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AN UPDATE ON THE LIGHTING INDUSTRY WASTE MANAGEMENT PLAN



CONTINUED ON PAGE 3

LIGHTCYCLE SA is a non-profit producer responsibility organisation (PRO) established in 2018. The organisation's objective is to promote the compliant and sound end-of-life management of lighting and associated equipment with accredited service providers for efficient collection, transportation and recycling. Lightcycle SA developed the Lighting Industry Waste Management Plan which details the requirements for the implementation of responsible and holistic post-consumer lighting waste management throughout South Africa. Patricia Schröder, on behalf of Lightcycle SA NPC, updates *Sparks Electrical News* readers on the latest developments.

Background

The Minister published a revised S28 Notice on 12th September 2016. After due consultation with industry, the Minister published a Final Notice on 6th December 2017, calling on the Paper & Packaging Industry, Electrical & Electronic Industry and the Lighting Industry to submit IndWMP's (industry waste management plans) by 5th September 2018. Plans that were received:

The Department received the following plans from the three sectors:

- Paper & Packaging: 7 Plans
- Electrical & Electronic: 5 Plans
- Lighting: 1 Plan (Lightcycle SA NPC)

Two submissions were submitted after the due date and were thus not accepted.

Current status in summary

A meeting was called for the 9th December 2019 by the Department of Environment, Forestry and Fisheries (DEFF), with the Producer Responsibility Organisations (PRO's) that submitted plans. The Director General, Ms. Nosipho Ngcaba chaired the meeting.

The Director General announced that the Minister would withdraw all submitted S28 Plans. Ms. Ngcaba reported in the meeting that, "Throughout the entire process it has become abundantly clear that none of the plans meets the criteria of a Government Managed Model, and that a Section 28 plan is therefore no longer the best route to take. In order to expedite the process, she would like to return to the drawing board as soon as possible to develop a workable plan. Receiving the support and buy-in of the industry

is vital if this plan is to succeed." Lightcycle SA's withdrawal notice was received on the 12th December 2019, citing the reasons for withdrawal.

The DG also confirmed that the Minister would shortly issue a notice of withdrawal of the S28 Notice and replace the S28 notice with the S18 (1) notice.

Ms. Ngcaba explained that a framework needed to be developed that would include clear targets for each sector, with quarterly and annual reporting, the



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Martin Hogan

MARTIN HOGAN, General Manager & Design Engineer at Telbit, a company which specialises in the design, development and manufacturing of custom made, state-of-the-art electronic systems, has seen the industry evolve over his 28 years in the field. Taking a small micro controller, adding circuitry and creating something new is what inspires him every day.

Sparks: Where were you educated?

MH: Technikon Pretoria, 1989-1991: National Diploma Electronic Engineering Light Current.

Wits Technikon, 1993-1994: National Higher Diploma Electronic Eng. L/C.

Telbit, 1992-2020: Advanced Crash Course in Electronics Design.

Sparks: How long have you been involved in the electrical industry?

MH: For 28 years in Electronic Research & Development.

Sparks: When and where did you start your career?

MH: I started at Telbit back in 1992 and am still proudly part of the furniture today.

Sparks: What are the greatest changes you have seen over the years?

MH: The way people and business communicate. Changes such as telex, letters, postal service, fax... Meetings in a board room, working for a company and never setting foot on their premise, people changing job every two years. And bad coffee.

Sparks: What major projects have you worked on and what is your greatest accomplishment?

MH: My greatest accomplishment was becoming market leader in the pre-paid water industry. Major projects include the design and manufacture of Prepaid Water Products for the two biggest meter manufacturers in South Africa; a contract to design and manufacture an Irrigation Controller for Netafim, Israel; the design and manufacture of an Aircon Temperature Controller for Nissan and Toyota; the turn Indicator (Flasher Unit) used in the Toyota Mini-bus; the design and manufacture of Defy Combomaid spin speed controller; and introducing Sigfox IOT solutions for Automated Meter Reading (AMR) in the water metering industry.

Sparks: Have you won any awards?

MH: Yes, two little boys. I'm still waiting for the award ceremony though!

Sparks: Who has been your inspiration or have you had a mentor who has influenced your career?

MH: Sam Ashkenazy, the founder and owner of Telbit (Pty) Ltd.

Sparks: What do you enjoy most about your job?

MH: To take a small micro controller, add some circuitry around it and have the power to create anything I can possibly imagine.

Sparks: How do you motivate your staff?

MH: Keep them busy with new products so there is no time to get slack!

Sparks: If you could 'do it all again', would you change anything? If so, what would that be?

MH: There are quite a number of things I would have done differently, but I would not want to bore your audience with the details!

Sparks: Would you advise a person leaving school to enter the electrical industry? And why?

MH: Most definitely. The world is powered by electronics, which in turn is powered by electricity. We need people like you to power this world.

Sparks: What is your advice to electrical contractors and electrical engineers?

MH: Knowledge is power. Become an expert in what you do; nobody can take that away from you.

Sparks: What is your favourite quote?

MH: "The best way to predict your future is to create it," by Stephen Covey.

Sparks: Name a few things on your 'bucket list'.

MH: I would like to take our products global and see my two boys graduate.

Enquiries: www.telbit.co.za

AN UPDATE ON THE LIGHTING INDUSTRY WASTE MANAGEMENT PLAN

CONTINUED FROM PAGE 1

minimisation of waste and encouragement of recycling. The first of these engagements took place early in February 2020 and will require input in terms of a possible structure and future cooperation between industry and Government.

The Minister called for the relevant industries to submit comments on the proposed framework of the Extended Producer Responsibility (EPR) scheme with the deadline of submissions being the 27th January 2020. Lightcycle SA NPC submitted comments within the timeframe.

The minister invited the PROs and stakeholders to engage with DEFF in workshops to develop the framework for the Section 18 (1) EPR Scheme, the first of these engagements took place on the 12th February 2020. All producers/individuals that are registered on its database were invited via IESSA. Within the lighting group of attendees, 83% were producers and 17% comprised other stakeholders.

The aim of the workshop was to discuss the development of a framework for the e-waste and lighting waste EPR Schemes, as per section 18 of the Waste Act. The DEFF split the meeting into lighting and EEE groups. The agreed initial outcomes were recorded as follows: The existing Lighting PRO established by the Lighting Industry, Lightcycle SA NPC, will manage all the aspects of Lighting EPR implementation as the only PRO/EPR Scheme nationally for South Africa. The lighting industry stood firm that no other EPR scheme i.e. EEE will manage lighting. The EPR fees will be collected by the lighting PRO and disbursed to meet the requirements as established. The next workshop dates to continue the balance of the framework items, will be communicated when this is received from DEFF.

Separate to the DEFF process above an Industry meeting and a subsequent Industry workshop will be planned, where all producers are encouraged to attend. Details of this will be communicated via Lightcycle SA in due course.

The way forward

The Section 18(1) notice calls for an Extended Producer Responsibility (EPR) scheme. This would allow for an industry-managed plan as opposed to a government-managed plan.

Lightcycle SA NPC welcomes the Minister's insight and decision. Even though a considerable amount of time, money and effort has been invested to prepare and submit the Lighting Industry WMP, which represents the entire lighting industry, Lightcycle SA believes the Minister has made the right decision. The plan will serve as the baseline for the future EPR implementation.

Lightcycle SA has always advocated for an industry-managed plan where the producers of lighting are held responsible for managing their waste through belonging to an industry body that represents their interests. For this reason, it is beneficial that the industry be left in charge of its own funds and projects, albeit with very close co-operation and direct accountability to Government.

Lightcycle SA NPC will provide updates on a regular basis to the lighting industry members registered on its database.

Register on www.lightcyclesa.org if you have not already done so to ensure you receive updates or feedback on any new developments.

Enquiries: www.lightcyclesa.org

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Game-changing electrical accessories for electricians, by electricians

Today's consumers want high quality products that meet their specific requirements. Electrical accessories are no exception and Schneider Electric has risen to the challenge with the innovative Iconic™ range of modern electrical accessories that is set to turn the wiring devices market upside down.

With this range, Schneider Electric offers electricians and homeowners a host of sleek switches, dimmers, sockets, USB chargers, and motion sensors. The new range is easy to customise, easy to install and pleasing to the eye, with a wide choice of stylish and elegant skins.

Designed for electricians by electricians, Iconic electrical accessories raise the bar for safe, long-lasting and reliable switching mechanisms. There are a variety of built-in features that are unique to the range, making it the choice for a quality installation and unrivalled customer satisfaction.

"Iconic is truly next generation, loaded with clever features like a locking bar and in-line terminals", says John Raptakis, Offer Manager, Home and Distribution Division for Schneider Electric. "With the Iconic range, we help contractors and electricians to deliver the best to their clients."

Innovative features

The range features a locking bar which makes it easy to change the orientation of the mechanism, resulting in fast and simple installation. It also makes the switch safer for the end-user. To prevent cases of users unintentionally pushing the switch back inside the wall, Schneider Electric engineers have invented the mech lock which allows electricians to secure every switch mechanism in the grid. "By adding this measure, electricians can be rest assured that their installations are reliable, and they won't be called back to site to face unhappy customers," says Raptakis.

Furthermore, when removing the mechanism, there is no risk of damage to the grid. The locking bar can be locked or unlocked with one push of a screwdriver. In-line terminals for easy screw access and faster termination, are another innovation.

Easily customisable

Schneider Electric Iconic is future-ready, allowing for future style and function updates. The range offers compatible modules and grids with changeable skins and dollies for unrivalled customisation. Whether a new installation or a retrofit, the aesthetics can be changed because the functional part of the switch is separated from the fascia. This future-proofs the installation and allows it to be customised.

Easy to install

With a 7 mm switch profile and 9 mm socket profile, standard mounting accessories can be used with Iconic accessories. In addition, clear markings display instructions on the mech grid to facilitate installation. The innovative safety flaps display warnings to advise customers against opening the unit or attempting to undo the screws.

"What makes the Iconic range different is the amount of time spent developing it – around 57 000 R&D hours," says James Calmeyer, Vice President: Buildings at Schneider Electric. "It's a range designed with electricians in mind. In the design process we spent a lot of time analysing an electrician's daily work. How much time goes into wiring; the pain points electricians face – one of which we discovered is speed of execution and how quick and easy it is to come back and wire something later. All the innovation in the range has been designed to make an electrician's life

simpler and easier."

In the process of customising the range – originally developed in Australia – Schneider Electric tailored it for local standards. After that the company developed samples and invited a number of electricians to install the products. "From that first exercise we got a lot of information, and we then reworked the products with their input. Over the past two years we have done countless trips around the country engaging with electricians and letting them test the prototypes," says Calmeyer.

An eye to the future

Traditionally, smart home technologies have been out of reach for most of us because of price and the complex communication platforms that have to be wired and configured, says Calmeyer. "We built a range that forms the platform for making it really simple; so suddenly for electrical contractors it's not just wiring devices in a home – it's about being able to give consumers the option to make their homes smart, at a price that doesn't break their wallets. Putting home automation in the hands of more consumers, means more people will be able to conserve energy, and that's really what we're trying to achieve with Iconic," he concludes.

Enquiries: www.se.com/za



Legrand SA appoints EDS UPS as an official systems partner

LEGRAND – a specialist in electrical and digital building infrastructures – has appointed Engineering Data Systems SA (EDS UPS) as an official Legrand uninterruptible power supply (UPS) sys-

tems partner.

EDS UPS, a company with strong technical capabilities in servicing and supporting UPS systems locally and throughout Southern Africa, is

authorised to supply, install and commission single phase and three phase Legrand UPS systems. The agreement came into effect in December 2019.

According to Legrand, dependable tier level 1 UPS support – such as downtime responses, critical alarm remediation and the back-up of reliable spares – is an essential requirement for continued operations in many industries. Typical sectors include mining, healthcare, banking and hospitality, as well as data centres and small and medium enterprise servers.

The partnership, which outsources the service sector in line with Legrand's global business model, boosts the recent launch of 'Legrand Data Centre Solutions', which encompasses the supply and support of specialist products, including LCS³, busbar, transformers and now UPS systems.

Legrand's commitment to ongoing investment – into South Africa and to nurturing specialised installation partners – addresses key strategic verticals of the Legrand Group.

The company's extensive range of UPS systems ensures maximum continuity of service of essential electrical equipment, by providing reliable performance in terms of power and back up time, particularly during electrical network disturbances such as load-shedding.

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Top from left: Rudolf Keller (Sales Manager – EDS), Steve Yap (Director – EDS), Johan Bosch (General Manager – Legrand), Marc Naidoo (Business Unit Manager – Legrand) and Trevor Wiggott (Sales Engineer – EDS). Bottom from left: Mike Worthington (Branch Manager DBN – EDS), Marius Labuschagne (Technical Manager – Legrand), Anthony Louro (Projects Specialist – EDS), Jeff Leonard (Sales Engineer – EDS).



Lightning and surge protection for cell sites as 5G moves closer

Today's cutting-edge frontier in the telecommunications world is coming in the form of 5G technology, the fifth generation of mobile networks, which will bring with it significantly faster data speeds when compared to the existing 3G and 4G cellular data networks. According to a recent statistic from www.statista.com, South Africa (as of March 2019) has over 30 million internet users, with most of its traffic being generated by smart phones.

Florian Vögerl, head of sales and operations at DEHN Africa, notes, "The increasing demand for 5G technology globally brings with it the need for higher transmission capacities and better network availability. In response, new cell site locations are constantly being developed for this purpose and the existing network infrastructure is being modified and expanded. Quite obviously, cell sites must be reliable – no operator wants to risk a network failure or restricted operation."

Consumers want higher speeds and instant, reliable services, and 5G brings the promise of the required solutions as telecom providers continue to run trials and prepare their networks to cope with the huge increase in the demand for communication. 5G, however, requires a huge investment in technology, at great cost, and obviously this needs to be protected from the elements.

Says Vögerl: "When looking at any telecommunications site, we need to provide thorough protection against lightning, including the possibility of a direct strike to this very sensitive equipment, as well as its indirect results in the form of related electrical surges. Both of these can cause immediate damage, which can result in down-time to the business or service, as well as potential degradation to equipment over time. Additionally, repair costs are in usually very expensive, because the towers are mostly situated in remote areas."

According to statistics from an American humanitarian organisation (www.borgenmagazine.com), the projected number of users in Africa who would be affected by an outage is significant: there are currently around 50 million 4G subscriptions in sub-Saharan Africa.

However, because of the growth in relatively young populations and the fast-growing economies on the continent, this number was predicted to grow by 47 percent between 2017 and 2023, when an estimated 310 million will have subscribed.

"So as we can see," comments Vögerl, "the number of people who could be affected by system outages is really potentially very great, and so this once again underlines how important it is to protect equipment failure. Here again we see that the correct lightning and earthing solutions are part of ensuring network availability and reliable operation. The exposed location of mobile radio masts makes them vulnerable to direct lightning strikes, which could paralyse the systems."

"Of course, damage is often also caused by surges, for example in the case of nearby lightning strikes. It is also crucial to protect employees who may be working on the system during a thunderstorm. A comprehensive lightning and surge protection concept will provide optimum protection and high system availability."

DEHN Africa provides information and services across the various aspects of the network industry, catering in turn to mobile network operators, installers and equipment suppliers.

Mobile network operators: DEHN offers system-specific protection concepts, optimised product solutions and engineering and testing services to reliably protect network systems.

Installers: DEHN Africa provides lightning and surge protective solutions that are quickly available and easy to install.

Equipment suppliers: As the requirements for new cell site locations continue to expand, DEHN Africa is able to provide optimally tailored solutions regarding performance and cost.

"There is wide expectation that the freeing up of new 4G and 5G spectrum for local cell phone companies, as per previous information from the Independent Communications Authority of South

Africa (ICASA), will facilitate local telecom operators in meeting the data expectations of their customers. South Africans are hungry for greater data availability and higher speeds, both at business and individual levels.

"DEHN Africa is already working with the major players globally in the telecommunications industry. As we wait in anticipation for the long-awaited 5G rollout to begin in earnest, DEHN Africa's experience and expertise will allow telecom businesses to achieve acceptable risk profiles for their sites to protect their investments and facilitate a local revolution in data speed and availability," concludes Vögerl.

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WearCheck expands in West Africa

South African condition monitoring specialists, WearCheck, today upgraded their laboratory in Tarkwa, Ghana into a state-of-the-art testing centre which can now conduct transformer oil, coolant and fuel analysis – amongst a host of additional services – as well as traditional used oil analysis.

Tarkwa's new laboratory – now housed in a building a block away from the original converted shipping container – is kitted out with various new instruments that enable extensive advanced testing to be done, and additional laboratory technicians have been employed.

The company also opened a second laboratory in Ghana recently, providing world class oil analysis and reliability solutions services to industries in the Ashanti region, in Kumasi.

These developments by WearCheck are a direct result of increased demand for excellent condition monitoring services in Ghana. This brings to 17 the number of laboratories operated by WearCheck, which was founded over 40 years ago in Durban, South Africa, and today processes in excess of 800 000 used oil samples annually.

Since 2013, WearCheck Tarkwa has successfully serviced Ghanaian mining operations and other industries, conducting the scientific analysis of used oil and other condition monitoring techniques – all of which reduce maintenance costs and boost productivity by improving equipment reliability and availability.

Managing director Neil Robinson is delighted to be expanding business operations



WearCheck Kumasi laboratory supervisor Martin Acheampong (left) processes used oil samples in the company's new lab in Ghana, while lab technician Charles Aggrey looks on. WearCheck provides oil analysis and other condition monitoring services to industries to boost machinery availability and reliability.

in Ghana. "The industries in Ghana have welcomed WearCheck with open arms, for which we are very grateful. The positive feedback from our Ghanaian customers has inspired our company to expand into the Ashanti area to meet the local need for our top quality laboratory services."

Robinson is dedicated to providing top quality service and is proud of WearCheck's status as the only condition monitoring company in Africa with ISO 9001 quality certification and ISO 14001 certification for its environmental management programme, as well as ISO 17025 accreditation for its laboratory-centric quality management programme.

Backed by a team of highly-skilled scientists and technicians, WearCheck assists customers to select the best condition monitoring programme, which incorporates

services such as the analysis of used oil and other fluids, thermography, vibration analysis, balancing, technical compliance, rope condition assessment, non-destructive testing, and a wide range of aligned services. Mining, industrial, marine, earth moving, aviation, construction and power generation – these are just some of the industries in which WearCheck's customers operate.

WearCheck is Africa's premier condition monitoring company, with a network of laboratories spanning nine countries on the continent and beyond in Dubai and India. Laboratories are situated in Zimbabwe, Zambia, Namibia, DRC and Mozambique, with WearCheck branches in several other African countries.

Enquiries: +27 (0)31 700 5460

Bringing off-grid power to over four million people in Africa

ENGIE Africa is pleased to announce that it has successfully accelerated the Access to Energy (A2E) strategy that it launched in 2018. ENGIE has achieved this through the development of its three A2E off-grid energy solution companies: Fenix International, ENGIE Mobilsol, and ENGIE PowerCorner.

