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## New casino for Cape Town



**T**HE odds on Cape Town getting a second casino precinct have shortened considerably.

At the end of February the Western Cape Government gazetted long awaited draft legislation to establish three zones for potential casino development in the Cape Metropole, and – more importantly – to permit the relocation of one of the four other existing Western Cape-based casino licences to the city.

Currently Sun International's GrandWest casino in Goodwood has enjoyed an extended period of exclusivity – the property's exclusive period having officially ended in 2013.

What the gazetted proposals mean is that one of the four Western Cape casino licences – either Golden Valley in Worcester, the Garden Route casino, Mykonos (near Langebaan) and Caledon – will be allowed to transfer to Cape Town.

To date neither Sun International – or its rival Tsogo Sun – have said too much on the matter.

Tsogo controls the Mykonos, Caledon and Garden Route casinos, while Sun International controls Worcester. To confuse matters, Tsogo is also a significant minority shareholder in GrandWest and Worcester – along with Cape Town-based empowerment company Grand Parade Investments (GPI).

In its recent financial results commentary, Sun International CEO Anthony Leeming noted the licence transfer proposals included changes to the gaming tax tables and conditions for relocation. "This will entail additional taxes and fees, obligations to mitigate any negative impacts which relocating a casino may have on the area from where the casino relocates and provides for economic opportunities for designated groups that reside in the area to which the casino will relocate."

He said Sun was still assessing the draft legislation and would respond at the appropriate time.

A reading of the government gazette suggests a maximum of three casinos may be located in the Cape Metropolitan area.

CBN doubts, at least for the short term, that more than one casino licence will be transferred to the Cape Town metropole. At this juncture, casinos are not managing to grow profits in the dour economic environment, and gaming groups might be loath to commit to the huge capital expenditure required to establish a new casino (Sun's new Menlyn casino precinct near Pretoria cost over R4bn to build).

In any event the Western Cape government was earmarked three sites for possible new casino development: the Table Bay area (ie the V&A Waterfront), the sprawl-

ing Tygerberg area (which stretches from Parow East, Bellville and Edgemoed to Kuils River and Delft) and the city's Eastern suburbs (Somerset West, Gordon's Bay and Strand).

Murmurings are that larger casino sites could be on the cards for Tygerberg and the Eastern suburbs – but that a smaller venue catering mainly for 'high rollers' would be considered for the Table Bay area.

The billion rand question, of course, is which casino licence will be transferred to the Cape Metropole. Initially there has been some speculation that Tsogo's Mykonos casino would be the obvious candidate for transferring to the city.

But Tsogo's results have shown that the small Mykonos casino is a surprisingly profitable venture, and its transfer could have a serious impact on the fragile West Coast economy.

The Garden Route casino is probably not an ideal candidate for moving since the property is solidly profitable and is a dominant player in the well-heeled Plettenberg Bay, Mossel Bay and Knysna tourist catchment area.

CBN reckons that either the Caledon or Worcester casino licences will be moved to the Cape Metropole.

If CBN had to bet on one option it would be The Golden Valley casino in Worcester. This small property generated R176 million in revenue for the year ended December – but earnings before interest, tax, depreciation and amortisation came in at just R39 million and operating profit at R23 million. The margin was 22%, which is well below the norm achieved at local casinos.

Of course, there will have to be a trade off if either the Worcester or the Caledon casino licences are moved. Both properties hold significant infrastructure in form of hotels (and a spa, in the case of Caledon). One possible solution is to introduce electronic bingo terminals (EBT) and limited payout machines (LPMs) to the properties.

EBTs and LPMs essentially function as mini-casinos, and can be rolled out without incurring exorbitant costs. There will probably have to be other compensatory investments to ensure community employment levels are not hard hit.

So what is the reason behind the Western Cape pushing for licence re-locations to

Continued on P2

## School receives AVBOB's 46th container library



**T**HE AVBOB Foundation have delivered an impressive container library worth approximately R0.5 million, fully stocked with ±2 500 books to the McGregor Primary School.

Mr Frik Rademan, CEO of AVBOB said, "AVBOB will be celebrating a historical milestone on 15 August 2018 when we celebrate our centenary. As part of our centenary celebrations, AVBOB has invested R150 million to renovate and refurbish schools in nine provinces, as part of our support to the Department of Basic Education's efforts to provide quality education to every learner in South Africa. The AVBOB schools infrastructure project has already commenced with our first school, the Joe Solomon primary school, in Bloemfontein."

The container library project – which has been AVBOB's flagship CSI project since 2013 – has been a huge success. To date, 46 fully-equipped libraries have been donated to schools in disadvantaged communities throughout South Africa.

AVBOB Industries in Bloemfontein is responsible for refurbishing the containers, which includes the fitting of wooden laminated floors, shelving, a chalkboard, tables and chairs. The libraries are also fitted with solar PV systems, which provide the libraries with the capability to power up LED lights, a computer or projector, and/or to recharge mobile phones or laptop computers.

The AVBOB Foundation has donated container libraries to schools all over the country, and has thus far spent well over R13 million in the undertaking.





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# AVI takes steps at Green Cross

CONSUMER brands giant AVI is feeling a painful pinch from Cape Town-based footwear specialist Green Cross.

AVI acquired Green Cross for R382.5m in 2012 – but the business is lacking the profit pace required to justify a return on that substantial investment. In 2012 Green Cross generated revenue of R300m and operating profit of R70m. That R70m level now looks a long way off, as Green Cross struggles for profitable traction in a highly competitive footwear space.

To be honest, the slow stepping at Green Cross is but a minor hitch compared to what AVI's large rivals – Tiger Brands and RCL Foods – are facing with the costly (and brand damaging) listeriosis crisis. Nonetheless, the profit stumble at Green Cross is conspicuous against AVI's solid performance from its best know household brands like Bakers biscuits, Five Roses, Ellis



Brown, Provita and Willards snacks.

In fact, the performance by Green Cross stands in total contrast to AVI's footwear mainstay Spitz, which again stepped up its rate of profit growth.

Green Cross showed no growth in revenue at R193m in the six months to end December with operating profit taking a nasty slip to R4.4m compared R18.7m in the corresponding period in 2016. Worryingly, the operating margin was worn out to a 2.3% sliver from almost 10% previously.

By contrast, Spitz upped revenue 7% to over R1bn and pushed

up operating profits 15% to R335m. The operating margin was wedged reassuringly at 32.3%.

AVI CEO Simon Crutchley noted that Spitz managed higher sales volumes as well as margin recovery from the stronger Rand and savings from a recent restructuring exercise.

On the other hand, Crutchley reported that Green Cross suffered from a poor performance of summer 2017 range in a highly competitive mid-priced footwear market.

He added that Spitz saw footwear volume growth and higher average selling prices on non-core ranges – but

that price increases at Green Cross were offset by lower volumes and higher discounting.

Perhaps most concerning is that Green Cross' retail endeavours are not kicking through huge profits or revenue gains...yet.

Green Cross now has 45 stores that generated interim sales of R141m – only slightly up on last year's R139m. However, on a like-for-like basis on a base of 38 stores revenue was down at R130m compared with R137m.

Not surprisingly AVI has decided to give oversight of key activities at Green Cross to the Spitz management team – including responsibility for planning, merchandising and the retail operations.

The Spitz team will also review factory throughput and costs at the Epping manufacturing facility, and “do the best job possible” with the Green Cross winter range.

One positive, is that Crutchley did reassure

that Green Cross was likely to remain cash flow positive in the second half of the financial year.

Crutchley stressed that AVI did not expect Green Cross to require material funding through a period of recovery as additional cash would be generated from the reduction of high inventory levels.

He added that capital expenditure requirements at Green Cross were insignificant.

Crutchley was optimistic that the Spitz oversight would yield “material improvements” in merchandise planning, stock turn over and retail trading densities in the next twelve months.

While AVI is a remarkable consumer brands company that has the knack of balancing volume growth with pricing power, CBN reckons it will take a fair amount of time before Green Cross hits the required profitable stride.

## New casino for Cape Town

Continued from P1

the Cape Town metropole?

Presumably the main driver is maximising tax revenue collection. Bigger casinos mean more taxes flowing into provincial government coffers.

The Western Cape Budget documents show provincial government projects gambling taxes to grow at an annual average growth rate of 6.3% from R498m in 2017/18

to almost R600m in 2020/21.

This could be substantially bolstered if another large casino comes into operation in Cape Town by 2021 or 2022.

What is going to be a contentious issue – and no doubt a matter raised by GrandWest owner Sun International – is whether a second casino will really generate additional taxes for provincial

government. Or will a new casino simply ‘cannibalise’ the existing GrandWest clientele, and result in little or no gain in tax flows?

It is interesting to note, that GrandWest – the most profitable casino in South Africa over the longer term – recorded flat revenue of R2.15 billion in the year to end December with operating profit declining 2% to R721 million.

## Clothing retailer invests millions to fight blindness in South Africa

A new public-private partnership will impact the lives of thousands of South Africans waiting for cataract surgery.

South African clothing retailer, Truworths, is investing R3.6million towards improving eye healthcare services in Gauteng province. This investment is in partnership with international NGO, Orbis Africa, and the Gauteng Department of Health.

The province of Gauteng contains a quarter of the country's total population and 75% depend on a public healthcare sys-

tem with a huge burden of high-mortality rate-diseases. The public-private partnership will support the Department of Health's efforts to address the significant backlog of cataract surgeries in the province.

The backlog is estimated to be in the region of 2 500 surgeries, with patients living in Soweto waiting up to 12 months to undergo surgery in state-owned facilities. In response, the Department of Health has identified the need to establish dedicated cataract surgical centres that will take the

pressure off Chris Hani Baragwanath Academic Hospital. A similar centre is already established by the Department in Bheki Mlangeni Hospital.

The investment from Truworths will strengthen cataract surgical services at Lenasia South Community Health Centre, a facility that serves communities living in Soweto and Orange Farm. The funding is being used to renovate the existing eye clinic, purchase diagnostic and surgical equipment, procure medical supplies and

train the full eye healthcare team. A broader impact will be increasing public awareness on the importance of eye health, and investing in research to improve the uptake of services, patient care and surgical outcomes.

The Truworths-funded cataract surgical centre at Lenasia CHC will not only reduce the backlog in Adult Cataract Surgery but will enable the team at Chris Hani Baragwanath Hospital to focus on essential teaching as well as Paediatric Eye Health Services.



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# Hake companies land big profits

CAPE TOWN'S stalwart hake fishing companies, Sea Harvest and I&J, have defied the stronger Rand exchange rate - hooking big profits as favourable operating conditions and strong demand in key markets markedly buoyed business levels.

Sea Harvest - which is controlled by Cape Town empowerment company Brimstone - reported a 10% hike in revenue to R2.13bn in the year to end December.

CEO Felix Ratheb reported continued strong global demand for high value wild caught hake with limited supply driving strong pricing across all channels and markets.

Gross profit was up a sprightly 19% to R717 million with the gross profit margin fattening

two percentage points to 34%. Earnings before interest and tax of R383 million was up 53% on the previous year.

Ratheb said Sea Harvest benefitted from the improved performance of its South African operations driven by strong market demand globally and exceptional performance of the (revamped) Saldanha Bay factories.

He disclosed that 61% of the company's revenue was now generated internationally - mainly in Europe and Australia (where Sea Harvest own the majority stake in seafood group Mareterram).

Ratheb said Sea Harvest - which is in the throes of acquiring the Viking Fishing Group as well as a 51% stake in that company's

promising aquaculture venture - had a clear strategy. "We are focused on driving earnings growth through investments within its existing operations, as well as through acquisitions in both South Africa and Australia. Good progress has been made on both fronts."

He pointed out that on the organic growth front Sea Harvest continued to invest in its fleet with the newly acquired R250 million state of the art factory freezer trawler, joining the fleet in the second quarter of this year.

Ratheb said another R100m was invested in Sea Harvest's land-based factory operations with further efficiency gains expected from the last quarter of this year.

He said negotiations with Viking Fishing were at an advanced stage.

"This deal would be transformational for Sea Harvest."

CBN estimates that with Viking - a sizeable hake player - on-board, Sea Harvest would comfortably be the largest hake player in South Africa.

After listing on the JSE early last year, Sea Harvest is strongly capitalised with cash on hand of R383m as well as a large revolving credit facility."

I&J, which is controlled by consumer brands conglomerate AVI, managed to push up revenue almost 5% to R1.2 billion in the half-year to end December with operating profit shifting up from R167 million to R179

million. I&J's operating profit margin increased from 14,6% to 14,9%.

I&J reported that revenue growth stemmed from higher sales volumes and higher selling prices in domestic and export markets - partially offset by lower Rand exchange rates achieved on export sales.

The company said sales volumes increased despite lower quota - but volumes in the comparative period in 2016 were hampered by strike action.

Directors felt I&J should be able to achieve another semester of sound profit performance supported by an improved sales mix, increases in export selling prices and cost saving initiatives.

The company



stressed that exchange rates had been hedged at levels that supported good profit margins.

In second half trading I&J expected good demand and prices in export markets as well as the potential to improve the export versus local sales mix.

Rumours around AVI looking to sell off I&J - which also owns an abalone farming facility and the Simplot

seafood business in Australia - have died down.

Market talk is that potential offers for the business were underwhelming, and that it may be more prudent for AVI to list I&J on the JSE with a large empowerment partner coming aboard.

AVI only said I&J was preparing for the long term fishing rights allocation for 2020.

## HEVAC&R expo: FRIGAIR 2018

THIS world-class exhibition is organised in partnership with the South African Institute of Refrigeration and Air Conditioning (SAIRAC) and is Africa's biggest dedicated HEVAC&R trade exhibition, taking place from 6-8 June at Gallagher Convention Centre in Midrand, South Africa.

Exhibitors from more than 100 heating, energy, ventilation, air conditioning, and refrigeration (HEVAC&R) brands (both local and international) have already confirmed their stands.

FRIGAIR takes place every three years and the sold-out FRIGAIR Expo 2015 was hugely successful, drawing 4 470 visitors from far and wide over the three show days.

### International speakers presenting ASHRAE courses

One of the highlights at the FRIGAIR Expo this year will be the three international ASHRAE speakers, specially flown in for the event. They will be presenting three-

hour-long short courses which will be taking place at the FRIGAIR exhibition venue on 6-7 June, and continuous professional development (CPD) points will be allocated.

The world-class courses are as follows: Designing and operating high-performing healthcare HVAC systems, presented by Daniel Koenigshofer on Wednesday 06 June 2018 from 09h00-12h00; Basics of high-performance building design, presented by Tom Lawrence on Thursday 07 June 2018 from 13h00-16h00; and Variable refrigerant flow (VRF) systems: design and application, presented by Dr Hesham Safwat's on Wednesday 06 June 2018 from 13h00-16h00.

Costs, per course, are R1 200 for SAIRAC/ASHRAE members and R1 750 for non-members. To book your seat, go to the website [www.frigairexpo.co.za](http://www.frigairexpo.co.za). Bookings are essential as space is limited and seats will be allocated on a first-come, first-served basis.

