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## PRATLEY CELEBRATES 75 YEARS OF BIG BUSINESS

Not even winter snowfall and a cold front could dampen Andrew Pratley's mood. "The company was founded by my grandfather, George Pratley, in 1948," says the current CEO of Pratley. "There is a tremendous amount of pride, not only in what we have achieved over the years, but also together with my brother Charles, in steering the business that my grandfather and later my father, built from the ground up. There are not many family run companies world-wide that survive well into the 3<sup>rd</sup> generation."

The company recently celebrated the 75<sup>th</sup> anniversary of its founding, and it brings Pratley a great sense of achievement, not least because the family still owns the business. "The average lifespan of a family-owned and run business in the USA is about 20 years according to research I recently read by the SC Johnson College of Business in the United States. Of those who succeed past that time, only about 10% of companies transition into the third generation. I am not sure what the statistics are in South Africa, but I would guess that they are even lower," adds Pratley.

#### All in the name

The company is best known globally for its Pratley Putty (originally named Pratley Plastic Putty), which was originally developed as an insulator for the junction boxes that the company first produced. "My grandfather returned from World War 2 and started doing business with mines in Johannesburg," explains Pratley, "and one of his early products was junction boxes. He was an educated and qualified engineer, and he began to experiment with ideas to adhere and insulate electrical terminals to these junction boxes. The putty was a spin-off product and besides being



a great insulator, it was also discovered that it had good adhesive and repair features that could be used in other applications. It was the first product of its kind in the world."

As a result, the company began producing Pratley Putty for other industrial and DIY applications. Innovation like this has continued through the years, and Pratley says that it "is something we continue to push and it's in our DNA. We do not sit back and let things rest. We are constantly evolving our products and exploring new ideas. We generally try to steer away from 'me too' type products and prefer focusing on producing products with innovative and unique features."

It turns out that the aftermath of the Covid-19 pandemic

CONTINUED ON PAGE 3



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## Tackle e-waste and dispose of your old appliances the right way

Getting rid of electrical and electronic devices is not as easy as throwing them on the refuse pile. e-Waste could be tomorrow's big crisis that South Africans should be tackling today if figures from the Gauteng provincial government are to be believed.

"South Africa produces around 360,000 tons of e-waste annually, with Gauteng contributing 55% of that volume," says Patricia Schröder, spokesperson for the official producer

responsibility organisation (PRO) Circular Energy. "Consumers need to be better educated on how to properly dispose of their appliances if we are to avoid an environmental catastrophe."

New legislation titled Extended Producer Responsibility (EPR) will shift responsibility to importers and manufacturers to ensure that their products and services come with environmentally sound management and disposal, which includes recycling.

What e-waste? "e-Waste comprises most electrical and electronic appliances or devices found in the typical South African household or business," says Patricia. This includes domestic appliances, power tools, digital devices and computers, electricity generation and storage devices, lighting, reusable and disposable batteries, cables and the like.

The construction of such appliances and accessories demands that they are never simply thrown away as they could contain materials that are potentially explosive, poisonous or otherwise hazardous, thus contaminating surrounding areas as they break down or posing a physical threat to health and safety.

It should also be noted that using a "smash centre" to dispose of appliances with "a bat for fun or for you to release frustration" is not just an unhealthy and unsafe practice, it is illegal and contravention of the National Environmental Management Waste Act of 2008.

"Items require specialised handling, recycling and treatment by suitably qualified persons within safely isolated environments," says Patricia, adding that it also makes good business sense to manufacturers. "e-Waste that is lost to landfills and refuse dumps means that scarce resources which could have been harvested and recycled must now be mined afresh."

One of the easiest ways to safely and responsibly dispose of appliances is with services like Circular Energy. The non-profit organisation based in Durban, KwaZulu-Natal offers a dedicated collection service for used or waste electric or electronics.

Enquiries: [www.circular-energy.org](http://www.circular-energy.org)

## Fuses: Knowing your AC from your DC

Direct Currents (DC) are easy to configure but, compared to Alternating Currents (AC), they are difficult to interrupt due to the absence of a natural current zero. That makes it vital to use the correct fuse in your circuit. A small part of any circuit, fuses are critical to the integrity of your project – and it might be something your team has put to the back of their minds.

A major benefit of AC is that the flow can be reversed multiple times without failure, whereas DC cannot be chopped and changed in a circuit, says Clive Fletcher from Swan Electric. "AC returns to zero magnitude with each change, while DC flows in one direction only. There is no reversal opportunity, nor does DC zero out in magnitude." So with no help from the current itself, a circuit's fuse is left to bear the burden of stopping these currents before any damage can be done to the construction.

"It's vital to the integrity of your circuit that you use the correct fuses," says Fletcher, adding, "DC fuses are specially designed longer in physical dimensions than their AC counterparts because they have to be able to interrupt the more powerful DC current. AC fuses simply would not be able to handle the strain (of a DC) and the circuit would fail as a result."

It is important to remember when designing and constructing a circuit that fuses with equal AC and DC voltage ratings mean that the DC interrupt rating is going to be lower than the AC interrupt. "You need to take that into consideration, and make sure you do not put AC fuses into your DC circuit if you want to have a successfully completed and operational circuit," adds Fletcher.

Enquiries: [www.swan-electric.co.za](http://www.swan-electric.co.za)

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## LESCO Manufacturing: A pillar of sustainable progress

Established in 1999 by David Shapiro, LESCO Manufacturing boasts a remarkable 23-year track record under its name. The company's origins trace back to 1958 with Switch King, founded by Natie Shapiro, David's father. Today, LESCO continues to thrive under the leadership of David's son, Jonathan Shapiro.

According to Shapiro, LESCO Manufacturing assumes distinct roles for stakeholders. For retailers, it serves as a trusted and preferred supplier. Homeowners associate the brand with safety and top-notch electrical products. For the youth and traditionally marginalised job-seekers, the company offers valuable employment opportunities.

"LESCO Manufacturing has earned its reputation as a driver of sustainable change across the African continent," Shapiro asserts. As part of its commitment to sustainability, the company recently consolidated its operations into a single, larger building in City Deep, Johannesburg, to enhance production and moulding capacities. This was primarily driven by a desire for increased capacity.

With expanded premises and the integration of new machinery, LESCO produces a wide range of competitively priced products that adhere to local standards and possess SABS accreditation. The company is widely recognised for its stringent quality control and quick response to specification changes.

An unwavering commitment to sustainability lies at the heart of

LESCO Manufacturing. The company is dedicated to supporting local talent and infrastructure while aligning its efforts with the United Nations' 17 Sustainable Development Goals. LESCO's community development programmes have provided work opportunities for a diverse range of individuals, including those with disabilities, women, and the youth.

David Shapiro's vision goes beyond social

change. He recently developed an assembly rail system for the production area that produces the same output without the use of any electricity, ensuring uninterrupted operations even during power outages.

Despite challenges faced by South Africa's manufacturing sector, Shapiro remains optimistic. LESCO stands as a testament to the industry's vitality, becoming more competitive as the Rand weakens. Shapiro emphasises the importance of supporting job-creating businesses to contribute positively to South Africa's growth. "We have been hosting key stakeholders at our factory since we moved

in and the response has been exceptionally positive and encouraging" says Shapiro.

The future looks promising for LESCO Manufacturing. The recent launch of the Apollo range, a significant tooling exercise, has not deterred the company from exploring new opportunities in the American and African markets.

With its commitment to sustainability and innovation, LESCO Manufacturing continues to shine as a beacon of progress in the electrical manufacturing industry.

For enquiries, visit: [www.lescosk.com](http://www.lescosk.com)



LESCO's updated factory layout has allowed the business to grow.

## WORX portable fan brings cooling to the job site

Tool manufacturer WORX has unveiled its Home & Jobsite Cordless & AC 20V two-speed fan. The compact unit measures 59 x 37 x 33cm and weighs just 2.48kg, making it portable, easy to store and easier to manoeuvre into tight spots that were often too hot to work in – like a cramped space between walls.

The fan has a 2.0Ah battery that provides up to six hours of cooling at low speed (1 500rpm) and two hours of cooling at high speed (2 500rpm). The 20V battery makes use of WORX's Power Share technology that allows you to use the battery on other WORX products regardless of the voltage, thanks to its adaptable chemical composition and proprietary connection design.

It has a 360° panorama swivel base that allows users to turn the fan head in any direction while maintaining its solid footing. The fan can clear up to 13m<sup>3</sup> per minute, providing clean, cool air that allows operators to work in comfort regardless of where they are.

A hanging hook on the back of the fan also allows the unit to be hung overhead in areas where there is limited ground space to stand. It retails at a recommended R1 999 without the battery and charger, and R2 999 with battery and charger kit.

Enquiries: [www.worxsa.co.za](http://www.worxsa.co.za)



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## PRATLEY CELEBRATES 75 YEARS OF BIG BUSINESS

in 2021 was the perfect opportunity for Pratley; "In times of adversity, there is also great opportunity. As Winston Churchill, working to form the United Nations after WWII said, 'Never let a good crisis go to waste.' Through necessity, logistic delays and global raw material shortages, we had, in some instances, to alter one or two of our existing formulations. We had cases where we could not get a specific raw material in the timeframe that we needed or a supplier could not supply at all. By so doing, we actually ended up making some of our products' performance even better.

### Big business

While the name Pratley is well known to consumer customers for DIY adhesive products, the group's CEO is quick to remind people that the business has far more spheres in which it operates. "We have got three separate divisions under the Pratley name. There is the consumer side, Pratley Adhesives, which are products that the public is generally familiar with. But probably our largest business unit is our electrical termination division which is very well known to industry. There we produce highly innovative cable glands, junction boxes and related accessories. Many of them also comply with stringent international standards for use in hazardous locations."

There is also a Pratley Minerals division, where we produce a range of eco-friendly, energy saving and pollution-cleanup products for various industries, explains the CEO. "Our company has been working with perlite and zeolite minerals since the 1970s and we are probably one of the world's leaders in producing these types of products and the related R&D that goes with them. For example, our Pratliperl® product which is a lightweight, thermally insulating and fireproof aggregate is a highly innovative solution when it comes to the energy saving topic that is relevant in South Africa in recent times. It is ideal for producing lightweight, energy saving plasters and

screeds when mixed with ordinary cement.

### Global appeal

While Pratley is a proud product of South Africa, the company has also stretched across the world. It holds over 350 global patents and manufactures over 1000 products across the various business divisions. "There are not many family run companies that can say they have been around for 75 years, weathered pandemics and wars, and even have a product that has been to the moon," says Pratley. "It happened almost by accident really. In the 1960s, there was a company in the United States wanted to produce Pratley Putty under licence from us. Their salespeople went to the American Space Agency (NASA) and sold them on the idea of using the product. But they were not actually manufacturing any of it at the time, so we ended up supplying them an amount from our factory in Krugersdorp. It was eventually used on the Ranger Spacecraft, which was the precursor to the Apollo Moon Missions."