With these three innovative entities, ENGIE Africa is bringing decentralised electricity to more than four million people in nine countries (Uganda, Zambia, Kenya, Tanzania, Rwanda, Nigeria, Benin, Côte d'Ivoire, and Mozambique). This growth is in line with the Group's ambition to reach millions of households and businesses with clean, distributed energy across Africa.

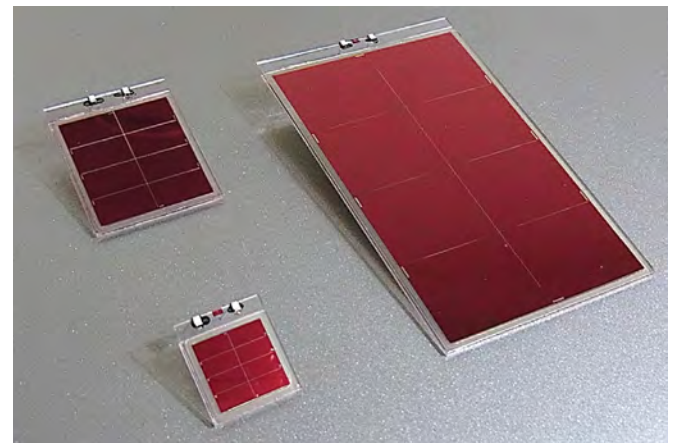
Fenix, which was acquired by ENGIE in 2018, expanded its operations significantly in 2019. To date, it has sold more than 700 000

solar home systems that power 3.5 million people in rural communities across six countries. Fenix launched sales in Mozambique in June 2019. In the last month, the company has reached milestones in multiple markets, with 150 000 solar home systems sold in Zambia, 50 000 in Benin, and 20 000 in Côte d'Ivoire.

Universal electrification is the seventh of the United Nations Sustainable Development Goals that the global community has committed to achieve by 2030. ENGIE is confident that universal access to energy is achievable in the foreseeable future, through smart investments in a combination of national grid extension, solar home systems and mini-grids.

Enquiries: www.ENGIE-Africa.com

The world's first commercial solar panel that charges under indoor light



RICOH has created a solar panel capable of charging under indoor lights. Technically, the new panel is a solid-state, dye-sensitised solar cell that mimics the same photosynthesis process plants use to harness the sun's energy to make glucose and oxygen from carbon dioxide and water.

"This is perfect for the Internet of Things (IoT) world we live in today," says Jacques van Wyk, CEO of Ricoh SA. "Our digital workplaces use a lot of battery-operated technologies, including things like the battery-operated multifunction printers that we make for use in warehouses and other areas. Being able to keep the devices charged from the normal lighting while working indoors has a huge impact on productivity and efficiency."

The DSSC technology replaces chlorophyll with light-absorbing dyes. Incoming light excites the molecules, creating energy that is collected by an electrolyte and catalyst structure that operates like a leaf does in nature.

DSSC technology that generates affordable electricity has been around for some time but has never been safely usable in commercial applications until now. The iodine and organic solvents that were traditionally used are easily made volatile and leak. But the solid-state electrolyte solves those problems. It also incidentally makes more power under weaker light sources, such as the light in warehouses, because the organic dyes work optimally with those light wavelengths.

The biggest of Ricoh's new solar panels, the DSSC5284, is being used for an office desk that keeps mobile devices on the desk charged up throughout the day. The desk is called LOOPLINE T1 and was made by Taisei Corporation and Design Office Line.

"We recognise the need – both within business and society – to identify new sources of renewable energy. In today's IoT era, we are even more committed to our energy harvesting efforts," says Tetsuya Tanaka, GM of the Energy Harvest Business Group at Ricoh. "Originally, our DSSC technology applied the organic photoconductor technology that we developed to drive our multifunction printers. The power of innovation and belief in technology that fuels the future led us to leverage that same DSSC technology to fuel renewable energy in environments critical to our customers, such as offices with little natural light. We're thrilled to introduce solid-state DSSC technology to the world and are eager to continue developing new applications for this critical renewable energy source."

Enquiries: www.ricoh.co.za

Energy training held in celebration of Nelson Mandela

ENEL FOUNDATION, together with the University of Cape Town's Graduate School of Business (UCT GSB) as host, inaugurated the third edition of Open Africa Power (OAP) in February, aimed at empowering a new generation of leaders to drive Africa's clean energy transition.

Open Africa Power, started by Enel Foundation in 2018, is aimed at sharing information and increasing know-how regarding all aspects of electricity generation, distribution and regulation among participating African PhD, Masters and MBA students and alumni. In addition, the education program also aims to empower a new generation of leaders able to contribute to their countries' clean energy transition and establishes a networking platform for participants to support achievement of SGDs 7 (Affordable and Clean Energy), 5 (Gender Equality), and 13 (Climate Action). The partnership announced on the sidelines of the opening of OAP 2020 includes the launch of the "Nelson Mandela Foundation OAP Prize", to be granted annually from 2020 onwards by both institutions to the best student of each edition of the program, based not only on academic merits but also on the student's social commitments to giving back to the community. The "Nelson Mandela Foundation OAP Prize" will further highlight this commitment and the first recipient of the distinction will be announced on Mandela Day.

Enquiries: www.enelfoundation.org

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Industrial Plugs & Sockets



Distribution Boards & Enclosures

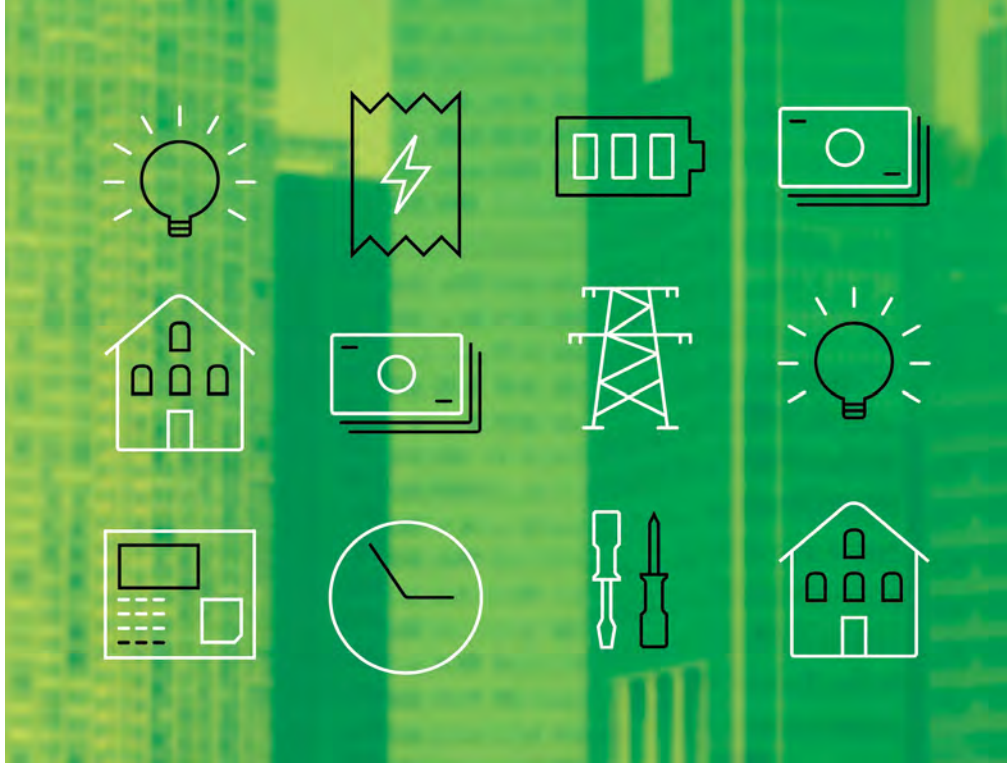


Building foundations for a sustainable 2020

The mood in the country is somewhat dark. There are economists and articles talking about the complexities of the economy and the lack of growth and the problems with unemployment, skills development and education. However, there is a bright side to this coin. It's the one where people realise that within the complexity lies opportunity. That people will always need electricity and they will always

need smart ways of managing their consumption and their budgets.

In fact, for the electrical contractor in South Africa, the current market is the perfect time to engage with customers across the consumer, retail, wholesale, rental and property markets in finding cost-effective and reliable solutions to their electricity problems.



"Whether your customer is a property owner or a tenant, they want to save money and reduce their admin burden," says Carel Scheepers, General Manager: Sales at Citiq Prepaid. "When the economy is tough, budgets get tougher and nobody wants to spend money unless they have to. This is the perfect opportunity to engage with customers about installing sub-metering solutions that are designed to streamline utility usage."

With a sub-metering system, utility usage is accurately split across multiple units or flats, ensuring that people only pay for the electricity that they use. Tenants can manage their spend by only purchasing tokens that they can afford while property owners and estate managers no longer have to chase people for money or split one bill between multiple people.

"In addition to giving more control to everyone on a property using the same main power meter, sub-metering also makes the entire process far more transparent," says Scheepers. "With Citiq Prepaid, customers can access our online portal and its customised reporting tools so they can get more insight into the system and usage. There are no hidden fees or unexpected surprises – everyone gets what they pay for, literally."

For electrical contractors, working with Citiq Prepaid has even more benefits. The sub-metering solutions developed by the company are reliable and robust, assuring of easy and quick installation. Citiq Prepaid also helps contractors if they encounter an unusual situation or require additional support during an installation. The process has been designed to be as easy as possible so that both contractor

and client enjoy the experience.

"Contractors that work with Citiq Prepaid also get rewarded for every meter they install," says Scheepers. "With the Citiq Installation Club (CIC), we've developed a customised loyalty programme tailored specifically for the electrical contractor and their requirements. When you install our meters, you get points that directly translate into money that can be used at specific wholesalers to purchase more meters at no cost to you. The system is designed to add value to the electrical contractor throughout the lifecycle of installation and customer support."

Citiq Prepaid places an emphasis on transparency throughout its processes as well. When electrical contractors engage with customers they can explain how there are no connection fees, no fixed monthly fees and no switching fees involved – it's transparent, cost-effective and has no secret costs.

"Many of us worked as electrical contractors and we understand the industry and what people need," concludes Scheepers. "This is why we are constantly working with our contractors and the market to ensure that what we offer is aligned with what they need."

Citiq Prepaid believes in building relationships with suppliers, electrical contractors and customers. The company is committed to building these relationships so that it can create relevant and accessible solutions that resonate with the electrical contractor market and help them build foundations for a sustainable business in 2020.

Enquiries: www.citiqprepaid.co.za



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Claims, disputes and settlement: what the contractor should know

Construction claims, disputes and settlements are a contractor's nightmare. Most contractors – electrical contractors included – do not relish the thought of submitting a claim but, in today's market, if you do not claim for work executed you will almost certainly head for liquidation. It is prudent to recognise the situation and deal with it in a realistic, positive and sensible manner, rather than brush things under the carpet until the end of the job, for fear of upsetting the contractual relationship.

It is almost unheard of that there is no change in a project between commencement and completion. It is also almost unheard of that a contractor gets fully reimbursed for the work executed. Based on these two statements, there will almost always be a claim on any project.

What happens next is fundamental to any contractor. While claims are generally associated with contractors there are instances where consultants have the right to claim for additional compensation. Generally speaking, the scope definition will define this:

Many contractors execute additional work, at no charge, at the beginning of a project as they do not want to upset the relationship with the engineer at the onset. In many instances, the cost of this mounts up until the contractor realises he or she is losing money, which then results in the submission of frivolous claims, which really upset the relationship.

In today's market of tight margins, incompetence and lack of experienced personnel, a Contracts Manager's job borders on the impossible. In most contracts, the parties may only claim in accordance with the contract because, by applying the claim clauses, the parties waive the right to submit a claim directly to arbitration or court proceedings. Generally, a contractor must claim his entitlements in terms of a clause in the contract that allows him to do so.

The resolution method of the claim determines the attitude on the project.

Engineer/contractor attitude on a project:

- Win/lose: A party with an all-out win attitude leaves the other party disgruntled, and generally results in a poor project.
- Lose/lose: When both parties have an all-out win attitude, invariably both lose.
- Win/win: The parties work together to produce the best solution to any issue.

All successful projects have a win/win attitude

It is difficult to define the scope of work fully – in fact, it's almost impossible hence there will always be work not defined in the scope that has to be executed. It is understandable, therefore, that the person executing it should be paid and, if there is no automatic re-measurable for compensation, the only way is to claim. A win/lose attitude rarely results in a successful project

Claim fundamentals

A few fundamental things should be done if you are involved in claims, these are:

- Read the contract carefully at the start of the project.
- Study the scope of work at the start.
- Check that what you are doing is clearly stated in the contract scope. If it is not, list the variances and, in each variance, do the following:
 - Define the difference
 - Cost the difference
 - Find the clause in the contract that allows you to claim. If there is no clause, you have no claim.
 - Give notice of your intention to claim stating the clause you intend to claim under (note this must be within the stipulated period in the contract).
- Remember any change or delay is going to cost someone money.

There are a limited number of reasons why a contractor has the basis of a claim and only a few items are uncontrollable. Any change can constitute a claim by either party.

Contractors are sometimes not aware that a particular set of circumstances or events can constitute a claim. A detailed construction programme is a good indication of a change in circumstances which could result in a claim.

To properly assess the extent and validity of claims submitted, the following provisions generally apply:

- All facts and circumstances relating to the claims shall be investigated as and when they occur or arise. For this purpose, the Contractor shall deliver to the Engineer/Employers Agent, records in a form approved by the Engineer/Employers Agent, of all the facts and circumstances which the Contractor considers relevant and wishes to rely upon in support of his claims, including details of all Construction Equipment, labour and materials relevant to each claim. Such records shall be submitted promptly after the occurrence of the event giving rise to the claim.
- The Engineer/Employers Agent may record facts and circumstances, additional to those recorded by the Contractor, he considers relevant and the Contractor shall, for this purpose, supply the Engineer/Employers Agent with all the information he may require.

This stresses the importance of detailed and accurate 'Daily Diaries' – if possible, get the Engineer/Employers Agent to sign them off.



A contractor's failure to comply with the notice period stated in the contract will result in time barring. Any time barring Clause in a Contract is enforceable.

Do's and don'ts of claims

Do not:

- Try and pull the wool over the Engineer/Employers Agent/Adjudicator's eyes – he/she will catch you out and it will prejudice all future claims.
- Submit fictitious claims – this just wastes everyone's time and is prejudicial.
- Submit cumbersome claims and expect the adjudicator to do a lot of research on reference documents.
- Assume the Adjudicator knows the contract.
- Labour the point in a claim.
- Submit incomplete claims requiring the Engineer/Employers Agent /Adjudicator to refer to outside sources for reference.
- 'Stretch the tape' to make up for claims previously not submitted.

Do:

- Refer to all contract causes that are applicable to your claim.
- Keep claims short and decisive with attachments as back-up.
- Submit claims as soon as they occur, even if it is early in the contract.
- Always claim what you are entitled to.
- Submit a complete claim and remember the first submission is the best you will get
- Do head all letters related to claims 'Without Prejudice'.

Claims are important – do not rush them as you may prejudice yourself in future.

Disputes

If a claim is rejected, declare a dispute. Most contracts have a dispute resolution procedure ranging from Mediation through Adjudication to Arbitration. Each process is more expensive than the last. Most contractors go straight to a lawyer for a dispute resolution; lawyers know the law, but do not necessarily understand construction. This can be prejudicial to the contractor. In the author's opinion, the best way to resolve a dispute is to consult with an Expert Construction Manager who has had claims and dispute resolution experience.

Disruption

Disruption, one of the biggest causes of cost overrun, is loss of productivity, disturbance, hindrance or interruption to a contractor's normal working methods, resulting in lower efficiency. In the construction context, disrupted work is work that is carried out less efficiently than it would have been, had it not been for the cause of the disruption. Disruption is a significant cause of cost overrun on any project and, if such disruption is caused by the Management/Client team, compensation for the contractor must be paid to ensure job creation and Industry stabilisation.

Disruption has a significant detrimental effect on any construction project and the effect is often not realised until long after it has occurred. It consists of two components, the first is the one that can be measured and the second occurs, but is more subjective than measurable. This happens when there is a change on the project. This can be a delay, change of scope, or any change whatsoever. Clearly the effect is dependent on the change. All disruption has a cost effect as any change incurs a cost.

The two types of disruption can be illustrated by instructing a contractor working in one area to carry out identical work in another area.

The two types are as follows:

- Quantifiable as the cost of moving the crew plus equipment to another location can be measured.
- Subjective as the reduction in productivity of the team is difficult to

measure though it does have a significant effect on costs. Furthermore, the cost of re-start up is one that is generally unaccounted for. This means, on normal contracts, disruptions can eliminate a contractor's total profit and contingency on a project. Change-related events on any project have a negative and synergistic effect on changed and unchanged work. The compounding effect of the numerous compensable events is:

1. Inadequately understood.
2. Difficult to quantify precisely.
3. Seldom, if ever, reflected in the estimated cost of approved and pending project changes.

Disruption has a significant effect on productivity.

Author's recommendation on contracts

Most small to medium contractors do not have a large management structure and therefore cannot spend too much time on paperwork. Regrettably, this can be costly in the long run.

On award, employ – on a temporary basis – an experienced Contract/Claims Consultant to read the contract, examine the scope of work, and advise you of potential pitfalls. If concerned about the cost, ask for a quote first.

It is your choice as to whether the consultant continues advising on an ad hoc basis. Record all events and discussions, and if someone writes to you be sure to answer the letter timeously. Should you have a claim, remember that your first submission is the best you will get so ensure its well-presented. If the claim is significant, with no disrespect to your current advisor, get a third-party review before submission.

Before rushing off to a lawyer get a claims consultant to examine the merits of your claim – thereafter you may or may not need a lawyer's assistance.

Conclusion

- Know and understand your contract.
- Be aware of what is in your scope.
- Maintain records.
- Get competent help if you need it – it's not expensive in the long run.
- Do not make hasty decisions.
- Be proactive not reactive.
- If the contract dispute resolution clause calls for Mediation (recommended) then Adjudication, try and get both Mediator and Adjudicator appointed at the start of contract.
- Declare a dispute if a claim is unreasonably rejected.

About the author

Neville Gurry has more than 50 years' experience in the Construction Industry ranging from Structural Consulting through multi-disciplinary Construction to Multi-Disciplinary Project Management.

From a gold mine in Mali to planning and overseeing the construction of Angola's only Fina refinery, Gurry has been at the forefront of building a legacy of world class infrastructure across Africa. His core responsibilities include facilitating the resolution of contractual disputes and advising members of the impact of legislation on their activities.

An experienced proactive project manager with a range of skills and a broad understanding of all engineering disciplines, Gurry also boasts on-site experience in multi-discipline construction. He is fully conversant with the PMBOK Guide and among his key strengths is the ease with which he is able to work with people of different backgrounds in a range of environments.