### SAIRAC confirms free-to-attend seminars

This year's FRIGAIR expo will also feature a not-to-be-missed speaker programme packed with industry experts from across the world. The seminars will be held at the FRIGAIR venue at the same time as the expo. It will be open to all visitors to the expo, free of charge as part of the South African Institute of Refrigeration and Air Conditioning (SAIRAC)'s commitment to further the education of the HEVAC&R industry.

Speakers for the seminars so far include: Grant Laidlaw (SAIRAC president and owner of ACRA): New training modules for HEVAC&R, the new air-conditioning trade, and the new trade testing system; Barney Richardson (director of SARACCA): Changes to the South African Qualification and Certification Committee (SAQCC) registration for the safe handling of refrigerants; Charel Marais (trainer at ACRA): Ducting

systems and doing it correctly; Marius La Grange (Refrigeration Solutions): Refrigeration pipe design; Eurovent Association and Eurovent Certita Certification: The role of the HEVAC&R industry in achieving sustainable and energy-efficient technologies/products.

These seminars will give visitors the chance to keep up to date with the latest industry developments. The remainder of the speaker programme and the time slots are to be confirmed closer to the time and will be available on the website [www.frigairexpo.co.za](http://www.frigairexpo.co.za).

FRIGAIR is endorsed by various industry bodies, including the South African Refrigeration and Air Conditioning Contractors Association (SARACCA), South African Air-conditioning Suppliers Association (SAASA), Refrigeration & Air-conditioning Manufacturers and Suppliers Association (RAMSA), and the Southern African Refrigerated Distribution Association (SARDA).

## Oceana invest in desalination

MINISTER of Economic Opportunities Alan Winde applauds the Oceana group for investing in desalination technology which will save municipal water and protect thousands of jobs.

The Oceana group, which has canning and fishmeal plants in St Helena Bay and Laaipelek, have invested in desalination technology to ensure that their business continues to function throughout the drought, thereby saving over 2 000 important jobs.

Oceana produces Lucky Star pilchards, a staple in many South African diets.

Phase one of the plan will see a R20m desalination plant, capable of producing 800 000 litres of water per day, come online at their largest facility in St Helena Bay, by the end of March. This means that the factory will be able to function without drawing water from the municipal supply.

The second phase of the plan will consist of a desalination unit at their Laaipelek facili-

ty which will produce around 600 000 litres of water per day.

The company has also invested R2m in a reverse osmosis plant and is currently exploring the possibilities around drilling boreholes on a nearby farm and routing the water to its St Helena factory.

Oceana is a major contributor to job creation on the West Coast and plays an important role in the economy. Its annual wage bill totals R200 million, and it spends a further R500 million on procuring goods in the Western Cape.

Taking themselves off the municipal water grid will also mean that more water is available to the communities in which the factories function.

Minister of Economic Opportunities Alan Winde applauded the company for seeking out ways to continue doing business and save jobs.

"This kind of collaborative approach between business and government is the key to finding solutions

during this difficult period. This goes to show that saving water can save jobs," Minister Winde said.

"It is imperative that businesses, municipalities and the Western Cape government work together to find innovative ideas to protect the economy and create resilient cities".

Oceana director Francois Kuttel said: "Closing or mothballing these facilities would have a massive detrimental effect on these West Coast communities and the local economy".

The company also contributes to food security as Kuttel said Lucky Star produced 400 million meal portions for South Africans each year.

"From a purely commercial point of view, water and energy saving initiatives may seem expensive to implement in the short term, however the long term benefits for the company and the communities where we operate far outweigh these costs," Kuttel said.

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# Slurry pumps push reliability

KSB Pumps and Valves have busted the 'slurry pumps have short lifespans' myth with the ongoing success of its Navachab Gold Mine installation in Namibia, where 10 of its LSA slurry pumps have operated for nearly a year without incident.

This is in stark contrast to the previous pump sets at the mine, which operated a mere 4-6 weeks between breakdowns in the aggressive wear environment of the mine. Resultant stoppages and production losses had resulted in the mine's management seeking alternative solutions from new suppliers.

KSB Pumps and Valves' Andreas Gremels says the company was able to convince the mine of LSA technical superiority, and now has backed up the recommendation with actual on-the-job proof. "Our pumps have proven that they can work reliably and efficiently where others simply cannot."

#### Technical solution

He continues that the hard metal design and additional high-pressure gland water system is less prone to component wear. The KSB LSA pumps make use of a unique high-



KSB Slurry pumps installation at Navachab Gold Mine, Namibia.

pressure gland water system and gland service package that pressurizes the stuffing-box with non-slurry laden water to prevent particle ingress that can cause wear of components. Hard metal linings and specially designed impellers further contribute to the hard-wearing nature of the pumps.

#### All-round solution

AK Roux, projects and asset management manager for QKR Namibia, said that the new pump station has now run more than 5 000 hours without a single breakdown. He added that the project

team placed specific focus on the evaluation of the full life cycle cost of the operation and maintenance of the pumps during the design of the new pump station and the selection of equipment. This resulted in pump installation which consume 18% less power under similar operation conditions than the previously installation, while the maintenance requirements over the first 5 000 hours of operations was limited to the re-packing of the glands and the checking of bearing assembly oil levels.

KSB Pumps and Valves slurry pumps

manager, Rob Bond, says the remote nature of this, and other mines in Namibia, makes it imperative that the pumps are manufactured from the highest quality materials and manufactured to the highest international standards.

Correct pump selection is important making it essential to work with the best technical teams available, such as those of KSB Pumps and Valves.

The ten 6x8 LSA 25.HVHP for the Navachab Gold Mine involve five pumps in series (2 trains), pressure final stage 30-bar, and a flow rate of 500m<sup>3</sup>/h.

# Common pitfalls of forensic corporate investigations

IN 2017 South Africa experienced a flurry of forensic corporate investigations which aimed to address allegations of misconduct, accounting irregularities and even fraud within companies or government institutions.

The latest was scandal-hit retail group Steinhoff whose CEO, Markus Jooste, resigned on the back of "accounting irregularities".

In most instances a company will instigate a forensic corporate investigation to get to grips with what happened to the money, who were involved, and who can be dismissed or held accountable.

David Loxton, partner at law firm Dentons, says this investigation is different from the police investigation which will look at criminal issues such as fraud or corruption.

He says in an investigation such as the one at Steinhoff the team must include forensic accountants. "You need someone who has a nose for how accounting irregularities are perpetrated. You need someone who will recognise the warning signs as to where the money may be hidden."

Once the team is up and running it is critical to make a list of the

allegations that has already been unearthed, the witnesses and the potential suspects.

#### Terms of reference

Loxton warns against the pitfall of accepting terms of reference which is aimed at engineering a result in favour of the company or organisation requesting the investigation. "It is quite easy to identify when the terms of reference has been written for the purpose of engineering a favourable result for the entity which requests the investigation," says Loxton.

It could simply be on the basis of the organisation stating in the terms of reference what the investigators can do, but also what they cannot do. It is the list of "cannot do's" that is the give-away.

Loxton says he has experienced instances where the entity, more often in the private sector, insists that one of their senior representatives is present during interviews.

"The team cannot allow that. People must be able to speak freely, and if a senior manager is present they will feel constrained."

If the company prevents investigators from speaking to employees without one of



David Loxton.

the senior people present, it is a sure sign that the results are being engineered.

#### Never compromise your integrity

The temptation to accept a too narrow terms of reference may be due to the temptation by some firms to earn fees for the sake of earning fees.

#### Be well prepared

Another common pitfall is a lack of preparation. Loxton says forensic investigators should be wary when an investigation needs to be done as a matter of "extreme urgency".

"I have seen teams leaping in and starting to interview people without doing the ground work properly. It is a common mistake."

Loxton says he has also noticed that some investigating teams do not even interview the suspects. They gather the evidence, but leave the suspects to be interviewed by the police, because of fear that they may be interfering in the police investigation.

"Your investigation is utterly incomplete if you have not confronted the suspects during interviews," says Loxton.

He warns against accepting too much assistance from the company itself. Many accept the offer from the company to let their IT-team assist with some of the evidence gathering.

Internal IT employees can manipulate information. They are also not forensically trained to obtain evidence that can be presented to a court of law.

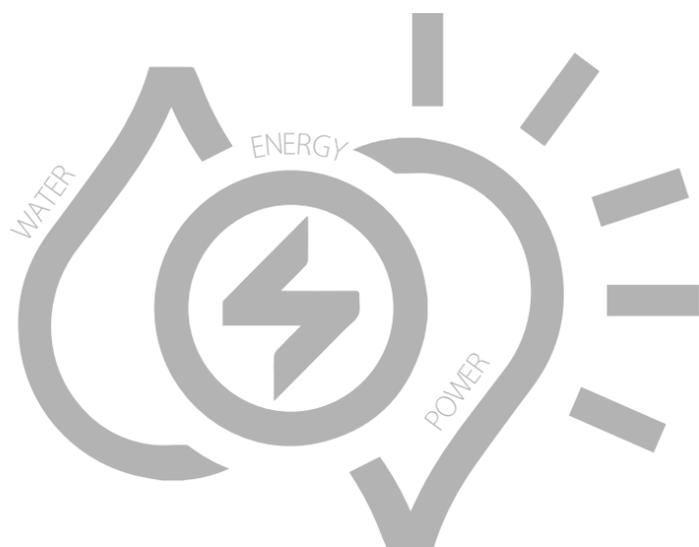
Loxton says once the investigation is complete it is critical to look at the evidence and consider whether you will get a conviction if the case was prosecuted in court.

This will focus the attention to what is lacking in the investigation.

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# Boosting women bio-entrepreneurship

THE Africa Women Innovation and Entrepreneurship Forum (AWIEF) has partnered with the NEPAD Southern Africa Network for Biosciences (SANBio) to implement the second season of the FemBioBiz Acceleration Programme in South Africa. SANBio is supported by BioFISA II, a Finnish-Southern African Partnership Programme to strengthen the SANBio network. FemBioBiz will be rolled out in a total of 8 southern African countries including: Botswana, Malawi, Mozambique, Namibia, Seychelles, South Africa, Zambia, and Zimbabwe.

“Coming together with SANBio to run FemBioBiz II in South Africa is an exciting opportunity for AWIEF to ignite change and promote bio-entrepreneurship with impact not only on women in the biosciences sector but the entire South African economy”, says AWIEF founder and CEO, Irene Ochem.

According to BioFISA II Programme Manager, Zvikomborero Tangawamira, the “FemBioBiz Acceleration Programme has been created to develop leadership, technological and business skills in female-owned businesses in the SADC region to support deal-making and business acceleration in the Biosciences arena. This programme creates a platform for peer learning and will empower



women to lead in health and nutrition through science and technology”.

While there have been attempts at improving participation of women in Science, Technology, Engineering and Mathematics (STEM), the representation of women in technology-led enterprises and, in particular, in leadership or managerial positions or as founders of businesses is very low in the SADC region.

More so, sub-Saharan Africa has not been famous for its status as a leader in female inclusion within the economic sector. However, African women are surprisingly beating the odds and defying the obstacles in the field of entrepreneurship in the region.

This was clearly the

case in the 101 women from nine SADC countries who were trained in the first season of FemBioBiz from which the top three performers won prizes worth R500 000 and a trip to the world’s leading start-up event in Finland, Slush.

As a woman it can be particularly difficult if you have to juggle the complexities of biotechnology, the practicalities of running a business, and the responsibility of bringing up a family. Yet there are women who are doing this, and this Programme seeks to showcase such gems. “In doing so, we envision that the women involved will inspire others to realise the business potential in science. It will also close this critical gap in support

of women entrepreneurs and catalyse a conversation around inclusive economic growth”, adds Ms Tangawamira.

AWIEF fosters women’s economic inclusion, advancement and empowerment through entrepreneurship support and development.

The NEPAD Southern Africa Network for Biosciences (SANBio) provides a shared research, development and innovation platform for collaborative research in health and nutrition. The FemBioBiz Season 2 was launched during this year’s SANBio Annual Event on 27 February 2018.

The call for applications for FemBioBiz II is open until 20 April 2018.

# Canon – working Wonders for carbon reduction and water saving

FOR the third consecutive year, Canon South Africa has reached its target to offset its carbon footprint by a minimum of 365 tons of CO<sub>2</sub>e. Now well on its way to becoming a carbon neutral business, Canon South Africa offset over 365 tons, equaling 19.34% of its carbon emissions, in 2017. This is buoyed by the 23.11% and 15.03% the company offset in 2016 and 2015 respectively.

Canon South Africa is working with the Carbon Neutral Group to offset its carbon emissions by supporting carbon reduction projects elsewhere in the economy. Carbon offsetting is achieved by taking responsibility for and financing carbon reduction projects elsewhere in the economy. Carbon offsetting will ultimately see Canon South Africa reduce the amount it pays in carbon tax. Canon South Africa offsets its annual carbon emissions through its support of a project to purchase and roll-out Wonderbags™ in underprivileged communities.

The Wonderbag™, developed in South Africa, is a nifty cooker that relies on the age-old concept of heat retention cooking to save energy costs. Once food has been brought



to the boil using a heat source, the warm pot containing the food is placed immediately in the Wonderbag™ and the food slowly cooks without using any additional energy. Wonderbags™ can be used to cost-effectively prepare a wide range of one pot dishes, casseroles, curries, cooked salads, and more.

bag saving as much as 150l per year. So this means for every one ton of CO<sub>2</sub> emissions that Canon South African helps to offset, it also enables three Wonderbags to be distributed, which in turn can save as much as 450l water per year.

According to Franz Rentel from the Climate Neutral Group, by offsetting over 365 tons of CO<sub>2</sub>e in 2017, Canon South Africa helped to distribute 1 095 Wonderbags.

“This contributed to water savings of around 160 000l per year. And remember a Wonderbag can last for up to 10 years, so the water savings will be higher over the lifespan of the bags. This is particularly significant in the Western Cape which is in the grips of a severe water shortage that has called everyone in the province to find more water-economical ways of living and working,” concludes Daly.

Wonder bags... contributed to water savings of around 160 000l per year.

The Wonderbag also saves water (due to less evaporation), with one

# Robben Island adopts a green energy supply

African Utility Week offers unique technical site visits

ROBBEN Island is renowned for being the place where South Africa’s first democratically elected president, Nelson Mandela, was jailed for 18 years of his 27-year prison sentence. The UNESCO World Heritage Site has recently adopted a sustainable blueprint for its diverse eco-system. The National Department of Tourism (DoT) commissioned a solar microgrid, awarding Cape Town-based SOLA Future Energy an EPC contract to design and construct a solar energy microgrid to reduce the island’s dependency on expensive heavy fuel oil. The project is the first of its kind on an island as part of a grid resolution, among other things, aimed at reducing the carbon footprint. The system consists of a solar photovoltaic (PV) farm, combined with



Photograph provided by ABB

a lithium-ion battery storage facility and smart controllers to ensure a seamless electricity supply, whilst significantly reducing the island’s fossil fuel consumption.

Robben Island has an energy usage profile that comprises residential needs, desalination, harbour and offices; in total, the island uses almost 2M kWh of electricity annually. The solar microgrid, which comprises 1,960 Canadi-

an Solar (CS6U-M-340 W) high efficiency modules, will produce almost 1M kWh of electricity annually, significantly reducing the costs of buying diesel and transporting it to the island.

