INGAL *EPS*

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Structures

INGAL ***EPS*** Lighting and Telecommunications' Newsletter
Quarter 3, 2013

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A Message from John Treacy

The release of our 3rd quarterly newsletter for 2013 will coincide with the Federal election to be held on 7th September. We are all hoping, regardless of the political outcome, that we see a boost in business confidence and growth in sectors that have softened in recent times. Some markets, particularly the resource sector in Western Australia, have certainly settled since the mining boom. In other states, there are mixed results dependent on state and federal government funding for infrastructure.

In this issue we have decided to diversify from our recent themes and showcase our Valmont China facility. Valmont operates out of a number of manufacturing facilities across Asia Pacific, with INGAL ***EPS*** sourcing a large number of poles from our Plants in Shanghai and Guangdong. These plants, together with our northern China plant, India, and the Philippines manufacture lighting, telecommunications, and power transmission poles for all parts of Valmont's global footprint. In fact, the Guangdong plant recently manufactured the poles installed for Robertson Oval in Wagga Wagga, Drummoyne Oval in Sydney, and the new apron at Melbourne airport. INGAL ***EPS*** is proud to be part of the Valmont group, giving us the unique ability to source poles for the Australian market from our own manufacturing facilities. As part of the prequalification for the supply of poles to a large LNG project, we have had customers tour our facilities in China. They reported extremely high levels of satisfaction in the production facilities and the quality of workmanship carried out.

Also in this issue, we have an exposé on the galvanizing process. Industrial Galvanizers, also part of the Valmont Group, provide the galvanizing service for the poles manufactured at our Australian facility in Acacia Ridge. Again, the breadth of Valmont ensures that we are sourcing a galvanizing service within our organisation to the exacting standards of manufacture also provided by INGAL ***EPS***. The galvanizing process, which may seem simple, is actually quite a technical process, designed to protect the steel from oxidation through a metallurgic process. This surface protection lasts many years, even in the harshest of environments.

Thanks again to all of you who participated in our customer survey, I appreciate that your time is valuable. The results of the survey revealed that we need to continue to improve our forewarning of problems and delays, provide goods without damage, and deliver your orders in full and on time. With assistance from the Ryder Self Group, who undertake the survey on our behalf, we have communicated the findings to our staff and are continuing on our continuous improvement journey. The key out take, from my perspective, is that our service levels have improved, but we cannot say that the journey is complete. We will continue to work on both our local and import supply chains to ensure products of the highest quality, first class communication from our people, and ensuring each and every delivery is on time and to specification.

I'd like to also point out that INGAL ***EPS*** can protect you and your customers from exchange rate fluctuations through our wholly owned manufacturing facility in Acacia Ridge, QLD. While products sourced from our global Valmont manufacturing facilities are subject to exchange rate movements, our commitment to local manufacturing will provide value to you with stability in costs and prices.

I hope you enjoy reading this edition of Structures and that your football team, regardless of code, performs well in the finals in September!

Regards,

John Treacy

Managing Director

Product Brief

INGAL ***EPS*** steel monopoles are designed for cellular, personal communication services, land mobile, microwave, broadcast, and other applications. These poles can be configured to support platforms and a variety of curved arms, straight arms, and other antenna mounting hardware.

INGAL ***EPS***'s range of telecommunication poles are manufactured from lightweight, high-strength galvanized steel and are available in 4 strength categories to cater for light to heavy antennae, radio units, and microwave dishes for one or more carriers. Thin steel walls also mean large internal space for bundled feeder cables, rather than using unsightly external cable ladders.

As part of Valmont Industries, INGAL ***EPS*** leverages off of its parent company's in-house design capabilities which include:

- State-of-the-art computer design techniques using proven structural engineering software
- Cad-cam systems to assist in design
- Drafting activities
- 3D modeling

As an international pole manufacturing company, Valmont's engineering team also applies domestic and internationally recognised standards as well as customer specifications in the monopole design. General Arrangement Drawings can also be prepared prior to manufacture for customer approval.

INGAL ***EPS*** monopoles can be supplied with headframes, antenna mounts, rotatable tri-brackets, curved and straight arm mounts, climbing ladders, fall arrest systems, lighting rods as specified by customer.