The Pratley family and their employees and business partners can be proud of the work they have done and continue to do. "I am extremely proud, not only of what we have achieved, but also of the very good people that have worked for the company over the years. Many of them started working for us in the '20s, and eventually ended up retiring from us over 30 years later," says Pratley. If nothing else, they are proving that with adversity comes great reward if you are brave enough to take that first bold step. One thing my father believed very strongly was that continuous growth is necessary, even in challenging economic environments. It is easy to sit on your laurels or even bunker down during such times, however, there is a danger in doing this for too long. In order to survive, you have to grow, and we certainly intend on doing just that for the next 75 years," concludes Andrew Pratley.

Enquiries: [www.pratley.com](http://www.pratley.com)



## BIM might be the best thing you can do for a new project

**B**IM stands for Building Information Modelling and it is exactly what you'd think it is: Building a complete computer-generated model of a project before a single tool has been lifted on the job site. If you are working on a new building construction, BIM would be used not only to create a 3D visual model of the concrete building structure, but also the plumbing, mechanical, architectural and electrical designs. So why is that becoming so important, especially for the electrical community?

### 3D visualisation

Working from only one model, BIM allows the various teams to collaborate during preconstruction. This means that everyone "is on the same page" and that all teams involved have the same information. It also means that electrical contractors specifically can visualise the completed design.

### Clash detection and co-ordination

Discovering problems on site is a common occurrence that BIM can reduce to an almost impossibility. This is because there is a single computer design file that contains all the information from the teams involved in the project and interferences can be identified and resolved before a single tool is lifted on site. Computer software such as

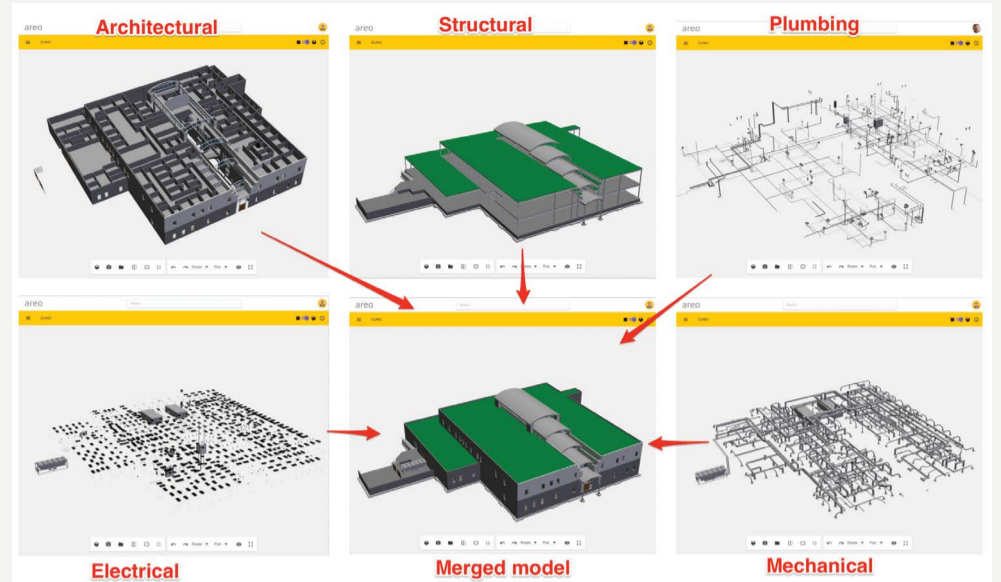
Autodesk Revit and Solibri Model Checker can automate the clash detection process to resolve any issues with 3D and 4D models that also allow for out-of-sequence viewing and assessment.

### Change management

It is no secret that problems arise during projects' initiation and implementation phases, with more than 70% of projects going over budget and up to 90% being delivered past the agreed-upon date. This is often due to a breakdown in communication processes between the stakeholders involved. BIM alleviates this issue because information is always available to all parties, and it is easier to keep control of change management. It also means that teams do not sit around on site wasting time waiting to perform their own tasks.

### Schedule- and cost-tracking

Contractors can identify and target each aspect of a project build, which means that off-site prefabrication can be pre-planned to help speed up construction. BIM has also helped cost estimators, who now no longer need to spend up to 60% of their time on the quantification process. Instead, the digital model allows almost immediate access to every bit of information regarding the project and there is an assurance that the generated outcome is consistent with the design.



For example, adding more light fittings and power points to the building plans will automatically be updated on the construction documents, which include the building schedules and stock sheets. This is available to the cost estimator, and to the teams responsible for their installation.

### Safety

BIM computer modelling reduces the need for people to be on site. This in turn means that the teams of professionals are allowed to work in the project space unencumbered and without "outsiders" potentially placing themselves, and therefore the rest of the team, in harm's way.

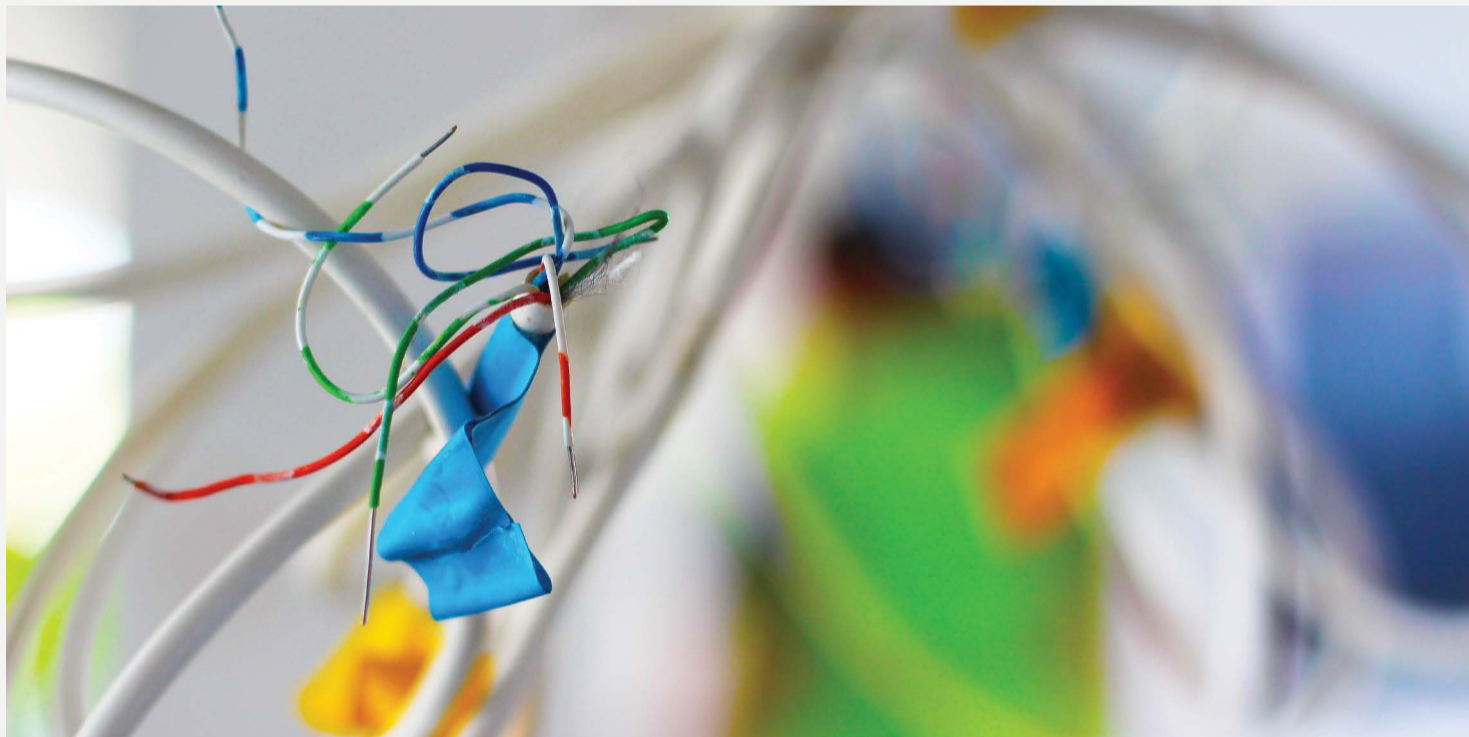
With prefabrication being highlighted early in the project's planning phase,

the amount of machinery, equipment and materials on site is also drastically reduced, thereby making it easier for the health and safety team to maintain control on site.

BIM technology is not new in the market, but with software developments and updates taking place on a daily basis, it has become a far more accessible and easy-to-use tool in planning and executing projects. With the need to pre-order materials and, having a lead time until delivery of goods, it makes sense for electrical contractors to make use of BIM as often as possible to manage their installations and bring power to the process.

Source: [www.linkedin.com/pulse](http://www.linkedin.com/pulse)

## Three steps to handling difficult clients – and what not to do



**I**t is important to avoid loose connections on a job site – literally and figuratively. Clients can often lose their cool during a project when they believe something is being done incorrectly or that their requirements are not being met; some even do it to relieve stress around other problems in their lives. Professionals, however, need always to maintain composure, to preserve their good reputations in the industry and keep work coming in.

What follows is an easy-to-follow three-step plan that will help you to identify problem clients. You will get a better understanding of why they act out, as well as how to improve your business

offering so they do not behave badly in the first place.

### Do not argue

Repeat this: "I will not argue with a client". Even if you win the argument, you will lose in the end. A client is often trying to be heard and might believe that an aspect of the job has not been performed correctly. This does not mean you need to retaliate even though you are defending your work which, chances are, will be flawless. Arguing or bickering is not a good way to work, and will earn you the reputation of being problematic yourself.

**Do not...** snipe back. Even if the client is

incorrect, practice restraint and do not lash out or present an aggressive attitude towards the client. It may be difficult, but it is in your best interests to remain calm at all times.

### Read between the lines

Listen to what the client is trying to communicate because they will often say things without using the words to make it clear. If a client complains that they've spend hundreds of thousands of Rands on a project, it could mean they are feeling under-appreciated and just want some form of acknowledgement. If they nit-pick on every little thing, they could be feeling ignored, so make 10 minutes

available to have a calm discussion and iron out any issues.

**Do not...** ignore what they are saying or delay helping. If a client says something is missing from a particular project, look at the specific area of concern. Show that you are attentive to their needs but also that you are aware of their immediate concerns.

### Appeal to the heart

When a client loses their temper, ask what would remedy the situation. A simple "What would make this right?" will often instantly calm down an angry client as they have your attention and can see you are willing to help fix the problem – even though it might not need fixing. By trying to understand the client's situation, you can better understand what they actually want. It will also let them feel you are on their side and want everything to go according to plan. Be sure to ask the client for some time to assess the situation and then correct it where necessary.

**Do not...** say "What do you want me to do about it?" as that comes across as belligerent and aggressive. You want the problematic client to feel calmer, so waving a red cape in front of their face will not help. Also do not put up a wall that encourages them to be more aggressive in getting their point across to you.

The key to any successful business relationship or project is harmony among those involved, directly and indirectly. That is not always possible, but with a few simple and easy-to-remember techniques, you will be able to successfully deal with a troublesome client, maintain your reputation and ensure the project's success.