### Technology in action at African Utility Week

To see the Robben Island solar microgrid in action, book a site visit to this project at African Utility Week which will include other his-

torical highlights on this World Heritage Site. The event returns to the CTICC in Cape Town from 15-17 May. Other technical tours that delegates can book for are the once-in-a-lifetime opportunity to visit the only nuclear power station in Africa at Koeberg and another solar installation at Lourensford wine estate. Content provided by [www.esi-africa.com](http://www.esi-africa.com) and [www.african-utility-week.com](http://www.african-utility-week.com)

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# “Pursuit of a better way”



Dylan Rishworth

**BUILDING** Information Modelling (BIM) is trouncing hundreds of years of accepted norms within the built environment. The true revolution has started and Dylan Rishworth, who is heading up the BIM and Digital Strategy at Mace Management Services (Pty) Ltd, part of Mace Group gets it!

## BIM and Project Managers

“PMs help clients achieve their objectives for on-time delivery, within budget, at optimal quality, with zero accidents, optimised operational (or lifecycle) cost and reduced environmental impact and technology. BIM balances all these objectives and promotes stakeholder engagement, throughout the project,” according

to Vaughan Harris, Executive Director of the BIM Institute.

“Strict governance is the foundation of Mace projects, and BIM as a tool ensures this. There is nowhere to hide sloppy work in a BIM project. All data is tracked and there are no shortcuts in the process. If somebody doesn’t do their job correctly and to spec it is guaranteed to come to light down the line when it has a knock-on effect. The client is paying to have his project done professionally, and BIM quickly unveils any service provider that comes up short,” ensures Rishworth.

## Should we BIM?

The first question the project manager must answer for the client, is if BIM should be used

on the project, and why it should be used. The answer relates to the client’s control of scope, time, costs, quality, safety and sustainability on a project, ensuring the client gets value for money, and that their risks are being effectively managed. This is compounded by the benefits BIM can provide from a Facilities Management point of view.

## Software choices

The company’s sub-Saharan African offices (in Johannesburg and Cape Town) use Autodesk Navisworks and Oracle Primavera for their BIM processes, as they oversee the projects and costs without doing the actual design, although they also have the software and hardware solutions to plug into design software as necessary.

## Client facing

“The client is worried about timing and cost,” says Rishworth, “It is our responsibility to represent the facts to the client – often in these terms – in a way that keeps him engaged and makes sense to them.”

He sees the BIM outcomes at the handover phase as invaluable, with the drawings, data and lifecycle information as is saving the client time and money for the lifecycle of

the building. The question is really whether the client sees the long-term benefit in explicitly demanding that the design and build team manage the “information” (drawings, schedules, specifications, bills of quantities, product data etc.) using a digital process to a recognised industry standard during the project?

The requirements for BIM on a project are driven by two distinct business needs:

- To have the “information” required to get building projects designed and constructed in an efficient and effective way – Project Information Model (PIM) Requirements.
- To have the “information” required to maintain and operate the building in an efficient and effective way – Asset Information Model (AIM) Requirements.

## Flow of information

Rishworth believes that controlling and monitoring the flow of information is one of the most important roles of the PM. He points to the combined knowledge of the Mace team – including designers, engineers, cost consultants and PMs – that have underlined the lack of co-ordination on BIM projects.

# Investment decisions: Why South Africa, and why now?

PwC economists’ forward-looking scenarios for the Ramaphosa presidency (2018–2022)

**ECONOMIC** growth and investment in South Africa is set to rebound following several years of economic and political decline. The country remains a promising investment destination with a bright future, and retained many strong fundamentals and positive factors for investment in spite of the above-mentioned declines. The country is certainly in a better place now than where it was when previous rating actions took place in late-2017.

These are some of the highlights from a report issued by PwC economists recently. Our economists see a 75% probability of improved economic growth in South Africa over the next five years under the leadership of President Cyril Ramaphosa, compared to the preceding years.

PwC Economist Christie Viljoen, says: “South Africa, like other emerging markets, has a critical need to attract foreign investment while at the same time driving economic transformation. At the time of writing this report, the most likely scenario is that President Ramaphosa is able to make the necessary changes and reforms to help economic growth accelerate to 3% by 2022.”

The report argues that the time is right for investing in South Africa, for both domestic and international investors, as President Ramaphosa takes over leadership of the party and government. There is a high probability that the South African economy will be in a much healthier position over the next five years compared to the start of 2018.

The past three months have also seen dramatic changes in South Africa’s economic and political landscape with the election of Cyril Ramaphosa as leader of the African National Congress (ANC) and president of South Africa.



The country’s citizens, foreign investors and financial markets have welcomed these changes, and stakeholders are at present focussing on a more positive outlook for South Africa’s economics and politics. In the report titled “Investment decisions: Why South Africa, and why now? Forward-looking scenarios for the Ramaphosa presidency (2018–2022)”, PwC first considers the country’s decline in 2014-2017 and the positive fundamentals that were retained despite the challenges faced by South Africa.

PwC considers the possible future scenarios for South Africa over a five-year horizon (towards 2022). The five scenarios are pathways to different potential future states by 2020 under the guidance of President Ramaphosa as ANC and national president, as well as a significantly revamped cabinet. “The scenarios enable the reader to look backwards from 2022 at the potential pathways that South Africa followed in the preceding five years,” Viljoen adds.

From a quantitative perspective, the scenarios provide projections for economic growth and the rand exchange rate. The outlook for GDP growth in 2018 is still quite opaque due to the uncertainties about how quickly President Ramaphosa can implement his reforms, comments Viljoen. The ‘downside’ and ‘worst-case’ scenarios see little to no improvement in job cre-

ation and economic growth, respectively, in South Africa’s economic growth rate due to limited further reforms after the new administration’s initial successes.

The ‘baseline’ scenario – entitled #Ramaprogress – sees more success in job-creating growth based on notable reforms under the president’s New Deal agenda. This translates into real economic growth rising to 2% in 2020 and 3% by 2022. As fiscal dynamics improve, no further downgrades are seen in the sovereign’s credit ratings. Meanwhile, the ANC improves its performance in the 2019 national elections and ends a recent decline in support.

The ‘upside’ and ‘best-case’ scenarios see even greater reform success that accelerates economic growth even further. At present, PwC sees a 25% probability of the next five years delivering economic growth of less than 1.5%.

This indicates a one-in-four chance that the election of President Ramaphosa will have no significant impact on the local economy. Overall, PwC sees a 75% probability of improved economic and political outcomes over the next five years, compared to the preceding several years.

These scenarios include different projections for economic growth and the exchange rate, and will have varying implications for different industries and investment decisions.

# Karatara hydroponics project

**THE** Karatara Hydroponics Project is a Lafarge local development project scheduled to be launched in the Western Cape in 2018.

The aim of the project is to promote intensive agriculture within Karatara, in the Knysna Local Municipality, by producing high value, high

quality fresh produce.

The project will uplift the community which at present is financially challenged as a result of the previous administration through employment and creation of a more viable economy in the local area. The funding from Lafarge is used as a cash injection for the start-up of

the project which will include production of cocktail tomatoes in three tunnels (900m<sup>2</sup>), as well as cash crops (herbs) grown under open-field irrigation (5 000m<sup>2</sup>).

The Trust established for the community will together with Direct Solutions (leasing the land) and the Knysna Mu-

nicipality oversee the spending of the money that is generated from the rental of the property in accordance with the lease agreement to uplift the town of Karatara. This will promote community development as described in the Knysna Municipal Integrated Development Plan.



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# Creating prospects for 700 township children



- help alliance opens iThemba Primary School in Capricorn near Cape Town
- First-class education for disadvantaged girls and boys
- Lufthansa Group aid organisation works closely with South African government and Ministry of Education

AFTER more than five years of intensive persuasion and planning, the brand-new Primary School of the help alliance project iThemba was opened today in Capricorn near Cape Town. From now on 105 children can be taught in three classes. After completion of all construction stages, 700 disadvantaged girls and boys will receive a high-quality education and the chance at having a better future. The socially and economically disadvantaged suburb of the South African tourist metropolis is still home to more than 2 500 children without a place in schools.

help alliance bears the construction costs of more than one million euros. It is the largest project of the Lufthansa Group's aid organisation. Susanne French, help alliance project manager for iThemba and Lufthansa Purser, has worked endlessly over the past few years to get this project up and running. The primary school has been approved by the South African Ministry of Education and is recognised and financed by the state. The provincial government provides the land and the operational costs are borne by the Western Cape Education Department.

help alliance patron Vivian Spohr, in the presence of her husband Carsten Spohr, Chairman of the Executive Board and CEO of Deutsche Lufthansa AG, opened the Primary School. "We are very pleased to be able to offer so many deserving children here in the township a first-class education. It is a dream

come true not only for the many people who have worked tirelessly for the project, but the children and families who will be impacted by the education provided. The girls and boys attending iThemba now have a new opportunity to achieve their dreams," says Mrs. Spohr.

For more than ten years now, help alliance has been involved with the children in the township and has been supporting the iThemba Pre-School since then. Currently, 85 children between the ages of three and six are being cared for here. In addition to qualified English lessons, they are taught social skills, which often fall by the wayside in the whirlpool of poverty and violence. A close cooperation with families and the community creates trust and acceptance.

With the construction

of the iThemba Primary School, help alliance is now taking the next step and significantly expanding its commitment with a clear focus on the Sustainable Development Goal "Quality Education" of the United Nations Agenda 2030.

However, there is more to come: "We have just completed phase one," explains help alliance project manager Susanne French. "Our goal is to build a community college for the whole family, because we have a holistic approach. The project is building towards offering evening classes and sports for young people. It is precisely this age group that is particularly at risk. We want and must show young people an alternative lifestyle to gang violence, drugs and alcohol. For this we need many more donations, of course."

# Disruptive mobile tunnel boring solution unveiled

MASTER Drilling Group Limited ("Master Drilling", JSE: MDI), a world player in specialised drilling solutions, has announced that its new disruptive Mobile Tunnel Boring ("MTB") solution, will be ready for commissioning in the third quarter of the year.

Master Drilling's internally conceptualised design and internationally patented MTB technology was developed in response for a cost effective mechanised tunnelling contract service that addresses safety and efficiency challenges on new and existing operations. The new solution may also make it possible for marginal projects to pass feasibility hurdles due to cost and time savings.

Danie Pretorius, CEO of Master Drilling, said: "This disruptive technology allows continuous mining and requires no blasting, thereby significantly enhancing mining efficiencies. It is as advantageous at the capital stage of mining projects, with quicker deployment and access to the ore body, as it is at the production stage through substantial productivity increase when opening up blocks of ground or increasing a mine's footprint."

Master Drilling's MTB solution can



bore out an excavation of 4.5 and/or 5.5m in diameter at a rate that far exceeds conventional tunnel construction methods.

"This disruptive technology allows continuous mining and requires no blasting."

The MTB can deliver various infrastructure solutions for declines, ramps, haulages and contact tunnels in hard rock with compressive strengths in excess of 300MPa. Its modular construction makes it also possible to retrofit to existing operations and major mining companies have expressed interest in deploying Master Drilling's first

MTB once commissioned in the third quarter of 2018.

Koos Jordaan, Executive Director of Master Drilling, said: "The concept phase of our MTB started in April 2017 and after consideration of various alternatives, we made the decision to pursue a collaborative option in the market to realise the concept. We are pleased to have partnered with Italy's Seli Technologies, a company with half a century's experience principally in civil mechanised tunnelling, to manufacture and assist us during operation of our first MTB."

The continuous process involves excavation, support and waste removal that creates a smooth circular excavation that does not

disturb the side walls of the tunnel. In addition, the geometry makes for a stable and strong tunnel and, because it is a non-explosive process, it increases the on-face time and delivers higher production advances on a cost-efficient basis.

Master Drilling's MTB solution will be deployed through a newly established and dedicated division, Master Tunneling. Master Drilling is also exploring other opportunities in the civil tunnelling industry. Established over 30 years ago, Master Drilling is a South African based JSE-listed company with over 160 rigs across 20 countries providing a comprehensive range of drilling and raise boring services predominately to the mining industry.

## A GROUND BREAKING APPROACH TO PROPERTY

**Abcon Group**



## Ford volunteers assist 30 organisations



FORD volunteers came out in force last year to support nominated community organisations in the Sub-Saharan Africa region (SSA) during Ford's Global Month of Caring.

Almost 800 Ford employees assisted a total of 30 non-profit organisations in South Africa. Dealer participation included South Africa, Mozambique and Kenya. Employees spent over 12 800 hours dedicated to making people's lives better and addressing environmental issues - with selected projects still ongoing.

In addition to the hands-on involvement of Ford personnel, the selected NPOs received much-needed funding to support these projects, with a total of \$111 300 (over R1.5-million) disbursed by the Ford Motor Company Fund through Global Giving.

The far-reaching projects tackled a wide range of issues, from revamping buildings at crèches, schools and community health and wellness organisations to creating sustainable vegetable gardens; assisting with much-needed maintenance at wildlife education and rehabilitation facilities; conducting environmental education, reforestation and clean-up campaigns; and providing skills development opportunities for the unemployed.

At Bright Beginnings, a day care centre located in Mamelodi East in Pretoria that caters for 83 vulnerable, abused children and those living with HIV/AIDS, Ford volunteers painted the classrooms, kitchen and toilets, and repaired the existing jungle gym.

The Guide Dog Association of Southern Africa also received a helping hand from Ford, with the donated funds helping a team of volunteers conduct essential maintenance of the kennels and facilities.

In Port Elizabeth, Ford employees conducted a clean-up campaign in conjunction with the Zwartkops Conservancy, and funded its impactful school environmental education initiatives.

In collaboration with the Loop Counselling and Training Centre in Gelvandale, Port Elizabeth, Ford staff and learners upgraded the kitchen that supports the feeding scheme for the Fontein Primary School and surrounding community, and revamped its skills development and training facility.

In Kenya, Ford and its local dealer, CMC Motors, initiated a long-term project with the Red Cross Society that involves establishing a tree nursery to support afforestation efforts in Migori. The objective is to establish a nursery with a capacity of growing 500 000 tree seedlings each year.

A community primary school in Maputo, Mozambique, received the special Ford treatment too, with support from the local dealer, InterAuto. The school accommodates almost 2 200 learners and 75 administrative staff, with extensive repairs and maintenance required for the ablution facilities, drains and water supply. The team also rehabilitated one of the classrooms with new windows, roofing, painting and lighting.

## Nurture a girl comes full circle

UWP Consulting's NURTURE A GIRL initiative aims to help teenage girls to succeed in their personal journeys to adulthood. Now some of the beneficiaries of this programme are choosing to pay it forward by helping their peers with addiction counselling.

Sixteen beneficiaries of NURTURE A GIRL at Garlandale High School in Athlone have completed a substance abuse counselling course and will now use the skills they have learned to help others at their school.

Consulting engineering firm UWP launched NURTURE A GIRL in 2017 with the initial aim of sponsoring 50 female learners at different secondary schools around South Africa for a year. Another 23 girls have joined the programme through sponsorships from other companies and individuals and the numbers continue to rise.

Each beneficiary receives monthly per-

sonal hygiene kits, opportunities to attend workshops and presentations, mentoring by UWP staff, career advice and basic life skills development. Their schools are also receiving various support.