For more information on our range of Telecommunication monopoles please contact INGAL ***EPS*** on 1800 623 302.

>> Design of lighting structures is an important component in any streetscape or public area, and not only serves a practical use but can aid in setting the tone or mood that the designer is trying to convey.

Industrial Galvanizers

Federation Square, Melbourne

Galvanizing for Novices

What is Galvanizing?

Galvanizing refers to the coating of steel or iron with zinc, to prevent corrosion. The name 'galvanizing' implies that the zinc coating is applied using an electroplating process, but it also includes hot-dip zinc coating. These coatings differ in that hot dip galvanizing (HDG) provides thick, durable corrosion protection, whereas electroplating produces a thinner, less resilient coating; hot-dip galvanizing is one of the most effective ways to protect steel from corrosion.

For the technically minded; the zinc coating serves as a sacrificial anode, so that it cathodically protects exposed steel. Simply put, even if the coating is scratched or abraded, any exposed steel is protected from corrosion by the remaining zinc - an advantage absent from paint, enamel, powder coating etc. Galvanizing is also favored as a means of protective coating because of its low cost, ease of application, and comparatively long maintenance-free service life.

How is it Applied?

Galvanizing is applied in specialised facilities, using a standardised process and trained operators. Steelwork enters the facility and moves through the stages of jigging, cleaning, fluxing, dipping, quenching, and dressing. The packaged work is then stored in the 'white work' area prior to dispatch.

Each of the steps is important in ensuring a quality outcome for the end-user; process chemistry is vital. At Industrial Galvanizers, the composition of process chemicals — including the zinc in the bath (or kettle) — is regularly tested in our NATA-certified laboratory. Adjustments are made to maintain chemistry within defined boundaries.

After tagging for identification, work is hung on jigs that are used to carry the product through the process using overhead cranes. Work is suspended from the jig at an angle to allow the molten zinc to flow off the surface before solidification; this creates a better surface finish and minimises the amount of dressing needed.

Also at the jigging stage, inspection is carried out to ensure that all hollow sections have holes in them to allow for venting (of trapped air) and draining (of liquid chemicals and molten zinc). Ineffective ventilation and drainage can lead to distortion of the product danger to the operators, and incomplete coverage of the surface. When designing and fabricating parts, it is vital to apply design guidelines that result in good draining and venting of closed sections.

Full jigs are immersed in a tank of hot caustic solution (70–90°C), which remove surface grease, oil, and most types of paint from the surface. Once removed from the caustic, steel items are rinsed and placed into one of several acid tanks which remove millscale, rust, and, if the steel has been previously galvanized, any remaining zinc.

The time that the steel is immersed in the acid is important, as over-pickling may result in surface pitting and a thicker, matt coating. One benefit of this is that thicker zinc coatings tend to have a longer life. When pickling is complete, the surface of the steel reacts quickly with air as it is withdrawn from the acid bath and a thin oxide layer begins to form. The steel surface and cavities must dry before entering the molten zinc bath, and this extends the time available for the oxide to form. The metallurgical reactions between the molten zinc and the steel surface will not occur if oxides are present on the steel surface. To overcome this, the clean, reactive steel is immersed in a pre-flux solution which contains zinc ammonium chloride and wetting agents, at a temperature of about 70°C. The pre-flux removes any oxide film that has formed on the steel after acid cleaning, and prevents further oxidation before galvanizing.

After cleaning and fluxing, the dry steelwork is immersed in the galvanizing bath ('kettle') where the galvanizing reaction occurs in molten zinc at 445–465°C. A series of zinc-iron alloy

layers are formed, which are metallurgically bonded to the steel. To allow the reactions to complete, steelwork stays in the bath until its temperature reaches that of the molten zinc. The immersion time varies; several minutes for light articles, and longer periods for large structural members.

Once zinc oxides (know as ash) form and are removed from the surface, the jig is withdrawn from the bath at a controlled rate and surplus molten zinc drains from the angled work. The outer layer of zinc solidifies to form a relatively pure and shiny outer zinc coating.