Source: [www.ewweb.com](http://www.ewweb.com)



## Bigger is better for power plant solutions, says Zest WEG

Reliable and consistent power supply is critical to economic growth on the African continent, which has led to companies opting to install ever larger power systems. Zest WEG notes that it is seeing more demand for generating plants with capacity of 10MW and greater. A popular option among many customers has been the company's modular solutions in this power range.

Whether companies demand power merely to survive loadshedding or to improve production output, the trend is for these power-generating systems to get bigger, explains Bernard Mitton, Business Development Consultant at Zest WEG.

"It is becoming more common for customers to request proposals for power solutions that exceed 10 MW. In South Africa this appears to be mainly a response to rising levels of loadshedding. In other parts of Africa, it is economic growth that drives demand," says Mitton, adding, "For many companies who want to grow their output, it is vital to have continuous and reliable power supply.

In recent years, Zest WEG has been designing and installing more of these large power plants for customers across Africa."

Zest WEG's depth of in-house engineering expertise and technical capability has seen the company become an industry leader, making it an obvious choice for projects like power plant installations. "From the generator sets themselves, to the transformers, switchgear and containers, Zest WEG is able to provide our customers with a full turnkey solution," says Mitton. "We often propose a modular system that allows the customer to roll out their project in phases."

This allows companies to begin with the most cost-effective solution, then having capacity to expand the plant as their power demand grows. In one of these 10MW systems, there will usually be eight to 10 generators installed within a containerised solution or a dedicated power plant room. They can generate power at 400V, to be stepped up by



transformer up to 11kV – or power can be generated directly with an alternator output up to 11kV.

"For a typical 10MW power plant, we connect the generators to a common switchboard up to maximum 22kV to distribute power to the various on site loads," says Mitton. "The switchboard solution can be installed in a container, an E-house or a plant room."

Each customer's generating unit is tailor-made and engineered for their needs, then built and fully tested in Zest WEG's Cape Town generator facility. Testing includes a step load test and the synchronisation of generators to each other – verifying all setpoints, engine performance and efficiency indicators.

Enquiries: [www.zestweg.com](http://www.zestweg.com)

## Referro-AMCI partnership brings PLC-Based Control Solutions to Africa

Distribution and sales company Referro Systems has partnered with US-based Advanced Micro Controls (AMCI) to import its range of Programmable Logic Controller (PLC)-based control solutions. Other products included in the partnership include AMCI's position sensing and motion control solutions that have previously been unavailable directly to the continent.

Adrian van Wyk, Managing Director of Referro Systems, says, "We are excited to bring the AMCI range of technologically advanced specialised products to the African continent. AMCI's control solutions, and in particular PLC Networked products, specialty I/O, position sensing and motion control products, dovetail with our current range of products that will simplify deployment of our customers' automation goals and add reliability and flexibility to manufacturing processes throughout Africa."

The deal will be beneficial to both companies and the marketplace, explains Van Wyk. "This is a win-win partnership – AMCI has found in Referro a successful partner and a partnership that can only grow the AMCI brand and technology presence within the African market. And for Referro, representing a premium global product offering (like that of AMCI) will extend our reach into the automation space."

AMCI was founded in 1985 and designs and manufactures all of its products in-house. "AMCI conducts comprehensive testing of every component, providing superior



**SMD23E2 Networked Series Integrated Stepper Motor + Controller + Drive.**

quality and innovation to its global customer base, says Van Wyk. "Its commitment to excellence in all areas of the company; research and development, sales, distribution and product support, mirrors our own culture and we look forward to working hand-in-hand with AMCI to deliver superior quality, performance and business operations to our customers in South Africa and across the continent."

Referro's technical sales team has been fully trained on the AMCI product range and according to Van Wyk, this was of great importance to the deal with the US-based company. "Our experts are ready to answer customer questions about the selection, installation, configuration and operation of all AMCI products into their systems. Both Referro Systems and AMCI invest heavily in training and continuous development to ensure product and system reliability and when needed, customer support is only a call or click away."

Enquiries: [www.referro.co.za](http://www.referro.co.za)

## SEW-EURODRIVE's Maxolution range could be key to maximising your automation efficiency

As businesses automate their production processes for better productivity, there can often be unknowns and pitfalls in navigating this technically intensive transition. SEW-EURODRIVE is simplifying this task by working with its customers to avoid these risks, applying its proven Maxolution offerings in applications that range from automotive plants to logistics warehouses and manufacturing facilities.

According to Werner Engelbrecht, Works Manager Mechatronics at SEW-EURODRIVE, this automation implementation process is focused on combining every aspect of the production process of SEW-EURODRIVE's customers, including fully integrated hardware and software components. Rather than a customer having to develop their own software infrastructure from scratch, says Engelbrecht, "Maxolution has its own pre-defined application modules that have been developed by the programming and engineering teams at SEW-EURODRIVE, drawing on their years of experience in the field."

"With our specialised software, we can simulate material flow in industrial systems, helping customers to achieve greater efficiency through multiple integrations of systems," he says. "The Maxolution portfolio allows applications in the customer's facility to be incorporated into a single network that can be troubleshooted before being assembled and put into the production line."

This creates the foundation for a complete system to work in synergy. It also opens the door to integrate new systems and to allow existing systems



**Automated Guided Vehicles (AGVs) make up part of SEW-EURODRIVE's Maxolution automation line-up.**

to adapt to product changes, explains Engelbrecht. "Maxolution can offer cost-effective adaptability for product variations in a production line due to its easily programmable application modules."

The system has already been installed to help automate the factories of leading South African car manufacturers. However, Engelbrecht argues that Maxolution has significant potential in other local sectors, helping to raise efficiencies, productivity and output once the processes have been tested, audited and applied.

"With our experience and the proven technology, we can use the Maxolution systems to implement automation plans cost effectively and quickly," he says. "These solutions also save energy through the use of energy management systems and energy efficient IE4 and IE5 mechatronic decentralised solutions and motors."

He highlights that the Maxolution offering is an important way that SEW-EURODRIVE differentiates itself as not only an equipment supplier, but as a partner in project planning, commissioning, after-sales service and support. Customers can even enrol staff for training at SEW-EURODRIVE's state-of-the-art Drive Academy near Johannesburg.

Enquiries: [www.sew-eurodrive.co.za](http://www.sew-eurodrive.co.za)

## ACTOM MV Switchgear unveils its cost-saving SBV4XE

Electrical solution specialist ACTOM has through its MV Switchgear (MVS) division launched its SBV4XE switchgear offering. Developed as the popular SBV4 and SBV4E's successor, the latest product from MVS represents a significant step forward as the SBV4XE has incorporated modern features that further enhance performance, functionality and cost saving.

Rhett Kelly, MVS's Design & Development Manager, says, "In developing the SBV4XE, we sought to retain the outstanding features of our previous models while introducing a host of significant improvements. Drawing upon our extensive experience, spanning 50 years, in switchgear manufacturing, we have re-imagined the SBV4E."

### The SBV4XE's features include:

- **Enhanced mechanisms:** The spring and cam follower mechanism redesign has used alternative materials, reducing costs without compromising reliability.
- **Efficient operations:** The opening and closing releases require less energy, resulting in improved energy efficiency.
- **Reduced maintenance:** A lower parts count in the circuit breaker operating mechanism requires less maintenance, leading to reduced ownership costs.
- **Emission reduction:** Arc cooling pressure relief devices have been integrated into the housing assembly, mitigating emissions during internal arc faults.
- **Optimised manufacturing:** The housing assembly is now bolted and riveted instead of welded,

streamlining production and offering inherent corrosion resistance.

- **Cost-competitive assembly:** The vacuum interrupter pole assembly is more cost-competitive, ensuring affordability without sacrificing quality.
- **Lightweight construction:** Components are manufactured using aluminium and zinc-coated steel sheeting, providing corrosion resistance and enhanced galvanic bonding properties.
- **Advanced current transformers:** The ring bar and base current transformers utilise epoxy resin insulation with an earth-screened bar primary and toroidal core.

### Overall improvement

Donovan Stevens, ACTOM Switchgear Division CEO, states, "The SBV4XE represents a significant leap forward in switchgear technology for our company and the industry. Its innovative features and cost-saving enhancements mean that we are able to offer our customers unparalleled value, reliability and ease of use. We are excited to introduce this ground-breaking solution to the market."

Mervyn Naidoo, ACTOM Group CEO, adds, "ACTOM is committed to delivering cutting-edge electrical solutions that address the evolving needs of our customers. The SBV4XE is a testament to our dedication to innovation and excellence, and we are confident it will set new benchmarks in the industry."

Enquiries: [www.actomswitchgear.co.za](http://www.actomswitchgear.co.za)



## Power Process Systems celebrates 30 years of business success



From left: Ervin Toth, Nhlanhla Zondo, Michael du Toit, Fundile Zondo and Caroline du Toit.

Electrical enclosure and distribution equipment manufacturer Power Process Systems (PPS) recently celebrated 30 years in business, having been established in 1993.

"We predominantly supply to the electrical infrastructure market, with the focus being on network reticulation (underground and overhead) and commercial distribution and metering panels," says Michael du Toit, PPS's Managing Director. "The sound reputation which Power Process Systems has built has always been based on the cornerstone of not only doing things right but also 'doing the right things'. The company's management constantly strive to be active participants in the electrical distribution industry through channels such as skills development, charitable contributions and transformation."

### Delivering to the market

In the past three decades, PPS has grown its team of experts. "We now have fully equipped manufacturing, assembly and wiring facilities in Johannesburg and Cape Town," says Du Toit. "All the components used in our products are designed, engineered, tested and manufactured in-house."

This has allowed PPS to maintain a strict standard of control and quality check system

to ensure that its products conform to all international specifications while also giving users peace of mind. "PPS has full ISO 9001/2008 SABS quality accreditation, and we are an SABS-accredited production facility for electrical assemblies under 10kA," explains Du Toit.

### Building for the future

The PPS team has worked tirelessly not only to construct high-quality products, but also to ensure that its service and in-field performance is second to none. "We have supplied to some of the largest reticulation projects undertaken in the South African electrical distribution industry," says Du Toit proudly. PPS got a boost in 2021 when it found a new business partner with the same ambitions and visions. "Msebe Investment Holdings bought into our Group in 2021, adding significant value through shareholder input and management. It has been a wonderful partnership, and we are looking forward to concluding successful projects as a team," adds Du Toit.

PPS is the largest manufacturer of reticulation enclosures in South Africa, with its electrical distribution products used by utilities across the country.

Enquiries: [www.ppspower.co.za](http://www.ppspower.co.za)

## ABB ties up CRM contract with ArcelorMittal Nippon Steel India

Electrical industry leader ABB has been awarded a multi-million dollar contract to provide electrification and automation solutions at ArcelorMittal Nippon Steel India's new advanced Hazira cold rolling mill (CRM) in Gujarat, West India, with the order being placed through original equipment manufacturer John Cockerill India Limited. The project will see ABB implement its proprietary technology to increase energy efficiency and optimised zinc consumption, leading to greater sustainability in the steel production process.

The flagship manufacturing plant is part of ArcelorMittal and Nippon Steel's downstream expansion plan, with ABB providing tried-and-tested solutions such as its ABB Ability System 800xA distributed control system to assist in high levels of corrosion resistance throughout the steel production process among other key operational processes.