Gurry's experience includes running his own construction engineering firm, NEG Engineering Construction, between 1994 and 1996, which focused on management and contracting in the mechanical, structural, and civil engineering fields.

Enquiries: 082 881 7266

Transforming buildings from passive to adaptive

At this year's Light+Building trade fair, Siemens will showcase its vision for transforming today's passive buildings into learning and adaptive environments that intelligently interact with people. The company's focus at this year's show is "Building the future today", outlining the innovations that will make this possible. These include cloud-based technologies, digital planning, occupant-centric building automation and services. New solutions for smart electrical infrastructure that seamlessly connects to the Internet of Things (IoT) are also at the core of this transformation.

"Around 99 percent of today's buildings are not smart. Digitalisation has the power to transform buildings from silent and passive structures into living organisms that interact, learn from and adapt to the changing needs of occupants. This is a significant leap in the evolution of buildings where our technology plays a vital role," said Cedrik Neike, Member of the Managing Board of Siemens AG and Chief Executive Officer of Siemens Smart Infrastructure. "This transformation is already becoming a reality. We expect to see the first entirely self-adaptive buildings in three to five years from now."



of buildings. Available as Software as a Service (SaaS), it provides real-time building data as the basis for predictive and corrective maintenance.

Digital solutions for the entire building lifecycle

Globalisation, urbanisation, climate change, and demographics are changing the way people live and work. At the same time, digitalisation is ubiquitous. With some 10 billion building devices already connected to the IoT, buildings are ready to leverage the potential of digitalisation. People spend an estimated 90 percent of their lives indoors, so ensuring buildings meet the broad range of individuals' needs is crucial. On one hand, smart buildings actively contribute to occupants' enhanced productivity, wellbeing and comfort. For operators and owners, they help them collect and analyse data to create actionable insights, boosting buildings' performance and therefore revenue.

Siemens will showcase the smart buildings suite of IoT enabled devices, applications and services. At the core of the suite is the "Building Twin" application, which will be on display at the booth. It provides a fully digital representation of a physical building, merging static as well as dynamic data from multiple sources into a 3D virtual model. With real-time understanding of how a building is performing, operators can immediately make adjustments to boost efficiency as well as extract data to improve the design of future buildings. One of the new IoT-enabled applications is "Building Operator", which allows remote monitoring, operation and maintenance

Smart electrical infrastructure

Given that buildings account for more than 40 percent of electricity consumption in cities, building efficiency is crucial in the battle towards decarbonisation. Electrical infrastructure lays the foundation for safe, reliable and efficient building operations, while delivering essential data for a holistic, cloud-based building management. This is made possible by communication-capable low-voltage products, power distribution boards and busbar trunking systems that enable the measurement and wireless transmission of energy and status data.

To illustrate this, Siemens will exhibit a unique end-to-end solution for cloud-based power monitoring in buildings. Electrical installations can now be supplemented with digital metering without additional space requirements or wiring outlay. This makes it easy for electrical installers to start using digitalisation to their benefit. With 'Powermanager', a power monitoring software, now fully integrated into the Desigo CC building management platform, all building and energy data can be managed, monitored and analysed from one single platform. Siemens will also display its electromobility ecosystem, including battery storage and charging systems for residential buildings.

Enquiries: www.siemens.com/smart-infrastructure

The rapid rise of 5G

According to the new Cisco Annual Internet Report, 5G will support more than 10% of the world's mobile connections by 2023. The average 5G speed will be 575 megabits per second, or 13 times faster than the average mobile connection. With advanced performance capabilities, 5G will deliver more dynamic mobile infrastructures for AI and emerging IoT applications including autonomous cars, smart cities, connected health, immersive video and more.

For the past 50 years, each decade introduced a new mobile technology with cutting-edge innovations. Mobile bandwidth requirements have evolved from voice calls and texting to ultra-high-definition (UHD) video and a variety of augmented reality/virtual reality (AR/VR) applications. Consumers and business users worldwide continue to create new demands and expectations for mobile networking. This ongoing trend is clearly highlighted by the adoption and use of mobile applications. Social networking, video streaming and downloads, business productivity, e-commerce and gaming will drive the continued growth of mobile applications with nearly 300 billion downloaded by 2023.

"What we are seeing from our research is a continuous rise in internet users, devices, connections, and more demand on the network than we could have imagined," said Roland Acra, Senior Vice President and Chief Technology Officer at Cisco. "The insights and knowledge gained by our Annual Internet Report are helping global businesses, governments and service providers prepare and secure networks for the ongoing growth in connections and applications. Strategic planning and partnerships will be essential for all organizations to capitalize on their technology innovations and investments."

The Cisco Annual Internet Report is a global, regional

and country level forecast/analysis that assesses digital transformation and is developed by the same analyst team that created the Cisco Visual Networking Index (VNI) Forecast. The report covers fixed broadband, Wi-Fi, and mobile (3G and below, 4G, 5G) networking. Quantitative projections are provided on the growth of internet users, devices and connections as well as network performance and new application requirements. Qualitative analyses and assessments are also provided in four strategic areas: applications, security, infrastructure transformation, and empowering employees and teams.

Enquiries: www.cisco.com



Investments in advancing renewable technology spearheads Africa into a clean energy revolution



Africa's abundant clean energy resources, coupled with new investments in renewable energy technologies, have spearheaded Africa into a clean energy revolution. As reported by the International Energy Agency (IEA), renewable energy is believed to constitute approximately 50% of sub-Saharan Africa's power generation growth by 2040, consequently accelerating Africa's novice economies.

Receiving more sun than any of its continental counterparts, along with its vast geothermal, wind and wave energy capacity and progressive energy policies, Africa has immense potential to leapfrog fossil fuels. Renewable energy applications are essentially decentralised and similarly inexpensive. In effect, several African nations are currently implementing strategies to harness renewable energy solutions to capitalise on such benefits. For instance, sustainability has increasingly become a key focus for Rwanda and Ethiopia, while Kenya has pledged a complete transition to clean energy.

Africa is a rapidly emerging investment opportunity. Home to several of the globe's fastest-growing economies, the African region is forecast to sustain an overall economic growth of 3.8 percent. Incidentally, 20 African economies are projected to expand at an average rate of 5 percent or higher over the next five years. Irrespective of increasing debt constraints and a proliferating population, Chinese-subsidised funding is expediting energy infrastructure development throughout the region.

Furthermore, its rapidly increasing deployment of automated technologies over

the next two decades implies the renewable energy realm will become progressively self-optimising and efficient. As new technological advancements, including battery storage and microgrids, become more affordable and durable, the continent's renewable energy revolution is set to expand, powering Africa's growing economic proficiency.

There is a close correlation between energy consumption and economic development. Africa's population of more than 1.3 billion people renders an immense and mounting need for reliable energy. By 2040, sub-Saharan Africa is predicted to consume as much electricity as Latin America and India did in 2010 combined. Deployment of solar panels, small-scale wind and hydro innovations, as well as energy saving mechanisms, could lead to clean energy technologies offsetting the exhaustive investments traditionally required for energy. The U.S. Department of Energy predicts that utility solar PV costs will fall 60 percent by 2050. Coupled with the declining price of battery storage, wind and solar could support a distributed energy infrastructure that drives both Africa's social and economic development for decades to come.

Long-term capital investment is essentially the key to Africa's clean energy future. Where Africa's vast renewable energy resources remain unexploited, the public sector's capacity to spearhead both clean energy financing and technology transfer has enormous potential to substantively transform the region as we know it.

Enquiries: www.africaenergyindaba.com

What to expect from the electronics industry in 2020 and beyond

The last few years have been tough within the electronic industry, from Brexit to the China tariffs, to economic struggles. This year, an expected rise in electronic component sales is anticipated, along with less market volatility, so what trends can we expect to see?

Artificial Intelligence (AI) making a breakthrough

Artificial intelligence is a controversial subject. Many people are not in favour of the idea due to the perception that electronic machines will suddenly become empowered with the ability to judge right from wrong. AI could make a breakthrough in 2020 and become more socially accepted as simply machine intelligence, where it could feature in the medical, automotive and education sectors. Within the next decade, AI also looks set to have a significant impact on marketing and sales strategies, where it can be used to leverage customer information and deliver targeted messages back to them.

Multipurpose electronics in higher demand

Multipurpose electronics is the term used for electronics which has more than one purpose. In 2020, expect to see more devices emerge with multipurpose functionality designed to solve storage and efficiency issues.

Environmental priorities

Environmental impact is hugely topical at the moment, for obvious reasons. One electronics company that has taken this responsibility seriously is Panasonic, with ambitious goals in terms of energy, both efficiency and renewables, as well as on making environmentally-friendly products. Other initiatives that companies within the industry are taking include cutting back on toxic substances used in product manufacture and aggressive recycling programmes to ensure that outdated products do not end up in landfills.

Enquiries: www.ebom.com



Impact drill designed to produce maximum thrust

The Makita MT M8100B 13 mm Impact Drill has a powerful 710 W motor and features a variable speed trigger that provides the user with maximum control over the drill speed via the trigger with forward and reverse change. The handy lock-on-button locks the trigger-switch into place for ease-of-use in continuous drilling applications.

The M8100B has a capacity of 16 mm in concrete, 13mm in steel and 30 mm in wood, delivering up to 48 000 impacts per minute. This impact drill has a no load speed for 0-3 200 r/min, measures 296 mm in length and weighs 2.1 kg.

The impact drill has an extra-rigid cylindrical housing and comes standard with a chuck key, side grip, depth gauge and a 2 m power supply cord.

For more information, call 011-878-2600 or visit www.makita.co.za



Organised tool storage system for tradesmen

For an organised workplace and safe transportation of tools and accessories from the workshop to the site, the new generation of Festool Systainer offers maximum mobility and impresses with countless practical and smart functions. The Systainer3 was developed by Festool and Tanos in cooperation with bott, the specialist in high-quality vehicle equipment, and therefore fits seamlessly into with the new bott vario3 vehicle equipment range.

The versatility of the new Systainer3 from Festool redefines mobility at work, enabling maximum flexibility from the workshop to the site. The common objective of the cooperation was to make every day working life even easier for professional users.

"The new product is also perfect for professional Festool workshop, and the DIYer who wants a perfect professional layout for his power tool," said Greg de Villiers the Vermont Sales, Festool brand manager and leading power tool Guru. "As mentioned, for the tradesman on the road and on site, this is the perfect set up."

The new Systainer3 Organizer is for neat and tidy storage of small parts and is another new addition to the Systainer range. It is available in two different sizes and has a transparent cover so you can easily identify the contents. Festool offers a range of equipment for the Systainer3 Organizer, with a total of seven different sizes of small parts boxes. Practical Systainer3 and the Systainer3 Organizer can be connected together, providing optimum organisation of the machine and consumables in the same system. With the established T-LOC one-handed operating element, both new products can easily dock onto other new product: The Systainer3 roll board comes with four handle options as well as practical feedthroughs for straps and, with its load-carrying capacity of up to 100 kg, is ideal for mobile use.

"The Systainer has always been more than just a toolbox. It's an important module in our Festool transport and storage system, which we are constantly expanding and further developing. But the new Systainer is significantly more versatile in terms of application areas," stresses Oliver Seeger, Product Manager for



Systainer at Festool. "With the help of the T-LOC operating element, the Systainer3 and many other system products including the older Systainer generations can be connected together. In addition, thanks to integrated mounting rails, it can now fit seamlessly into the new bott vario3 vehicle equipment. This not only means you save a lot of time on your journey from the workshop to the construction site and back, but you are also safe when you are travelling, as no unsecured items can fly around. Everything stays in its place, even in the event of an accident. Safety is the top priority for all of our products," said Seeger.

The superscript number '3' not only indicates the third generation of the Systainer, which has been established in the professional trade sector since 1993, but also the three application areas, the Workshop, transport and construction site. With the standardised Systainer3 storage and transport system, everything can be stored neatly, perfectly organised and securely stowed, both in the stationary workshop and on the construction site. The new Systainer3 is also fully downwards-compatible with all older Systainer models. In addition, the Systainer3 system is available in a range of widths and heights. The three low Systainer3 variants have a handy front carrying handle, allowing them to be carried ergonomically, close to the body. The new Systainer3 can also be connected to other Festool system accessories, such as the new Systainer3 roll board or the mobile dust extractor.

Enquiries: www.vermontsales.co.za

Power logging meter kit now for hire

Mimic Components ENERTEQ™ is one of the best handheld 3-phase alternatives for power network analysis; not just for its functionality but also because of the price. Robust, reliable and user friendly are other key factors.

It is used on distribution boards to measure voltage and current in order to determine the power consumption at a factory or elsewhere (other electrical connections such as frequency can also be measured and all in real time). The design of the Rogowski coils makes for easy cable clamping inside distribution boards in addition to other characteristics.

The data information is used to establish new network applications. For example, if you want to switch from electrical power to solar power, you first test the electrical connection at that site to establish how much current is passing through it (including voltage and other electrical factors) so as to determine which solar kit is the right one for that site.

As most of the functions on the ME435 are already pre-programmed, making it easy to work with and to obtain the data. Simply connect the current transformers and voltage clamps, switch the power logging meter on and the device logs the data

straight onto the internal SD card (logging intervals can be manually programmed).

In fact, the device's substantial increase in popularity has led to it being available for hire as well as for purchase, as many end users who do electrical testing, use it once-off on one or multiple sites, returning it after use.

The kit contains: 4 x voltage wires, 1 x power adapter, 1 x 1GB SD card, a robust case, 3 x 600 A Rogowski coils, 1 x power meter and 1 x USB-to-SD adaptor.

Enquiries: +27 (0)11 689 5700



Compact infrared camera for laser machining processes



Temperature measurement in processes where lasers are used, provides major challenges for infrared measurement technology. For example, the camera needs to be insensitive to the laser's scattered light. Instrotech, local representative of Optris – leading manufacturers of non-contact temperature measurement devices – has launched Optris PI 08M, ideally suited to these kinds of applications. It has a very narrow-band spectral sensitivity of 800 nm. Most industrial machining lasers, such as for example NIR or CO₂ lasers work outside this range, so that the detector is protected against scattered laser light, without additional filters.

Precise temperature measurement

With the wavelength range of 800 nm, the PI 08M has an additional advantage, as the measurement error is minimal with

unknown or changing emissivity. At high temperatures it is only 1.5% of the measuring value; below 1 500 °C just 1%. The measuring range is from 575 °C to 1 900 °C. The interior of the IR camera holds a dynamic CMOS detector with an optical resolution of up to 764 x 480 pixels, which can be operated with a maximum frame rate of 1 kHz, making it highly suitable for very fast processes. A real-time analog output provides an output signal of 0 to 10 V. Here the temperature is averaged over an area of 8 x 8 pixels – the position of the area can be selected freely.

Optimum integration into the application

The new PI 08M can be integrated very easily into a wide range of applications, such as laser welding, laser soldering or laser hardening processes, where temperature plays a key role. The PI 08M comes with a Software-Development-Kit.

Enquiries: +27 (0)10 595 1831



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A cable gland world-first



The primary function of any cable gland is to anchor the cable securely to an electrical apparatus. Ex d (flameproof) cable glands obviously provide additional safety performance related to human life preservation in hazardous locations. Strict international testing standards (IEC 60079 series) specify pernicious performance requirements for the certification of such glands. These requirements are so demanding that, up until now, no Ex d/e corrosion-resistant flameproof compression gland on the world market has been certified without some attendant requirements or 'special conditions' of use.

Pratley Marketing Director Eldon Kruger comments: "It is quite bizarre to pay for a cable gland that, due to its

incapability of performing its primary anchoring function, requires the special condition of external clamping." Also, notwithstanding the extra cost, the external clamp itself must necessarily comply with IEC 61914 (2009 Ed.1). If it is either not fitted or not compliant, the entire installation would be unsafe and non-compliant. This places innocent end users at great risk. Understandably, even master installation electricians could be excused for missing the small print on instruction leaflets and assume that a certified Ex d (flameproof) cable gland could simply be fitted to a flameproof enclosure. "It's a natural conclusion to make," Kruger points out.

In the case of at least one well-known brand, the gland is also unable to comply with IEC torque require-

ments. It's therefore been certified with yet another special condition. In this instance, the gland must be installed with a special proprietary spanner that emulates a semi-open ring spanner, and thereby prevents collapse of the compression nut. Of course, the installation would require such a spanner for every size gland and, even worse, if it is inspected routinely as required by law, routine maintenance tightening would also require a special spanner.

From a risk-analysis viewpoint, one must ask: Will such a gland ever realistically be installed with both an external clamp, and using a special spanner? Will it also five years down the line still be inspected and tightened with such a special spanner? If the answer is 'no', the engineer in charge and the installer are at legal risk, and the workforce in the plant is at mortal risk.

Pratley's new, fully-certified Ex d/e corrosion-resistant Enviro Compression Gland solves all of this. "It has zero special conditions of use attendant to its installation, and that's a world-first," highlights Kruger. Pratley is well-known in the market for producing world-class electrical termination products. In fact, it takes product performance so seriously its policy statement reads that the performance of its products should outperform all others on the world market. It's even signed by CEO Kim Pratley and displayed on the product packaging.

Pratley claims that there's almost no place on earth where its new cable gland cannot be installed. From Group I locations in underground fiery mines, and Ex d flameproof environments, through to the coldest and hottest climates on the planet, the gland has been certified for temperatures from minus 20°C to 95°C. It's also IP66/68 certified and can withstand an incredible continuous depth of 350 m underwater. That's equivalent to the depth of the North Sea 50 km offshore.

It's made from high-tensile brass components encapsulated in a tough engineering plastic, which means it will not crack when tightening. This, combined with Pratley's unique Taper-Tech® internal seal design, ensures safe installation in corrosive environments, without damaging the cable or compromising seal longevity due to cable cold-flow. The cable gland is suitable for installation in equipment Groups I, II, and III, and Zones 1, 2, 20, 21, and 22 hazardous locations. It's also completely oil- and grease-resistant.

"I am confident that we have produced a product that not only complies with our policy statement, but exceeds it. Our aim was to produce a cable gland for hazardous locations that stands out from the rest and does what a cable gland is supposed to do, without compromising on safety. There shouldn't be any limitations, special conditions, or ancillary tools. If you need it in metric thread, NPT thread, or stainless steel, no problem, as we can do that, too," concludes Eldon.

Enquiries: +27 (0)11 955 2190

Diagnostic tools of the future

The tried and true multimeter will always be around, but sensor level communications, technology and the Internet of Things are changing diagnostic tools from reactive to proactive

When starting up a new control system as a machine builder or servicing production equipment as a system integrator, there are a wide variety of diagnostic tools used. These are often reactive tools used to identify problems as they occur during commissioning or system troubleshooting. However, once in production, digital connections and the Internet of Things (IoT) are using sensors, measurement devices and vision systems for proactive diagnostics, as well.

The seasoned electrical engineer, electrician or technician may have a tool cabinet full of diagnostic tools to test many machine and process variables. These tools span the range from power and discrete level testing in a control panel to analogue instrument setup and calibration. Additionally, the IoT is adding network diagnostic tools and even predictive diagnostic applications in the cloud.