The freshly galvanized zinc surface will oxidise rapidly in moist air and white 'storage stain' can form. To delay this process, galvanizers normally quench items in a diluted potassium dichromate solution that applies a chromate film to the zinc surface. Jigged items can be left to cool naturally (air quenched) and this may be required if the work is to be further processed such as for powder coating. Storage stain is more prevalent in wet weather; relative humidity is high and rain washes the quench solution off of the galvanized work (which is generally stored outside) before the protective patina has time to form. Good storage and packing strategies can reduce the formation of storage stain.

In the last stage of the process, the galvanized steelwork is removed from suspension and a visual inspection of the work is carried out. Any zinc spikes, dags, and rough areas are dressed. Spikes and dags form naturally as the molten zinc solidifies but jigging components at an angle reduces their incidence and severity. An advantage of hot-dip galvanizing is that visual inspection can show whether the coating is continuous. Defects such as uncoated areas from incorrect surface preparation can be found easily. Once the product has passed inspection the finished work is packaged and then stored before dispatch.

What are the benefits of galvanizing?

Galvanized steel has a tough, metallurgically bonded protective coating of zinc alloy; it is durable, combining long life with minimal maintenance and low whole-of-life cost in a tried and tested corrosion protection system.

The key benefits of hot-dip galvanized zinc coating are:

- Reliability (a thick, complete and easily inspected coating);
- Dependability (electrochemical cathodic protection for the entire component or structure);
- Predictability (forecast life based on known corrosion rate of zinc).

Galvanized steel exhibits an attractive finish that is in increasing demand for its low maintenance, UV-immune properties, and easy integration with other materials. It also provides a superior foundation for a decorative top coat that provides colour, increased chemical resistance, and synergistically extended life.

For more information, please contact Industrial Galvanizers on 1300 464 258 or got to *www.ingal.com.au*

INDUSTRIAL GALVANISERS

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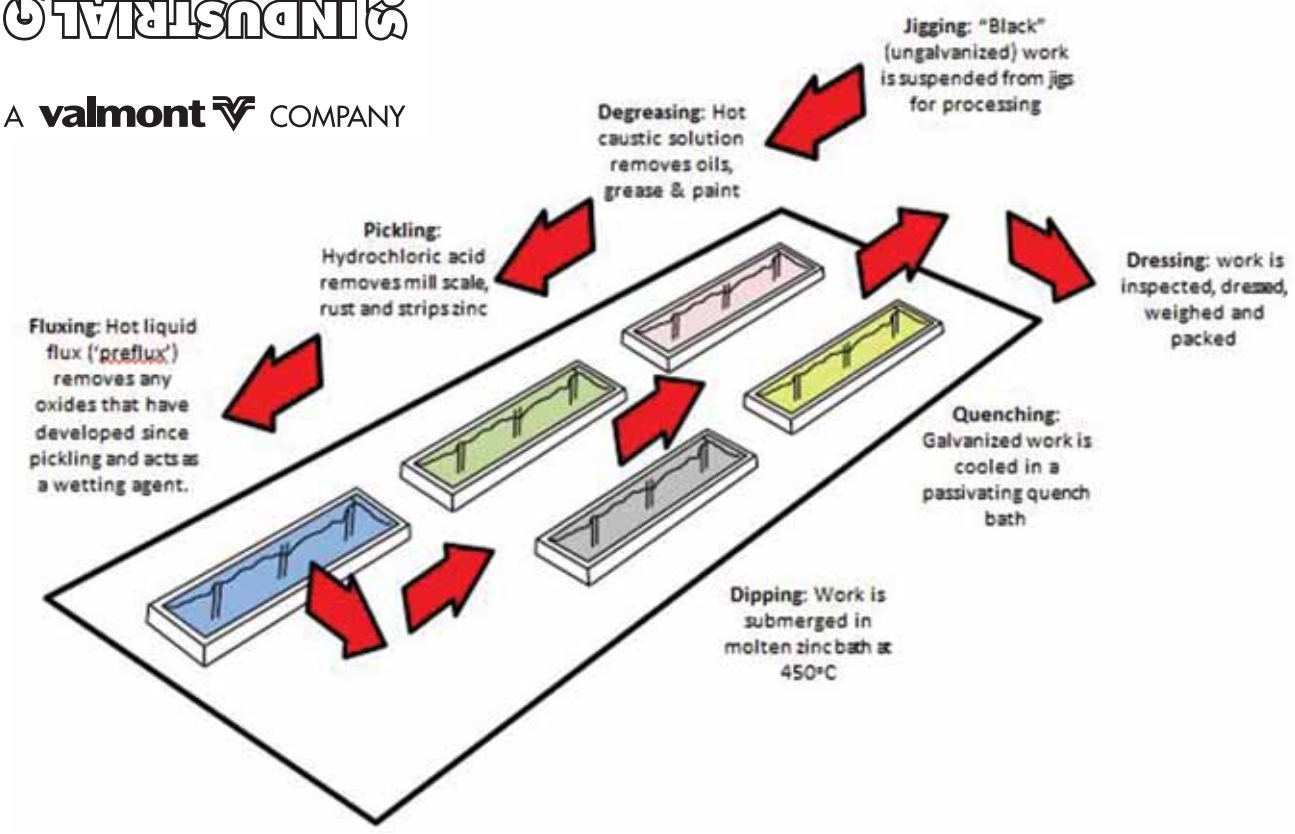