The 16 beneficiaries of NURTURE A GIRL at Garlandale High immediately volunteered when SANCA (South African National Council on Alcoholism and Drug Dependence) offered the two-day Peer Counsellors Training Programme. The course trains participants to provide listening support and peer guidance.

These learners will now start a support group at the school for others struggling to overcome addiction and other issues.

"The SANCA course is just one way in which the girls are being upskilled so that they can help themselves and encourage their peers to make better life choices", says Nerissa Ventura of UWP Con-



Some of the learners at Garlandale High School in Cape Town, including Nurture a Girl beneficiaries, who have completed SANCA's two-day Peer Counsellors Training Programme. They are (from left): Shanaaz Chamwaita, Nonkululeko Mzileni, Shaakirah Heyns, Shadey Bailey, Asithandile Mpepo (with SANCA certificate), Tasha Rhode, Samantha Edwards, Oksanah April, Vuyisinani Mjenzane, Geneva Smidt, Aqueelah Kayser and Natasha Nyerederani.

sulting Cape Town.

The training has been successfully completed and certificates were awarded by SANCA at a ceremony on 27 January 2018.

Ventura adds that UWP is currently renovating a room at Garlandale High which will be used for counselling ses-

sions. The NURTURE A GIRL beneficiaries will also participate in a stress and anxiety workshop hosted by Hope House at the school in the near future.

"As our relationships develop with the girls we are finding ways to meet individual needs that may go beyond

the scope of the programme," says Claudia Picarra, marketing manager at UWP Consulting. One candidate at Garlandale High School in Cape Town needs a kidney transplant and UWP has facilitated this process to the point where it is now becoming a reality.

## "Refuelling" of electric vehicles in "no time"

POWERSWAP AB, a Swedish start-up, has revealed news of their radical solution for charging electric vehicles. Instead of connecting the cord and waiting for the car to be charged, the battery is replaced with the help of a robotic device in three minutes. "Our solution is in many ways revolutionary and will change the way we think about EV charging," says Sten Corfitzen, founder of Powerswap.

The technical concept was created with the goal of using the already well-established refuelling infrastructure, petrol stations.



"It is better if we do not have to establish a completely new infrastructure just because we want to use EVs instead of fossil fuel cars. By installing robotic swap units at petrol stations and parking lots, we will gain a cost-efficient solution for the transition to a dominant electric transport sector."

Powerswap is very different from earlier battery swap trials, which have been based on building new swap stations and which are expensive and require new land. Another difference is that Powerswap handles the swap of batteries from the side, which is more optimal when it comes to automation.

"I am confident we have created something that will lead to faster expansion for EVs. Taxi companies and other transportation fleets are suitable niches for our introduction because their operations have no time available for prolonged charging. We have received a Letter of Intent from Taxi Stockholm, the biggest taxi company in Sweden." In short, the advantages of automatic battery swap are:

No time needed for charging; faster than filling a petrol car.

The car is not out of use during "refuelling" (charging).

The EV can be sold without the battery, which will make the price of an EV less than that of a fossil fuel car. The battery will be leased and can be renewed when enhanced technology is available.

The Powerswap battery swap system offers cord-free "refuelling" of EVs in three minutes. Powerswap is supported by the Swedish Energy Agency, Energi-myndigheten, with the goal of enabling a more efficient infrastructure for electric vehicles. The company collaborates with Chinese battery manufacturers and OEMs.

## #GoGreen donates +700 Green Desks to 40 Schools

OVER 700 Green Desks, made from 2 700kg of recycled plastic waste collected from both the 2017 Comrades and 2017

Two Oceans marathons, are being delivered to over 40 schools in the Western Cape and KwaZulu-Natal. This impactful #Go-

Green project is part of a collaborative campaign between Polycoco, WILDLANDS, and Old Mutual. According to WILDLANDS, there is a shortage of 300 000 school desks in South Africa, and this initiative aims to tackle the shortage head on.

On 15 February 2018, 20 of these desks were delivered to Axios School of Skills in Eerste River in the Western Cape, and 20 more were delivered to Nobanda Primary School in Sweetwaters,

KwaZulu-Natal. Polycoco's Chief Executive Officer, Mandy Naudé said "This is our opportunity to show children the power of recycled plastic, all while they're sitting at their Green Desks. Currently only 5% of South Africans recycle plastic, and we're hoping these desks will help fuel learners' curiosity and lead them to ask questions about the power of recycling."

The latest drop-off occurred at Lalelani Primary School in Nthshongweni, Kwa-

Zulu-Natal which is a beneficiary of the ROBINHOOD Foundation. On 14 March 2018, a total of 47 double green desks were handed over to the Grade 1 class, who were extremely excited to receive their new and much needed desks.

Through the #GoGreen campaign, Polycoco, WILDLANDS, and Old Mutual hope to educate and enlighten young South Africans about the true power of recycling plastic, one Green Desk at a time.

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# Girls 1, boys 0

GLOBAL problem solvers are in high demand. Just google Re-Imagine Education and check out the wealth of conferences and events focused on what learning matters to ensure individuals have the skills to think like entrepreneurs and collaborate with people from all backgrounds.



attitudes towards collaboration.”

Andreas Schleicher is Director for Education and Skills, and Special Advisor on Education Policy to the Secretary-General at the Organization for Economic Co-operation and Development (OECD) in Paris. The first ever assessment of collaborative problem solving skills aims to help countries and economies see where their students stand in relation to their peers in other education systems. Students in 52 countries completed this test in addition to the main OECD PISA 2015 Survey on Science, Mathematics and Reading.

What lessons can researchers learn from the 15 year-old girls who outperformed boys in collaborative problem solving in every country around the world, according to the new study by the OECD? In C.M. Rubin's interview with Andreas Schleicher, Director for the Directorate of

Education and Skills at the OECD, he notes, “Girls show more positive attitudes towards relationships, meaning that they tend to be more interested in others’ opinions and want others to succeed.”

Schleicher also notes that “strong academic skills will not automatically also lead to strong social skills. Part of the

answer lies in giving students more ownership over the time, place, path, pace, and interactions of their learning. Another part of the answer can lie in fostering more positive relationships at school and designing learning environments that benefit students’ collaborative problem-solving skills and their

## Royal HaskoningDHV’s Saturday schools celebrate 10 years of ‘Investing in Education’

ROYAL Haskoning-DHV has held celebrations across the country to mark 10 years of Investing in Education through their Saturday Schools programme. It is said a nation that fails to invest in its youth fails to invest in its future. This was the motivating factor for Royal HaskoningDHV’s Saturday Schools programme in South Africa that was launched in 2007 when the dearth of engineering students became apparent. To date the programme has benefited more than 1 400 learners.



Pauline Makama, CSI Manager at Royal HaskoningDHV South Africa, states, “The aim of our Saturday Schools initiative is to improve the marks of scholars in mathematics, science and engineering graphics and design to help under-privileged students gain university places in technical subjects”. “The initiative is vitally important,” says Makama. “Across the world there is a shortage of engineering graduates, and the problem is particularly acute in South Africa”.

The Royal HaskoningDHV’s Saturday Schools programme supports under-privileged communities with the aim of creating a level playing field and giving everyone a chance to participate in the economy which

ultimately translates into the building of better communities.

Royal HaskoningDHV has had many Saturday School success stories over the years with learners progressing from school to university, being taken on as interns and some finally becoming employed by the company as engineers while others have become doctors and scientists. One of the beneficiaries of the programme is Ntsako Masangu who has completed the full cycle and currently works as an engineer in Royal HaskoningDHV’s Johannesburg office. Ntsako started out as a Saturday Schools pupil who went on to receive a bursary from the company for her engineering studies. Upon completing her studies, she was taken on as an intern and was eventually employed as an engineer. Ntsako is now a Saturday Schools tutor and gives back by spending her Saturdays tutoring pupils, something in

which she takes great pride.

Royal HaskoningDHV’s employees appreciate the need to improve the matric pass rate for maths, science and technical drawing and are therefore willing to sacrifice their time to provide free tuition to learners. Teachers are drawn from the professional staff of Royal HaskoningDHV’s offices countrywide.

They are primarily university graduates currently performing scientific, academic and technical functions where the application of mathematic calculations, scientific formulae and technical drawing are performed on a daily basis in the execution of their duties.

From humble beginnings Royal HaskoningDHV’s Saturday Schools are now held in numerous schools across South Africa, in Alexandra, Soshanguve, Cape Town, Pinetown, Pietermaritzburg and Mangaung.

## Recovering R1,7 billion “lost” water revenue achievable

Janine Myburgh outlines Cape Chamber of Commerce and Industry’s recovery plan

THE municipality is the biggest business in Cape Town employing nearly 27 000 people with a budget of R44.3 billion so a R1.7 billion cut would amount to just 3.8% of the budget.

“This should be a fairly straight-forward exercise and well within the Council’s capability,” said Ms Janine Myburgh, President of the Chamber. “Any large business should be able to do it.”

Making the job even

easier is the fact that there is a good deal of padding in the spending plans as officials generally make sure that they over-estimate costs to cover themselves in the event of unexpected cost overruns. Last year, for instance, the underspending on the operational budget amounted to 5.2 percent and the municipality finished the year with R3.8 billion cash in the bank.

Ms Myburgh said the City should get to work

on the cuts without delay. “We are dealing with an emergency situation.”

She said the place to start would be the Mayor’s directorate which had a budget item of R41.8m. “This money, according to the presentation we saw on the draft budget, was to be used for the activation of the Cape Town to Miami air route, propagation of the Invest Cape Town brand and the Atlantis SEZ’ and other similar projects.

“The problem here,”

said Ms Myburgh, “is that this is work that Wesgro does and does very well. It looks to me like duplication so there would be an easy cut and a good way for the Mayor to lead by example.”

The crisis was also a good reason to look again at the plan to divide the City into quadrants each with a “mini mayor” who would require support staff. “There may or may not be merit in the plan but there is certainly no urgency.”

## Agriculture proves to be a heavy lifter

Comment by Paul Makube, Senior Agricultural Economist at FNB Business

ON the back of a devastating drought in South Africa’s biggest agriculture region, the Western Cape (WC), the sector has managed to pull off an impressive 37.5% q/q and contributed 0.8 percentage points to GDP growth. The WC is however

still gripped by drought conditions and accounts for 23% of the total South African agriculture GDP. The agriculture, forestry and fishing GDP for 2017 also grew by 17.7% year on year and contributed 0.4 of a percentage point to the overall

South African GDP.

The robust agriculture output was boosted by favourable production conditions for the second consecutive season following the worst drought in 100 years two ago. The first production estimate for the 2017/18 season surprised on the

upside for grains with the major staple maize coming in at 12.22 million tons though still down from the record 17 million tons last year.

We expect the industry to continue on its stellar performance as the summer crop season tails off.

## Revamped international arbitration legislation enacted by Parliament

PARLIAMENT has enacted the long-awaited International Arbitration Act which brings about an overhaul of the international arbitration framework, which commenced on 20 December 2017.

The new Arbitration Act regulates international arbitration proceedings in South Africa and governs the enforcement of foreign arbitral awards. The

Act, which incorporates the Model Law on International Commercial Arbitration, aligns the South African international arbitration law with international best practice. It also opens the door for South Africa to become a more attractive venue for resolving international disputes.

The Act not only ensures that the Model Law now applies in

South Africa, but also the UNCITRAL conciliation rules, as well as the Convention on the recognition and enforcement of foreign arbitral awards.

The International Arbitration Act only reforms international arbitration, while domestic arbitration is still governed by the Arbitration Act, 1965 which remains in force.

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## New Eco drive arrives

FROM wine farms to the mining industry, the new LTP-B Eco drive from SEW-EURODRIVE is finding applications in a range of sectors.

While SEW-EURODRIVE does have general-purpose units for fans, pumps, and even conveyors, it initially saw a niche for a unit specifically for the Heating, Ventilation and Air-Conditioning (HVAC) industry, targeted at building designers focusing on 'green' design, National Sales Manager **Norman Maleka** comments.

In terms of a commercial building such as a hospital, traditional drives meant that fans had to operate continually at full speed. "With the improved functionality of the LTP-B Eco HVAC drive, facilities managers can now control a fan by only running it according to demand, for example. This represents a major advantage in terms of en-



ergy-saving, as it allows for total flow control,

While the HVAC sector remains a focus, the broader energy-saving benefits means it is equally applicable to customers in other niche sectors with a broad power-output range from 0.75kW to 250kW.

In addition, it replaces the traditional electrolytic capacitors used in the DC link with film capacitors, which have reduced energy losses, as well as eliminating the need for AC, DC or swinging chokes, which boosts the overall efficiency of the drive by

4% compared with a standard AC drive.

Extra features include pump-cleaning and pump agitation functions, which is particularly useful if a pump has been out of operation for a period of time and needs to be restarted. The sleep mode function allows for added energy-saving when the drive is inactive.

"All of these functions can be monitored directly from the drive itself, as all inputs can be fed back directly to the management system, with no direct interface required," Maleka adds.

## Local desal company scoops contract in Saudi Arabia

GRAHAMTEK, a global desalination and water purification company based in the Strand near Cape Town, was awarded a major contract to build a desalination plant in Saudi Arabia. The contract will be worth approximately R5 billion on completion.

The desalination plant is the sixth contract that the South African company has secured in the Kingdom of Saudi Arabia.

The contract to design, build and operate a desalination plant was awarded by The Saline Water Conversion Corporation (SWCC) that operates several water treatment plants across Saudi Arabia.

Making the announcement, GrahamTek CEO, Julius Steyn said the contract consists of several phases and on completion, will generate in excess of R5 billion in foreign revenue for South Africa.

"SWCC controls about 40% of the desalination plants in the world and owns and operates 27 such plants in Saudi Arabia, producing in excess of 6 billion litres of desalinated water for the country each day.

"Saudi Arabia is investing ahead of the future demand caused by population growth, replacement of ageing infrastructure as well as an increase in urbanisation. The prolonged low oil prices compelled Saudi Arabia to consider the latest technologies that would provide desalinated water at the most cost effective prices," Steyn said.

A delegation from SWCC visited GrahamTek late last year to evaluate the company's technology. After due consideration and adjudication, the contract was awarded to the South African company.

"We will now commence with phase one, with a view to complete the entire contract over the next 18 months. The contract will be executed in conjunction with a GrahamTek consortium of major international engineering firms that will construct the various



phases within the time frame and design parameters," Steyn said.

The contract follows the PSG Group putting its weight behind GrahamTek last year by way of acquiring a controlling interest in the company via Energy Partners, a part of the PSG Group and leading supplier of sustainable energy solutions in South Africa and Africa.

GrahamTek has over 20 years of experience in desalination and waste water treatment. Two years ago, the company was restructured from a family-owned business into a corporate entity with a strong focus on the international market.

The company was last year contracted to do consultation and optimisation work on the four largest desalination plants in the world, producing more

than 4 000 million litres of water per day. GrahamTek engineers identified opportunities to reduce the cost of water production by more than 20% and to improve the reliability of the plants in the process.

"Based on the successes achieved with this work done, SWCC asked GrahamTek to design a modular desalination plant optimised for their local conditions. This resulted in the contract we received today," Steyn added.