A must-have diagnostic tool is the digital multimeter (DMM) to measure ac/dc voltage, ac/dc current and resistance. A clamp-on current-tester accessory is also helpful for currents over 10 A or so. In addition, a built-in diode and continuity tester, with audible beep, is a useful feature during testing.

Some DMMs have frequency and capacitance measurement capabilities that a few users may need. When testing an electrical circuit, the ability to stand up the meter or hang it can also improve readability by the user. And make sure it can handle at least 600 V.

Another great addition to the diagnostic toolbox is the oscilloscope. It is nearly a must-have to sort out encoder signal hardware and wiring problems, especially with the quadrature devices. It is also useful to test or understand transducer or load-cell response in a dynamic-system test by providing a high-resolution view of the signal showing oscillation, overshoot and undershoot in high-speed applications.

Single-point infrared thermometers and thermal imaging cameras are another area of diagnostics. Running a motor too hard and a loose wire are just two of the many problems that can cause excess heat but are easy to detect with the proper tools.

Technology adds diagnostic tools for communications. A wide variety of cable and protocol testers are available. Many are focused to a single protocol or hardware platform but can quickly help diagnose a problem with a network.

Diagnostic tools are endless and are often a starting point for continuous improvement. The problem or issue needs to be observed by human or machine, and the data needs to be viewed as actionable information. An HMI alarm screen is a must-have. However, that data can be sent to the cloud, as well. Once there, it can be available to all. It can also be analysed by applications in the cloud and returned to the machine as usable diagnostic information before a problem occurs.

The tried and true diagnostic tools will always be needed, but the automation world is changing. Add the technology and more information to your diagnostic toolbox.

Enquiries: www.controldesign.com

Actum Group brings you the world's leading industrial and electronic products



Over the years, Actum Group has been proudly built through partnerships, collaborations and acquisitions of leading world-class companies with a long history and rich legacy in the industry. These companies include Actum Electronics, Dowson & Dobson Industrial, Peter Jones Electronic Equipment, Altico Static Control Solutions, and most recently, Banding & Identification Solutions Africa.

The company is excited to inform the public that Actum Group will be the flagship brand going forward. Its team and product offering have not changed; they are simply promoting everything under one over-arching brand from now on.

Actum Group Director, Kevin Klaff, explains the reasoning behind adopting Actum Group as the flagship company brand: "The key to our ongoing success is our product offering of specialised quality products. Over the years we have partnered with the leading suppliers in the industry to offer our customers quality that they won't find elsewhere. Through improved communication, stock management and lead times, we have significantly improved our customer service and aim to continue doing so. By consolidating all of our company brands under Actum Group, we simplify our product offering and give our customers a one-stop solution to access all of the products and brands they need."

Actum Group is a specialised importer and distributor of industrial and electronic products in South and southern Africa. Its world touches everything from agriculture, construction, mining and oil and gas; to telecoms, pharmaceutical and automotive. The company is focused on quality and proudly represent only the very best international and local brands.

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Waco

CONTACTS

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Alfred Weldon
R&C Instrumentation
Johan de Villiers
Stone Stamcor
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Voltex
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Sales

LADDERS AND SCAFFOLDING

ACDC Dynamics
Full range of ladders and scaffolding
Atlas
A-frame and extension ladders for industrial and domestic use; scaffolding on request
Belco
A-frame and extension ladders for industrial and domestic use; scaffolding on request
Brady South Africa/Grafo
Equipment status management tools – Scafftag, Laddertag
Citilec
Full range of ladders and scaffolding
Electrahertz
Selection of ladders
Magnet Electrical Supplies
Rigwell, Lovemore Bros
Voltex
A-frame and extension ladders for industrial and domestic use; scaffolding on request
Waco
A-frame and extension ladders for industrial and domestic use; scaffolding on request

POWER TOOLS AND ACCESSORIES

ACDC Dynamics
Full range of power tools and accessories

POWER TOOLS AND ACCESSORIES

ACTOM Electrical Products
Full range of power tools and accessories
Atlas
Various brands of drills, grinders and accessories for industrial and DIY
Belco
Various brands of drills, grinders and accessories for industrial and DIY
Bosch
Power tools for drilling, driving, grinding, cutting, metalworking and woodworking
Citilec
Full range of power tools and accessories
Electrahertz
Range of power tools and accessories
HellermannTyton
Electric terminal crimper (EK50ML) – high speed crimping
Magnet Electrical Supplies
Bosch, Black & Decker
Makita Industrial Power Tools (Rutherford)
Comprehensive range of corded and cordless power tools and accessories
Phambili Interface
Full range of power tools and accessories
Voltex
Various brands of drills, grinders and accessories for industrial and DIY
Waco
Various brands of drills, grinders and accessories for industrial and DIY

DRAW WIRES AND AIR-DRIVEN SYSTEMS

ACDC Dynamics
Full range of draw wires and air-driven systems
Atlas
Wiremate pull cord systems
Belco
Wiremate pull cord systems
Citilec
Full range of draw wires and air-driven systems
Electrahertz
Range of draw sires and air-driven systems
Magnet Electrical Supplies
HellermannTyton; Three-D
Voltex
Wiremate pull cord systems
Waco
Wiremate pull cord systems

HAND TOOLS AND ACCESSORIES

ACDC Dynamics
Full range of hand tools and accessories
ACTOM Electrical Products
Full range of hand tools and accessories
Atlas
Various brands and ranges for professional, general electrical and DIY use
ARB Electrical Wholesalers
Full range of hand tools and accessories
Belco
Various brands and ranges for professional, general electrical and DIY use
Brady South Africa/Grafo
Handheld printers for cable and wire identification, labels, sleeves
Citilec
Full range of hand tools and accessories
Electrahertz
Range of hand tools and accessories
Electroparts
Full range of hand tools and accessories
Electro Test Instrumentation
Full range of hand tools and accessories
Garry Lumpe Imports
Full range of Knipex and Wiha German-made hand tools: pliers, wire strippers, side cutters, cable cutters, crimpers, VDE spanners and sockets, screwdrivers, Allen keys and toolkits
HellermannTyton
Complete range from tool kits, screwdrivers and crimpers (hydraulic and hand held) to VDE and 1000 V double insulated
Legrand
Starfix crimper; Colson cable tie tensioner
Magnet Electrical Supplies
HellermannTyton; Major Tech; Gedore
Major Tech
Full range of hand tools, designed by electricians for electricians. Range varies from VDE, 1000 V, insulated hand tools for all electrical requirements
MCE Electric
MCE handheld cable cutters; MCE handheld crimping pliers; MCE VDE screwdriver sets; hydraulic crimping pliers; MCE hydraulic punch and die set
Phambili Interface
Various brands and ranges for professional, general electrical and DIY use
Phoenix Contact
Wide range of handheld tools and accessories
Radiant Group
Full range of hand tools and accessories
Stone Stamcor
Full range of cutting, compression and electrician's tools
Voltex
Various brands and ranges for professional, general electrical and DIY use
Waco
Various brands and ranges for professional, general electrical and DIY use

INSULATION INSTRUMENTS AND ACCESSORIES

ACDC Dynamics
Range of insulation instruments and accessories
ACTOM Electrical Products
Full range of insulation instruments and accessories
Atlas
Various brands available as per customers' requests
Belco
Various brands available as per customers' requests
Comtest
Full range of Fluke Industrial and Amprobe insulation multimeters and insulation resistance testers
Electrahertz
Range of insulation instruments and accessories
Electroparts
Full range of insulation instruments and accessories
Electro Test Instrumentation
Full range of insulation instruments and accessories
HellermannTyton
T1800 insulation testers; analogue insulation tester (T1832); analogue insulation tester (T1132); multimeter (TBM878) insulation/combination
Magnet Electrical Supplies
HellermannTyton; Major Tech; Fluke
Major Tech
Full range of analogue and digital LV and HV insulation testers
Megger
MIT and MFT
Phambili
Various brands available as per customers' requests
R&C Instrumentation
Full system power management local and via Internet
Voltex
Various brands available as per customers' requests

INSULATION INSTRUMENTS AND ACCESSORIES

Waco
Various brands available as per customers' requests

SEALANTS AND LUBRICANTS

ACDC Dynamics
Full range of sealants and lubricants
ACTOM Electrical Products
Full range of sealants and lubricants
Atlas
CRC and other well-known brands
Belco
CRC and other well-known brands
Electrahertz
Range of sealants and lubricants
Electroparts
Full range of sealants and lubricants
HellermannTyton
Fospro penetrating fluid and lubricant
Voltex
CRC and other well-known brands
Waco
CRC and other well-known brands

STRIPPERS

ACDC Dynamics
Full range of strippers
ACTOM Electrical Products
Full range of strippers
Atlas
Leading brands available
Belco
Leading brands available
Electrahertz
Range of strippers
Electroparts
Full range of strippers
Garry Lumpe Imports
Knipex cable wire strippers
Legrand
Starfix multi-tool stripper/crimper
Magnet Electrical Supplies
Full range of strippers
HellermannTyton
Electrician's wire stripper (SWN160); PV stripping tool (PVST46); cable stripper (ASS103)
Major Tech
Complete range of wire strippers and cable knives
MCE Electric
MCE cable strippers; MCE wire strippers
Phambili Interface
Leading brands available
Phoenix Contact
Full range of strippers
Stone Stamcor
Full range of cable strippers
Voltex
Leading brands available
Waco
Leading brands available

WELDING INSTRUMENTS AND ACCESSORIES

ACDC Dynamics
Full range of welding instruments and accessories
Atlas
Full range of welding instruments and accessories
Electrahertz
Range of welding instruments and accessories
HellermannTyton
Soldering kit (TP720K); solder (resin core, 2 mm); Clipper butane gas (SOLDERGAS)
Magnet Electrical Supplies
Afrrox

CABLE LABELLING/CABLE TESTING/CABLE FAULT LOCATION

ACDC Dynamics
Full range of cable testing and cable fault location instruments
ACTOM Electrical Products
Full range of cable testing and cable fault location instruments
Atlas
Leading brands available on request
ARB Electrical Wholesalers
Full range of cable testing and cable fault location instruments
Belco
Leading brands available on request
Brady South Africa
Full range of cable labelling
Comtest
Range of Fluke and Amprobe testing instruments
Electrahertz
Range of cable testing instruments
HellermannTyton
Cable route tracers (VLOC2 and RD7100)
Indlovu Enterprises
Cable fault location services (faults/VLF/PD/TD/ID/Spike); new cable fault location equipment; repair of cable fault location equipment; training on cable fault location equipment
Legrand
CAB 3 and Memocab cable markers
Magnet Electrical Supplies
HellermannTyton; Major Tech; Fluke; Eberle
Major Tech
Cable testers for location, length and LAN testing
Megger
EZ Thump; DET; CI (Cable Identifier)
Voltex
Leading brands available on request
Waco
Leading brands available on request

EARTH ELECTRODE RESISTANCE

ACDC Dynamics
Full range of electrode resistance instruments
Atlas
Full range of electrode resistance instruments
Belco
Full range of electrode resistance instruments
Comtest
A full range of Fluke and Amprobe instruments
Electrahertz
Range of electrode resistance instruments
Electroparts
Full range of electrode resistance instruments
Electro Test Instrumentation
Full range of electrode resistance instruments

ENVIRONMENTAL TESTERS

HellermannTyton
Earth resistance clamp (T2000)
Magnet Electrical Supplies
Surgetek
Major Tech
Digital resistivity, resistance and clamp-on earth testers
Megger
MFT
Voltex
Full range of electrode resistance instruments
Waco
Full range of electrode resistance instruments
ACTOM Electrical Products
Full range of humidity temperature, wind and sound environmental testers
Atlas
Various well-known brands available
Belco
Various well-known brands available
Comtest
Full range of Fluke and Amprobe environmental testing instruments
Electro Test Instrumentation
Full range of environmental testers
HellermannTyton
Digital lux meter (T630); sound level tester (T325); anemometer/hygro/lux/temperature (T8000)
Major Tech
Full comprehensive range of environmental testers
Voltex
Various well-known brands available

HV PROBES

ACTOM Electrical Products
Full range of HV probes
Atlas
Various well-known brands available
ARB Electrical Wholesalers
Full range of HV probes
Belco
Various well-known brands available
Denver Technical Products
High voltage probes, transducers and measurement for ac and dc applications
Electrahertz
Range of HV probes
Electro Test Instrumentation
Full range of HV probes
HellermannTyton
High voltage detectors (HVD, THVD); high voltage tester (TPC11K)
Magnet Electrical Supplies
HellermannTyton; Major Tech; Catu; Fluke
Voltex
Various well-known brands available

INFRARED THERMAL IMAGING

ACDC Dynamics
Full range of infrared thermal imagers
ARB Electrical Wholesalers
Full range of infrared thermal imagers
Atlas
Various well-known brands available
Belco
Various well-known brands available
Comtest
Full range of Fluke Industrial IR thermal imagers and lenses
Electrahertz
Range of thermal imagers
Electro Test Instrumentation
Full range of thermal imagers
HellermannTyton
Full range of infrared thermal imagers; Thermal IR camera (THT45); Thermal Imager (TPK 1600)
Magnet Electrical Supplies
HellermannTyton; Major Tech; Fluke
Major Tech
Full range of IR thermal imagers
R&C Instrumentation
Infrared inspection windows; infrared thermal imagers, fixed and portable
Voltex
Various well-known brands available
Waco
Various well-known brands available

COMPLIANCE TESTERS

ACDC Dynamics
Full range of compliance testers and contractor's kits
ACTOM Electrical Products
Full range of compliance testers and contractor's kits
ARB Electrical Wholesalers
Full range of compliance testers
Atlas
Various well-known brands available
Belco
Various well-known brands available
Comtest
Full range of Fluke compliance testers
Electrahertz
Range of compliance testers
Electroparts
Full range of compliance testers
HellermannTyton
Full range of compliance testers including kits; compact digital compliance kits (TCTCDK); analogue compliance kit (TCTRP); compliance tester (MACROG3); compliance/three-phase power analyser (T60)
Magnet Electrical Supplies
HellermannTyton; Fluke
Major Tech
Complete range of compliance testers for all CoC tests
MCE Electric
MCE socket tester
Voltex
Various well-known brands available

CLAMP-ON METERS

ACDC Dynamics
Full range of clamp-on meters
ACTOM Electrical Products
Full range of clamp-on meters
ARB Electrical Wholesalers
Full range of clamp-on meters
Atlas
Various well-known brands available
Belco
Various well-known brands available
Comtest
Full range of Fluke Industrial clamp-on meters
Denver Technical Products
Clamp on metering units for all ranges of current, for measurement of ac and dc currents



CLAMP-ON METERS

Electrahertz
Range of clamp-on meters

Electroparts
Full range of clamp-on meters

Electro Test Instrumentation
Full range of clamp-on meters

HellermannTyton
Full range of clamp-on meters including AMPTIP; TBM175D 600 A ac; TBM089 1000 A ac/dc; TBM197 2000 A ac/dc

Magnet Electrical Supplies
HellermannTyton; Major Tech; Chavin Arno; Fluke; Three-D

Major Tech
Comprehensive range of AC and ACDC clamp meters

Megger
DCM

Phoenix Contact
Full range of clamp-on meters

Voltex
Various well-known brands available

Waco
Various well-known brands available

EARTH-LOOP IMPEDANCE TESTERS

ACDC Dynamics
Full range of earth-loop impedance testers

ACTOM Electrical Products
Full range of earth-loop impedance testers

ARB Electrical Wholesalers
Full range of earth-loop impedance testers

Atlas
Various well-known brands available

Bellco
Various well-known brands available

Comtest
Full range of Fluke Industrial earth-loop impedance testers

Electrahertz
Range of earth-loop impedance testers

Electro Test Instrumentation
Full range of earth-loop impedance testers

HellermannTyton
Full range of earth-loop impedance testers; multifunction device (T419); compliance tester (MACROG3); compliance/three-phase power analyser (T60)

Magnet Electrical Supplies
Fluke; Major Tech; HellermannTyton; Three-D

Major Tech
Full range of earth-loop impedance and PSC testers

Megger
LTW

Voltex
Various well-known brands available

POWER ANALYSERS

ACDC Dynamics
Full range of power analysers

ARB Electrical Wholesalers
Full range of power analysers

Atlas
Various well-known brands available

Bellco
Various well-known brands available

Comtest
Full range of Fluke Industrial power analysers

Denver Technical Products
Power analyser range of products, for handheld and permanent installation applications

Electrahertz
Range of power analysers

Electro Test Instrumentation
Full range of power analysers

HellermannTyton
Full range of power analysers; three-phase power quality analyser and recorder (T824); three-phase power quality analyser (T78); three-phase and single power quality analyser (TPQA820); compliance/three-phase power analyser (T60)

Impact Power Innovations
Various well-known brands available

Magnet Electrical Supplies
Major Tech; HellermannTyton; Impact Energy

Major Tech
Compact power analysers, power quality analysers, current loggers, current and voltage loggers, leakage loggers

Megger
MPQ

Mimic Components
ME435 Power Logging Meter in Kit for Poly-phase Power Network Logging

Voltex
Various well-known brands available

MULTIMETERS

ACDC Dynamics
Full range of multimeters

ACTOM Electrical Products
Full range of multimeters

ARB Electrical Wholesalers
Full range of multimeters

Atlas
Various well-known brands available

Bellco
Various well-known brands available

Comtest
Full range of Fluke and Amprobe multimeters from low-cost analogue to high-resolution digital

Denver Technical Products
Fluke range of multimeters

Electrahertz
Range of multimeters

Electroparts
Full range of multimeters

Electro Test Instrumentation
Full range of multimeters

HellermannTyton
Full range of multimeters from DIY to five-in-one combinations, including T835; TBN812XEX; T8209

Indlovu Enterprises
Range of Fluke multimeters

Magnet Electrical Supplies
Major Tech; HellermannTyton; Fluke; Three-D

Major Tech
Extensive range of multimeters designed for all electrical measurement requirements

Megger
AVO

Phoenix Contact
Full range of multimeters

Voltex
Various well-known brands available

Waco
Various well-known brands available

VOLTAGE TESTERS

ACDC Dynamics
Full range of voltage testers

ACTOM Electrical Products
Full range of voltage testers

ARB Electrical Wholesalers
Full range of voltage testers

Atlas
Various well-known brands available

Bellco
Various well-known brands available

Comtest
Full range of Fluke and Amprobe voltage and continuity testers

Denver Technical Products
Full range of voltage transducers for permanent installations

Electrahertz
Range of voltage testers

Electroparts
Full range of voltage testers

Electro Test Instrumentation
Full range of voltage testers

HellermannTyton
Full range of voltage testers including non-contact and high voltage; non-contact voltage tester (TLVD17); WIBRE 1000; Telescopic HOT Stick-Ritz (VTT25F)