"Our goal is to help create smarter steels for brighter futures, brighter futures for people and the planet. We place safety, innovation and technology at the heart of our manufacturing operations and product development, and ABB's technology will support us in this," said Dilip Oommen, Chief Executive Officer of ArcelorMittal

Nippon Steel India (AM/NS India). "The new processing lines are designed to produce new-age value-added steel, embedding the most demanding quality standards. This expansion will help us meet the growing demand for high-end steel while also enhancing our portfolio of value-added, sustainable steel."

The new CRM is expected to be commissioned in 2024. ArcelorMittal Nippon Steel will be looking to add to its crude steel capacity of 9 million metric tons per annum, with ABB's input and technology assisting with maximising production.

"We are proud of having been chosen by such a first-class steelmaker for the supply of two highly automated processing lines, combining cutting-edge equipment with integrated quality control and enhanced energy efficiency," says Frédéric Midy, Project Director for John Cockerill Industry. "The fight against climate change is part of John Cockerill's mission. This new contract will not only enable us to accompany ArcelorMittal Nippon Steel India on its journey towards sustainability but will also contribute to the country's low-carbon economy ambitions."

Enquiries: [www.global.abb](http://www.global.abb)





## Maintaining transformer performance has never been more important to a business's success – or easier

Transformers are critical components in business operations around the world, not least South Africa which is yet again in a critical position thanks to loadshedding. Transformers provide a reliable and stable power supply to operate equipment and machinery, but as with all other equipment, transformers are prone to wear-and-tear degradation and ageing, which can lead to failures, malfunctions and unplanned downtime, thus affecting production.

Condition monitoring specialist company WearCheck has developed monitoring software that allows engineers to get real-time feedback on transformer performance, which is a critical operational tool, says Gert Nel, WearCheck's Transformer Division Manager. "The timely detection and diagnosis of potential issues is essential for ensuring efficient and reliable operation of any project."

But it is not just digital monitoring tools that need to be implemented, says Nel. "Transformer oil condition monitoring can be used as an excellent tool for predictive maintenance of transformers. Oil is an essential component of the transformer insulation and cooling systems, playing a critical role in maintaining the transformer's electrical and mechanical properties. The condition of transformer oil can indicate the health of the transformer, as changes in the oil properties can result from various forms of wear and ageing. Monitoring the condition of transformer oil is a useful tool for predicting potential issues in transformers."

Monitoring the transformer oil involves analysing the physical and chemical properties of the fluid, such as furanic components, dielectric strength, interfacial tension, acidity, moisture content and dissolved gas content. These properties can provide insight into the condition of the transformer insulation and other components, as well as potential issues that may be developing.

"By analysing the oil properties over time, maintenance teams can detect changes in the oil condition and take appropriate actions, such as performing maintenance or replacing components before a failure occurs," explains Nel, adding that "there are several methods for analysing the physical and chemical properties of transformer oil, each with its advantages and limitations. Some of the common methods include:

- Furanic test: Paper deterioration is the single biggest cause of transformer failure. WearCheck's furanic test enables the predicted DP value to be tested from the oil rather than taking an actual paper sample, which is intrusive and often inaccurate.
- Furanic derivatives in transformer oil are correlated with the UV-visible spectral property. 2-FAL is the major furanic derivative and the most stable compound of deterioration of insulation paper. High concentration of furanic derivatives may indicate presence of thermal fault and also indicates the tensile strength of paper insulation life.
- Dielectric Breakdown Voltage (DBV) Testing: DBV testing is a technique used to measure the breakdown voltage of transformer oil under an applied voltage. DBV testing can detect changes in the oil dielectric strength, which can indicate potential issues

with the transformer insulation or other components.

- Water Content Analysis: Water content analysis is a technique used to measure the moisture content of transformer oil. Excess moisture in transformer oil can lead to reduced insulation properties, corrosion, and other issues.
- Dissolved Gas Analysis (DGA) Test of Transformer Oil: DGA is the study of dissolved gases in transformer oil. When a transformer undergoes abnormal thermal and electrical stresses, certain gases are produced due to the decomposition of the transformer oil.

Transformer oil monitoring provides insight and helps maintenance managers to plan remedial action proactively before they escalate into significant problems, which is something every business wants to avoid," says Nel.

Enquiries: [www.wearcheck.co.za](http://www.wearcheck.co.za)



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## Size matters when it comes to solar

As loadshedding continues its unforgiving march, demand for solar systems has continued to increase. But not all clients are aware that getting the right size system is critical to their needs and finances.

"Size really does matter when it comes to panels, but it all comes down to your specific energy needs and desires," says solar expert Rein Snoeck Henkemans, Managing Director of solar power installers Alumo Energy. "In terms of surface area, a larger solar panel will obviously produce much more energy than a smaller one; these range at a 395kWh and 460kWh mark. But the size of the panels is not the only factor influencing your system's overall performance. The azimuth angle and environmental factors also play a major role as they determine the amount of sunlight you'll receive."

A typical 2 x 1m residential solar panel can generate around 405W of power. But if you've got a bigger house with higher energy consumption needs, you will need multiple panels to meet your energy needs. To determine the right size system, Alumo has a Solar Panel Calculator on its website, which allows you to get a real-time quote according to information that you enter into the software.

"The size of a solar system increases with the package size, which means that the larger the solar package, the more power you can generate and sweat up. This means that if you opt for a bigger package with more panels, you could potentially generate enough energy to power larger appliances or electronics in your home or business, which could lead to even greater savings on your electricity bill over time," says Henkemans.

Enquiries: [www.alumo.co.za](http://www.alumo.co.za)



## You could be paying 35% too much on your generator usage

South Africa's loadshedding crisis is hitting businesses harder than anyone has realised. Mobile phone operator Vodacom revealed that, since 2020, it has spent over R4 billion just on back-up power solutions such as batteries and generators, with an additional R300 million spent on diesel, security, and maintenance. Major food retailers are such as Pick 'n Pay are spending up to R3 million a day on diesel just to keep trading.

Smaller businesses are certainly spending a fraction of this but the cost for the enterprises is nevertheless huge. Generators are a significant expense and there is a fine line to balance between the company bearing the cost implication by itself or passing it on to its customers and client base.

Businesses are desperate to find ways to save money on back-up power generation – and local engineering services and asset maintenance specialist Pragma may have the ideal tool to help.

### Generator calculator

As a specialist engineering company, Pragma's calculator is able to quantify potential savings for businesses using online monitoring and generator management systems.

Morné Steenkamp, Pragma's Asset Health Service Divisional Manager, says, "Many companies have multiple generators, but even those with only one need to have a sense of what they can expect from their asset. With proper generator monitoring and asset management, businesses are realising savings of 30-35%."

The Pragma calculator works out a tailored business case based on each business's circumstances and generator fleet. It considers aspects like loss avoidance by ensuring the generator remains healthy; fuel optimisation; increased generator lifespan due to improved, pro-active maintenance; optimal refuelling and reduced call outs; and after-hours work. This information is entered into the software and complex

Generator Savings Calculator			
Cost saving element	Monthly saving per generator	Annual saving per generator	Annual savings for all generators
<input checked="" type="checkbox"/> Opportunity cost of generator not starting up	R 8 333	R 99 996	R 999 960
<input checked="" type="checkbox"/> Fuel optimisation Generators disabled after hours (30%)	R 12 666	R 151 992	R 1 519 920
<input checked="" type="checkbox"/> Load management Influence behaviour, protect generator and reduce energy (2% of avg fuel)	R 1 222	R 14 664	R 146 640
<input checked="" type="checkbox"/> Increased asset life Extend asset life with 5 years	R 6 140	R 73 680	R 736 800
<input checked="" type="checkbox"/> Reduction in maintenance cost due to early failure detection Reduce large failure once in 5 years	R 2 461	R 29 532	R 295 320
<input checked="" type="checkbox"/> Cost benchmarking 15% Cost saving	R 6 922	R 83 064	R 830 640
<input checked="" type="checkbox"/> Re-fuelling planning Prevent 2 too early re-fuellings per year	R 200	R 2 400	R 24 000
<input checked="" type="checkbox"/> Reduce call-outs and after hour work Own staff overtime	R 400	R 4 800	R 48 000
<input checked="" type="checkbox"/> Reduce maintenance management resources 8 Hours annually	R 200	R 2 400	R 24 000
<input checked="" type="checkbox"/> Load testing cost Load testing facilitated via on-site staff	R 900	R 10 800	R 108 000
<b>Totals</b>	<b>R 39 444</b>	<b>R 473 328</b>	<b>R 4 733 280</b>

calculations provide answers. But it is not just the generator calculator that is going to save money.

### Hardware monitoring and maintenance

One of the less obvious costs related to generating alternative power is also one of the most significant. The average generator will run for more than 1,500 hours per year in South Africa, requiring at least six maintenance services.

"Generators should last 25-30 years," says Steenkamp, "but without proper maintenance, their lifespans are significantly shortened by current loadshedding in the country. Businesses are struggling to keep up with refuelling requirements and neglect more frequent generator services. The good news is that there are opportunities to save costs with the appropriate software, business processes and contractor networks."

Often businesses have different brands and models of generators in their system, which used to be a headache as each unit would require special computer software to monitor it. But Pragma has developed a program to alleviate this issue by allowing for a

standard monitoring solution.

Rhynard Prins, Pragma's Asset Health Management Business Development Manager, explains, "Pragma's monitoring system is compatible with most common generators available in the marketplace. Many clients buy monitoring hardware but are not clear about how the data from the monitoring solution will be used. Businesses struggle to prioritise the work required on these machines and ensure the work is executed. Pragma's monitoring solution is underpinned by a sophisticated maintenance management system that automatically keeps track of maintenance, refuelling, contractor management and service level agreements through mobile applications.

"What differentiates Pragma is that all data points are recorded, analysed and reported, plus customers have a real time view of their entire generator fleet. We help our clients get a grip on the workload and to drive decision making in support of budget forecasts, optimal maintenance strategies and more," says Prins.

Enquiries: [www.pragmaworld.net](http://www.pragmaworld.net)

## Registration is open for the Solar & Storage Live Africa 2024 show

Being held 18-20 March 2024, the 27th annual Solar & Storage Live Africa conference and expo is now open for visitor, speaker and exhibitor registration. The event will take place at Johannesburg's Gallagher Estate Convention Centre in Midrand, with the theme of *Technology, Investment, Development-Accelerating Africa's Sustainable Energy Future*.

The previous event, hosted in April 2023 in Sandton welcomed over 15,000 attendees, 1,500 VIPs, 350 exhibitors and over 200 speakers from more than 40 African countries attending the three-day show. The expo centres on new technologies and market disruptions that have been designed to interrupt the status quo and offer solutions to serious power delivery crises that impact the African continent and the world as a whole. This includes enabling Africa's energy transition and bringing solar energy generation, battery, storage solutions and clean energy innovations to the forefront.