Victoria

Shell Reserve Ocean Grove

The Ocean Grove Structure Plan, adopted by the City of Greater Geelong in 2007, suggested that the population of Ocean Grove would increase from 11,814 people in 2006 to approximately 21,000 people by 2020. In order to properly plan for the formal outdoor sporting needs of both the current and future residents of Ocean Grove, the Shell Road Reserve needed to be upgraded in order to provide for an ultimate population of around 25,000-30,000 people (the long-term desired capacity of the town).

Having previously supplied product to the City of Greater Geelong on time and without hassle, INGAL ***EPS*** was selected to supply the Shell Road Reserve netball courts with 8 x 15m poles, 4 x 30m poles to the Football/Cricket Oval, and 6 x 25m poles to light the two soccer ovals which is now the only soccer facility on the Bellarine Peninsula with lights.

INGAL ***EPS*** provides a wide range of all floodlighting requirements and has floodlighting poles installed in some of Australia's most well-known sporting grounds. No Floodlighting project is too large or too small for INGAL ***EPS***. We also hold common sizes of Floodlighting poles in stock at many of our sites. For more information, please visit our website or call to speak to a sales representative.

Queensland

Gold Coast Rapid Transit

The Gold Coast is one of Australia's fastest growing cities, and with the 2018 Commonwealth Games looming the construction of the Gold Coast Rapid Transit Project is moving ahead rapidly. The project is jointly funded by State / Federal and Local government.

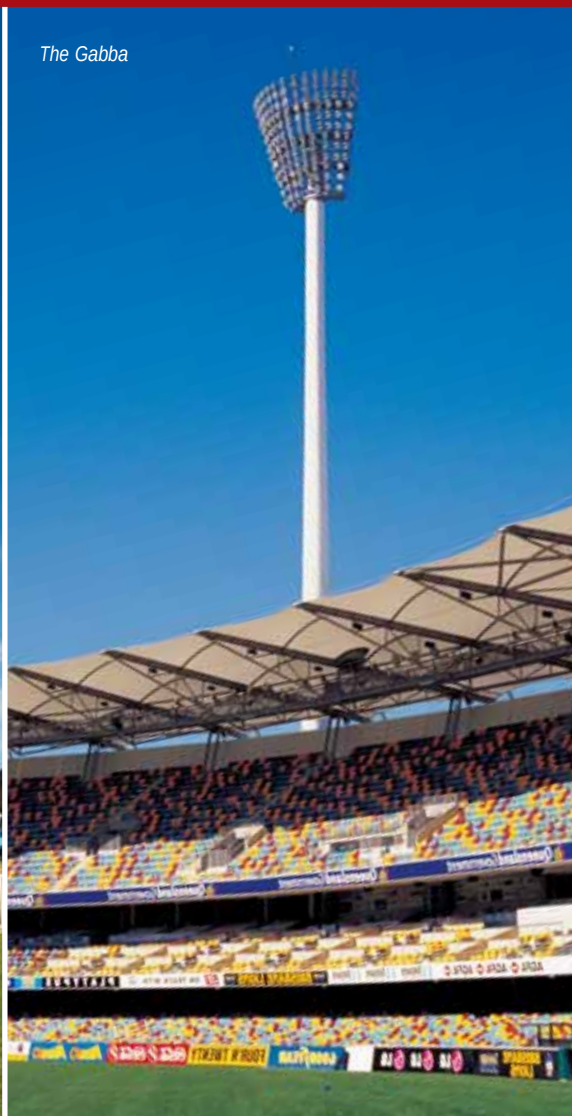
A key component of the construction is the change in traffic and pedestrian thoroughfares brought about by the new light rail network. This change meant that many new traffic and pedestrian signaling was required. Utilec was one of the contractors that worked on the project and utilised INGAL ***EPS*** traffic signals. INGAL ***EPS*** is a certified supplier of Queensland Main Roads traffic components such as Mast Arms, Posts, and Joint Use Poles; all of which were utilised in the applications on the Gold Coast Rapid Transit Project.