Magnet Electrical Supplies
Major Tech; HellermannTyton; Fluke; Three-D

Major Tech
Comprehensive range of voltage testers and 2-pole voltage testers

Mimic Components
ME435 Power Logging Meter in Kit for Poly-phase Power Network Logging

Phoenix Contact
Full range of voltage testers

Voltex
Various well-known brands available

MEASURING INSTRUMENTS FOR SITE SURVEYING

ACDC Dynamics
Full range of measuring instruments

Comtest
Fluke Industrial tools

Indlovu Enterprises
Cable route tracing for ground surveying

Magnet Electrical Supplies
HellermannTyton; Three-D; Fluke

Major Tech
Laser distance meters and video borescopes

OSCILLOSCOPES

ACDC Dynamics
Full range of oscilloscopes

Atlas
Various well-known brands available

Bellco
Various well-known brands available

Comtest
Full range of oscilloscopes including Fluke Industrial, GW Instek, Tektronix, Pico Technologies

Electro Test Instrumentation
Full range of oscilloscopes

Magnet Electrical Supplies
Fluke; Major Tech

Major Tech
Range of handheld digital storage oscilloscopes; digital storage oscilloscopes; True RMS multimeter and oscilloscope

Voltex
Various well-known brands available

PHASE TESTING

ACDC Dynamics
Full range of phase testing equipment

ACTOM Electrical Products
Full range of phase testing equipment

ARB Electrical Wholesalers
Full range of phase testing equipment

Atlas
Various well-known brands available

Bellco
Various well-known brands available

Comtest
Fluke phase testers

Electrahertz
Range of phase testers

Electro Test Instrumentation
Full range of phase testers

HellermannTyton
Full range of phase testing equipment; non-contact, three-phase detector (T890); three-phase rotation indicator (T887); high voltage tester (TPC11K)

Magnet Electrical Supplies
Major Tech; Catur; Surgetek; Fluke; HellermannTyton

Major Tech
Full range of phase rotation meters and non-contact safety phase indicators

Megger
PSI; MFT

Voltex
Various well-known brands available

TEMPERATURE TESTERS

ACDC Dynamics
Full range of temperature testers

ARB Electrical Wholesalers
Full range of temperature testers

Atlas
Various well-known brands available

Bellco
Various well-known brands available

Comtest
Full range of Fluke temperature testers; Calog calibrators

Electrahertz
Range of temperature testers

Electro Test Instrumentation
Full range of temperature testers

HellermannTyton
Full range of IR and non-contact temperature testers; dual input thermometer (T502KJ); TIR9PEN; four-in-one non-contact thermometer (T151)

Magnet Electrical Supplies
Fluke; HellermannTyton; Three-D; Major Tech

Major Tech
Full range of infrared and K-type thermometers

R&C Instrumentation
Portable and fixed infrared thermometers; Ex- and IS-rated infrared thermometers

Voltex
Various well-known brands available

INSULATION TESTERS

ACDC Dynamics
Full range of insulation testers

ACTOM Electrical Products
Full range of insulation testers

ARB Electrical Wholesalers
Full range of insulation testers

Atlas
Various well-known brands available

Bellco
Various well-known brands available

Comtest
Full range of Fluke insulation and resistance testers

Electrahertz
Range of insulation testers

Electroparts
Full range of insulation testers

Electro Test Instrumentation
Full range of insulation testers

HellermannTyton
Complete range of digital and analogue insulation testers

Indlovu Enterprises
Range of insulation testers – 5 kV, 10 kV, 15 kV, 25 kV

Magnet Electrical Supplies
Fluke; HellermannTyton; Three-D; Major Tech

Major Tech
Full range of analogue and digital LV and HV insulation testers

Megger
MIT; MFT

Voltex
Various well-known brands available

POLARITY/ELCB TESTERS

ACDC Dynamics
Full range of polarity/ELCB testers

ACTOM Electrical Products
Full range of polarity/ELCB testers

ARB Electrical Wholesalers
Full range of polarity/ELCB testers

Atlas
Various well-known brands available

Bellco
Various well-known brands available

Comtest
Fluke polarity/ELCB testers

Electrahertz
Range of polarity/ELCB testers

Electroparts
Full range of polarity/ELCB testers

HellermannTyton
Complete range of polarity/ELCB testers; industrial ELCB (TELE10L); ELCB testing/polarity (TEL2SC, TEL1TLB))

Magnet Electrical Supplies
Major Tech; Fluke; Three-D; HellermannTyton

Major Tech
Range of ELCB testers and industrial RCD/ELCB testers

MCE Electric
MCE socket tester

Megger
MIT; MFT

Voltex
Various well-known brands available

STANDARD METERS

ACDC Dynamics
Full range of standard meters

ARB Electrical Wholesalers
Full range of standard meters

Atlas
Various well-known brands available

Bellco
Various well-known brands available

Comtest
Fluke and Amprobe standard meters

Electrahertz
Range of standard meters

Electroparts
Full range of standard meters

Magnet Electrical Supplies
Fluke; Three-D; Major Tech; HellermannTyton

Major Tech
Full range of standard meters

MCE Global Suppliers
MCE ammeters, voltmeters

Phoenix Contact
Full range of standard meters

Voltex
Various well-known brands available

Waco
Various well-known brands available

TEST LEADS

ACDC Dynamics
Full range of test leads

ARB Electrical Wholesalers
Full range of test leads

Atlas
Various well-known brands available

Bellco
Various well-known brands available

Comtest
Full range of Fluke and Amprobe test leads, probes and clips

Electrahertz
Range of test leads

Electroparts
Full range of test leads

Electro Test Instrumentation
Full range of test leads

HellermannTyton
Complete range including leads, crocodile and banana clips; TAL24, TAL30ARBK; TELEWR50F

Indlovu Enterprises
Range of test leads

Magnet Electrical Supplies
Fluke; Three-D; Major Tech; HellermannTyton

Major Tech
Range of modular test lead sets and croc clips in PVC and silicone insulation

Megger
MFT leads

Voltex
Various well-known brands available

Waco
Various well-known brands available



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+27 (0)10 595 1921



+27 (0)11 878 2600



+27 (0)21 929 9400



Rugged phone that life won't break

Cat® Phones has launched the Cat S52, a sleek and truly rugged phone. The phone combines military grade toughness with a pocket-friendly design that is thinner than a mainstream smartphone in an often-bulky case that offers limited protection.

At just 9.69 mm thin and weighing 210 g, the S52 is strengthened by a high-grade aluminium frame with a thin but tough non-slip rubberised TPU backplate, ensuring a sleek, classic look. The front face of the product is covered by scratch and crack-resistant Corning® Gorilla® glass 6, slightly recessed below a surrounding protective ridge, with full metallic keys and waterproof connectors completing the design.

Cat phones set the standard in rugged, and the Cat S52 is no exception. It is built to last, subjected to an extremely rigorous drop test onto steel, 30 times from 1,5 m, including drops on every side and corner. It is dirt and dustproof, and can be fully submerged in water, with an Ingress Protection rating of IP68. It's also MIL SPEC 810G, which means it's been put through a barrage of Military Spec robustness tests, including thermal shocks, high and low temperature extremes, vibration tests, tumble tests, and salt mist conditions.

The main camera boasts fast and accurate focusing thanks to its dual pixel Sony sensor, and its bright f/1.8 aperture and large 1.4 µm pixel size delivers great low-light performance. This, combined with advanced multi-frame image processing software, provides a class-leading camera experience for a rugged phone.

"Statistically, one in three consumers have



severely damaged their phones as a result of every day mishaps in the past three years. Not only is this inconvenient for consumers but repairing or replacing phones can be prohibitively expensive. With the Cat S52, we've made a smartphone that life won't break. It's a true rugged Cat phone at its core, but with a mainstream design that looks and feels great. Sleek and tough – it's one less thing to worry about," says Peter Cunningham, VP Product Portfolio at Bullitt Group.

The Cat S52 has a recommended retail price of R10 999 and is available from leading cellular network operators in South Africa or from Takealot.com.

Enquiries www.catphones.co.za

Safe and accurate leakage clamp meter

The K2434 leakage clamp meter from Major Tech can detect current readings within a range of 0.1 mA to 100 A. The clamp has a 28 mm jaw, which encircles the wire under investigation, meaning measurements can be taken safely on a live system without having to break the circuit.

Leakage current is the small (hopefully) amount of current that flows in the conductor insulation and in filters protecting electrical equipment that can potentially cause nuisance tripping. Placing the jaws of the K2434 around a conductor allows it to read the amount of 'leaked' current, which is shown on the instrument's LCD display. The display is capable of a maximum reading of 3 999.

To assist electricians to obtain accurate measurements, the K2434 includes a frequency filter that removes the effects of high frequencies generated by equipment, such as inverters, which can affect the current measurements. All the user needs do is press the 'Frequency Selector' button to activate the filter.

When taking readings in environments with poor lighting or in positions where it's difficult to see the display, the instrument includes a 'Data Hold' button to retain the current reading on the screen. It will remain there until the user once again presses the button to clear it.

The K2434 carries a CAT III 300V safety rating according to the IEC 61010-1 standard and runs off two 1.5 V R03 batteries. A low-battery signal will let users know when it's time

to change the batteries, which can be used for about 150 hours of measurements. In addition, the power-off function will switch the instrument off after 10 minutes of inactivity in order to save power.

Enquiries: www.major-tech.com



Protecting your tools



As a tradesman your tools are mighty important to you, so it is important that they are protected both physically and financially. For many tradesmen the thought of having your tools stolen is enough to make you feel sick, but every day around South Africa there are hardworking electricians, plumbers and the like having their tools stolen.

Unfortunately, many stolen tools end up being sold for a fraction of their true value by thieves who don't understand what it's like to work hard and earn their own money. Whilst we'll never be able to stop tool theft entirely, there are a few things we can do to help to protect your tools.

Lock them up

The first tip may seem quite obvious, but there are plenty of trusting tradesmen out there who unfortunately leave their tools unsecured in their car.

A lot of tool theft is done on an opportunity basis. This means that the thieves are going around looking for random targets, then having a go wherever there's an opportunity for a quick score. By leaving your tools unsecured you are giving them the opportunity they want.

As a minimum, all toolboxes should be properly

secured and they should also have big solid locks on the lids or doors. Also consider the hinges, as weak hinges on some toolboxes can easily be broken.

Any large equipment that cannot fit in a toolbox should be locked to your vehicle with a chain and padlock. Ladders should be secured in a similar way. Most average padlocks can be easily and quietly cut using bolt cutters, and other types of toolbox locks can often be jimmied open with a crowbar, so don't skimp on your security devices.

Keep them out of sight

Most tool thefts occur from vehicle parked outside of a home during the evening or on site. The easiest way to stop this happening is to park your vehicle inside a garage. If you already have two cars in the garage, or if your garage doubles as storage space for the rest of your tools it may not be possible to park inside. In this case, at least consider parking off the street.

Identify your equipment

Despite our best efforts, there is nothing we can do that will 100% guarantee the safety of our tools. So if they are going to get stolen, try to make sure that

Point and shoot laser distance meter

Available from Comtest is Fluke's new 417D, an accurate, durable, point and shoot laser distance meter, designed for indoor and outdoor, dusty and wet conditions. Easy, one-button operation means users can minimise time taken by measuring, while the Fluke brand assures the quality and

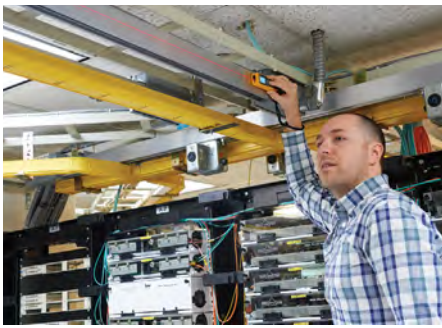
reliability of the measurements taken. And, with simple function buttons, three different measurement tasks can be completed quickly and easily. The extra bright laser is clearly visible, so the target point can always be seen, even if the target object is in a hard-to-reach spot, or at a long distance. The 417D has

a large 2-line illuminated LCD screen and three-buttons for easy-to-use one-handed measurements.

417D's features and benefits:

- Measures up to 40 m (accuracy of 2 mm).
- One button instant distance measurement.
- Quick calculation of area (square metres).
- Continuous measurement capable.
- Battery life 3 000 measurements and improved by 'auto shut-off'.
- One-metre drop tested.
- IP54 dust and water-resistant.
- Three-year warranty.

Enquiries: +27 (0)10 595 1821



you have the best chance of recovering them.

All of your valuable tools should be engraved with a special marking. This may not stop someone from stealing them, but it will make them harder to sell and easier to identify if the police manage to recover your tools.

It is also a good idea to keep a comprehensive record of each and every tool, from your most expensive power tools through to every little drill bit and screwdriver. It's amazing how quickly these things add up, and if you get cleaned out you want to make sure that everything is accounted for, especially if you have insurance.

Insure your tools

Keeping your tools secure and out of sight is all good and well, but sometimes a determined thief will clean you out when you least expect it. When this happens, it is vital that you have insurance to cover their replacement.

When your tools are stolen you need to replace them quickly so you can get back to work. Having to cough up out of your own hard-earned money is not ideal, but if you have them insured properly the insurance company will cover the bill for you.

Having your tools stolen is not a nice experience, but if there is a positive to be taken out of it, at least you will get to update all of your tools with new items. This is

because most tool insurance policies provide new for old replacement.

The insurance companies will always try to pay your claim as quickly as possible, but generally it will take a week or more to get the money in your hand. This isn't soon enough for most electricians, so you may have to cover the costs on your credit card until the insurance payment is made.

Insurance companies will generally want to see some form of evidence of ownership when paying claims, so in addition to your list, try to keep copies of receipts, owner manuals or original packaging materials; basically anything which can link you to the item.

Protect your tools

Essentially there are four main tips to protect your tool:

- Lock them up.
- Keep them out of sight.
- ID your equipment and tools.
- Keep them properly insured.

Your tools are a big part of your ability to earn an income as a tradesman, so it is worth making the effort to keep them safe.

Enquiries: www.traderisk.com



In-house transformer testing benefits customers and standards

The recent installation of an impulse voltage generator at Zest WEG's transformer manufacturing facility in Heidelberg will allow in-house testing of transformers, thus saving customers time and money.

According to Ronaldo Bertoldi, engineering manager at the facility, the substantial investment in this specialised equipment positions Zest WEG well for growth within South Africa and the rest of the continent.

"The impulse generator is strategic equipment for us, providing an important service, especially for our larger customers," Bertoldi says. Where the transformer size is larger than the 72,5 kV voltage class, impulse testing is routine as per IEC 60076-3. Customers have the option to do an impulse test in lower voltage classes as a type test.

An impulse generator produces short, high-voltage surges to test the strength of electric power equipment against lightning and switching surges. It comprises multiple capacitors that are first charged in

parallel through charging resistors by a high-voltage, direct-current source. These are then connected in series and discharged through a test object by a simultaneous spark-over of the spark gaps.

Sales team leader Stuart Brown explains that the acquisition makes the Zest WEG transformer manufacturing facility one of only a handful of local Original Equipment Manufacturers (OEM) with this testing facility in-house. This enhances local engineering capacity and entrenches global standards. "Major energy utilities will often require that suppliers have this capability," says Brown. "It is therefore a valuable resource as we expand the range of our transformers up to 50 MVA, 132 kV units."

Zest WEG has been manufacturing transformers locally since 2013, with significant growth in its range since 2016. Impulse testing had previously been outsourced and added to the lead time for completing units, he says.

Bertoldi emphasises that impulse testing is

important to establish that transformers can withstand waves on the network induced by lightning faults. "In particular, it tests whether the transformer's insulation is capable of withstanding such faults," he says. "In a country like South Africa, where lightning flash density is high, this is a vital exercise."

Impulse tests are also required by the global IEC 60076 series of standards, he says. These include full wave lightning impulse tests for line terminals and chopped wave lightning impulse tests for line terminals for power and distribution transformers.

"For instance, IEC 60076-3 requires that – for transformers with a rating of more than 72,5 kV voltage class – the lightning impulse test on the line terminals becomes a routine test," he says. "This means that it has to be performed at the factory by the manufacturer on every unit leaving the factory."

The impulse generator will also allow Zest WEG's transformer facility to test its own new product prototypes. These are continuously developed with

the technical support and shared resources of WEG's research and development facilities in Brazil.

Enquiries: www.zestweg.com



A new smart and safe way to monitor powertrain equipment in hazardous areas



ABB will launch its Smart Sensor for rotating machines operating in hazardous areas at Hannover Messe 2020, the leading international technology fair. The sensor further extends the existing scope of applications for ABB Smart Sensors with a new generation design for powertrains in hazardous areas. Chemical and oil and gas customers can now benefit from cost-efficient condition monitoring in a wide variety of applications.

The wireless smart sensor monitors key parameters to provide detailed insights into the performance and health of assets such as motors and pumps. Equipment installed in difficult or dangerous to access locations can be safely monitored from a distance. Combining connectivity and data analytics means operators can plan their maintenance activities in advance, reduce downtime and extend equipment lifetime.

"Our new generation of smart sensors provides high quality data to enable ABB's advanced analytics to be used in hazardous areas," says Teijo Kärnä, Global Product Manager, ABB Ability™ Smart Sensor. "These smart sensors are more sensitive which allows customers to see problems earlier. They also offer more monitoring capabilities and a broader communications range."

The sensor offers a battery life of

up to three times longer than most competing designs. It is sealed for life, with an IP66/67 rating and, using a simple mounting bracket, can be mounted directly to the equipment in a matter of minutes.

The sensor communicates with smartphones, tablets, PCs and plant gateways using low energy Bluetooth or WirelessHART. A new antenna design has extended its range by a factor of three to four, meaning that reliable communication over distances of a few hundred metres (line of sight) is now possible.

Another crucial upgrade is that the sensors have greater sensitivity to small changes in the condition of the equipment, including advanced warning of bearing damage. This capability to generate a much wider range of data is matched with state of the art integrated electronics that incorporate advanced algorithms based on ABB's vast experience in electric motors. This helps operators and maintenance teams produce insightful information to predict potential failure, enabling remedial action to be taken before a breakdown occurs.

The Smart Sensor is currently completing certification for hazardous areas – ATEX, IECEx, and NEC. Other certificates will follow over the coming year.

Enquiries: www.abb.com

Surge-protection technology to cope with grid instability

Instability in the electricity grid owing to ongoing load-shedding is increasing the possibility of overvoltage events. Surge protection devices from CPT Cirprotec, a pioneer in lightning and overvoltage protection devices for the past 25 years, are distributed locally by ElectroMechanica (EM).

An effective surge-protection device is crucial. Most people associate surge protection with lightning protection, but while the latter is important, especially if you live in an area where this is needed, it is not the only form of surge that can damage equipment.

Overvoltage events are now much more common, warns EM Product Manager Christo van Rensburg. These not only damage equipment, but reduce the lifespan of infrastructure and incur costly downtime for repairs.

CPT Cirprotec's class-leading lightning and surge-protection devices are at the forefront of innovation and design. Headquartered in Barcelona, Spain, the company has invested in two purpose-built surge-protection test laboratories, and has conducted over 30 000 tests to date.