The Solar & Storage Live Africa event takes place in conjunction with the Future Energy Show Africa, which is run by the same team. Together, the expos aim to unite all leading stakeholders, from energy utilities, IPPs and governments, to regulators, associations and consumers. Large energy users in all industries, energy start-ups and incumbent innovators are also represented, allowing for their invaluable input into this critical industry that concerns the entire world.

There will be various means of interaction for attendees. The specially designed mobile app (iOS and Android) allows access to the event, connecting with exhibitors, buyers and sellers, as well as scheduling virtual meetings. Evening networking events and hosted VIP meetings allow guests to interact on a face-to-face level, while exhibitions allow visitors to meet a variety of skilled experts who are able to provide insight on new products, developments to technologies and more in the ongoing quest for energy supply, storage and efficiency. There will also be keynote presentations on topics ranging from decarbonisation, to battery storage, sustainability and asset management.

Enquiries: <https://www.terrapinn.com/exhibition/solar-show-africa/index.stm>

## Storage batteries: Knowing the good from the bad

Loadshedding isn't going anywhere anytime soon (still), so the search for back-up power is more important than ever. But with myriad options on the market, how do you know the performers from the flops when it comes to storage batteries?

Lance Dickerson, Managing Director of Honeydew-based battery specialists REVVOV, says, "Whether a household or a business chooses to invest in renewable energy generation, such as solar, or in an uninterrupted power supply (UPS) system, batteries are an integral component. If the wind is not blowing and the sun is not shining, electricity that has been generated needs to be stored to carry the system until the renewable source resumes once more."

### Here's a five-step guide to choosing the right battery for your system.

#### The chemistry

This is critically important. If the chemical make-up of the battery is incorrect, not only will the battery be ineffective, it may be dangerous as well. Different chemistries are better suited for specific environments – for example, automotive-grade battery cells deliver extreme temperature resilience and high-energy density, which makes them well suited to environments that rely on these characteristics.

#### Charging capacity

A battery must meet user demands, so you need to ensure that whatever unit you choose has the right capacity insurance. That means the battery has the ability to support the charging required and remain within the operation paradigm of the system.

#### Well-designed box

It does not help to spend a fortune in time and money to design and develop a battery cell, only to use substandard materials to construct the frame structure. The physical box that houses the battery not only needs to be rugged to protect the user from any potential physical risk, it needs to shield the battery from any possible damage from external forces. There must also be secure monitoring systems in place to provide the user with accurate information about the status of the battery at all times.

#### Safety

Batteries are built using chemicals and there is a constant chemical reaction taking place within the cell. Safety is paramount when choosing a unit to install in your system.

A lithium battery, for example, has a

battery management system (BMS) that monitors and shuts down the battery at failure. There are also physical signs to look out for, like a misshapen form or leaks. 2nd LiFe batteries from electric vehicles (EVs) are designed to deliver performance and safety. If you consider that 2nd LiFe batteries have 10-15 years of use once they have been repurposed from their 1st LiFe in EVs

into storage batteries, the value is two-fold: You pay less for high-grade batteries, and batteries headed for landfills are moved off grid in a sustainable manner.

#### Carbon footprint

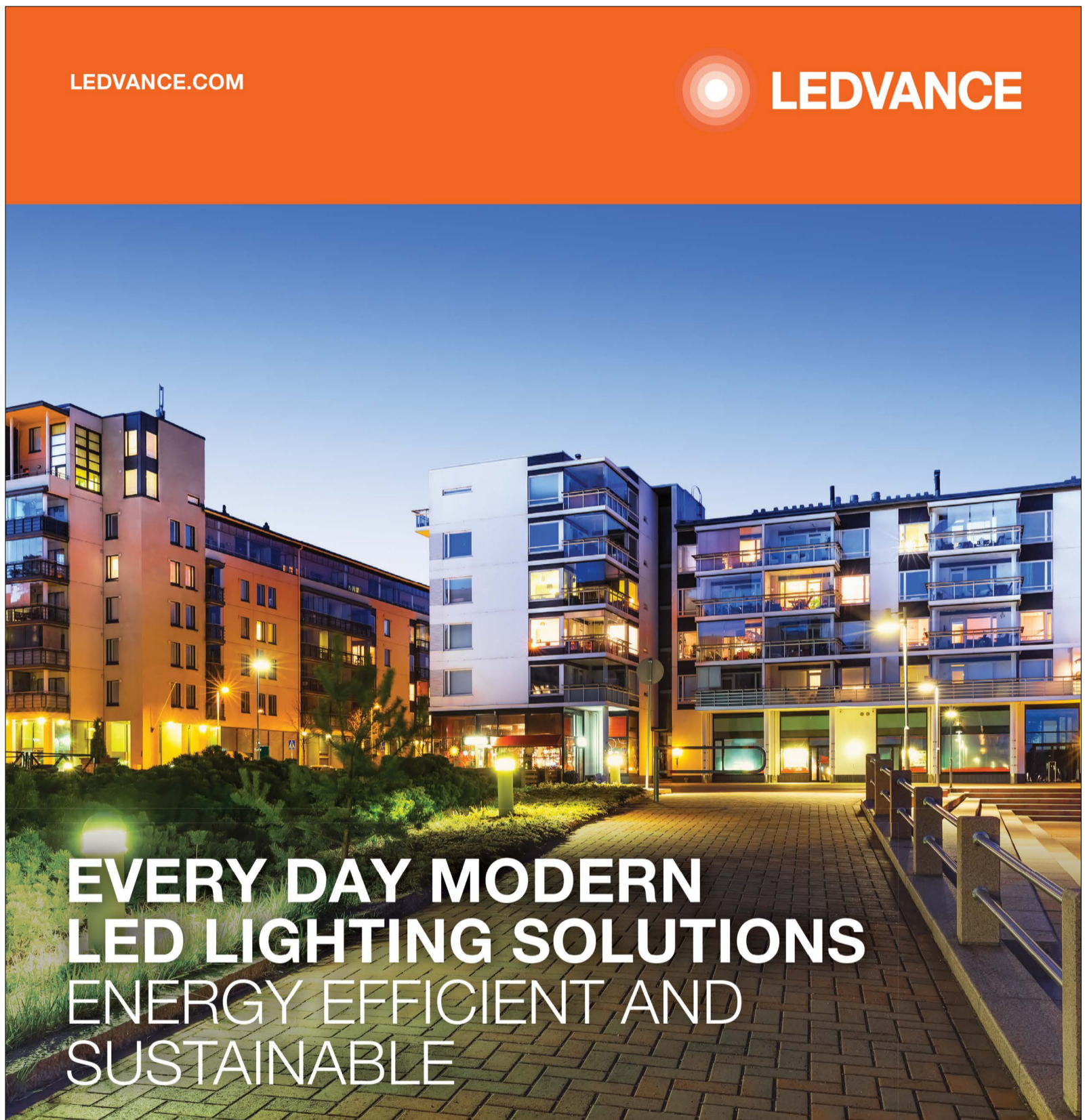
Choosing the lowest environmental impact is the right thing to do. Our children and their children deserve a healthy planet.

There is no battery with a lower carbon footprint than a 2nd LiFe battery. They have already lived their first life in the EV market. The components are made of the best cells, a casing and the BMS – no new lithium or lead is mined and beneficiated, and the cells are put to good use instead of being tossed into landfills.

Enquiries: [www.revov.co.za](http://www.revov.co.za)

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## Process automation is key to the success of solar farms in South Africa

The establishment of solar farms continues to grow in South Africa as a result of the ongoing electricity supply problem that has crippled the country for years. Solar farms are not a silver bullet solution to loadshedding, though, explains Hennie Colyn, Direct Sales Executive of Process Automation at Schneider Electric. "According to Eskom's renewable statistics webpage, some 2,787MW solar generating power is connected to the grid. Of that capacity, PV (photovoltaic) plants contribute 2,287MW, while a further 500MW come from concentrated solar plants (CSPs)."

While solar farms can play a significant role in addressing the country's energy needs, they are unlikely to completely replace traditional forms of energy generation anytime soon.

Instead, a combination of renewable energy and traditional energy sources may be the most effective solution, says Colyn. "Renewable sources such as solar farms must be implemented correctly from the get-go to ensure that they effectively contribute to the country's distributed energy resources

(DERs) posture." One way of ensuring correct planning and execution thereof is process automation.

### Automation solution

Every single project in the world, regardless of industry or environment, is a combination of various moving parts – and to make sure that everything goes seamlessly, there needs to be a huge planning process. Due to their complex nature, as well as the scale of energy generation and feeding into a national electricity grid, the planning and implementation phases of solar farms need to be undertaken by experts who have years of training and hands-on experience. Making that process a little easier is automation.

"Importantly, process automation reduces solar projects' time to market and overall cost," says Colyn, adding, "This is thanks to optimised engineering and design, combined with simpler installation protocols and commissioning that are compliant to grid codes and standards. This, in turn, maximises revenue and optimises operations with a

focus on people and asset safety, system reliability, operational efficiency and security against cyberattacks.

### Automation benefits

Project and plant automation comes with a host of positives, even if they are not apparent at first glance. These include but are not limited to:

- Process automation provides insight into how energy is being used and how it can be optimised.
- It tracks how the PV energy produced is being consumed by the loads, stored, or injected to the grid.
- Automation follows and analyses the trends of the PV production alongside the loads' consumption.
- Users are able to calculate economic benefits related to the reduced consumption of energy from the grid.
- Asset management features include the assessment of the PV system performance, detection of drifts or malfunctions, and immediate fault notification.

- Process automation provides information about power quality disturbances that can be measured and followed, especially harmonics and imbalance.

Process automation also provides insight into grid-connected PV production and offers the following important control functions:

- Limiting PV production to avoid injection of power to the grid.
- Managing power factor at the point of grid connection to avoid penalties.
- Shifting loads to the period of PV production to maximise self-consumption.
- Participating in demand response, especially when storage or generators are also part of the installation.

Combined with advanced cloud-based analytics, solar farms can benefit from the optimised usage of local electricity production, which generates additional economic savings.

Enquiries: [www.se.com/za/en](http://www.se.com/za/en)

## Scatec heads to the Northern Cape Province with a massive renewable energy project

Norwegian energy company Scatec has made strides over the last few decades with its energy storage products and solutions that most recently involve integrating cutting-edge storage technologies into renewable energy projects.

Scatec has headed to the Northern Cape Province where it is executing its three Kenhardt battery storage projects after concluding the contract in late 2022 with the Department of Mineral Resources and Energy in South Africa.

Jan Fourie, Executive Vice President for Scatec in Sub-Saharan Africa, says, "The initiation of our three Kenhardt projects, under the auspices of the Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP), exemplifies Scatec's innovative spirit. These ambitious projects, involving a total capital expenditure approaching a staggering \$1 billion, represent one of the most extensive photovoltaic endeavours globally."

The Kenhardt projects are unique in design to meet the needs of the project as well as the South African environment and weather systems. "There is a total solar capacity of 540MW and a battery storage capacity of 225MW/1,140MWh is truly the first of its kind," says Fourie, adding, "Upon completion, the Scatec Kenhardt system will rank among the world's largest solar and battery hybrid installations. More than just large-scale, these projects are transformative in that the utility-scale energy storage solutions will allow renewable solar energy to become fully dispatchable – and to flexibly meet the demands of the grid in real-time."