INGAL ***EPS*** has installed poles in many locations across Australia. In this issue of Structures, we take a look at some of INGAL ***EPS***'s most notable projects.

Drummoyne Oval,
Image Courtesy of Sydney Sixers

Robertson Oval,
Image Courtesy of
Wagga Wagga City Council

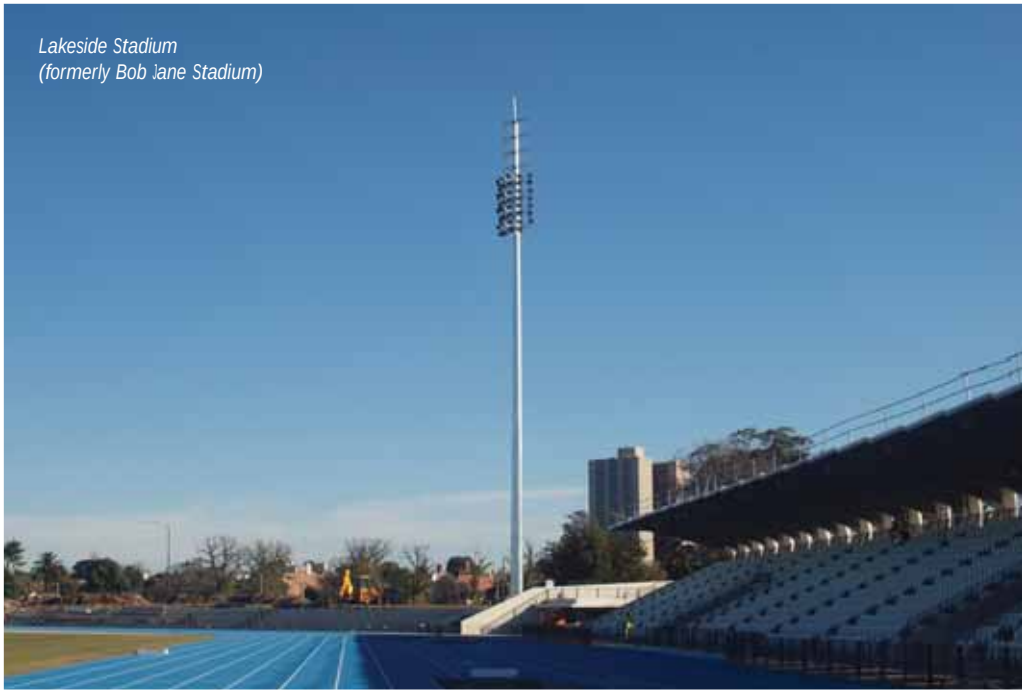
The Gabba



Brisbane Domestic Terminal Apron Upgrade

Sir Leo Hielscher Bridges
Image Courtesy of The Courier Mail

Jetty Canti-Traveller
WICET



Lakeside Stadium
(formerly Bob Lane Stadium)

Dandenong
Feature
Pole

Seaford Rail

Meet the Team

From Left: Greg Beattie, Belinda Aguirre, Michael Rouse, Roanne Troost, Aaron Hanlon

Brisbane, QLD

The Queensland Sales department has undergone many changes in the last year, so we thought that the "Meet the Team" segment would be a great opportunity to reintroduce the team.