It also employs a team of electrical engineers, is represented on key international standard committees, and invests significantly in research and development, all of which translate into world-class products and solutions, which enable the company to offer a product range that complies with IEC, UL, and NFC standards.

CPT Cirprotec solutions are available from EM for a range of industries, from transportation to energy, water treatment, commercial buildings, data centres, and industrial and residential installations. The brand is a key component of EM's low-voltage product offering.

Products include modular plug-in Type 2 and combined Type 1 and 2 surge-protection devices. With the increasing demand in photovoltaic (PV) installations, EM also offers a PV (DC voltage) surge-protection range from CPT Cirprotec.

Latest developments available from EM include the SAFEGROUND® range. This is thought to be the first protection device on the market that, in addition to indicating it is properly wired, guarantees an adequate path to ground, which is essential if the protection device is to shunt the energy peaks to ground effectively.

In addition, the unit can also indicate, depending on the colour and flashing sequence, whether the installation is permanent undervoltage (<195 V), permanent overvoltage (>275 V), or high potential neutral ground.

"Nobody knows what percentage of surge-protection devices are properly installed to provide effective protection," van Rensburg cautions. Here SAFEGROUND® stands to play a vital role, especially as it is based on the impedance loop technology already patented, sold, and implemented by CPT Cirprotec in thousands of protection solutions.



It is a known fact that electronic equipment is more sensitive to overvoltage ($U_e = 1.5$ kV). Because of this, it is highly recommended that surge-protection devices are installed in these type of applications.

It is also recommended that surge-protection devices are protected against any short circuits by DF fuses or Hager circuit breakers. "This ensures that, as a complete solutions provider, we can cater for all of our customers' requirements," van Rensburg concludes.

Enquiries: +27 (0)11 249 5000

POWER UP

TE Connectivity offers over 300 solutions for EMI/RFI problems associated with susceptibility, as well as compliance with international emissions standards.

Corcom filters are available in a wide range of single and 3-phase designs as well as IEC inlet and power entry modules which can combine several functions to reduce cost, space and labour. Solutions are also available for DC applications.

Contact Juan Ras on +27 83 561 6767 or JRas@arrow.altech.co.za for expert advice and quotes.



altronarrow.com



Coal mine sees benefit in dry-type transformers

Trafo Power Solutions has recently completed a contract as part of a significant upgrade at an Mpumalanga coal mine. According to Trafo Power Solutions managing director David Claassen, it involved the design, supply and installation of two 200 kVA – 22 kV to 400 V – dry-type transformers. Housed in specialised IP42-rated ingress protected enclosures, the units were specified by a design house on behalf of the end-customer.

“The contract demonstrated our application engineering capability, and our experience in co-ordinating our solution within a larger project,” Claassen says. “This included meeting detailed specifications, and ensuring our design for the transformers and their enclosures matched the requirements and constraints of the site.”

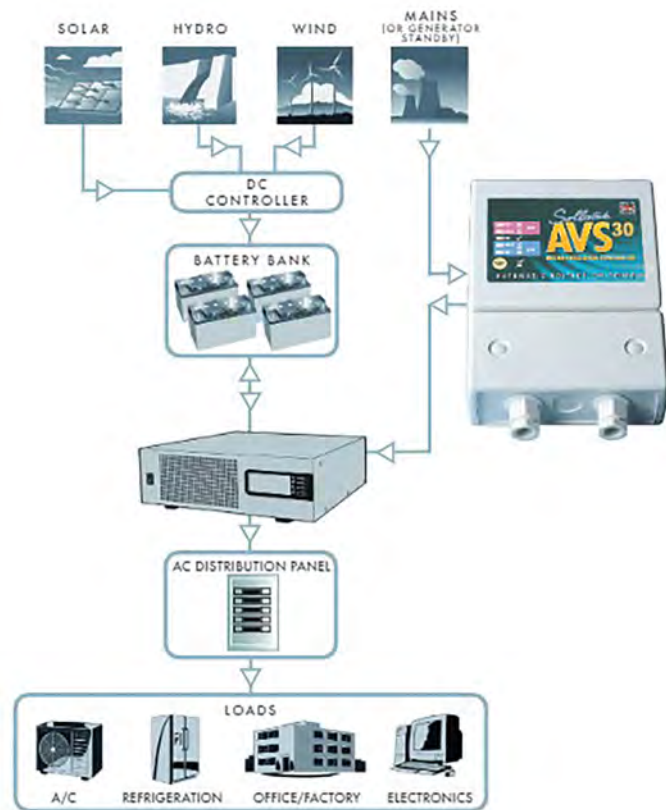
Trafo Power Solutions also equipped the units with the necessary earth fault protection and surge protection, as well as vibration pads. “Dry-type transformers are well suited for the coal mining environment, with its hazardous areas and its regulations to mitigate fire risk,” he says. “The dry-type technology uses air to cool the transformers, doing away with the need for oil as a coolant.”

Claassen emphasises that the absence of oil has advantages for safety, since the possibility of oil igniting is removed. An added advantage is environmental, as there is no chance of an oil leak contaminating the ground or water.

Enquiries: www.trafo.co.za



Finding an effective power solution for blackouts and load-shedding



receiving 3-phase (+400 V) and not the 220-230 V, again damaging electrical appliances.

5 main power problems:

The following problems can negatively impact the solar inverter if the right protection isn't correctly installed to prevent the below events from occurring whilst in function;

1. High voltage – As power fluctuates due to unreliable mains or poor distribution network, the mains voltage can either drop or rise. A sustained over voltage event can be catastrophic and cause instant irreparable damage. (Consider installing a SVS, voltage stabiliser, where utility is supplying high/over voltage for long durations. This will facilitate faster charging of the battery pack).

2. Low voltage – Similarly, low voltage can occur often during fluctuations, over stretched distribution network, excessive demand to the size of the utility or being at the end of a long distribution line. Low voltage is particularly damaging to equipment. (Consider installing a SVS, voltage stabiliser, where utility is supplying low/brown out voltage for long durations. This will facilitate faster charging of the battery pack).

3. Power back surges – Commonly occur after power cuts. As the mains supply resumes, it usually returns with a surge which could be quite high and damaging in some instances. Ensuring the power has settled before resumption is important.

4. Spikes and surges – Power spikes are short pulses of energy on a power line and contain high voltage. These spikes only last a few milliseconds, but they have the potential to cause great damage to sensitive equipment. Often equipment does not fail right away; however, in many instances when it does, this seriously affects the shelf life of any electrical equipment.

5. Loss of neutral – When the instance of LoN occurs, the line voltage will rise from a normal 220/230 to 400/415 V causing instant catastrophic damage and even risk of fire.

The AVS30 inverter accepts the input power source from the ac mains, battery, solar modules and switches between various operation modes depending on the operational conditions. This will expose the inverter to high or low voltage, which will damage its circuitry. The AVS is installed to protect the inverter from unreliable damaging mains power by disconnecting the input main power when it's outside the limit of acceptable voltages.

Enquiries: sales@sollatek.co.za

Custom built and designed control panels on offer



For over 30 years, the panel workshop of AC/DC Dynamics has been manufacturing motor starters, pool boxes, DBs and PFC as standard products from its catalogue. These are either for stock or specific client orders.

What is not well known, however, is that AC/DC Dynamics also have a team designing and building custom control panels for clients. 60% of these are pumping solutions which often involve soft starters and VSDs as illustrated in the below photograph. Their experience enables them to take a brief from a client and convert this into an electrical solution with full schematic diagrams. Factory Acceptance Tests are conducted in the workshop and site commissioning is available when required. All the control panels showcase the components from the expansive AC/DC Dynamics catalogue.

Many solutions are simply modified standard designs which can be produced quickly on demand. Others require specially designed and constructed enclosure systems to meet the necessary European and South African standards.

Quadritalia floor standing steel enclosure systems are also assembled from stock in this workshop. Again, this includes standard single enclosures as well as multiple tier solutions.

For Power Factor Correction systems, AC/DC Dynamics undertakes site surveys to establish the most cost effective way to improve a client's power factor to reduce energy costs, eliminate hot cables and nuisance tripping of an overloaded electrical system or reduce harmful harmonics to prolong the life of electrical equipment. For long reliable life with low heat output, AC/DC Dynamics only uses the DW range of capacitors from RTR in Spain.

Enquiries: www.acdc.co.za

Managing the fire risk of transformer explosions at substations

One of the largest and busiest airports in Africa, OR Tambo International in Johannesburg, was plunged into temporary darkness on Sunday 12 December after a transformer at a substation in Kempton caught fire. While this highlights the vulnerability of such critical electrical infrastructure, there are various measures that local authorities can implement in order to manage the fire risk, ASP Fire CEO Michael van Niekerk highlights.

The fact that substations, by their nature, do not have personnel





Complete electrical engineering design solutions

The Electrical Engineering department of infrastructure company AECOM works in conjunction with all related disciplines – from architectural to mechanical, structural, civils, project management and quantity surveying – to provide fully coordinated design solutions for its clients. Projects range from rail to airports, breweries, automotive, sports stadia and even commercial offices.

Such collaboration allows for continuous interaction and coordination between all of the departments, aided by regular project design and coordination meetings to discuss the various interfaces, Johann Wolmarans (Pr Eng CEng MIET), Practice Area Lead, Electrical Engineering at AECOM explains.

The Electrical Engineering department consists of a range of engineers, technicians, and BIM modellers, all working together seamlessly as a unit in order to deliver projects. “Our team has a wide variety of skills and expertise that enables us to take on almost any project of any size and complexity,” Wolmarans highlights.

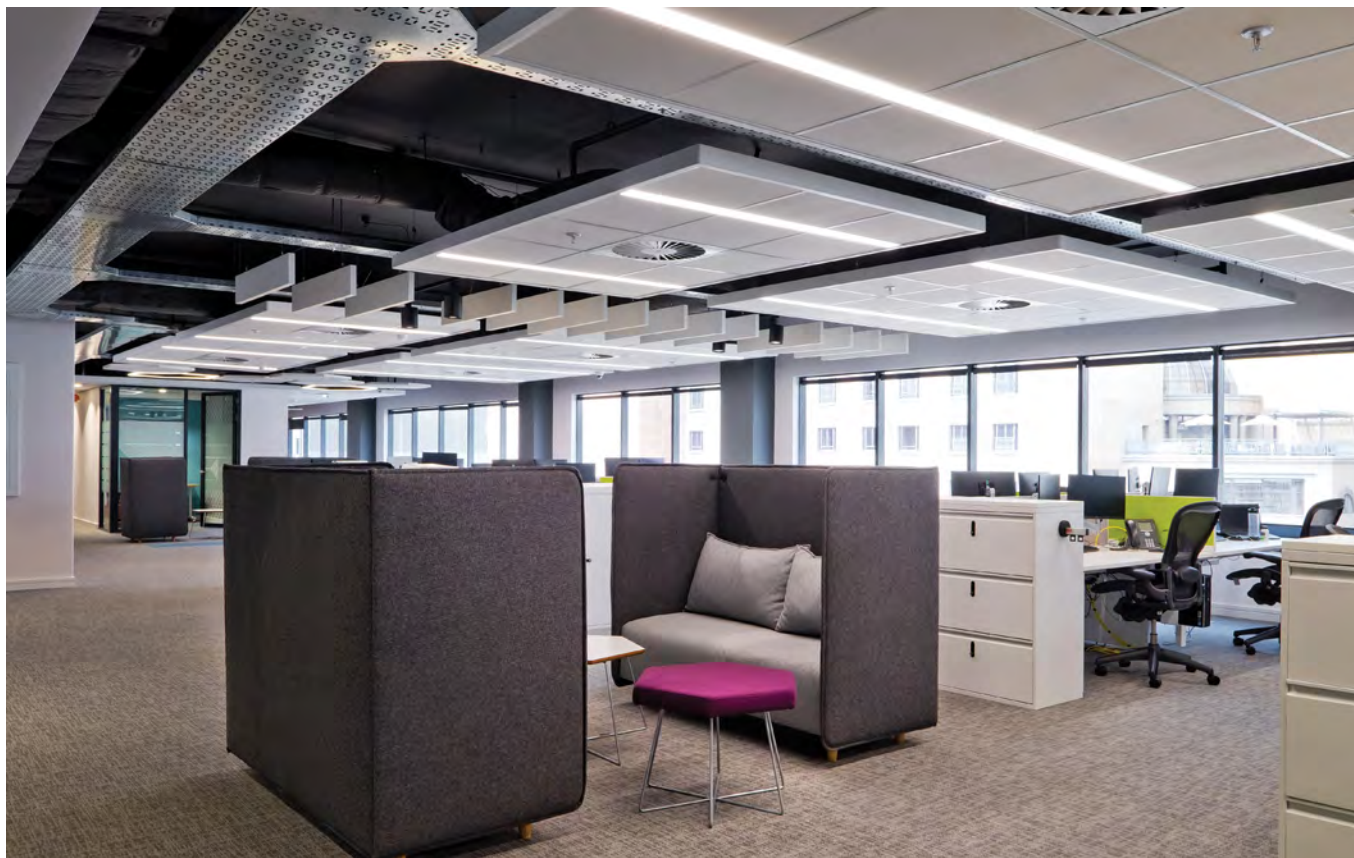
These range from new office developments for Citibank and Absa, a new bodyshop and logistics building for MBSA, a new bodyshop and data centre for BMW, the Heineken brewery expansion in Sedibeng, the Terminal A refurbishment at OR Tambo International Airport for ACSA, the new rail transport manufacturing facility for Gibela, and the Park Station refurbishment in central Johannesburg for Prasa, among others.

Design is carried out using Revit 3D BIM, Amtech ProDesign 3D power system design, and ElumTools lighting design software. AECOM has started implementing Amtech ProDesign in Africa especially. This powerful, engineer-friendly software is ideal for projects of all sizes, from residential to industrial. ElumTools is highly specific in that it takes into account the holistic environment and architectural aspects, from the furniture to the colour rendering on the walls and ceilings, all in a 3D environment.

“These software packages helps us to provide efficient, coordinated, and cost-effective design solutions within any industry,” Wolmarans stresses. The AECOM electrical engineering team utilises BIM 3D modelling to coordinate with the other major disciplines. BIM, in particular, aids in clash detection at the initial stage, identifying the exact location of discrepancies within the 3D BIM environment.

Commenting on what gives AECOM the leading edge in this field, Wolmarans explains that its focus on an integrated 3D BIM design platform provides a complete engineering design solution in line with all the relevant SANS standard requirements, from which accurate bills of quantities can be generated from as early as the design stage.

“It is extremely important for us as engineers to actively utilise the various software packages available to us. This helps us streamline our work flows and deliver high-quality coordinated designs much more efficiently, which improves our competitiveness in the marketplace,” Wolmarans adds. The high-quality work delivered consistently by the Electrical Engineering department has thus resulted in a lot of repeat business from existing clients.



In terms of ongoing challenges, Wolmarans points out that, due to the current economic climate, customers tend to look for more cost-effective solutions. As a result, projects are much more cost-driven, and budgets are tighter than ever. “This affects the way we approach our design solutions and manage the budgets on our projects, as customers are constantly striving towards improving their operations as a means to increase revenue.”

One way of reducing costs is through automation, which Wolmarans sees as definitely playing a major role at present. “Businesses are looking more towards automation as a means of cost reduction and increasing productivity. With automation, businesses can either save or make money.”

Another major trend is energy-saving and sustainability. “Energy sustainability is becoming a global necessity, given the pervasive use of energy resources globally. Energy, which is needed for every aspect of life, plays a key role in the development of countries. Countries need to use energy efficiently to be globally competitive, ensure sustainable development, and succeed economically.”

Wolmarans points to South Africa as an example, where Eskom’s long-term demand forecast is anticipated to be 77 960 MW by 2025, from a peak demand of 34 000 MW in 2016. “Energy efficiency is a

critical tool to relieve pressure on energy supply. It can play a big part in reducing demand which, in turn, reduces the risk of energy suppliers being unable to keep up with the demand.”

As the Electrical Practice Lead based at the AECOM Centurion regional head office, the department’s capabilities focus on energy and renewable energy solutions, LV electrical and ICT installations. It offers all aspects necessary for a successful project, from inception to masterplanning, preliminary and detailed design, and budgeting and financial control, through to the construction, completion and close-out phases.

Wolmarans commenced his career at Scott Wilson in the UK, which was acquired by URS and subsequently AECOM. He worked eight years in the UK, of which five were spent on major redevelopment projects at Heathrow Airport. During this time he obtained Chartered Engineering status with the Engineering Council UK, and also worked on power system upgrades and studies in the UK and Wales.

He returned to South Africa six years ago, working on major projects in the mining and petrochemical industries. He has also been accredited as a Professional Engineer by the Engineering Council of South Africa.

Enquiries: +27 (0)12 421 3832

means there is no one to raise an alert in the event of any incident. In addition, a lack of maintenance also means an increased likelihood of such incidents. The situation is exacerbated by load shedding, which results in current intrushes when the power is restored, which can damage components such as ageing electrical insulation, and the potential of transformer fires.

Some substations are in very remote areas, or in locations that are difficult to access after normal business hours. This means that installing a standalone fire-detection system is recommended to protect high-risk items such as transformers, which are used to step down the electricity from 33 000 V to 11 000 V or 6 000 V. In addition, a fire-suppression system using foam mist can be highly effective.

However, the dangerous combination of load shedding and a lack of preventative maintenance can result in arc flashes, which are basically mini lightning bolts that can cause the insulation in substations to start burning. A lack of adequate maintenance of the cooling oil in a transformer can cause hot-spot temperatures that result in bubbles in the oil which, combined with high temperatures, increase internal tank pressure, and may result in overflow or tank rupture.

ASP Fire can supply and install fire-suppression systems that are standalone, meaning they do not have to rely on pumps and water-storage tanks in the event of a fire. Water is, instead, stored in nearby pressure vessels, which has the added benefit of minimising the quantity of water needed to suppress a fire.

The major problem, however, remains the lack of adequate maintenance. “We are all aware of the challenges faced by local government in maintaining essential infrastructure. Ageing substations that are not well-maintained to begin with are increasingly vulnerable to load shedding, which is a recipe for disaster,” van Niekerk warns.

While a simple solution is to install adequate fire detection and suppression systems, this is hampered by the lack of necessary funding. Therefore, carrying out preventative maintenance will ensure that substations are robust enough to cope with load shedding, and also allow local authorities to save on capex costs.

While local authorities have to adhere to strict regulations in terms of electrical safety, the installation of fire detection and suppression systems is not mandatory. An exception is the mining industry, which operates its own substations. Here electricity is essential to ensure life-critical equipment such as ventilation shafts and personnel lifts are operational at all times.

“At the end of the day, the knock-on effect on the entire South African economy is huge,” van Niekerk stresses. “The cost in replacing a single transformer is prohibitive, which behoves local authorities to ensure they have a maintenance schedule in place, or have conducted some kind of fire-risk assessment, even if they are not in the financial position to install proper fire detection and suppression systems.”