BESS Installation, Scatec Kenhardt facilities.

The projects provide a glimpse into the future of energy storage. Expected to provide 150MW of dispatchable power under a 20-year Power Purchase Agreement (PPA), the Kenhardt plants will significantly alleviate the power shortages currently experienced in the region, highlighting the critical role of energy storage in SA's road towards energy security, and the battle against the ongoing Loadshedding crisis.

Scatec will retain a 51% stake in the project, while the remaining 49% will be held by the company's local partner, H1 Holdings, says Fourie. "Our role as the Engineering, Procurement, and Construction (EPC) provider mandates us to provide Operation & Maintenance and Asset Management services for the power plants. This strategy reinforces Scatec's commitment to fostering local economic growth, and also facilitating skills and knowledge transfer around the latest innovations in incipient energy storage technologies – a rapidly evolving field."

Lithium-ion (Li-Ion) technology continues to be widely used as the primary storage solution in the solar energy industry, especially in South Africa where the climate is sunnier and warmer

than most parts of the world. This has helped make solar energy cost competitive with coal-based plants at the utility and industrial scales, Fourie explains. Not that Scatec is resting on its laurels. "Other technologies are emerging as potential alternatives. For instance, supercapacitors and different types of batteries (such as Li/K/Zn/Na/Mg ion/air-based solutions) are being researched for their flexibility of scale and low environmental impact. While Li-Ion is still a standard, we are committed to staying at the forefront of these developments, exploring options and considering how to leverage these advances to diversify the solar energy storage landscape, and drive further innovation."

The Kenhardt projects highlight the importance of using the most technologically advanced equipment available in the storage industry to effect a true and just energy transition in SA. "Our role in these projects and our commitment to integrating cutting-edge storage technologies affirm our position as a key player in driving the solar energy revolution in the country," concludes Fourie.

Enquiries: [www.scatec.com](http://www.scatec.com)

## Beyond Turbines – Windaba 2023 heads to Cape Town to talk about wind's power

The annual wind-themed conference Windaba will take place at the Cape Town International Convention Centre from 3-5 October 2023, and will feature a roster of local and international experts who will explore and recommend the best path to delivering a sustainable energy supply.

The theme of Windaba 2023 is *Beyond the Turbines*, and it will feature themes such as changing the world with wind and how the resource can be used to tackle challenges facing the world, including climate change, social inequity and energy inequality.

"The situation we find ourselves in has been 15 years in the making, but we do not have 15 years to resolve the energy issues facing the country, to combat loadshedding and meet our climate obligations," says Niveshen Govender, Chief Executive Officer of the South African Wind Energy Association.

"Our ambition is for South Africa's wind power industry to thrive as we pursue a common goal of harnessing the natural resource in a bid to deliver secure energy for South Africa. This will only be achieved through innovative thinking, a spirit of collaboration – across the renewables industry, government and private sector."

Attendees at Windaba 2023 will hear how the wind sector has a role to play in addressing and managing complex global challenges – South Africa



is not suffering alone with energy supply-demand issues – and how to create a more sustainable and just world.

Govender adds, "Energy efficiency is vital in our efforts to deliver energy security and we will be highlighting the many ways in which renewables, and wind projects in particular, can be leveraged to lower energy bills, save resources and improve South Africa's industrial competitiveness."

Thanks to its line-up of experts, Govender says "delegates will deep dive into the theme of 'Beyond the Turbines', with the ambition to maximise wind energy to mitigate the energy, climate and societal crises that are facing South Africa today. It is important that we think innovatively and fully realise the potential of our wind resources as a major contributor to the energy mix and a significant part of the solution to address the energy crises."

More than 600 delegates and industry exhibitors are expected to attend this year's Windaba conference.

Enquiries: [www.windaba.co.za](http://www.windaba.co.za)



## Human-centric lighting is good for business – and the user

Human centric lighting (HCL) has emerged as an increasingly important tool in business as it seeks to improve productivity by promoting health-care and awareness. HCL offers lighting conditions that are in harmony with the biological clock, and the philosophy has been easier to implement in recent years thanks to advancements in LED lighting and digital control systems.

“Meeting the current lighting requirements with human-centred projects, HCL represents a cultural change, seeking to create a healthier relationship with the artificial environment in which we live,” says architectural wellness author Camilla Ghisleni.

“Human-centred lighting ensures that the temperature and intensity of light are individually tailored throughout the day, even matching, albeit artificially, natural lighting that precedes it.”

Natural light has always been the best HCL solution, yet that is not always achievable in the modern work environment for any number of reasons. “HCL seeks to approach its qualities as closely as possible in an efficient combination with other artificial sources, explains Ghisleni. “This can include aspects like spectrum, intensity and duration.

Morning natural light informs our biological clock that the day has begun, activating bodily functions. At this moment, cool white light with wavelengths in the blue spectrum can stimulate the body when we need to concentrate and be alert. At sunset, the lighting decreases, which increases body deceleration. At this moment, warm white light can help us relax and unwind.”

HCL can be used for purposes other than health in the workplace – it can be used in a clinical environment as therapeutic lighting that helps patients with psychiatric or

dementia-related diseases; as ergonomic or architectural lighting by using different colours to create ideal visual conditions; or as biological lighting, imitating sunlight to improve human performance, well-being and support a better circadian rhythm, says Ghisleni.

HCL has become vital to human physical performance and psychological status by making people feel more at ease in their environments, which are now more welcoming than ever.

Source: [www.archdaily.com](http://www.archdaily.com)

## LiteTrance launches DoB LED range with Bluetooth mesh control integration

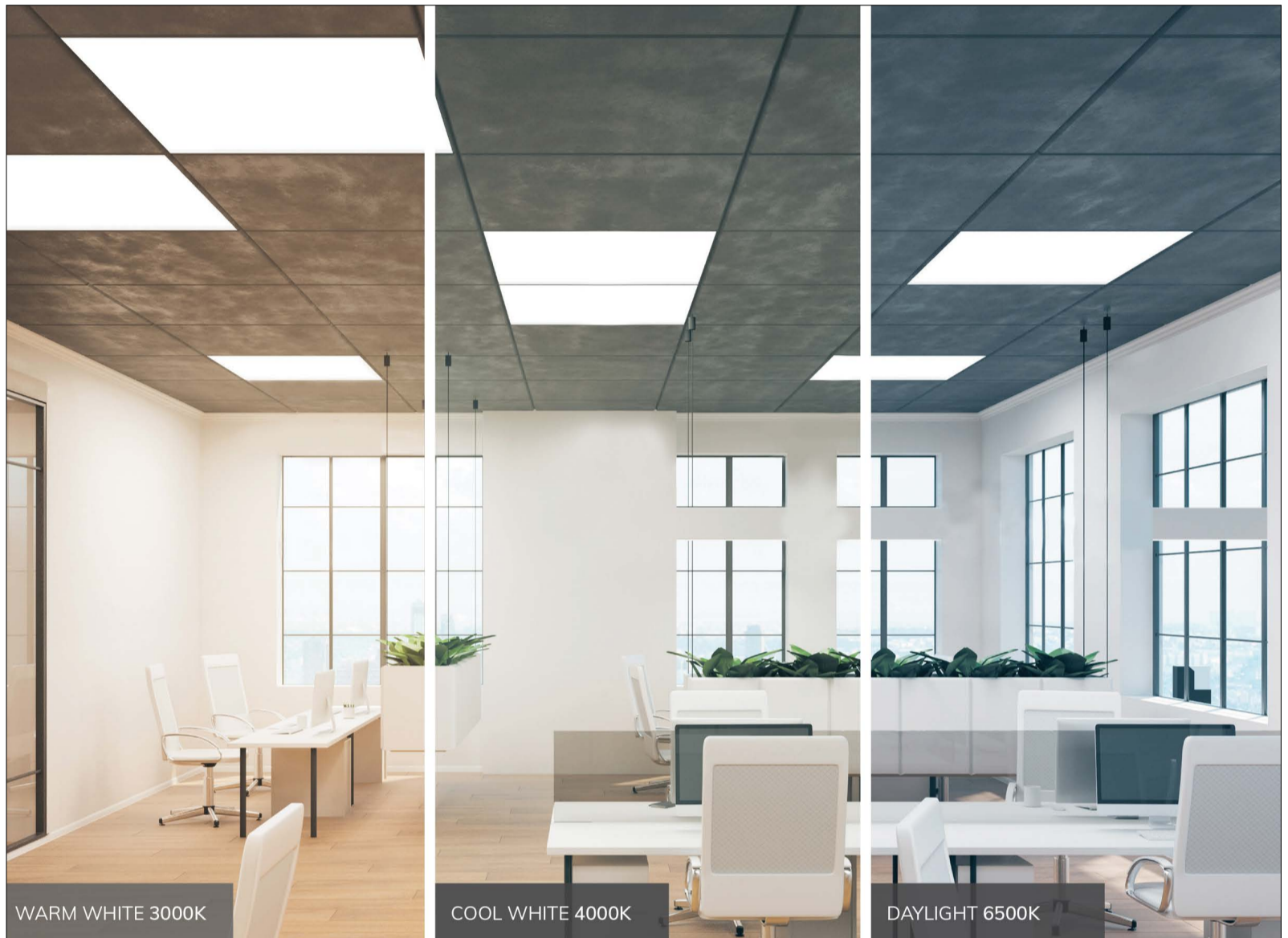
China-based Bluetooth Network Lighting Control (NLC) giant LiteTrance has unveiled its round Driver-on-Board (DoB) LED range with integrated Bluetooth-mesh control.

The move is an industry first, and the 120VAC units are designed to be installed directly in the field as Bluetooth LED retrofits for various luminaires such as ceiling lights, flush mounts, wall sconces and more.

“By integrating Bluetooth Mesh technology into these light engines, integrated luminaires such as ceiling and wall mounts can be easily setup to be controlled wirelessly with remote sensors and switches,” states Chris Primous, Vice President of Business Development and Sales at LiteTrance. He adds, “These light engines are ideal for retrofits to update existing luminaires for simple network lighting controls.”

The LEDs are controlled by the user via Lite Trance’s Keilton smartphone app (both Android and iOS versions are available). They come in three sizes – 7cm (10W, 750 lumens), 10cm (17W, 1,200 lumens) and 14cm (23W, 1,700 lumens) – and are fully dimmable. The lightbulbs feature a magnetic factory reset, integral UL (Underwriter Laboratories)-rated clear cover plate and integrated heatsink, certification for indoor use as field-installed retrofits, Bluetooth Mesh Network 5.0 technology,

Source: [lightingcontrolsassociation.org](http://lightingcontrolsassociation.org)



EXPERIENCE COLOUR CHANGING TECHNOLOGY IN THESE NEW BACKLIT LED PANEL LIGHTS



600mm x 600mm

RPR360

3CCT LED Backlit Panel  
40W, 4000 Lumens



1200mm x 300mm

RPR361

3CCT LED Backlit Panel  
40W, 4000 Lumens

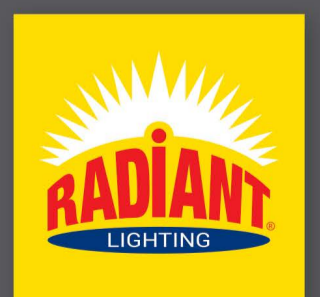


1200mm x 600mm

RPR362

3CCT LED Backlit Panel  
60W, 6000 Lumens

The three-colour changing technology on our new LED panel lights means you can select from Warm White, Cool White or Daylight settings through a CCT in-line switch. These ceiling lights are flicker-free and available in 3 sizes. All are covered by a 3 year warranty, terms & conditions apply. Radiant Lighting offers an extensive product range to meet your architectural and building project requirements. Our lighting specialists offer professional and technical advice from specifying, on-site supervisory to after sales service. Let us take your project to the next level.