Steyn said that GrahamTek's technology is ideally suited for the South African environment. "We are a proudly South African company and well positioned to provide solutions for the Cape Town water crisis".

GrahamTek is also engaged with contracts in India and Ghana.

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## Inhibiting scaling and corrosion on heat transfer surfaces

ALLMECH was founded in the mid 90's and originated as a steam and hot water boiler manufacturer that soon branched out into manufacturing and supplying the water softeners and chemicals to their customers to ensure optimal utilisation of the boilers.

In addition to high quality equipment and chemicals is a skilled technical team that specialises in servicing the equipment and maintaining the softeners on a regular basis. Monthly tests and tailored maintenance programmes are developed for each customer's specific needs and requirements.

Allmech's water treatment division specialises in the chemical treatment of boilers and cooling systems to inhibit scaling and corrosion of heat transfer surfaces, as well as the building and supply of

water softeners, chemical dosing systems and TDS controllers to suit various industrial needs.

It manufactures and supplies cost effective chemicals to save its customers from unnecessary damage and maintenance costs. Its vast range of customers include food processing plants, tyre manufacturers, meat plants, bakeries, hospitals, farmers, pharmaceutical and cosmetic companies amongst others.

Allmech is the official agent for Runxin®, multi-functional flow control valves for water treatment systems, in South Africa as well as being qualified to service all other major brands of softener control valves. It supplies a full range of filter and softener valves; electronic as well as manual, ideal for various applications. Allmech is fully

equipped to test, service and repair valves locally. Spares are readily available and all technicians are trained and equipped to carry out minor repairs on-site.

Another added benefit that Allmech supplies is a comprehensive range of ceramic ball valves. These valves are non-corrosive and are chemical resistant. This allows for a much more durable and reliable product that is also very cost effective with an extended service life.

These valves are manufactured to open and close easily with the ceramic ball as the core sealing part minimising friction and providing better corrosion and dirt resistance. The ceramic ball valves are available in manual or motorised units and in different configurations.

## Flushing with up country water – unsustainable

THE policy of taking water from the agricultural areas of the country and flushing it down city toilets is unsustainable, especially in coastal areas, says the Cape Chamber of Commerce and Industry.

The Chamber made this point in a letter to the Department of Water and Sanitation which is developing a master plan for the future.

Ms Janine Myburgh, President of the Chamber, said there was convincing evidence that the desalination of sea water on an appropriate scale was now both viable and necessary in coastal towns. "One of the proposals made to the Cape Town City Council was to build a large desalination plant to produce about 250 million litres of water a day, about 30% of Cape Town's needs in a normal year. When this desalinated water was blended with 70 % dam water the result would be an increase in tariffs of just 6.54%."

She said the offer was in line with the highly successful process used by the Department of Energy to attract independent power producers. "In terms of this process the desalinating company would design, finance, build, operate and maintain the plant in return for the City's commitment to purchase the daily water output for an extended period of about 20 years."

Ms Myburgh said the

increased cost of desalinated water could also be offset by the lower cost of recycled water, especially for industry.

The use of desalinated water in coastal regions would mean that more water should be available for agriculture and food production. She pointed out that agriculture had made considerable progress in using water more productively. Drip and micro irrigation systems as well as tunnels and shade cloth had produced bigger harvests with less water. Agriculture deserved more water to enable more and better food production which would, in turn, create more jobs and export earnings.

"The recycling and reuse of water must be increased to get maximum value from our water resources. In Cape Town, for instance, only six percent of water is recycled in a normal year. The other 94 percent is discharged into the sea, most of it treated to a safe and acceptable standard."

Ms Myburgh said this was one of the important lessons to take from the drought in the Western Cape and "we believe the time has come to set recycling targets for all cities and towns and to increase these targets as progress is made. We believe increased water reuse should be a fundamental part of any future water and sanitation plan."

DESALINATION may be one answer to tackle the shortfall in fresh water in the Cape, but achieving high quality potable water through this method needs several stages of treatment. Bacteria and algae that are present in sea water cause growth of the microorganisms in pipework and will directly affect the normal operation of seawater desalination equipment. Typical oxidising bactericides - liquid chlorine, sodium hypochlorite, copper sulphate and other chemical agents are dosed to effectively kill off the microorganisms prior to further treatment and processing.

Chemical dosing at many desalination plants often tends to be overlooked, until plant problems caused by plant malfunction become apparent. It should be remembered that, for whichever chemical is chosen for the seawater treatment process, dosing level is of prime importance. Each chemical has an optimum dose level to prevent plant damage, but without excessive costs caused by overdosing. And significantly, these remote plants have low staffing levels and so maintenance is performed infrequently.

Although various types of chemical dosing pumps exist, 62% are solenoid or stepper motor driven diaphragm

pumps. It is known that conditions such as pressure, running speed, product viscosity, temperature and various others variables, affect flow accuracy in the majority of diaphragm pumps employed for chemical dosing.

Loss of prime and off-gassing to the point where bubbles get into the diaphragm and cause vapour locking, are typical issues which frequently mean that chemicals are over or under dosed with subsequent additional chemical dosing required to balance the effect.

Vapour locking is not the only problem when pumping certain chemicals either. Many are abrasive or chemically aggressive, causing diaphragm pump parts to wear or seize and require maintenance downtime.

Growing numbers of plant designers and contractors are turning

## Peristaltic pumps for chemical dosing duties



to peristaltic pumps for these remote chemical dosing duties. The Qdos range of chemical metering pumps fitted with ReNu pumpheads from Watson-Marlow Fluid Technology Group, have no valves, seals or glands in the fluid path, so are not affected by air entrainment or abrasive/corrosive fluids such as those found in

water treatment. Delivering flow rates that remain constant right up to 7bar Qdos pumps give users a unique advantage over diaphragm metering pumps by cutting chemical costs through higher accuracy metering. They also provide simple drop-in installation and eliminate the need for ancillary

equipment, providing further savings.

WMFTG's new Qdos 20 is inherently designed to reduce maintenance. For example, the ReNu pumphead features an integrated leak detector that shuts off the pump to protect it in the event of any type of failure. Moreover, if the tube fails, operators just quickly and safely replace one component, the pumphead, without the need for tools or special skills.

The new pump has been developed to offer optimised performance life in sodium hypochlorite applications up to 7 bar at flow rates from 0.005-20 litres per hour. It is especially suitable for applications at the sites of many smaller water treatment and desalination plants, where operators benefit from accurate and repeatable linear flows, with greatly reduced downtime and spares inventory.

## Water Tracker shows where Cape Town's water goes

EIGHTY20 Consulting has released an interactive data visualisation which draws on the latest available water consumption data to show how much of Cape Town's water each suburb uses. The Water Tracker also provides up-to-date dam-level data highlighting the declining trend in Cape Town's dam capacity since 2012.

The Water Tracker aims to educate and inform people about the current water crisis by providing access to data that has, to date, not been provided in a suburb-level view. It is intended to help facilitate fact-based discussions and ultimately make people more aware about the current crisis.

The tracker uses median data of household water usage from December 2017 and com-

pares it against the December target of 10.5kl per household (assuming 4 people per household at 87.5l/day). The tracker will be updated as new data becomes available.

The visualisation reveals that high-income areas with larger estates, such as Bishopscourt, Clifton, Camps Bay and Fresnaye tended to use more water, and were exceeding targets, despite having decreased their water usage dramatically from the beginning of 2017. Conversely, lower income areas along the N1 near the airport tended to have high water usage, including Manenberg and Gugulethu. However as data only includes free-standing houses, it doesn't correctly account usage in informal housing. This means that the formal free-

standing households were exceeding their water usage targets, but information about informal households is inaccessible.

Suburbs that reliably used far below target are those on the Cape Peninsula, including Muizenberg, Kalk Bay, Fish Hoek to Simon's Town, as well as Kommetjie and Scarborough. Certain suburbs near the CBD are also below target, including Vredehoek and Tamboerskloof. The southern suburbs along Victoria road, stretching from Observatory to Diep River, also tend to keep water usage below target at a moderate level.

The suburbs that had the best reduction in water consumption for December were Tamboerskloof, Meadowridge and Greenville Garden City.

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## Safe water from corner shop?

Sweden's Bluewater joins forces with local company to improve generation and availability of clean drinking water and to decrease prevalence of single-use plastics

SWEDEN's global water technology company Bluewater has made a significant investment in I-Drop Water – a South African water solutions provider – to provide better access to clean drinking water and slash single-use plastic bottle use.

Bluewater, which sells its advanced water purifier solutions across Europe, the USA, China and South-East Asia, said the investment marks the launch pad for the company's continued expansion throughout Africa. I-Drop Water designs, builds and installs drinking water purification and dispensing machines in general grocery stores at no capital cost – shares ongoing revenue from water sales with store owners.

"Bringing I-Drop Water into the Bluewater family strengthens the fast-track approach to bringing our water solutions technology market proposition to South Africa and elsewhere in Africa," says Anders Jacobson, co-founder

and CEO of Blue AB, the Swedish investment company that owns Bluewater. He notes how Johannesburg-based I-Drop has quickly built a strongly growing market position in South Africa, Zimbabwe and Botswana, a presence Bluewater is committed to help grow in the long-term.

### Better access to drinking water

While Bluewater specialises in water purification solutions for home, commercial and public drinking stations, I-Drop designs, builds and installs drinking water purification and dispensing machines. Together, the two companies will improve local access to water purification solutions that process almost any source of water – greywater, rainwater and borehole – into drinkable water.

Formed in 2015 by husband and wife team James and Kate Steere, I-Drop uses nano-purification water filtration technology and a GSM-

enabled platform to empower grocery store owners to purify and sell safe, affordable drinking water to their customers. Shoppers refill multi-use containers and pay by the litre for the drinking water they need, an innovative approach that saw the couple win the 2017 AllAfrica Business Leader Award – Innovator of the Year, hosted by CNBC Africa and Forbes Africa.

"Thanks to I-Drop Water more people can afford safe drinking water, less plastic waste is produced and local economies benefit by supporting their local grocery stores," said I-Drop co-founder, James Steere. He added the partnership with Bluewater aligns perfectly with I-Drop's business vision and mission and will enable I-Drop to accelerate its rollout and ongoing contribution to job creation in both the water and service sector as well as help spur further technology innovation in South Africa and beyond.

FIBERTEX Controlled Permeability Formwork (CPF) liners are designed and manufactured for concrete surface enhancement in diverse applications, including highly aggressive environments.

Typical applications of Fibertex Formtix® CPF liners are in drinking water tanks, sewage and water treatment plants, settlement tanks, container terminals, bridges and tunnels, marine structures, as well as dams and sluices.

Formtix is a two layer CPF liner, consisting of a drainage layer that allows water and air to escape and a filter layer with a pore size designed to retain cement particles. When surplus water and air is drained from the surface of the freshly poured concrete during compaction, the water/cement (w/c) ratio in the concrete cover is reduced. This results in a denser and stronger concrete, with a blemish-free surface.

Formtix also reduc-

## Concrete surface enhancement

es the formation of blowholes and other blemishes on the concrete surface that normally require extensive deburring after the formwork is removed. The smooth, dense and strong concrete cover is dust-free and because there are no release agents, it is an ideal prepared base for further surface treatment or coatings.

The main functions of these robust geosynthetic materials are to improve the durability of a concrete structure, to extend its service life and reduce maintenance costs," explains Clive Hitchcock, CEO, Fibertex SA. "Formtix CPF liners, which are suitable for all shapes of concrete elements, ensure high quality, durability and low maintenance of concrete elements.

"The chemical and mechanical resistance of concrete structures of sewage plants and settlement tanks are important factors for con-

sideration. The concrete face, which is in constant contact with wastewater, needs to withstand the penetration of aggressive substances and high-pressure cleaning procedures.

"In drinking water tanks, mechanical resistance of the concrete is also imperative, as the concrete face is subjected to high-pressure cleaning and, because micro-organisms flourish in voids and feed on oils, it is critical that the concrete surface is smooth, uncontaminated and free from blowholes.

"A recent application for Formtix was at a large container terminal – a heavily reinforced structure exposed to high chloride, CO<sub>2</sub> and moisture levels, as well as elevated temperatures. This dense, yet workable concrete CPF liner, provided a fast and safe workflow. Other benefits are extended service life of the container terminal and minimal

maintenance costs.

"Typically, the ingress of chemicals, moisture and general degradation, is reduced by more than 50% with Formtix CPF liners."

Formtix CPF liners, which reduce micro-bacterial growth, are a highly efficient alternative to slip agents for fresh water supply structures. CPF liners also minimise the penetration of graffiti media, making it easy to remove from a surface.

Formtix is designed for tensioned, glued or self-adhesive mounting to vertical or inclined surfaces. Once Formtix is attached, concrete casting is performed as usual. These liners can easily be removed from the concrete during formwork striking.

Fibertex, which celebrates 50 years of business this year, manufactures the only non-woven UV stabilised virgin PP geotextiles in Africa, with certification for durability of over 100 years.

## No 'pipe dream': trenchless pipeline rehab

WHILE there is an urgent drive to conserve water, much of the country's usable water resource is lost through leaks in municipal pipeline networks; as well as through leaking sewers and storm water pipelines, with the attendant negative environmental impact.

Conventional methods of repair involve digging up old pipelines and replacing them. However, in highly dense urban and peri-urban areas, this is often an almost impossible task, as it involves major and costly disruption to other infrastructure along the route of the pipeline.

"As Aegion South Africa, we circumvent this problem through the application of our tried and tested, proprietary international trenchless technology. The application of this technology achieves permanent, stronger and safer solutions for the rehabilitation of pipeline infrastructure – combined with excellent local experience and expertise," says Johann Scholtz, General Manager of Aegion South Africa.

Scholtz explains that Aegion South

Africa's shareholders are Robor South Africa (40%) and the US-based company Aegion (60%), a widely recognised in the field of proprietary trenchless technology solutions and pipeline rehabilitation. Its capabilities encompass the fields of pipeline rehabilitation, services to new pipelines, the restoration of the pipeline integrity, cathodic protection, structural reinforcement and refinery maintenance.

"Furthermore, our local partner Robor manufactures longitudinally-welded steel tube and pipe; and a range of steel pipe and customised conveyance pipe solutions which provides complete piping solutions to the infrastructure market," Scholtz says.

Aegion in the US is the parent company for Corpro, Insituform and United Pipeline Systems. These infrastructure brands provide proprietary technologies and services for the corrosion protection of industrial pipelines and for rehabilitating and strengthening sewer, water and mining pipeline infrastructure. Aegion South Africa has access to these

technologies and the intellectual property (IP) supporting them.

The South African business has two main focus points:

- Cured-In-Place Pipe (CIPP) pipeline rehabilitation
- Hydro-transportation, (the conveyance of solids by pumping)

"CIPP presents a cost-effective and extremely fast method of restoring pipeline integrity. This replaces and is vastly superior from a technology and cost perspective to conventional 'dig and repair' methods of pipeline rehabilitation. Aegion-branded Insituform is especially suited to provide long-lasting quality solutions in the execution of CIPP rehabilitation projects.

"Since inception, we have completed a number of successful pipeline rehabilitation and hydro-transportation projects," Scholtz advises.