Committed to Superior Customer Service, the QLD team is made up of two Internal Sales Staff (Roanne Troost and Belinda Aguirre), a Territory Manager (Aaron Hanlon), a Sales Engineer (Michael Rouse), an Agent in North Queensland (Peter Lollo), and myself, the State Manager (Greg Beattie).

Queensland's Internal Sales Supervisor, Roanne Troost, has been with INGAL ***EPS*** for nearly 5 years. Outside of work, Roanne is a devoted grandmother and New Zealand Rugby Supporter, she is also an active supporter of animal rights.

Brisbane's Internal Sales Coordinator and Wholesaler Representative, Belinda Aguirre, has been part of the INGAL ***EPS*** family for just as long. The energetic mother of two is known around the office for her energetic get-go attitude as well as her keen eye for fashion.

Aaron Hanlon is Queensland's only Territory Manager and has been Queensland's expert on Infrastructure and Floodlighting for the last 5 years. The mad fisherman has been known to enjoy a couple of beers around a campfire.

Comparatively, Michael Rouse is the newest member of the group, having been at INGAL ***EPS*** for 2 years. The Sales Engineer enjoys being involved in all aspects of sales and has been working tirelessly in further developing our presence in the Telecommunications market. Away from the office, Michael enjoys spending time with his children as well as participating in events like Tough Mudder.

Townsville-based agent, Peter Lollo from JEM Distributors is an avid traveller and is a wealth of industry knowledge. You can learn more about Peter and JEM Distributors in this issue's Customer Profile.

Finally there is myself, Greg Beattie. As manager of this passionate bunch, I work to maintain the direction that INGAL ***EPS*** has set as a company by pushing initiatives and developing processes with other key managers. Each member of the Queensland Sales Team is energetic and committed to providing our customers with the best in customer service and product. It is because of this that I encourage all of our Queensland clients to contact our sales team on 1800 623 302, via *qldsales@ingaleps.com.au*, or by stopping by our office located at 7 Activity Street, Acacia Ridge.

Regards,

Greg Beattie

Queensland Sales Manager

Valmont Industries

Dubai, United Arab Emirates

Valmont China

Valmont China is a wholly owned subsidy of Valmont Industries. Established in 1994, Valmont China operates out of Shanghai, while also operating two additional steel pole plants in Guangdong and Shandong. These three plants produce products for utility power transmission, the international wireless communication, and lighting markets.

Employing over 800 staff, Valmont China's strong engineering capacity, high quality, comparatively low cost, globally recognised ASTM steel materials, and commitment to excellent customer service have brought Valmont China great success in international markets. As the leading manufacturer of Telecommunication Mono-poles in China, Valmont China has supplied thousands of poles worldwide, including Japan, the Middle East, North America, and Europe. In terms of lighting, Valmont China has been a pioneer in China since the 1990s and continues to supply street lighting, high masts, stadium lighting, traffic signals, and flag poles worldwide.

As a recognised leader in structured pole engineering, Valmont China has participated in establishing national standards for design, manufacturing, and installation of pole structures and has been actively involved in the following engineering committees: ASCE, AISC, ANSI, AASHTO, TRB, and NCHRP. Valmont China's strong engineering team can create designs based on many internationally recognised standards such as ASCE, AASHTO, BS5649, CP3&TR7, BS6399, EN40, EUROCODE, TIE/EIA-222-G (or F) and many more.

Quality management is one of the top priorities for Valmont China; covering the company's entire operational process from receipt of purchase orders to final delivery and commissioning operation. Valmont China has been certified by BVQI with ISO9001 and IQRS grade 4; meeting or exceeding customer expectations on product quality, delivery, and customer service are guaranteed by the Valmont China team.

Equally important to Valmont China is their safety management goals. Guaranteeing the safety of products via a strong engineering capability and quality management system, their goals are validated from its certification from DNV with the ISRS seven star standard.

For more information on Valmont China please visit their website: *www.valmont-china.com/en/*

Customer Profile

Customer Profile: JEM Distributors

INGAL ***EPS*** has been supplying product to North Queensland for over 14 years. This has only been possible by our ongoing relationship with Peter Lollo from JEM Distributors.