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## Smart lighting trend continues to boom

Intelligent design, technology and ease of integration have made smart lighting a must-have in most modern homes. This has also expanded into the workspace, but to a lesser degree, says Piero de Marchis, MD of UK-based Detail Lighting. "Our homes are having to work harder for us than ever before as we now use spaces for multiple functions. From open-plan living areas to kitchen-

dining zones, the trend of multi-functional lighting that can be adapted to suit the room as and how it is being used is increasing."

Brands like Avisio are designing products that don't just change colour hue, though. Instead, their lighting products include features such as voice-activation and motion sensors. There are other benefits of using smart lights in your

home, explains Piero. "Clever lighting designs are often more energy-efficient and can make the lighting schemes in your space feel more unique as well as being incredibly functional. The more comfortable you are in a space, the more productive you will be with your specified activity."

There is also a new demand for more naturalistic lighting solutions. "Lighting

experts are now using this smart lighting technology to develop artificial skylights that reproduce natural daylight. This can transform a basement parking area and give it the visual appearance of the sun and sky that's currently above ground."

Source: [www.homesandgardens.com](http://www.homesandgardens.com)



**BEKA Schröder**  
Experts in lightability™



## SOZELLA

Solar post top luminaire



The South-African designed and manufactured SOZELLA solar post top luminaire provides a modern design with clean lines using state-of-the-art technology and is suitable for most urban lighting applications.

This solar luminaire is designed to operate independently of the electrical grid. It relies solely on solar energy for power, eliminating the need for external electricity sources or wiring infrastructure. This makes it highly suitable for remote locations, areas with unreliable power supply, or regions where grid connection is difficult or costly.

The lighting system is designed to be efficient and reliable, with low maintenance requirements and no electricity costs.



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## BEKA Schröder launches Sozella solar post top luminaire range

The Sozella series of solar post top lights have been launched by BEKA Schröder, adding to its catalogue of decorative products.

The luminaire is styled with a modern design and clean lines, but it is under the covers that the real magic is hidden. Using state-of-the-art technology, the engineering team at BEKA Schröder has created a product that is as functional as it is aesthetically pleasing, and the Sozella range can be used for almost every urban lighting application.

As a solar post, the Sozella does not rely on grid electricity for power, eliminating the need for external electricity sources or wiring infrastructure. This means that the light fixtures can be used in remote locations, distances away from buildings



## Solar high mast solutions are still not ready for nationwide implementation

oadshedding has communities, the private sector and even government municipalities searching for affordable and reliable solutions. For municipalities, the most important areas of concern are public street lighting and public spaces such as recreational parks.

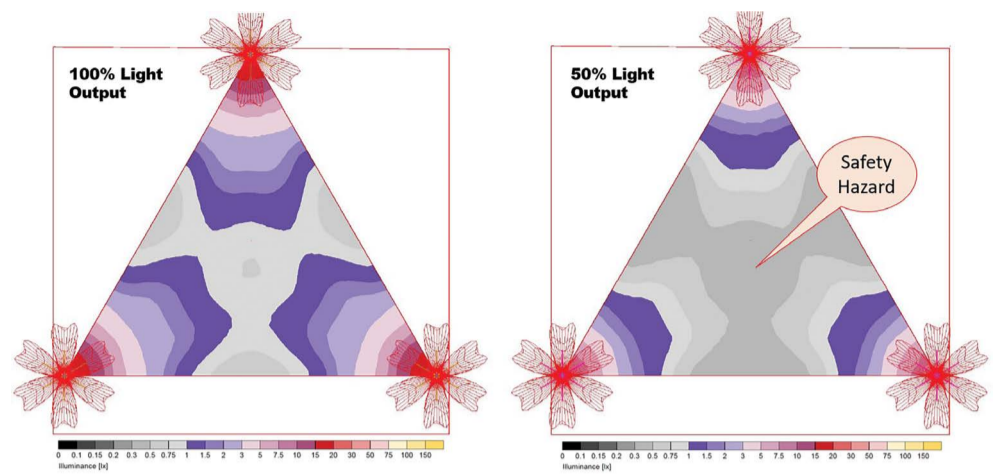
Until now, solar offerings have been pushed aside due to the size and weight of the panels and battery packs. "Due to technological advances in the field of energy storage and generation recently, solar street lights have been making head way into the public eye with great success," explains Ian Marais, Systems Engineer at Genlux. But is there a reason that lighting using solar high mast solutions has seen little to no adoption in the same period?

During the design phase of the lighting system, it is important to consider the weight of the solar panels, batteries and extra bracketry, as well as the efficiency of the solar panels. "Even more important, is the capacity of the existing high masts sufficient?" asks Marais. Public lighting design in South Africa is governed by the

lighting standard SANS 10389-1, which specifies the minimum average maintained illuminance for different types of areas. By reducing the total high mast floodlight power to 40%, from 1,500W to 600W, the solar panels can be smaller and the batteries lighter. This increasing the feasibility of a mechanically sound high mast.

To ensure that the batteries are small enough to be charged and will not overburden the mast, the 600W LED floodlight power is further reduced by utilising light dimming profiles to 300W during the night cycle. "The cost of this design choice, by abandoning the specifications as prescribed in the SANS standard, is that not nearly enough light reaches the ground," explains Marais, who adds, "Spacing and luminance requirements are designed to ensure a good level of uniformity between masts. Having light only illuminating the base of the mast serves no practical purpose."

Solar high mast lighting solutions are an attractive option for the upliftment of informal settlements and townships that are home to some of South Africa's poorest



communities, which are estimated to be made up of 90% black South Africans. Should the deployment of solar power high mast with poor lighting performance be realised, it would mean that the marginalised poor black communities in South Africa are again being neglected and denied basic human rights to a safe and secure environment.

The wide adoption of 6-to-8-metre solar street lights have seen great success in secure areas where the risk of vandalism and theft is lower. These street lights are designed

to provide sufficient illumination according to the SANS specifications while using smaller solar panels and batteries, making them a more sensible option.

"We are guaranteed continuous advances in technology that will soon allow for a SANS-compliant solar high mast to exist. Unfortunately, low-powered LED floodlights have no practical use being mounted on high masts," says Marais.

Enquiries: [www.genluxlighting.co.za](http://www.genluxlighting.co.za)



with power, or regions where grid connection is difficult or costly.

### Construction

The Sozella has been designed to be efficient, with low maintenance requirements and no electrical costs to users. The luminaire has been constructed using ASA and die-cast aluminium that were selected to ensure durability, as well as resistance to environmental factors. Fully designed and manufactured in South Africa, the Sozella is perfectly constructed for the harsh African environment.

The light is able to operate for 11 hours a day, which takes into account intelligent-programmed dimming profiles. There is also an optional movement sensor to improve function and battery operation time. The engine configuration is designed with sufficient autonomy to cater for two consecutive days of overcast or rainy weather.

Being solar powered and harvesting power from the sun, the Sozella helps reduce carbon footprints and emissions, making it perfect for businesses and people who want to contribute to a greener and healthier future.

Enquiries: [www.za.schreder.com](http://www.za.schreder.com)

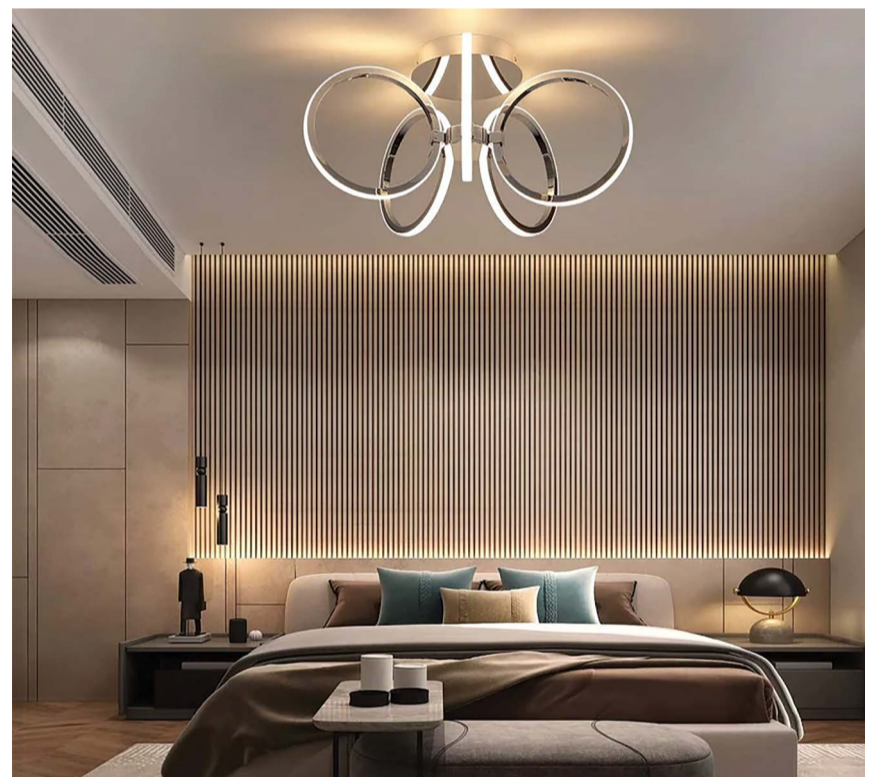
## Smart lighting systems to triple in the next decade in the US alone

Cost and complexity are currently keeping smart lighting systems and strategies mainly in the industrial and commercial space rather than in the consumer's home. However, US market intelligence company Guidehouse Insights believes that the industry will explode in the next 10 years when technology advances to the stage where smart lighting control strategies become commercially available to the homeowner.

"As energy-efficient LED light systems become increasingly widespread and opportunities to improve light source efficiency become more limited, increased proliferation of lighting control systems can become an important mechanism for reducing the energy consumed by lighting," says Wendy Davis, Senior Research Analyst with Guidehouse Insights.

Advanced lighting strategies include systems like time scheduling, occupancy sensing and daylight harvesting, and have the potential to reduce energy consumption substantially in buildings. Currently the United States' market for these smart light systems is in the mid \$5 billion, with Guidehouse's research indicating that it could triple in growth by 2032. "Energy and building codes mandating the use of lighting controls strongly drive this market," says Davis. "As a global community, we need to increase our efforts to reduce energy consumption and concomitant greenhouse gas emissions. Smart strategies like this will lead to development for home use to increase the global reduction of carbon emissions."