Aegion South Africa recognises the importance of forging strategic partnerships in order to effectively enable and execute its infrastructure rehabilitation projects.

"At the centre of any

project, we provide the local technology and expertise platform and footprint; and in so doing, already have a successful track record of close collaboration with several capable, professional empowerment partners with substantial hands-on experience," says Scholtz.

"Typically, rehabilitating a pipeline under a major urban highway would rate as a highly disruptive dig and repair job. Insituform enables completion of such a project in just four days – with no inconvenience to the road authorities or the public."

Aegion South Africa also has substantial local experience and expertise in the field of hydro-transportation. This involves pumping solids through the pipeline in a fluid medium such as the pumping of high specific-gravity paste tailings.

"We are now able to offer South Africa – and the rest of the continent – proprietary, innovative and high-quality rehabilitation solutions for leak-free, environmentally-friendly, stronger and safer pipeline infrastructure going forward," he concludes.

## Fluence containerised desal



CONVENTIONAL wisdom assumes that a desalination plant must be a massively large structure that will take many years to develop, and cost billions of rands to construct. "That is the old model for these sorts of plants, but it is not the only model," Fluence Corporation Managing Director and CEO Henry Charrabé comments.

He highlights that the company's Smart Packaged Plants offer a cost-effective 'plug-and-play' solution, thereby avoiding the time-consuming and costly inefficiencies associated usually with largescale infrastructure projects, thus providing a viable solution to Cape Town's water worries.

Charrabé explains that the units, sold under the brand name NIROBOX™, guar-

antee an immediate source of fresh water at a manageable cost for authorities. The plants allow for remote monitoring and operation, which aids operators in reducing their operational expenses substantially.

Point-of-use decentralised plants require short and limited in-ground infrastructure, resulting in savings of around 25% on capex and 40% of opex costs for new installations and upgrades. Localised water treatment and reuse avoids the need for a large installed base to transport water from source and return the treated water, which reduces overall water and energy demand.

Furthermore, Charrabé points out that Fluence already has an operating NIROBOX™ facility installed and operating

in KwaZulu-Natal. "This demonstrates clearly that we have the technology and the economics in place to make this work. The KwaZulu-Natal installation has successfully been delivering fresh water for over a year already," he comments.

This high-output desalination plant was urgently needed to solve an acute potable water shortage in KwaZulu-Natal. Fluence supplied ten modular NIROBOX™ containerised seawater desalination units to produce 20Ml/day of potable water. These units were built, delivered, and installed in just four months.

Fluence has at least two dozen NIROBOX™ units in its inventory – each NIROBOX™ can produce 1,5Ml of fresh water per day.

## Desalination - integral part of future water-source mix

DESALINATION must form part of the future water-source mix in a large coastal city in a water-scarce environment like Cape Town. However, it must be carried out responsibly from an environmental and financial perspective.

The impact of higher water tariffs to fund water augmentation schemes will be long-lasting, and may be a future burden for ratepayers, especially when the drought is past, Hatch's **Pieter de Kock** cautions.

Desalination of seawater is carried out by means of reverse osmosis (RO). This is a process whereby salt water is passed through a very dense membrane to strip the water molecule of salts and other minerals, leaving demineralised water that is further treated before it is fit for human consumption. "It is expensive to carry out reverse osmosis on a large scale, and very energy-hungry due to the high pressures required," de Kock notes.



There are also significant challenges to transport millions of litres of treated water from the coast to the main reservoirs to distribute via the existing distribution network and new large diameter pipelines and pump stations will be required. The relative unit cost per kilolitre of water produced could be up to three times more expensive than surface water depending on the relative location and cost of connecting infrastructure. The impact of brine discharge on the environment and coastal

areas must also be taken into account, and detail coastal modelling studies are required.

The City of Cape Town is currently investigating largescale desalination for Cape Town. It is constructing a number of smaller-scale desalination plants, which is anticipated to deliver the first two million litres of an expected seven million a day by March 2018.

Hatch is managing a R60 million emergency water augmentation project for the Stellenbosch Municipality in the Western Cape.

## Water Saving Toolkit for commercial properties

SEAN Paul, Executive Director of Spire Property Management says that it can be challenging to speedily change water use behaviours amongst employees in an office building because they are not directly singled out in the total water usage figures for that building as they are in their own homes. Even more so are the habits of customers through a retail space – which may have hundreds of feet through its doors every day.

Paul unpacks the Water Saving Toolkit that Spire has developed which provides a list of the practical and tangible options available to landlords in order to slow the flow of water within a commercial building.

### Immediate Interventions

"I would term all of the below as 'low hanging fruit' that can be eas-

ily and cost-effectively implemented within a commercial property, before even looking at the complex and costly technology that can be employed to reduce water consumption."

These are some of the measures that Spire as property managers are rolling out on behalf of their clients:

- Turn off or limit the irrigation of gardens or replace landscaping for succulents and other water wise plants and install synthetic lawn.
- Adjust the flush valves to reduced flow in toilets.
- Adjust the water flow duration and pressure from the basin taps if the taps are automated.
- Turn off all water features and fountains.
- Install aerators on the bathroom taps.
- Consider turning off the water to the hand basins and provide waterless hand

sanitiser.

- Convert urinals to ones that are waterless.
- Place locks on all the external taps to avoid abuse.
- When draining fire protection systems (sprinklers) water must be redirected into tanks or inflatable storage then pumped back into the system afterwards or used in other applications.
- Make use of contractors who use harvested rain water for window cleaning or other cleaning.
- Communications can be sent to all tenants informing them of mandatory water saving measures that they must adopt whilst at the work place.
- Install pre-paid water metres for tenants that are high water users – such as a car washes, gyms, restaurants, hair salons etc.

Further water saving measures – level of capex required

- Install rain water harvesting initiatives
- Redirect the sump water from underground basements to be used in the buildings
- Install grey water solutions to facilitate a re-use of all available grey waterless
- Have boreholes installed at the property
- Amendments can be made to air conditioning and HVAC systems in order to harvest the water generated through these technologies

Although the above comes with larger costs to the landlord, they do in turn future proof the building, bringing it in line with global trends towards increased sustainability in the built environment and improving the overall value and desirability of the building as an asset.

## Sea Harvest leading the way in water resource management



A desalination plant installed at JSE-listed sea food company Sea Harvest's internationally accredited Saldanha factories includes, Dissolved Air Flotation (DAF), Ultra Filtration (UF) and Sea Water Reverse Osmosis (SWRO) systems to treat effluent or sea water, and will provide the company with all the water it requires, said Sea Harvest operations director, Terence Brown, on 22nd March at the launch.

"The most important deliverable of the



An aerial view of Sea Harvest's 1.15 mega litre (ML) desalination plant.

plant is 1.15 ML of potable water per day. This will ensure that there is no disruption to our business, we remain sustainable and profitable and, importantly, protect jobs."

The quality of the water produced by the plant will conform to the South African National Standard (SANS 241-1:2015), as the requirement for potable water.

The quality of the water will be monitored continuously through the online plant instrumentation as well as the ImproChem quality management system and as a second tier through Sea Harvest quality management system.

Sea Harvest's operation is National

Regulator for Compulsory Specifications (NRCS) and European Union accredited and, to retain this accreditation, stringent food processing requirements include the use of water.

The fresh fish processing and added value factories, based at the Saldanha Bay Harbour, are dependent on municipal water to remain operational. Sea Harvest uses municipal water for factory hygiene, primary and secondary fish processing, human consumption, washing bins & tubs, production of ice, and fresh water supply to vessels.

"This natural resource is, therefore, a key component of Sea Harvest's operations," he said.

The municipal potable feed to Sea Harvest was reduced by 35% between March 2016 and December 2017. However, as a large water user in the municipality, the risks of a loss of water supply, and the associated jobs, prompted the company to build the plant, said Brown.

The desalination plant will replace the municipal feed and process used factory water and sea water as a blended feed. With all process water now being self-supplied, the water availability to Sea Harvest will now be limited to plant throughput, said ImproChem Engineered Solutions executive director, Sepadi Mohlabeng.

"The first step of the process includes liquid-solid separation by means of mechanical screening followed by Dissolved Air Flotation. Further fine solids removal will be done by means of ultra-filtration. This filtration technology will also ensure dissolved organic removal. Finally the dissolved solids (Salts) will be removed through the high pressure Sea Water Reverse Osmosis system to produce potable water.

"With the high energy costs associated



Sea Harvest Sales and Marketing Director, Konrad Geldenhuys; Sea Harvest Operations Director, Terence Brown; Mayor of the Saldanha Bay Municipality, Alderman Marius Koen; Western Cape Economic Opportunities MEC, Alan Winde; Improchem Executive Director, Sepadi Mohlabeng; Improchem MD, Graham Saunders and Deputy Director General: Economic Opportunities, Rashid Toefy.

with desalination, an Energy Recovery Device (ERD) is installed in the system. This technology reduces the power consumption in terms of kW/m<sup>3</sup> by 30% - 50% depending on the feed source of the water, explains Sepadi Mohlabeng.

The plant will supply potable water to the factories, including fish processing, cleaning and sanitation, and general use.

Some of the measures that have been implemented to reduce Sea Harvest's consumption of water, include the following:

- Installed sea water supply line for Eco-wise (our cleaning service provider) to connect to the water pump system in order to do initial rinse using sea water;
- Hygiene water pressure increased to reduce the volume required;
- Increased inspections of freshwater lines

- and reduced the time to do any repairs;
- Daily monitoring and reporting of freshwater consumption in factories;
- Identification of freshwater leaks in facilities and remedial actions carried out ASAP;
- Meetings held with Saldanha Bay Municipality to discuss effectiveness of municipal flow meters;
- Meetings held with key stakeholders, including the Western Cape Premier and Saldanha Bay Mayor's office;
- Installed nozzles on freshwater lines to reduce consumption;
- Installation of seawater line to hose down outside areas.

[www.seaharvest.co.za](http://www.seaharvest.co.za)

## UN embraces nature for water management solutions

THE UN is looking to nature for solutions to manage water better to meet the demands of a growing global population and climate change.

The UN's annual 'World Water Development Report 2018', underlines that working closely with nature to support a "resource-efficient and competitive circular economy", could be achievable.

Climate Action Programme explained that this will entail mimicking natural processes such as soil moisture retention, building large

new wetland areas, and restoring floodplains or green roofs.

### Water management solutions

Audrey Azoulay, the Director-General of UNESCO, which worked on the study, explained: "We need new solutions in managing water resources so as to meet emerging challenges to water security caused by population growth and climate change. If we do nothing, some five billion people will be living in areas with poor access

to water by 2050.

"This Report proposes solutions that are based on nature to manage water better. This is a major task all of us need to accomplish together, responsibly so as to avoid water related conflicts."

The report notes that through incorporating techniques found in nature, it can have environmental, social and economic benefits and help achieve the vital Sustainable Development Goals into the 2020s.

Gilbert F. Hounbo, Chair of UN-Water

and President of the International Fund for Agricultural Development, commented: "For too long, the world has turned first to human-built, or "grey", infrastructure to improve water management. In so doing, it has often brushed aside traditional and Indigenous knowledge that embraces greener approaches.

"Three years into the 2030 Agenda for Sustainable Development, it is time for us to re-examine nature-based solutions to help achieve water management objectives."

## Cloud seeding technology to maximize water availability



CLOUD seeding is the process of applying chemicals such as dry ice or silver iodide to clouds in order to stimulate precipitation, thereby creating rainfall. This is done through the creation of ice crystals from cloud droplets in a super cooled state. The chemicals are dispersed using light aircraft fitted with flares that distribute the chemicals over gathered clouds. The cloud droplets react with the silver iodide or dry ice and form ice crystals that are too heavy to stay suspended in the air and they then melt and fall, creating rain.

"At its essence, this process alters the microphysical processes within the cloud," explains Franco van der Merwe, Managing Director of Water Analytical Services

(WAS). "This process has been used all over the world for decades now and we believe that South Africa can benefit from using this technology to enhance rainfall where it is needed most."

The use of cloud seeding is growing worldwide with recent journal reports indicating that the global cloud seeding technology market is set to grow substantially by 2024. In fact, in 2016 56 countries around the world had cloud seeding operations. "We are witnessing a decline in the rainfall rate across the globe due to global warming and pollution is increasing the threat of draught conditions globally," says Van der Merwe. "Looking at case studies around the world, we have seen how effective this technology is. It has the capability to provide much needed water security for farmers who would see the benefit of proper rainfall needed for their operations and decreased risk. This may even have a wider benefit to the insurance needed for crops."

There are numerous cases backing up the effectiveness of cloud seeding worldwide. In one case, a team of scientists from the National Center for Atmospheric Research spent three years seeding clouds in the drought-stricken northern Mexican state of Coahuila. They found that rainfall from seeded clouds

lasted longer than rain from unseeded clouds, the rainfall covered a larger area, and that the total precipitation was higher – sometimes even doubled. In many cases, they reported that results began just 20 minutes after the seeding.

According to van der Merwe, cloud seeding has potential beyond creating rain. "The usual intent is to increase precipitation, but cloud seeding technology also has advantages for weather regulation and curbing pollution."

Practical examples of this are evident in hail and fog suppression – achieved with cloud seeding – that is widely practiced in airports. Major events have also benefited from this technology. At the 2008 Beijing Olympics in China, officials used cloud seeding to ensure that it rained before and not on the night of the opening ceremony – and throughout the event from there to secure favourable weather conditions for the games. In 2017, cloud seeding was used in Dubai that achieved 30% more rainfall for the area.

The practice has been used on an ongoing basis since then with positive results and the team responsible was recognized for their ground breaking work in January 2018 when they received an award from the UAE Research Programme for Rain Enhancement Science.

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# Waste no longer, or go without

**Arnaud Malan,**  
**Technical Director:**  
**Water, WSP, Transport**  
**and Infrastructure,**  
**Africa**

WASTE no longer, or go without! The message towards all consumers of water – industry, business, residential and agriculture - needs to be clear and definite if we are going to adapt to the “new normal” and effect lasting positive change in consumption behaviours; to protect remaining and future water resources.

South Africa is classed as the 30th driest country in the world and it has a high within-season variability of rainfall and uneven distribution of rainfall (43% of the rain falls on 13% of the land). This means that even during a good year of average rainfall the country’s water resources are already stretched in some regions. The direness of the arid situation now has certainly been exacerbated by extreme weather conditions in recent years, however, the current drought alone cannot be blamed for the present water crisis. Droughts typically move in cycles – where every decade or two the whole water system goes into ‘crisis’. But, this sense of crisis that we are feeling now has further been intensified by two fundamental problems; inadequate infrastructure management and wasteful water usage.

Maintaining infrastructure networks

The infrastructure challenge is two-fold; firstly, despite the fact that no less than 21 million people have benefitted from a basic supply of water since 1994, there are still many areas around major cities or towns in South Africa that are underdeveloped and have limited access to clean running water. A study of 905 towns, (excluding metros and large cities,) found that 28% have inadequate water resources. On the other hand, with urbanisation and industrialisation across the country, demand for water services has grown at a faster pace than the infrastructure. And, in those more developed areas, much of the existing water infrastructure is rapidly ageing and hasn’t been maintained to standards that would ensure maximum efficiencies. In fact, up to 35% of the country’s water is lost due to leakages in the infrastructure networks.

