million, Building Services Hydraulic Design is a clear leader in their field.

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## CONSULTING SOLUTIONS

### MODERN TECHNOLOGY

Located just 8 kilometres from Brisbane CBD, TradeCoast Central proved to be an ideal location for the EnergeX Distribution Centre.

Building certification of the project was undertaken by Building Surveying Professionals who have been providing certification services throughout Queensland and Victoria for the past 15 years.

The building regulatory consultancy provided by Building Surveying Professionals on the EnergeX Distribution Centre project included BCA design review, authority liaison and certification services. With full electronic systems including E-Certification and E-Inspections, building regulatory compliance for the project was achieved seamlessly and with full electronic integration between other consultants, the builder and developer.

Building Surveying Professionals are an established consultancy that delivers both experience and personal attention which have proven to be paramount in the complex building industry.

The experienced directors at each of the head offices provide a stable platform to lead the capable team who are responsible for working closely with their clients. The extensive knowledge held by the directors and staff enables clients to receive much needed help through the intricate process of regulations and construction standards.

With tailored solutions, Building Surveying Professionals work in both the private and government sectors with a focus on delivering a project in a timely and cost effective manner.

Some of their recent projects include a 480 multi-level apartment/hotel/ mixed use development at Burleigh Heads along with a multi-storey apartment development (150 apartments) at Helensvale and various industrial projects varying in size from 30,000m<sup>2</sup> (large over-sized buildings) to small multi-unit factories.



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Morgan Consulting Engineers Pty Ltd (MCE) were the Structural Engineers for the EnergeX Distribution Centre project. They were responsible for the design, documentation and construction inspections.

The main challenges on the EnergeX Distribution Centre project were to develop simple, efficient and cost effective structural solutions in a building that had very specific end user requirements. The large column-free areas in the warehouse, the large warehouse mezzanine structure and gantry crane areas were particularly challenging. Morgan Consulting Engineers had to ensure they achieved the fine balance between user requirements and budget constraints.

The professional relationship that Morgan Consulting Engineers developed with the project team, particularly TradeCoast Central and Sparc\* Architects, was a very refreshing and enjoyable experience. Their mutual understanding of each other's requirements resulted in an exceptional finished product, with a minimum of fuss.

Morgan Consulting Engineers is a medium sized structural and civil engineering consultancy which was founded in Brisbane in 1972. Since then, Morgan Consulting Engineers has developed an enviable reputation for delivering high quality consulting engineering services on a diverse range of projects. They place great emphasis on providing designs aimed at simplicity of construction, resulting in time and cost savings for their clients. The experienced staff at Morgan Consulting Engineers provides clients with innovative and cost effective solutions whilst integrating seamlessly with other members of the project team to produce coordinated, practical designs.

Typical commissions carried out by Morgan Consulting Engineers include:

- Houses
- Multi-residential unit developments
- Resorts and hotels
- Retail and commercial
- Industrial developments
- Institutional
- Refurbishments
- Heritage building renovations
- Subdivisions
- Site civil works
- Expert witness reports
- Development Application reports

Morgan Consulting Engineers also carry out a range of specialist services, such as product development, advice on structural repairs and remediation, forensic investigations, insurance claim investigations and high volume housing.

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•STRUCTURAL•CIVIL•HOUSING•FORENSIC•

TradeCoast's Energex Distribution Centre, QLD



## GREENSTAR PROFESSIONALS

As Greenstar Professionals on the Energex Distribution Centre project Ecolateral Pty Ltd delivered the first accredited Greenstar Design rated Industrial V1 building in Australia. The rating influenced the design, plant and equipment, interior, air quality, water and energy consumption amongst other essential performance elements. Ecolateral's services included environmental advice, stewardship, documentation and the full submission to the Green Building Council of Australia.

The project was the second rated industrial building for Ecolateral at TradeCoast Central having delivered a 4 Star Greenstar Industrial Tool pilot in 2010.

An essential part of the delivery was Ecolateral's ability to draw on its extensive experience with Greenstar projects to ensure long-term financial and environmental benefits to Energex.

Ecolateral is a boutique environmental consultancy based in Brisbane and Tasmania that focuses on providing a personal service to their clients to ensure that the environmental standards they aspire to are delivered in the most economic and commercially advantageous way.

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## STRATEGIC PLANNING

Sparc\* Architects were delighted to work on the Energex Distribution Centre at TradeCoast Central in Brisbane. Sparc\* Architects were engaged to carry out the design, documentation and construction phases of the project.

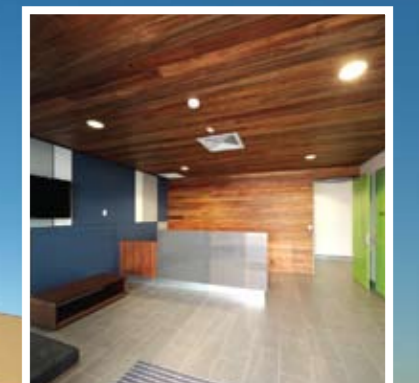
An interesting and challenging aspect of the Energex Distribution Centre project was incorporating and capturing the Energex logo in the design of the entry structure.

Sparc\* Architects take pride in providing a service which caters for the individual client. With industrial projects such as the Energex Distribution Centre, Sparc\* Architects believe it's essential for well

considered solutions to be executed by both the engineers and architects to ensure a cost-effective outcome for their clients.

With many projects now incorporating headquarter facilities and corporate offices into the warehouse sites, strategic site planning is becoming a more complex design challenge. A challenge Sparc\* Architects is excited to take on.

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