Building codes in the United States have helped to fuel the



Smart lighting strategies will be adapted and become available to homeowners in the future.

marketplace demand for new energy efficient lighting technologies and systems, which David says will have tremendous gains for the home user later on. "Energy codes are increasingly mandating the use of lighting controls, which is fuelling growth in lighting control deployments. This has led to the increased development of components and equipment such as occupancy sensors, photosensors, multi-feature sensors, relays and switches. These may sound too industrial to the average person, but contractors have great insight and understand that the marketplace is going to boom when this technology becomes homeowner friendly."


Smart lighting strategies currently extend to solar systems, LED panels, Wi-Fi-connected

lightbulbs that can be controlled via smartphone app, and a handful of other technologies. Davis admits that "the list is not all that long for consumers at the moment, but the demand in commercial and industrial spaces will force companies to re-engineer their products if they want to stay in business."

As industrial and commercial lighting systems and strategies advance in terms of technology, it filters down to the home user. Strategies like occupancy sensors, where sensors turn lighting systems on and off when users enter or exit rooms, is not something you find in the average home – today. Tomorrow could be a different story.

Sources: [www.finance.yahoo.com](http://www.finance.yahoo.com), [www.wayfair.co.uk](http://www.wayfair.co.uk)



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## BRIGHT SPARK

### THE BUS DRIVER

You are driving a bus. The bus is empty when you begin your route. At the first stop, four people get on. At the second stop, eight people get on and 2 get off. At the third stop, 3 people get off and 4 get on. What colour are the bus driver's eyes?

### JULY SOLUTION

Years earlier, three men had been stranded on a desert island. When they became desperate for food, they agreed to amputate their left arms in order to eat them. One of them, a doctor, cut off the arms of the other two men. Because they swore an oath to all have their left arm cut off, after they were rescued, the doctor had his arm amputated and sent to the other two men.

#### SEPTEMBER 2023 FEATURES

- DBs, Switches, Sockets and Protection
- Industry 4.0 and Automation
- Lighting

#### OCTOBER 2023 FEATURES

- MCCs and motor protection
- Energy measurement and supply
- Lighting

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**Design:**  
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**Publisher:**  
Karen Grant

**Deputy publisher:**  
Wilhelm du Plessis

**Published monthly by:**  
Crown Publications (Pty) Ltd  
P O Box 140  
Bedfordview, 2008  
Tel: (011) 622-4770  
Fax: (011) 615-6108

**e-mail:** [sparks@crowm.co.za](mailto:sparks@crowm.co.za)  
**Website:** [www.crown.co.za](http://www.crown.co.za)

**Printed by:** Tandy Print

The views expressed in this publication are not necessarily those of the editor or the publisher.

This publication is distributed to electrical contractors, wholesalers, distributors, OEMs, panel builders, Eskom, mining electricians and consulting engineers (electrical) as well as libraries, members of IESSA and public utilities.



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# NORMAND<sup>®</sup>

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## *Electrical Enclosures*



*Leaders in Demanding Applications*

*Complete Quality Solutions for all Major Industries*

# Normand Distribution Boards



Locally manufactured, the Normand range of wall-mount distribution boards are perfect for indoor and outdoor applications. Manufactured from 2mm mild steel and powder-coated with a UV protected Electric Orange as standard. A full range of accessories are available and 3CR12 or 304 Stainless Steel versions of the DB are available upon request.



## Features & Benefits

- Available direct from stock (3CR12/304 upon request)
- 2 mm Material thickness
- Din or Samite compatible
- Expandable to left, right, top and bottom
- Reversible door and document pocket
- Pre-punched top & bottom cable gland plates
- Polyurethane gaskets
- DB only or fully equipped to customer specification
- Full range of accessories available
- Custom sizes available on request
- Supplied with Earth & Neutral Bars

Part No	Size mm (WxHxD)	Rows	No. of Ways	Description
FDB 4.6 OT	415mm x 615mm x 250mm	3	45	Electric Orange Combinable DB
FDB 4.8 OT	415mm x 815mm x 250mm	4	60	Electric Orange Combinable DB
FDB 4.10 OT	415mm x 1015mm x 250mm	5	75	Electric Orange Combinable DB
FDB 6.6 OT	615mm x 615mm x 250mm	3	78	Electric Orange Combinable DB
FDB 6.8 OT	615mm x 815mm x 250mm	4	104	Electric Orange Combinable DB
FDB 6.10 OT	615mm x 1015mm x 250mm	5	130	Electric Orange Combinable DB

*Available in different colours on request.*

## Modular Expansion in all Directions

Side, top and bottom plates are removable to allow for expansion to the left, right, top and or bottom. Expansion of the DB is quick and easy and does not require any additional cutting.

DB's can be expanded by adding different size modules as seen in Fig. 1.

## Quick and Easy Expansion

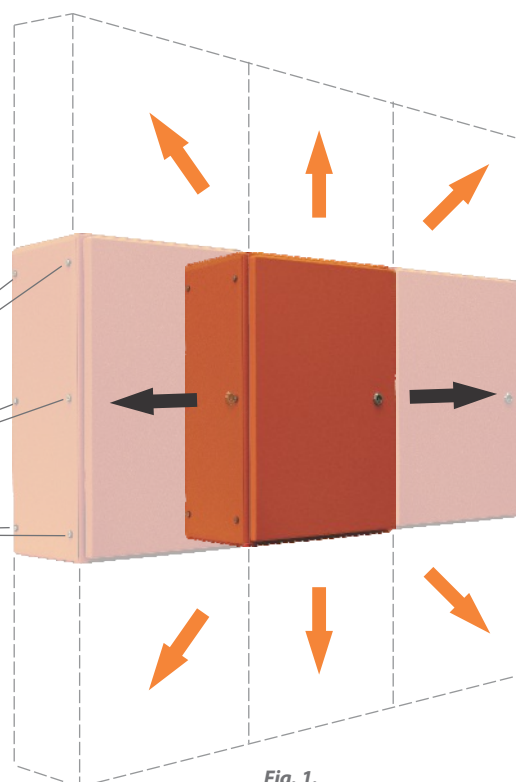


Fig. 1.

# Normand Distribution Boards



The Normand Distribution board is a high quality locally manufactured distribution board, available direct from stock. A full range of accessories are available including rain canopies, adjustable mounting plates, mounting brackets, padlocks and cooling systems. Custom designs, special colours, materials and modifications are available upon request.

## Wall Mount DB

### Stainless Steel door hinges.

Reversible for left or right door application.



### Dinrail mountable.

(Samite available on request).



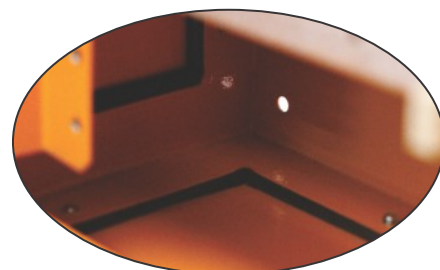
### Reversible door and Document pocket.

Reversible for left or right door application.



### Lockable door.

(Padlock available upon request).



### Polyurethane Gaskets.

High quality for long lasting protection against environmental elements.



**Supplied with Earth and Neutral Bars.**

**Removeable side, top and bottom plates for easy expansion.**

# Normand Combinable Floor Enclosures



The locally manufactured Normand floor standing combinable enclosure is a high quality electrical enclosure for any indoor and outdoor application. A full range of accessories are available including rain canopies, adjustable mounting plates, mounting brackets, padlocks and cooling systems. Custom designs, special colours, materials and modifications are available upon request.

## Features & Benefits

- Available direct from stock (3CR12/304 upon request)
- 2 mm Material thickness
- Combinable to left, right and centre
- Polyurethane gaskets
- Panel only or fully equipped to customer specification
- Full range of accessories available
- Custom sizes available on request
- Supplied with double-folded Aluzinc mounting plate
- Can be divided in 200mm increments
- 100mm or 200mm Plinth
- Easy 19" Rack conversion
- 3-Point Padlocking system with 4 door hinges
- Top or bottom lifting capability
- Front and rear entry option with double mounting plates
- Double doors available on request
- Partial doors and mounting plates
- Glass doors and cutouts available
- RAL 2000 and RAL 7035 as standard



### Size mm (WxHxD)

400mm - 1000mm  
1200mm - 2200 mm  
400mm - 1000mm

*Increments of 200mm in any direction*

### Description

Enclosure c/w frame, mounting & bottom plate, door & rear panel

*Available in different colours on request.*

## Combinable to the Left, Right and Rear

Left and right plates are removable to allow for expansion to the left and right. Expansion of the Enclosure is quick and easy and does not require any additional cutting.

**Enclosures can be expanded by adding different size modules as seen in Fig. 1.**

## Quick and Easy Combination



Fig. 1.

# Normand Combinable Floor Enclosures



As standard the Normand Enclosures are manufactured from 2mm mild-steel. Upon request, 3CR12, 304 and 316 are available. All enclosures are powdercoated with 80µ-120µ UV protected paint for extra durability for indoor and outdoor applications.

The Normand Enclosure comes complete with

## Floor Standing Combinable Enclosures



# Flexi Busbar Systems



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**Better ampacity** than traditional cable due to skin effect.

**Flexible, insulated** copper-plated aluminium, flat braid.

**Ready to use** for direct connection to a busbar or circuit breaker

**Advanced Technology** is a Class II and Ik09 thermoplastic elastomer (TPE) that is LSHFFR and 1000 VAC/1500 VDC (IEC)

Current (A)	Conductor/Phase	Lengths
560	1 x 220mm	Available in standard lengths from 200mm up to 1000mm and specials lengths up to 20m.
704	1 x 360mm	
900	1 x 545mm	
1120	1 x 640mm	
1400	1 x 960mm	
1750	1 x 1280mm	
2253	1 x 1810mm	
2816	2 x 960mm	
3520	2 x 1280mm	
4435	2 x 1810mm	



# Cosmotec Panel Cooling



## Filter Fans

### GSV



Filter Fans -  
Includes grill kit, filter mat,  
mounting templates, seal

**Air-flow (m<sup>3</sup>/h)**

67 - 850

### GSF



Grill Kit -  
Includes grill kit, filter mat,  
mounting template, seal

**Type**

Grill kits for GSV models

### TB



Roof Mounted Exhaust Fans -  
Includes fan & seal

**Air-flow (m<sup>3</sup>/h)**

575 - 5200

## Panel Air-Conditioners

### CVE



Protherm -  
Side mounted panel  
air-conditioners, indoor range

**Cooling Capacity (Watt)**

380 - 5950

### CVO



Protherm - Outdoor  
Side mounted panel  
air-conditioners, outdoor range

**Cooling Capacity (Watt)**

580 - 4100

### ETE



Protherm -  
Top mounted panel  
air-conditioners, indoor range

**Cooling Capacity (Watt)**

330 - 3800

### BP4008



Vortex Cooler  
IP 66 | TYPE 4X

**Air-flow (l/h)**

227 - 1133

### EXW



Water-to-Air  
Heat Exchangers

**Cooling Capacity (Watt)**

870 - 6700

### CVE



### CVO



Battery Coolers

**Cooling Capacity (Watt)**

500

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