Then, if we review the Department of Water and Sanitation’s Draft National Water and Sanitation Masterplan (NW&SMP) it stress-

es that the remaining potential surface and groundwater sources is very limited. The stark reality is that without rain to replenish our dams and ground water resources, and unless something significant is done to improve water resource management and service delivery in

the country – the situation will only worsen.

Current projections forecast that without serious intervention we could face a 17% gap between supply and demand by 2030. This will have a significant influence on the country’s future economic and social sustainability.

Changing habits of wasteful water usage

For decades people have been using water as though they are living in a water-rich country, with little regard for conservation. To put this into perspective, average daily water use in South Africa is around 237l

per capita, which is much higher than the world average of 173l. For a water-scare country, this usage is too high and not sustainable. Hence the need for a clear message to reduce water waste. In the agricultural sector, which uses more than 60% of the water in the country, the biggest dif-

ference can be made through using more efficient irrigations systems and technologies.

If we look at Cape Town and the threat of a Day Zero, for example, possibly one positive attribute to come out of the water crisis is that the community – businesses, residents and agricul-

ture, alike – has learned to use water much more sparingly and responsibly. And, we can only hope that this learning will result in a lasting culture change towards sustainable water consumption habits - even when the emergency water resilience projects come online.



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## Who's been tickling the Sleeping Giant ?

ARE we seeing early signs of economic recovery in the Eastern Cape, asks John Valentine, Director at Real Telematics. Just recently I have been responding to more and more enquiries on the FMX Forklift Management System in Port Elizabeth and East London.

In particular, motor vehicle manufacturers and associate component suppliers, which are densely packed into the area, seem to be preparing for a boom by investing in equipment such as FMX, forklifts and other infrastruc-

ture. Or it could also be attributed to changes in the old guard, creating new efficiencies and getting rid of maintenance heavy equipment. For the trend to be so widespread, it certainly talks to astute reasoning.

Logistics companies servicing the motor manufacturers have arrived in strength and because they suddenly find themselves responsible and accountable for large (and small) forklift fleets, they turn to FMX to help them manage abuses and keep costs low. The knock-on affect in asset depreciation and tangible savings on Fuel, Tyres, and Batteries to name just a few elements is massively positive.

The IDZ areas at Coega and East London, are certainly

not full yet, but it is encouraging to see how many operations are already there and how many more are being built.

Naturally, such infrastructure changes also have impacts on staffing requirements. Nothing uplifts a community as powerfully as employment. Perhaps the gravy train has derailed at the station, and instead of the funds being siphoned off, they are actually being ploughed back into the area as they should be.

Whatever the cause, the Winds of Change are blowing hard in the Friendly City and adjacent areas. Regardless of where the winds are blowing you, FMX is positioned blow you away with world class service and economy boosting savings.

## KFC's save up to 20% with financed solar

KFC's across Port Elizabeth are the latest in a growing list of businesses joining the solar energy revolution with SolarAfrica. The solar energy solution provides an alternative to owning a solar system, offering fast-food franchises the opportunity to get cleaner energy without paying for the system. With SolarAfrica's clean energy solution, companies can go green and start saving from day one.

In October 2017, after a quick three day installation per site, four of KFC's Port Elizabeth outlets welcomed solar on their premises. Planning and timing was crucial as three of the sites operated 24/7, but with a dedicated team of installation partners and project managers all sites went live seamlessly with minimal down time and uninterrupted store time for customers.

Together, all four



solar systems will produce savings of up to R410 000 over the five year term with projected savings reaching over R2 200 000 throughout the full term contract. By embracing solar energy, the KFC outlets will positively impact the environment by saving more than 130 tons of CO<sub>2</sub> each year.

AKM Foods' Managing Director, Nishid Dosa, believes that it is every business's responsibly to lessen their

carbon footprint and do their bit for the country. "We looked at solar because of the synergy it has with us and our goal to reduce our carbon footprint. Solar also makes business sense in reducing the energy costs at our stores."

Kobus Van Tonder, African Programme Manager at SolarAfrica is excited about the latest solar installation at the KFC's and looks forward to the opportunity of advancing the systems at a later stage,

"There is certainly capacity to add more panels and up size the systems in the future, by considering alternative options such as carports or vacant land for the solar panels, we'd be able to increase their savings even more!"

With no capital investment required and significantly reduced energy bills, SolarAfrica continues to provide financed energy solutions for businesses throughout South Africa.





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## DEHN protects wind turbines

WIND energy is a clean and renewable form of energy, which is also drought-resistant and almost emission-free. However, as South Africa's renewable energy industry continues to explore wind energy as a potential resource, considerations around possible lightning strikes need to be factored in. Across the globe, whether on- or offshore, DEHN protects wind turbines against disturbances resulting from lightning currents and surges, and provides components and solutions relating to safety equipment.

The cost of construct-

ing and operating wind power plants must be amortised within the timeframe of an average 20 years of operation. Constant monitoring and foresighted maintenance are essential. DEHNdetect, available from lightning and surge protection expert, DEHN Africa, is designed to measure lightning currents and detects not only impulse currents but also the dangerous long stroke currents (ICC only events - Initial Continuous Current).

Damage resulting from a lightning strike does not necessarily



lead to the immediate failure of the turbine, and so lightning events often remain undetected. Especially in the case of upward flashes, the initial long stroke current flowing is only a few hundred amps, and this can be the main

cause of melting, for example on the receptors of rotor blades. The resulting subsequent damage can be severe.

DEHNdetect allows the operator to assess the situation and ask the following important questions: "Was the lightning strike harmless or does the turbine need to be switched off and inspected in order to rule out damage to the rotor blades or other components?"

As well as the total current in the system, DEHNdetect registers individual partial currents in the rotor blades.

The provision and management of data is simple and convenient via web applications (cloud). DEHNdetect allows for the monitoring of several plants or even entire wind parks.

DEHNdetect can be installed directly by the wind turbine manufacturer or retro-fitted in existing plants. Installation is quick and easy and can be adjusted to the specifications of the individual turbine.



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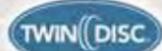
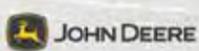
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# Kwikot going places

A household name in South Africa for more than 114 years as a supplier of electric hot water heaters, or 'geysers', Kwikot has evolved into a truly hi-tech energy supplier and, with the acquisition of the Kwikot Group by Swedish multinational home appliance manufacturer, Electrolux, a one stop-shop for kitchen and bathroom concepts.

"The heart of the Kwikot business is still in domestic and commercial water heating" said Paul Rawsthorne, Western Cape Regional division Sales manager, "but gone are the days of the simple energy hungry geyser that would probably only last five years."

The combined pressures of legislation, increased energy costs and environmental concerns of water and energy usage has led the world to exploit solar energy and produce machines such as heat pumps and gas appliances that are affordable for domestic use.

"South African legislation has caught up with the worldwide trends in hi-tech domestic and commercial water heating with the imposition of standards which dictate that

at least 50% of hot water requirements in new builds must be supplied by solar, heat pumps or gas installations. While electrically heated geysers are still permitted for the next few years at least, B rated energy products will be the preferred choice" he said.

Kwikot currently enjoy a 75% market share in the Southern African hot water supply industry with geyser sales in the Cape region alone of 4 500 per month and nationally, about 360 000 pa.

"We cater for the complete range of water heating solutions from the energy efficient superline 400 dual electric water heaters, through to a complete range of direct and indirect solar offerings and heat pumps, to a range of gas water heaters with all pipework, fitting and accessories for a complete, safe, reliable and energy efficient installation" explained Rawsthorne.

He commented that new and technically advanced products require expert installation and many people have been disappointed with results of hi-tech equipment installed by low-tech

installers. "To fully realise the potential of these new advanced products, it is essential that the home owner in particular only employs accredited installers and investigates the sometimes superlative claims made by the unscrupulous or technically inept installation companies. "This is the reason that we have an extensive showroom and training facility which is open to anyone to inspect, where we can provide professional advice of correct sizing and that supports a superior product range" he said.

The Kwikot range is truly extensive and energy efficient.

The superline 400 dual electric water heaters for example, are up to 50% more energy efficient than conventional geysers (B rated instead of D rated), are renewables ready for solar or heat pump retrofit and can be installed either horizontally or vertically. Long gone are copper inner cylinders, replaced by glass coated enamel fused to a steel core and surrounded by polyurethane insulation between cylinder and outer galvanised case-ment which is 128%

thicker than before, resulting in 50% better energy retention. Replaceable sacrificial anodes protect the inner cylinder from electrolytic degradation.

## Solar

On the solar front, two types of Kwisol solar heaters are offered – indirect – for frost locations and direct for frost free regions. Both systems offer solar collector panel and vacuum tube types in a variety of internally or externally mounted close coupled cylinder thermosiphon or solar pump powered configurations. Integral or retro fitted types are available in different capacities from 100 – 300 litres.

Cistern type solar installations have become a common sight in low cost housing developments where homes do not have an electric water heater or no access to electricity such as in rural areas.

## Heat pump

Kwipump are Kwikot's range of domestic and industrial heat pumps which heat water at about 1/3 of the cost of a conven-

tional geyser. Heat pumps operating cycle is the reverse of a standard refrigerator and has the advantage of extracting heat from the surrounding atmosphere, virtually irrespective of external air temperature. Heat pumps are used in conjunction with hot water cylinders or solar systems and are generally micro-computer controlled. An integrated heat pump / storage tank system is also available.

## Gas

The range of Gasmate forced and natural draft instantaneous gas water heaters is a popular alternative in certain situations where instant hot water is required for hand basins, kitchen prep bowls, wash troughs and bathroom wash ba-



Kwisol close coupled solar vacuum tube geyser.

sins. Forced draft units are mounted externally and are suitable for both showering and bathing, while the natural draft models can be mounted internally. Both types use LPG for heating which is ignited by an electrical impulse activated via a water pressure sensor triggered when a water

tap is opened. "We cater for any hot water requirement – residential, commercial or industrial – with quality products that have stood the test of time. Our showroom and training facilities are open to anyone – just call for an appointment" concluded Rawsthorne.

## Cummins, NRG Energy develop first-of-its-kind distributed generation platform

CUMMINS Inc. and NRG Energy of the US have announced a strategic commercial partnership to deploy a resilient, cleaner, and cost-effective distributed generation platform for commercial and industrial customers. This platform is the first-of-its-kind in the energy industry.

The easy-to-implement solution gives customers the opportunity

to transition to a smarter energy consumption model. The platform, with a preliminary estimate of hundreds of megawatts of capacity, or enough to power tens of thousands of homes, enhances customers' energy usage through Cummins-powered generators and NRG-distributed generation resource capabilities.

The companies esti-

mate that the solution will save customers up to 15% on their current energy costs, and in many cases with zero enrolment expenses. In addition to providing customers with more control over their energy future, the platform is expected to reduce environmental impact and power-grid stress significantly. Furthermore, the platform architecture al-

lows for more capacity to meet expanding market requirements.

The companies note that while the formal partnership is new, they have in recent years successfully implemented distributed generation models for several customers, and are now ready to bring this proven, cost-effective solution to a wider customer base.

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# Damen contracted for CSD 250 vessel

DREDGING Africa (Pty) Ltd has signed a contract with Damen Shipyards Cape Town (DSCT) for the delivery of a Cutter Suction Dredger (CSD) 250. Due to Damen's policy of series building standardised vessels, the CSD was in stock and available for fast delivery in March 2018. This will be the first Damen CSD to operate in South Africa. The contract for the CSD came about after Dredging Africa signed a memorandum of understanding with DSCT at the yard's first African Dredging Seminar, held in October last year.

Mr Arend van de Wetering, Director of

Dredging Africa said: "We are very happy to be working with DSCT for the delivery of this dredger. From the outset, the collaboration has been excellent; Damen have gone out of their way to create the opportunity for this project to be realised. They really thought along with us to create a solution that matches exactly our needs – including looking at various financing options that are available."

Damen Product Director Dredging Olivier Marcus concurred, saying, "We are very pleased to be delivering this CSD to Dredging Africa. The cooperation between us has been very fruitful and



we are looking forward very much to delivering the vessel in a short space of time. Dredging has enormous potential to open up new trading opportunities

in South Africa and we are proud to play our part in supporting this."

DSCT decided to host the African Dredging seminar,

understanding the importance dredging has for South Africa and the wider region. CSDs such as this also have the capability to maintain reservoirs

"Dredging has enormous potential to open up new trading opportunities..."

ensuring the supply of drinking water in the country. Damen has previously delivered a number of products from the Damen Dredging Equipment (DDE) portfolio to Africa. Dredging Africa intends to use its dredger on multiple contracts in South Africa and Southern Africa at large.

Damen's CSD portfolio features a range of standardised dredgers often built for stock and customised for individual client re-

quirements via the application of standard options. Damen has optimised its designs based on user experience. As a result, the CSDs offer an outstanding high production to low operating cost ratio, extreme ergonomics, low noise & vibration and a layout aimed at ease of maintenance. The modular nature of the design means that the CSD 250 can be transported easily, in just three containers, to the remotest of locations.

## DSCT to Inshore Patrol Vessels for the SA Navy



DAMEN Shipyards Cape Town (DSCT) has received an order from Armscor – the acquisition agency for the South African Department of Defence – for three Inshore Patrol Vessels (IPV), 62 x 11 metres. The vessels form part of the South African Navy's Project Biro. The project aims to develop South Africa's maritime security, ensuring that the country has the capability to respond effectively, rapidly and cost-efficiently to maritime threats such as illegal trafficking and fishing.

DSCT received the order exactly four years to the day that it received the order to deliver vessels for a previous project for the South African Navy – Project Canter. The yard is delighted to be able to continue to provide support to the navy, says Chairman Mr. Sam Montsi.

Mr. Montsi continues: "At DSCT we are not only about shipbuilding and repair, but also about providing people with the opportunities needed to reach their potential – whether they work for us or for one of our many local sup-

pliers – and supporting the country's economy. DSCT is about the development of an entire shipbuilding and related industries."

Naturally, with this philosophy in mind, DSCT will be sourcing as many components and services as possible for the project from South Africa-based suppliers. In this regard, DSCT plans to provide active support for the Government's Enterprise Supplier Development programme, supporting small and micro-businesses in the country.

The project will also actively contribute to the Department of Trade & Industry's National Industrial Participation (NIP) programme and the complimentary, defence-focused Defence Industrial Participation (DIP). In turn this contributes to the Government's Broad-Based Black Economic Empowerment (BBBEE) initiative. BBBEE is a Level-3 BBBEE rated company.

The IPVs will be the first vessels of a Damen Sea Axe design to operate in South Africa. The Sea Axe is a revolutionary, Damen patented hull design, which offers exceptional seakeeping behaviour.

The straight-edged, axe-shaped bow cuts through the water, minimising slamming for improved safety and comfort on board and significantly reduced fuel consumption and emissions.

### Building in Africa for Africa

Damen Shipyards Cape Town (DSCT) builds ships in Africa for Africa. To date, the yard has constructed and delivered 40 vessels to the African continent from its base in Cape Town, including offshore patrol vessels, dredgers, tugs, naval craft and platform supply vessels, some of which have been built for stock in order to ensure fast delivery. The DSCT Services & Repairs department has provided training, delivery, maintenance & repairs assistance to countries across the globe and especially to African countries seeking to source high quality services from South Africa.