JEM Distributors has been actively established as a Manufacturer's agent in Townsville for over 37 years and focuses on distribution, marketing, and representation to the electrical industry in Northern Queensland – Mackay North and West to Mount Isa. Also representing L'Oreal, Arlec, and Mistral. Also representing INGAL ***EPS*** for over 14 years, JEM Distributors is committed to delivering a high level of service to customers with the aim of increasing profitability for partners.

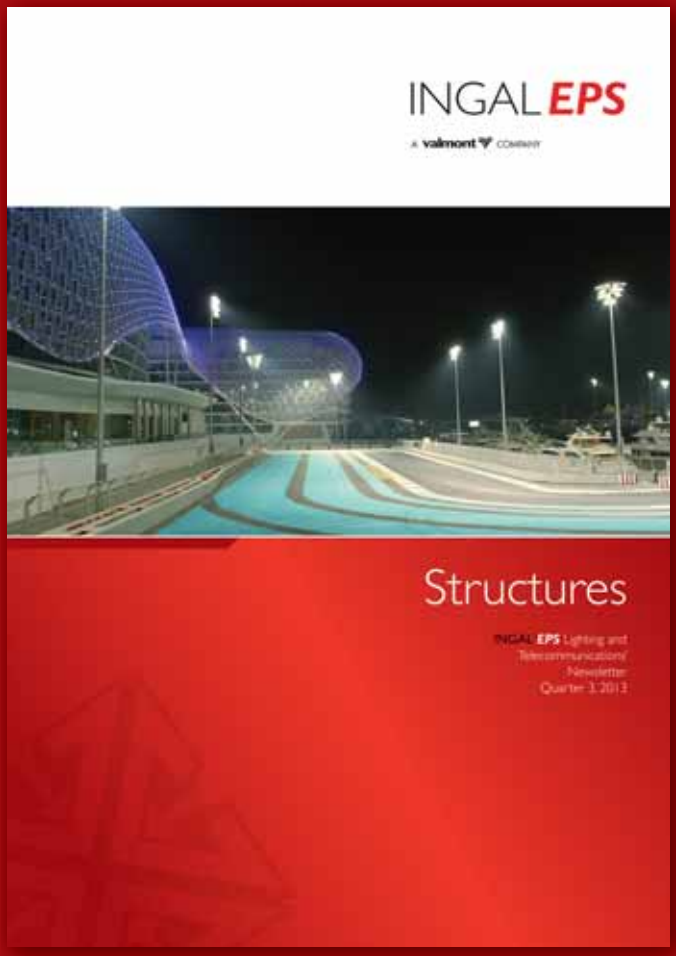
Based at 2/37 Mackley Street, Garbutt, the premises has 780m^2 of floor space, pallet racking space for over 200 pallets, and is located within close proximity to all electrical wholesalers in the area. JEM Distributor's staff is multi-disciplined in all aspects of the business and pride themselves on their ability to stay ahead of the curve in regards to product knowledge and customer service.

Over the past few years, JEM Distributors has been involved in several projects including:

- Street Lighting for Townsville Port Access Road
- Mine Lighting for Lady Loretta Mine
- Street Lighting for Shaw Road — Bruce Highway
- Floodlighting for Townsville RAAF Base Ordinance Loading Area
- Floodlighting for Cairns Airport
- Street Lighting for Cairns Esplanade Foreshore

INGAL ***EPS*** is proud to have JEM Distributors as its North Queensland Agent and helping us to consistently provide a comprehensive range of products to the territory as well as continuing to provide excellent customer service.

Way to go, JEM!



An Invitation to Submit

Customer Profiles

The general focus of INGAL ***EPS***'s newsletter, *Structures*, is to provide our customers with up-to-date information and developments within the company. The newsletter encourages diversity through mutually beneficial marketing opportunities.

We would like to invite contributions to the publication in the form of customer profiles. We also welcome contributions that highlight collaborations between INGAL ***EPS*** and customer projects.

We suggest that case study submissions to *Structures* be limited to finalised projects. By this we mean contributions that present completed projects.

For more information regarding formal instructions for authors, or to submit your profile, please email: *marketing@ingaleps.com.au*

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Did you know that INGAL ***EPS*** is now on: LinkedIn, Twitter, Facebook, Google+, Industry Search, and Project Link?

Follow Us online, join our conversations, and engage with our team all around Australia.

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