Enquiries: +27 (0)11 452 2169

Marthinusen & Coutts invests in its Zambian facility

A new 435 m² machine shop workshop and transformer department at Marthinusen & Coutts’ facility in Kitwe, Zambia, will further improve the quality and turnaround time of its services in the region.

According to Marthinusen & Coutts Zambia General Manager Eugene Lottering, the commissioning of the machine shop workshop in January this year created significant space in the 1700 m² main workshop, allowing for the investment in a transformer department.

“We now have a dedicated factory for machining work-pieces for the main shop,” says Lottering. “The Marthinusen & Coutts head office in Johannesburg plays a key role in our operations, sending its machine shop foreman to provide training. This enables us to upgrade local Zambian machining skills on a continual basis.”

The division’s machine shop facility boasts five machining lathes, two milling machines and a submerged arc welding machine. It also has a 50-tonne horizontal press and rotor binding machine. All equipment operates under two 6.3-tonne jib cranes.

“Our transformer department has allowed us to enter the market in transformer repairs. The facility is equipped with a 20-tonne overhead crane to lift larger transformers,” he says. The facility is also equipped with a new coil machine, ratio tester, an oil purification machine and a dedicated oven.

Marthinusen & Coutts, a division of ACTOM, has already successfully overhauled transformers for a number of opencast mines. Projects have included a 10 MVA unit, two 5 MVA units and a 3 MVA unit. Working in collaboration with M&C Johannesburg has ensured quality standards are maintained while local transformer repair skills are also being developed.

“We have established a Level 3 maintenance site services team to provide on-site electro-mechanical assistance to customers, including on-site repairs, maintenance and testing,” Lottering adds.

Significant previous investments in the division’s Kitwe workshop have included a 12-tonne balancing machine, a vacuum pressure impregnation (VPI) plant, burn-off and curing ovens, and a fan test column. There is also an ac and dc test facility equipped with power analyser, surge comparison tester, core flux tester and high voltage pressure tester.

“Our ongoing investment in the region enables us to provide customers with a one-stop electro-mechanical repair facility for alternators, generators, motors and transformers, as well as mechanical equipment,” Lottering says. “This means shorter lead times and less transportation risk, while benefitting the Zambian economy.”

Enquiries: www.mandc.co.za

Durable LED floodlight series to illuminate exteriors

OPPLE LIGHTING'S new LED Floodlight EQ series is touted as the most advanced product introduced under the category of professional luminaires and is also revolutionary in nature owing to its energy efficiency. "At Opple it's our constant endeavour to bring in the top of the league technology and advancement in the lighting industry and further transform the lives of our consumers," says Rambo Zhang. "We feel extremely happy to launch the new LED Floodlight EQ series which is ideal for the outdoor lighting application. One of its major benefits is the optimised waterproof design, making it the most durable product for discerning consumers."

The EQ series is specially designed to consume low energy. It is a progressive light that easily replaces the conventional high bays and has 90% lower energy consumption than halogen floodlights. One of its major features is its time span which is nearly 30 000 hours. Equipped with advanced features such as IP65 water and dust proof helps it adapt to severe environments. The 2.5 KV surge resistance makes the LED Floodlight EQ series robust and durable in poor grid environment with an amazing inbuilt feature of aluminium housing which is vibration-proof, wind-resistant and rust-proof. Available in different variants – 10/20/30/50/70/100 W – the LED Floodlight EQ

series is available in two series an EMC version, and Non-EMC version.

LED Canopy Performer

Another recently released product is the LED Canopy Performer which offers excellent lighting effects, low glare and optimised vertical illuminance. It is energy efficient with up to 60% energy saving compared to MH luminaire. As the luminaire is IP65 rated it is waterproof and dustproof, therefore adaptable for outdoor use. Flexible installation of the fitting accommodates various applications

Features:

- Up to 115lm/W, 1-10V dimmable.
- Multiple beam angle options: 60°, 100°, Asymmetric.
- Flexible installation options including recessed, pole and surface mounting.
- Up to 60 000 hours lifespan, IP65, IK08.

Enquiries: www.opple.co.za/en



OPPLE

LIGHTING

LED STREETLIGHT EQ SERIES & LED CANOPY PERFORMER

BENEFITS

- Waterproof and dustproof, adaptable installation
- Energy Efficient, Long life
- Excellent Lighting effect, low glare
- Flexible installation, various applications

FEATURES

- Optimal heat management
- High Lumen output
- IP65 protection rating
- Multiple beam angle options



OppleLightingMEA
info.sa@opple.com
+27 11 465 1651

A comprehensive solutions provider for LED-based lighting systems



At the world's leading trade fair for light, the Light + Building in Frankfurt, over 2 700 exhibitors will present their new products in the fields of lighting, electrical engineering as well as house and building automation from March 8-13, around the time of publication of this issue. As one of the world's leading lighting suppliers, Ledvance will also be present at the industry get-together, presenting new lighting solutions. These include professional lighting management systems that work according to the latest ZigBee 3.0 or DALI 2.0 standards, the intuitive Biolux Human Centric Lighting System and numerous other luminaire highlights for lighting applications in offices, industry, shops, hospitality or out-door areas. Electricians and electrical planners benefit in particular from a wide range of system solutions.

Every two years, Light + Building offers the world's biggest stage for the lighting industry to present new products from various fields to an interested expert audience. While it was introduced as the general lighting division of Osram at Light + Building 2016, in 2018 Ledvance not only presented itself as an independent enterprise but had already established itself as one of the largest European general lighting providers. Feedback on the company's presence at the 2018 trade fair was also extremely good. Ledvance has further built on this success and has actively promoted the transformation from a classic lamp manufacturer to a full-range provider. Thus, in 2020, Ledvance is on the best way to becoming a comprehensive solutions provider for LED-based lighting systems and offers its customers everything from a single source.

Managing Director Europe West, Dr. Oliver Vogler, defines one special goal for Ledvance in 2020: "As a leading company for sustainable lighting solutions, it is our objective to increase productivity, health and well-being for everyone. Our BIOLUX Human Centric Lighting System encapsulates this in an intuitively simple, smart control unit." Therefore, at the booth, everything will revolve around connected lighting and smart products that will be presented across the various applications. "This year, the focus is primarily on application-specific

OppleMEA.com



New infrared laser for short-range LiDAR applications

How long do you think cars will be steered by a driver? For autonomous driving to become widespread, several legal and technological hurdles will have to be overcome in the upcoming years. Nevertheless, car manufacturers and mobility service providers are already working on their visions for driverless vehicles. The need for autonomous vehicles to more comprehensively and reliably detect their surroundings makes the number and arrangement of sensors, such as LiDAR (Light Detection And Ranging), more critical. As the market leader for LiDAR lasers, Osram Opto Semiconductors plays a central role in the realisation of these applications. With the SPL DP90_3, the semiconductor expert is expanding its portfolio with a component that has been specially developed for high-resolution, near-field detection in LiDAR systems.

There is now a broad consensus that only a sensor fusion of LiDAR, radar and camera systems can provide the necessary security for fully autonomous driving. Each of these technologies has advantages and disadvantages depending on the respective scenario, but overall, the better they are coordinated – the safer the vehicle moves through traffic. For example, LiDAR systems are strong in generating high-resolution 3D information in real time. Long-range LiDAR is used to detect objects up to approximately 250 m away. The immediate surroundings of the car must also be reliably captured by short- or mid-range LiDAR, which covers a distance up to approximately 90 m from the vehicle. Short- or

mid-range LiDAR covers classic traffic situations such as passing cars on highways or driving in urban traffic.

With SPL DP90_3, Osram is presenting a new single-channel pulsed laser that features improved beam quality and particularly compact dimensions. Thanks to its space-saving footprint of just 0.3 mm x 0.6 mm, system manufacturers can create extremely compact designs. An efficiency of around 30 percent helps reduce the overall cost of the system during operation. With an optical output of 65 W at 20 A, the component not only has an absolute unique selling point but is also ideally suited for capturing the immediate vehicle surroundings, ensuring high-resolution images for subsequent systems.

“Ground-breaking decisions are currently being made about which components will be used in which systems for autonomous driving”, explains Jörg Strauss, General Manager and Vice President for Visualization & Laser at Osram Opto Semiconductors. “Thanks to our many years of experience in the development and production of special infrared lasers for LiDAR systems, we enjoy a high level of trust among our customers. The superior quality of our products has further consolidated our strong market position in this area. With the SPL DP90_3, our customers have another choice to help realise their visions for autonomous driving.”

Enquiries: www.osram-group.com



product innovations that can be easily adapted to the respective customer requirements – be it that we customise luminaires or ‘smartify’ them,” Dr. Oliver Vogler explains the idea behind the Ledvance fair booth.

Versatile system solutions for professional lighting applications

At one of the largest booths at the fair, Ledvance will present lighting solutions for different lighting requirements and offer its visitors a complete user experience for the various application areas. In the open space office, the interplay of different luminaires will be demonstrated, taking into account a wide range of requirements and all relevant office standards – from standard open-plan offices to high-quality equipped offices. The new BIOLUX Human Centric Lighting System is used in the HCL workspace, allowing users to adjust the light to different working conditions.

For industrial applications the expanded portfolio of the TruSys light band system for walls and ceilings will be presented especially in the production and warehouse area. In addition, special damp-proof and high-bay hall lights are also used here, such as the new HQI LED, which replace conventional HQI lamps. In the area of supermarket and fashion, shop lighting like the Tracklight Spots and the Downlights, among other things, ensure that certain products are presented in the right light. Beyond that, visitors will be shown a wide range of new products for car park and outdoor lighting in the parking, outdoor and hospitality showroom, including the new design of the HQL LED PRO, which is primarily used for street lighting. In the smart residential area, the focus is on the interplay of new smart lights in living spaces that can be easily and conveniently operated using voice control via common smart speakers.

Ledvance completes its extensive portfolio with a range of electronic components, including flexible LED light strips in three categories for different applications. These will be presented at the fair especially in the hospitality area. The portfolio also includes an extensive range of LED drivers, profiles for surface-mounting and installation, covers and other accessories. The perfectly matched system solutions for lighting professionals thus cover a wide range of requirements for professional lighting applications. This year, Ledvance has a wide range of system solutions to offer, especially for electricians and electrical planners.

Enquiries: www.ledvance.com



LEDbay

LED lowbay and highbay

Designed and manufactured
in South Africa

Various optical
solutions available

Available for emergency
and zone applications



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BEKA Schröder
Experts in lightability™

LED highbay lighting for state-of-the-art sports hall



BEKA Schröder recently supplied the LED highbay lighting solution for the new state-of-the-art sports hall of the German International School Cape Town, also known as DSK. The new sports hall is one of the most modern and well-equipped halls of the Western Cape, if not countrywide. Some of its key features are: A gallery with space for more than 150 spectators overlooking a 23 x 44 m court with a clear height of nine metres; two automated curtain walls that divide the main court into three sections, allowing three classes to take place simultaneously; acoustic panels ensuring that the noise levels meet DIN requirements for acoustics in school sports halls; three basketball, three volleyball and six badminton practise courts while the main centre court offers a handball, basketball, tennis and volleyball court of international size.

Such a modern facility called for a high-quality LED lighting solution. BEKA Schröder's OMNistar-midi was the luminaire of choice, due to its high efficiency. The required lighting levels of 900lux were achieved at very low energy consumption levels. Further energy savings can be achieved with the installed DALI lighting control system. The system enables the school to control the light level of each luminaire independently or grouped. This allows them to have the right light level depending on which sport is being played, and at which game level, namely practice or match game, or even an international event. This can be done remotely from a smart device. Thus, by selecting the required light level, energy savings are achieved by only consuming the exact amount of energy needed.

The South African designed and manufactured OMNistar-midi is a cost-effective and efficient lighting solution to maximise energy and maintenance cost savings. It is the smaller sized floodlight in BEKA Schröder's OMNistar family. The various optical solutions make it a very versatile floodlight, ensuring the correct lighting for the area to be illuminated. Various optical solutions are available to achieve the highest energy savings and the most economical lighting solution.

BEKA Schröder locally develops and manufactures energy-efficient LED lighting products, designed and suitable for local conditions.

Enquiries: www.beka-schreder.co.za

Bathroom lighting safety: Zones and IP Ratings

When planning bathroom lighting you may choose fixtures that are functional and stylish. But have you factored in safety? The bathroom is a wet zone in the home so it's important that the lighting meets certain rules and regulations to keep you safe when using this space.

The following explanation of bathroom zones and fixture IP ratings should help you make an informed choice: A bathroom is divided up into zones and these zones dictate what type of lighting should be installed to ensure safety and the longevity and functionality of the fixture:

Zone 0: This area is inside the bath or shower itself. Fixtures used in this zone must be low voltage and rated at least IP67, meaning they are totally immersion-proof.

Zone 1: This area is above the shower or bath and measures approximately 2.25 m from the floor. A minimum rating of IP45 is required, but it is advised that a rating of IP65 should be used.

Zone 2: This area stretches 0.6 m outside the perimeter of the bath and reaches a height from 2.25 m from the floor, requiring a rating of at least IP44. Remember to also consider the area around the basin. A 60 cm radius around the tap is considered part of zone 2.

Zone 3: This area is any area of the bathroom not included in zones 0, 1, and 2. It's a zone where no water is likely to be used. While there are no specific IP requirements for this zone, a rating of at least IP21 is recommended.

Certain IP ratings are required for the different zones, but what exactly does IP mean and why is it important? IP stands for Ingress Protection and is a rating system used to define how protected the fixture is against particles and water. The first digit represents the level of protection against particles and the second digit represents

the protection against water.

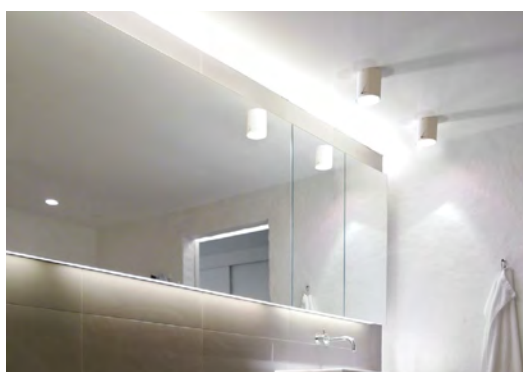
First Digit (Ingress of Particles)

- 0: No Protection
- 1: Protected against penetration by solid objects 50mm+
- 2: Protected against penetration by solid objects 12mm+
- 3: Protected against penetration by solid objects 2.5mm+
- 4: Protected against penetration by solid objects 1mm+
- 5: Dust Protected
- 6: Dust Tight

Second Digit (Ingress of Water)

- 0: No Protection
- 1: Protected from vertically falling drops
- 2: Protected from water drops falling at a max angle of 15°
- 3: Protected from water as in the rain at a max angle of 60°
- 4: Protected from splashing or projection
- 5: Protected from low-pressure jets
- 6: Protected from high-pressure jets
- 7: Protected from temporary immersion
- 8: Protected against long periods of immersion

Enquiries: www.eurolux.co.za



Portable LED lighting units: placing mines in a favourable light



With the enormous investment placed in large open-pit mines, the pressure is on these operations to produce. Inevitably, this dictates that they work around the clock. However, working at night does present some very real potential safety hazards which are not present during the hours of daylight. This is according to Craig Swart, Fleet Manager at Rand-Air, the leading local provider of compressed air and power to the mines, as well as to many other industry sectors.

"The most serious potential hazard in an open-pit mine – even during daylight hours – are the very large load-hall-dumpers, excavators and rope shovels used to excavate and transport broken ore. Apart from vehicle headlights, better all-round area lighting is an absolute necessity to ensure safe operations," says Swart, adding that having clear, strong area lighting means that drivers of off-the-road mining equipment will be able to pick up the reflective strips on a pedestrian's safety vest with much greater ease.

Rand-Air has the solution in its portable LED lighting units. "As these units are fitted with LED bulbs, they are remarkably economical and will run for days without requiring refuelling or any other attention. In addition, modern LED bulbs last longer and fail less often than their earlier filament counterparts, and can handle harsh mining conditions without burning out prematurely," Swart explains.

As the diesel engine, generator and lighting tower are all contained on a single trailer, there are no trailing cables to either get cut, damaged or trip over. Furthermore, as they are mounted on a robust trailer, moving them to new positions as mining shifts in the pit, takes a matter of minutes.

What makes Rand-Air portable lighting units an even more attractive rental proposition is that the company regularly upgrades its equipment fleet with new machines. In addition, Rand-Air lighting units are all manufactured by world leader Atlas Copco and, as such, these units deliver the most cost-effective, lowest maintenance service.

Rand-Air portable lighting units are also backed up by the company's unmatched service ethic. In the unlikely event of an issue with one of these machines, Rand-Air's qualified technicians are on standby 24/7 to ensure that full lighting is restored without delay.

Speaking to the all-important requirement for safety at all times – particularly within the mining environment – where occupational health and safety challenges are amongst the biggest causes of injuries and fatalities – Swart makes the following recommendation: "Outdated lighting units in any industry that are not operating at a satisfactory level pose a serious threat to the working environment and its people. A preventative maintenance strategy is therefore critical, to guarantee safe operation of the equipment – and is key to minimising the risk of injuries or accidents."

www.randair.co.za

Supplying high quality, cost-effective LED products



Nadine Willemse, director of LBY Africa LEDs.

LBY AFRICA LEDs is based in Johannesburg, South Africa and distributes LBY LED products across southern Africa. "We have been manufacturing LEDs and strip light for over 18 years, and we focus on supplying high quality, efficient and cost-effective LED modules, LED tape light, power supplies and aluminium lighting channels," explains director, Nadine Willemse. "Our product range has been well researched in order to provide a simple choice between the best LED lighting solutions."

LBY is a growing international company which has



Lighting a warehouse or factory: some tips

When undertaking the lighting design for a warehouse or factory, there are a number of factors to take into consideration to ensure that the goods stored in the warehouse are visible and to ensure the health and wellbeing of the workers. Spazio Lighting takes a look at why sufficient, well planned lighting is so important for a warehouse or factory setup.

A typical warehouse layout is that of high ceilings with long racking aisles, which in some cases have shelves that are stacked so high the products are only accessible by forklift. Because of this, it is important to ensure that each aisle is individually illuminated with its own set of light fittings. Poorly positioned lighting will create dark spots and shadows, which will make products less visible.

To compensate for the high ceilings, it is important to install light fittings with a very high light output so there is sufficient lighting on the ground level of the space.

Stay away from traditional fluorescent or HID light fittings and prefer energy efficient LED alternatives. Not only will this save on energy consumption and offer a better quality of light output, but – when switched on – the fittings will light up instantly, unlike traditional fittings that can take a few minutes to warm up to full brightness. LED fittings also produce less heat, which is better for conserving the items being stored.

Because LED light fittings light up instantly, they can be connected to a motion sensor without affecting their lifespan. This means that an aisle of light fittings in a warehouse will only switch on when someone enters the aisle, leading to an even bigger saving in electricity consumption.

The UFO LED high bay, available through Spazio, is a good choice for a warehouse or factory. It is available in 100 W, 150 W and 240 W options with a very high light output (140 Lm per Watt). The 90° reflector means the fitting gives off a wide beam of light, covering a bigger surface. There is also the option of the UFO high bay complete with a microwave sensor which means that the fitting will switch off if there is no activity in close proximity. The UFO has an impressive five-year warranty, which is another advantage as it can be very complicated to replace light fittings mounted to such high ceilings.

Note that warehouse and factories are legally required to have the correct emergency light fittings lighting the way to an emergency exit. Spazio Lighting offers a range of light fittings with three-hour emergency backup as well as emergency exit signs with interchangeable pictograms.

Enquiries: www.spazio.co.za

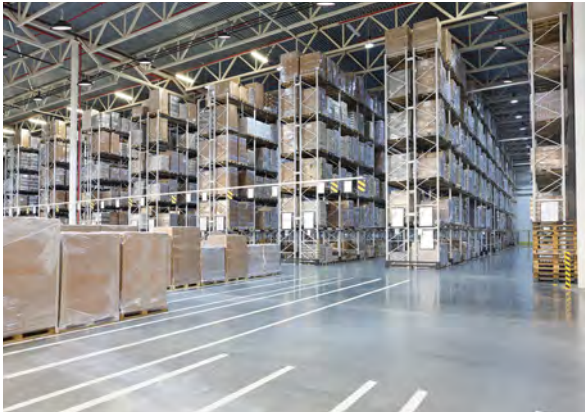
over 120 branches across the globe; its aim is to be the first choice of LED products for the lighting and signage industry worldwide.

LED Aluminium Profiles

No professional lighting project is complete without the use of LBY LED Aluminium profiles. Conceptualised to be an excellent aesthetic tool for all lighting design applications, these aluminium profiles can be recessed into floors, ceilings, tiles and walkways, and be used to illuminate staircases or by transformed into contemporary linear lighting fixtures.

LBY LED Aluminium profiles are available in wide range of shapes and sizes. They create attractive linear lighting and outlining, as well as providing heat management and a protective housing for LED strips. The possibilities are endless as they are simple to use, practical and elegant.

Enquiries: www.lbyafrica.com



CORROSION RESISTANT

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10W / 1170Lm / 4000K
W. 108 x H. 93 x D. 23

R 127 INCL. VAT

IPLAST 20



20W / 2340Lm / 4000K
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R 203 INCL. VAT

IPLAST 30



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W. 186 x H. 142 x D. 38

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IPLAST 50



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W. 300 x H. 220 x D. 36

R 849 INCL. VAT

IPLAST 100



100W / 12000Lm / 4000K
W. 390 x H. 290 x D. 36

R 1184 INCL. VAT

- Plastic body
- 304 Stainless steel bracket
- Tempered glass diffuser
- LED driver included
- 110° Beam angle
- Coastal Quality
- 120Lm/W
- EMC approved
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The importance of fully compliant emergency lighting

Do you remember the awful fires at Grenfell Tower in London, United Kingdom in June 2017; the Marco Polo condominium fire in Honolulu, Hawaii in 2017; the shopping, all fire in Kemerovo, Russia in March 2018; the Claremont Hotel fire in Eastbourne, England in November 2019 and the Bank of Lisbon building fire in Johannesburg in November 2019?

The significance of each of these fires was that there was loss of life as a result. Most important is that in each case, the investigators found that the emergency lighting did not function, was non-existent, or as in the case of the Bank of Lisbon building fire, the building had failed the safety inspection and nothing had been done to rectify the faults or problems that had been found.

These incidents should have prompted our lighting design community, which includes lighting designers, consulting electrical engineers and mechanical fire engineers, to spring into action. This action could have been revisiting completed projects to ensure that the emergency lighting was fully compliant and then to ensure that all future projects would also always be fully compliant.

I have personally received a number of calls and emails from engineers to clarify various aspects about the subject of emergency lighting. Whilst I was encouraged to be asked, I was probably more alarmed at the serious lack of understanding and knowledge about this extremely important subject. It prompted me to ask: "What have they not been doing for so long?"

Let's look at the basics

There are two principal guiding documents. They are the Occupational Health and Safety Act, Act 85 of 1993 where the specific requirements are detailed in The Environmental Regulations for Workplaces, Section 3: Lighting and then SANS 10114-2: Interior Lighting: Part 2: Emergency Lighting.

These documents are one with each other and have a singular purpose irrespective of the fact that

they may be dated and require urgent updating specially to bring them into line with modern technologies and international standards.

How is Emergency lighting defined in SANS 10114-2?

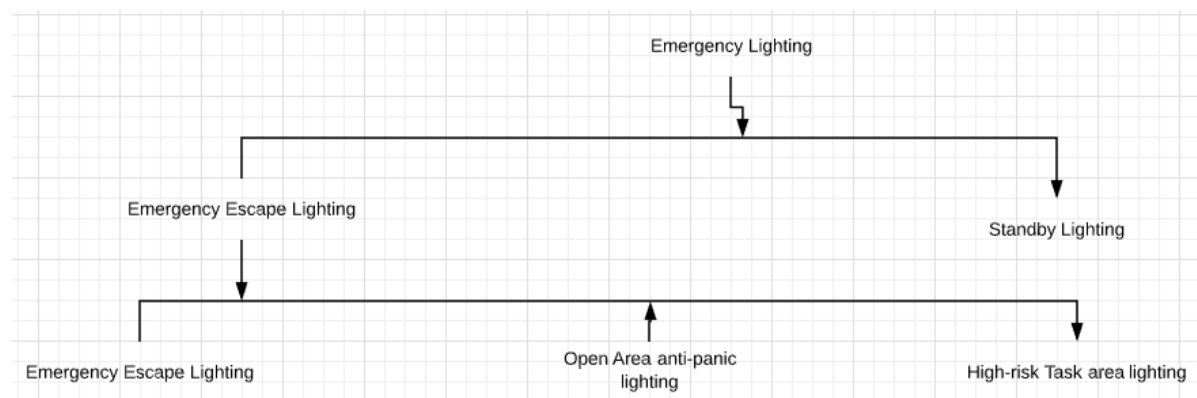
Here is the source of the problem. Many engineers place great weight on the fact that there are two definitions in the same standard, but without a clear separation of purpose.

Emergency Lighting is defined as "lighting provided for use when the supply to normal lighting fails." A sub-definition then is "Emergency Escape Lighting is that part of emergency lighting that provides illumination for the safety of people who are leaving a location in the premises or who are attempting to terminate a hazardous process before leaving the process."

And then much further down the list of definitions: "Stand-by lighting is the non-mandatory part of emergency lighting that is provided to enable activities to continue substantially unchanged."

It is precisely the definitions that give rise to the idea that if some form of alternative power source such as a generator or Uninterrupted Power Supply (UPS) will sort out both situations. This is where those with that idea fail the test dismally.

Here is the diagram on page 6 of the standard:



ABOUT PHILIP HAMMOND

Philip Hammond is the Director and Principal of BHA School of Lighting which offers a variety of courses from entry level Foundation Lighting right through to Advanced Diploma and Master Diploma in Illumination Engineering Courses. Other courses include Photometry, Lighting Economics, Relux Lighting Design Software courses, and more. Visit www.bhaschooloflighting.co.za

Lighting helps stroke patients deal with fatigue, depression

Studies of 90 stroke patients in a Danish hospital indicate that LED lighting tuned to mimic the patterns of daylight can have a positive effect on depression, fatigue, anxiety, and wellbeing, although there was some amount of inconclusiveness, and lighting made no difference in cognition improvement.

The results of the observations at the Stroke Rehabilitation Unit in Copenhagen's Righospitalet from May 2014 through June 2015 were only recently published. The studies were conducted by the University of Copenhagen's departments of neurology and neurophysiology and by the hospital's department of ophthalmology, using specialty lighting from Chromaviso, based in Aarhus, Denmark.

The scientists generally tuned lighting in patient rooms to deliver the brighter and more blue-rich makeup associated with natural daylight during the mornings and afternoons. They toned down the brightness and delivered warmer spectral content in the evenings. At the same time they delivered ordinary hospital lighting to control groups.

The team worked on the hypothesis that the tuned lighting would support human circadian rhythms associated with the 24-hour cycle of day and night, whereas ordinary hospital lighting and indoor confinement deprives patients of circadian normalities and can thus cause physiological disturbances.

All patients were hospitalised for over two weeks.

In one study focused on fatigue, they concluded that "fatigue was significantly reduced in rehabilitation patients exposed to naturalistic lighting during admission." They based their conclusion on a couple of questionnaires, one called the Multidimensional Fatigue Inventory questionnaire, and the other the Rested Statement, noting that the experimental groups reported less fatigue compared to the control group. However, by another measurement, the Pittsburgh Sleep

Quality Index, "no differences were detected between groups in sleepiness or subjective sleep quality," wrote the authors, led by Anders West from the neurology department.

If those results were encouraging but mixed, the same could be said of a separate set of observations looking at a combination of depression, anxiety, wellbeing, and cognition. "Depressive mood and anxiety was reduced, and wellbeing was increased in the (experimental) group at discharge compared to the (control group)," the authors reported.

However, "no difference was found in cognition," the authors stated. The team applied the Hamilton Depression Scale, the Major Depression Inventory, the WHO-Five Well-being Index, the Hospital Anxiety and Depression Scale, and the Montreal Cognitive Assessment to determine the results. "This study is the first to demonstrate that exposure to naturalistic light during admission may significantly improve mental health in rehabilitation patients," they concluded, adding that "further studies are needed to confirm these findings."

Enquiries: www.chromaviso.com



LED streetlights donated to Chintsa East



BEKA Schröder was recently involved in a heart-warming project where 160 LED streetlights were donated to Chintsa East in the Eastern Cape. Chintsa East, located 50 km north east of East London, is a small village with a big heart for their community. Today, 160 donated streetlights are installed through the Chintsa East Location, lighting up the streets so women and children can walk around freely at night, kids can play soccer under the streetlights, and everyone feels safer. This is the first streetlight installation for Chintsa East.

Towards the end of 2019, BEKA Schröder approached African Angels to find out what Chintsa East's biggest need was to uplift the community, and their answer was street lighting. With the expansion of the community, this has unfortunately led to an increase of nocturnal crime activities within the village. With the installation of

streetlights, this would be curbed, and the community would feel safer. BEKA Schröder decided to join forces with the Community, Great Kei Municipality and Eskom and to donate 160 ZIYA-E LED streetlights and the installation thereof.

The streetlight installation was met with great excitement. There is a newfound freedom after dark in the village where kids can play in the street and the community can move safely in the streets. This co-lab project is a wonderful example of how South Africans can work together to make things better for all.

African Angels is a local charity who runs a school for kids from the township, a community computer lab, a boys' mentoring project, and an early childhood development project.

Enquiries: www.beka-schreder.co.za



UPCOMING INDUSTRY EVENTS

P&T Technology 2020 course calendar

Inspect, test and certify and single phase electrical installations

8-10 June

5-7 October

Inspect, test and certify and three phase electrical installations

20-22 April

8-10 June

3-5 August

5-7 October

Inspect, test and certify and hazardous electrical installations

18-22 May

17-21 August

19-23 October

Refresher course: Testing & Inspecting Single & Three phase

24 April

12 June

7 August

9 October

Electric fence installer

2-4 March

11-13 May

20-22 July

14-16 September

KNX Basic course

18-22 May

17-21 August

19-23 October

Enquiries: www.pandttechnology.co.za

ECA Electric Fence System Installer courses

The ECA(SA)'s second Electric Fence System Installer course for 2020 will be held from 16-18 March at the Meadowdale Training Centre and it's an opportunity for Installation Electricians (IEs) to qualify with EWSETA and be registered with the Department of Labour as Electric Fence System Installers (EFSIs). This three-day course is an RPL (Recognition of Prior Learning) course for persons who have been in the Electric Fence Installation field for more than two years.

Electric fence installations may only be done (and a Certificate of Compliance therefore issued) by registered Electric Fence System Installers (EFSIs) and anyone who would like to register as an EFSI in terms of the Electrical Machinery Regulations 12 – 14, can attend the ECA(SA)'s EWSETA-accredited Electric Fence Installer course, which is presented at the Highveld Training Centre eight times a year.

Venue: The course is presented at the ECA(SA)'s Meadowdale Training Centre, 91 Newton Road, Meadowdale Ext 2, Germiston, 1401.

Course dates first quarter of 2020:

16-18 March

22-24 April

Enquiries: Keabetswe.matolong@ecasa.co.za

IESSA courses in 2020

IESSA has as a tenet in the advancement of lighting knowledge. To this end we offer a number of lighting courses from basics to intermediate as well as with those handling specific areas of lighting have been developed.

The Basic lighting Concepts, Vision, Lamps and Colour course is designed to provide persons associated with, or entering into the lighting industry with an understanding of basic lighting terminology and techniques.

The specialised courses are dedicated to various specific aspects of light and covers aspects such as road lighting and maintenance, shop and retail lighting, emergency lighting, and industrial lighting as well as the use of lighting tools such as the 'Relux computer design program'. These courses range from 1 day to 2 days. The candidates to the courses are recognised with either certificates of attendance or certificates of accomplishment as appropriate.

2020 Course Calendar

16-17 March: Interior Lighting Course (Johannesburg)

2-3 April: Photometry (KZN)

20-21 April: Exterior Lighting Course (Johannesburg)

7-8 May: Lighting Concepts, Vision, Lamps & Colour (Cape Town)

18-19 May: Lighting for Energy Efficiency in Industry (KZN)

21-22 May: Quality Assurance - Public Framework (Johannesburg)

9-10 July: Interior Lighting Course (Cape Town)

13-14 July: Lighting for Roads & Precincts (KZN)

30-31 July: Photometry

3-4 August: RELUX Lighting Design (KZN)

27-28 August: Lighting for Energy Efficiency in Industry (Johannesburg)

10-11 September: Exterior Lighting Course (Cape Town)

29-30 September: Lighting for Roads & Precincts (Johannesburg)

8-9 October: Retail & Shop Lighting (KZN)

15-16 October: Quality Assurance - Public Framework (Cape Town)

19-20 October: RELUX Lighting Design (Johannesburg)

16-17 November: Retail & Shop Lighting (Johannesburg)

12-13 November: Lighting for Energy Efficiency in Industry (Cape Town)

Dates to diarise in 2020

Internet of Things Forum Africa Exhibition

25-26 March

Internet of Things Forum Africa Exhibition is a highly anticipated conference, targeted at thought leaders, IoT ecosystem participants and experts in Africa, and will create a platform for all players to share their knowledge of real-world IoT trends, challenges, and solutions. IoT Forum Africa will gather thought-leaders, solution providers and decision-makers from diverse industries. Past sponsors of IOTFA include BCX, MTN, Huawei, Schneider Electric, Software AG, Altech, Dimension Data, Grant Thornton, Dark Fibre Africa amongst many others.

The Solar Show Africa

31 March-1 April 2020

The Solar Show Africa brings together thousands of industry professionals who want to share their ideas on the newest innovations on solar power generation and the entire solar value chain. The show maximises the learning through:

- Keynote speakers
- Regional project case studies
- Roundtable discussions
- On-floor seminars

Discover what are the top trends in the solar energy sector and what are the biggest opportunities thanks to a superior content on smart electricity: solar, nuclear, maintenance and asset management, coal, power distribution, energy storage, gas power, finance, investment and billing. And if you are going to exhibit, explore exciting technologies by networking and participating in live demos taking place on all the exhibition floors.

Power & Electricity World Africa

31 March-1 April

Power & Electricity World Africa bring innovators, disrupters and change agents together to talk and engage in healthy business pertaining to power and electricity. This serves as a platform for thought leaders and disruptors to showcase their solutions to Africa power and energy buyer community. This event focusses largely on creative, organic and customer-focused approach to bring new innovations in power industry.

Securex

2-4 June

Securex South Africa is one of the most important trade fairs for commercial security and fire protection, which takes place once a year in Johannesburg. The exhibition sets new standards for the future and is therefore a must for many decision makers from the industry. The event attracts visitors and exhibitors from all over the country as well as top experts from around the world that are represented with pavilions at the fair. The visitors are able to inform themselves in detail and comprehensively on security, fire protection, energy and environment and on the latest developments, trends, services and products in the fields. Other topics include access control, biometrics, video surveillance, IP security and intelligent buildings. The goal is to merge the systems and strategies of all firms, so that the industry becomes more profitable, more efficient and a lot more effective.

A-OSH Expo

2-4 June

Occupational health and safety are important issues when it comes to the workplace. To address these questions and themes, the A-OSH Expo South Africa was created. She is a national trade fair for occupational safety and health at work and takes place annually in the Gallagher Convention Center in Johannesburg. The fair offers the perfect opportunity to talk with industry experts to gather information, share knowledge and provide critical questions about OSH. It is a platform for anyone who has to do with health and safety, even when it comes to the points of commitment, training and equipment. Visitors can discover and test the latest innovations, products and services from many leading companies.

In addition, the fair is an important meeting place, to provide themselves with valuable contacts, to network with colleagues in the industry and to share ideas, opinions and best practices. The exhibition is accompanied by a conference, by first aid demonstrations and demonstrations of working at heights.

SAITEX

21-23 June

One of Africa's largest and most well-established trade exhibitions, SAITEX is an annual product sourcing opportunity for the entire continent's retail and trade industry. Africa featuring electronics and home appliances, homeware and household products as well as building materials and tools.

Interbuild Africa

29 July-1 August

Interbuild Africa in Johannesburg is a trade fair for construction and an excellent platform for exhibitors to meet with new and existing customers, introduce new products, sign sales contracts, to strengthen their own brand, to interact with suppliers and to get information on events in the market. Visitors can find in depth and comprehensive information here about the latest developments, trends, products and services in various fields.

Electra Mining

7-11 September

Electra Mining Africa is the ultimate meeting and market place for all stakeholders involved in the mining, construction, industrial and power generation industries. It offers both exhibitors and visitors the opportunity to make valuable business connections, discuss the latest developments, technologies, trends, products and services in these sectors. Many new innovations are showcased including energy efficiencies and environmentally friendly products, as well as products in line with the mining industry's goals on health and safety. Electra Mining Africa is co-located with Elenex Africa (power generation, electrical engineering and lighting) and Transport Expo (construction and mining transport).

AFRIBUILD

13-15 October

AfriBuild is aimed at equipping the local building sector with the practical examples, demonstrations, skills, and advice needed for successful future development. The new expo will take place over three days, bringing together hundreds of local and global exhibitors – ranging from mechanical, electrical and plumbing (MEP) providers and tools, equipment and materials experts, to structure, occupational health and safety (OHS), and technology and innovation specialists – to showcase their expertise, products and services.

Planning any training courses or events for 2020? Publicise them in the monthly *Sparks Electrical News* Industry Events page. Email the event details to sparks@crow.co.za



Aurecon Africa



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Chairperson



Gustav Rohde
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