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## PE volumes up - signals recovery



TRANSNET Port Terminals (TPT) recently reported that in the Eastern Cape region, its December 2017 volumes for both automotive and containers far exceeded their forecasts. According to Siya Mhlaluka, TPT's GM: Eastern Cape, the automotive sector recorded almost 100% more volumes handled than originally anticipated with 10 574 handled versus the budget of 5 133 Units which is 100% above plan for the month. He confirmed that PE con-

tainer terminal volumes of 13 906 units versus the predicted 9 735 units were 43% above plan for December.

"These are fantastic numbers and serve as a positive way to end off 2017 and start the New Year. We have attributed these inflated volumes across the two sectors to the demand from local and international markets, along with automotive investments made in the region. We are very proud of how our highly skilled and dedicated staff handled

these major volumes over the December period and these volumes are encouraging signs that we might be seeing a positive upturn in the economic climate not only in the region, but also for the country," stated Mhlaluka.

The National Association of Automobile Manufacturers of South Africa (Naamsa), seemed to echo Mhlaluka's positivity with projections of significant growth in vehicle production, exports and domestic new vehicle

sales for 2018. Despite depressed trading last month - which, among other economic factors, Naamsa attributed to model run-outs ahead of new model introductions, it reported a 1.8% year-on-year improvement in sales volumes for the first time in four years.

"The improvement, due to modest gains in new car and light commercial vehicle sales, was encouraging, given subdued economic growth, pressure on consumers' disposable income and low levels of consumer and business confidence," Naamsa said.

The PE Car Terminal is one of the best performing RoRo terminals in the ports system and has received numerous accolades for service excellence. The terminal is equipped with modern equipment and skilled staff that works with one berth, which has an operational capacity of 200 000 fully built units with 5 000 parking bays, a car wash facility and road / rail connectivity. It occupies 14% of the port land.

## SA's smallest commercial port set for further development

THE Port of Mossel Bay - South Africa's smallest commercial port and an important contributor to the economy of the Garden Route and Southern Cape - is set for further development under Operation Phakisa.



That was the message from Nico Walters, general manager: strategy at Transnet National Ports Authority (TNPA), when he addressed delegates from countries including Sweden, China and Singapore at the Garden Route Investment Conference held recently in George.

"The immense potential of small ports and harbours to contribute to economic growth is acknowledged in government's pursuit of using small harbours to attract investment in state coastal maritime, develop infrastructure and properties, grow businesses, create jobs and redistribute wealth," said Walters.

The Operation

Phakisa strategy, designed to unlock the ocean's economy, has resulted in upgrades and new facilities for ship repair as well as the development of oil and gas industry, to ensure that South Africa attracts its share of this business.

"The ocean's wealth translates into skills development, jobs, innovation, entrepreneurship and changing the country for the better," commented Walters.

TNPA's Section 56 programme and leasing policy also support transformation, opening up participation in port activities to businesses owned by historically disadvantaged individuals.

Walters said development plans for the Port of Mossel Bay would ensure that it continued to create economic growth in the region. "These include the establishment of a mixed-use waterfront development that will include retail, commercial and industrial facilities," he pointed out.

The Port of Mossel Bay is the only port operating two off-shore mooring points providing underwater vessel inspection, hull cleaning and salvage. The slipway upgrade that is in the pipeline will also support the local fishing and other industries.

Reprinted from ftw online

## Transnet to spend another R229bn on upgrades by 2022

Logistics efficiency remains at the heart of strategies implemented by Transnet National Ports Authority (TNPA)



SPEAKING at an Exporters' Club Western Cape function recently, Coen Birkenstock, TNPA corporate affairs manager in Cape Town, said ongoing investment as part of the Market Demand Strategy (MDS) was paying off across the country as efforts were being intensified by the state-owned freight and logistics company to deliver efficient logistics that would ultimately ensure South Africa's global competitiveness.

Birkenstock said already South Africa was improving in its rankings on the World Bank

Logistics Performance Index having scored 34th in 2014 and improved to 20th position by 2016.

"The MDS was in response to the country's quest for improved logistics and to make South Africa more competitive while also addressing the skills base."

Birkenstock said with R155 billion already spent and another R229 billion earmarked to be spent by 2022 the challenge was to maintain the gains recorded in logistics in the country.

"This includes

Transnet gearing up to diversify its services and activities in line with market needs."

Improved and increased connectivity was part of this process, he said, as were innovative and shorter responses to customers. "Transnet is often referred to as an elephant. We might move slowly, but we do so with power. We want to see this movement become slightly faster while retaining the power. It will not only be about freight logistics any more but about delivering the solutions."

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# Steering a course for growth

AMSOL invests in a robust talent pipeline. As a finalist in the Skills Development category at the 2018 Oliver Empowerment Awards which recognise exceptional contributions to sustainable transformation in South Africa, majority Black owned specialist marine solutions provider African Marine Solutions (AMSOL) is dominant in this niche market.

“We believe that investing significantly in the training and development of our employees, who are shareholders in the business, is what sets us apart in an industry that has high compliance, competence and skill requirements and competes for talent on a global platform,” comments AMSOL’s Human Resources Executive Nceba Mfini. He believes

that skills development is an important part of the company’s employee value proposition and contributes to the development of a high performance culture.

#### A market leader

AMSOL has 550 employees and is active in the Ports, Energy, Mining and Maritime sectors where it provides specialist marine

solutions to clients that include Shell, BP, PetroSA, De Beers, Sapref and the South African Departments of Environmental Affairs and Transport. Management and employees own 32% of the business and the company is 60% owned by Black South Africans.

With an accredited Cadet Training Scheme, seafarer Rating Training Pro-

gramme, Diver Training Programme as well as internships, AMSOL prioritises experiential training as an important component of talent development. The company’s tertiary bursary programme has included students of Maritime Studies and Marine Engineering as well as Oceanography and Climatology at Masters level, reflecting AMSOL’s

commitment to sustainability.

AMSOL values a diverse workplace and has recently partnered with training service provider Athena in Durban to invest in the training of young people living with disabilities. The company also offers learnerships to employees in relevant roles, supporting their career goals whilst at the same time increasing the value they offer the business and its clients.

under development.” It is this community spirit that supports a culture of learning and peer development at AMSOL, aligned with the company’s values.

Promoting maritime education & awareness

It is not just the development of its own employees that AMSOL believes is the key to transformation in the maritime sector. The company supports a talent pipeline that starts at secondary school level. There AMSOL funds bursaries for specialist maritime education partnering with maritime educators to develop both textbook and online resources to supplement learning for more than 1 500 learners at 25 secondary schools. Maritime subjects are offered in Kwa-Zulu Natal, Eastern Cape and Western Cape.

Nceba Mfini explains. “Over a three year period, we funded the development of Grade 10, 11 and 12 Maritime Economics textbooks and sponsored the distribution to learners across South Africa.”

Notes Nceba Mfini: “It is because of the importance of on-the-job exposure that we are a training community at AMSOL – with higher ranked seafarers playing an important role in mentoring, guiding and teaching those in lower ranks that are

The author, Balungile Masuku, is a South African entrepreneur and maritime educator – and her textbook has filled a vital gap in maritime education. AMSOL also worked closely with maritime educator Brian Ingpen to develop a freely available online resource for both learners and educators – located at [www.maritimesa.org](http://www.maritimesa.org). With localisation a priority as the company expands onto the continent, AMSOL is indeed Africa’s marine solution.



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African Marine Solutions (AMSOL) is a specialist solutions provider and partner to clients who operate in marine environments. As a market leader, AMSOL is the only marine solutions provider in the region that is employee and management owned, and is a catalyst for economic empowerment and shared value creation.

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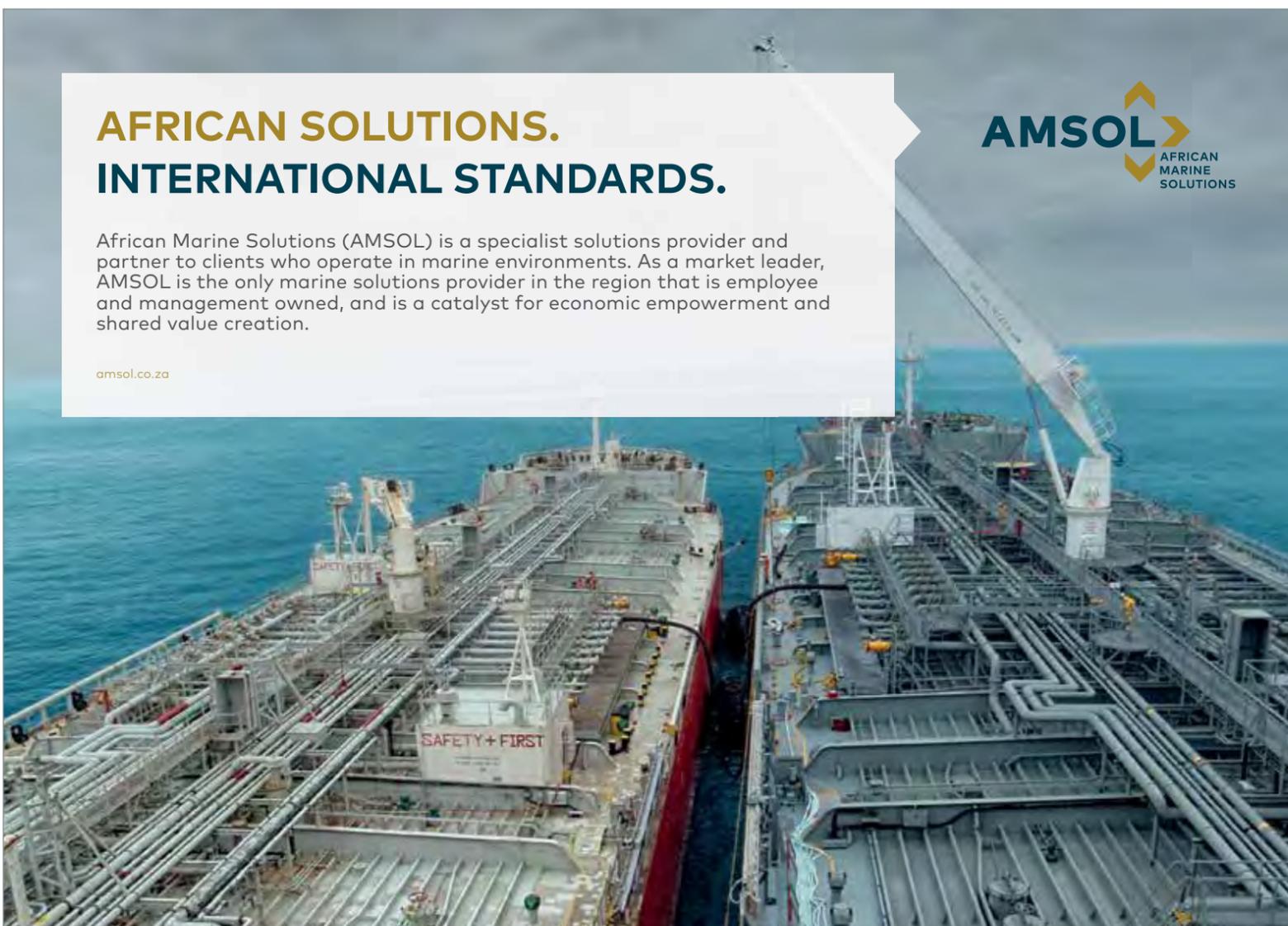
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## \$5 bn Nacala rail project starts

THE African Development Bank is taking the lead in facilitating one of Africa’s largest infrastructure project – the \$5 billion Nacala corridor rail and port project.

The Bank will support the project with \$300 million from its Private Sector Window.

The project will provide a 912km rail line from the Tete province western in Mozambique to the Nacala port on the eastern coast of the country, through Malawi. The Project also includes the construction of a deep sea port and associated terminal infrastructure at Nacala.



## AR welding simulator saves training costs

THE blue collar skills shortage in South Africa is estimated at around one million jobs. To meet this demand, training is essential, but the machinery needed is expensive. Providing theory and no practical training is insufficient.

To address this, a widely-acclaimed augmented-reality welding simulator is available in South Africa as a cost-effective alternative to traditional training that provides the same level of skills but offers significant cost saving that can run into millions of rands per annum.

“The Soldamatic welding simulator, which has won top honours at the Worlddidac Awards for the most innovative educational product, requires no costly welding consumables and reduces training time by half,” says Bez Sangari, CEO Sangari Education, sole distributor of the product.

“Consumables such as welding rods, steel



plates or oxygen are not needed, and because the equipment has no gas emissions, it is eco-friendly,” he says.

“In addition, the AR simulator can be used in any environment with no need for special clothing or ventilation. The welding can be done in a classroom or even an office. It is 100% safe, simply because it provides a augmented-reality welding environment. The system is based on augmented-reality 3-D vision through the trainee welder’s headgear.”

“Payback for a large training institution is about 18-24 months. The quick payback period is achieved because no consumables are used and there is no wastage of materials,”

Mr Sangari says.

The simulator consists of a hardware unit the size of a standard PC, with a built-in screen that allows the trainer to view the student’s progress in real-time, as well as the student’s welding process being recorded. The trainee wears the virtual-reality headgear which simulates a real-world welding environment.

The headgear generates realistic welding graphics such as the weld pool and beam. It emits simulated smoke, sparks and heating of the affected area, all through the student’s headgear. It also simulates cracks, filler material, gravity and undercutting.

“Welding skills can

be learnt for specific applications and the student’s performance measured in a fair, reliable and unbiased manner. The unit includes 93 different training lessons and customised lessons can also be added,” he added.

The facilitator and trainee are able to analyse and assess the trainee’s welding performance in a video afterwards and evaluate their skills level such as the welding velocity, stick-out, travel and working angles. The system will report on each student’s progress and retains a detailed portfolio of their learning progress.

The system supports SMAW, GTAW and GMAW processes and a variety of welding joints such as V-butt joint, Lap, T-joint, pipe to square butt joints and pipe T-joints and a variety of angle welding exercises. When required, maintenance and upgrades of the software can be done remotely.

## Fiber laser cutting technology



THE latest developments in fiber laser technology are taking sheet steel component production to even higher output and quality levels.

Bystronic – a provider of cutting and bending solutions – offers the steel industry productivity solutions by linking its flagship ByStar 10kW fiber laser to a ByTrans loader, it is now possible to automate production to a far greater level than was possible previously.

First Cut represents Bystronic exclusively in South Africa.

Bystronic’s 10kW ByStar Fiber laser is to date Bystronic’s most powerful laser on the market. The ByStar Fiber’s new cutting head will deliver the highest part output through the full spectrum of sheet thicknesses. It will also cut other ‘exotic’ materials such as aluminium, brass and copper without the need for deburring. In terms of productivity, the ByStar Fiber is up to five times faster than a 4kW CO<sub>2</sub> laser.

Even compared to a

6kW fibre laser, the time to complete a job on 6mm steel could be cut in half and the cost per part reduced by as much as 35%.

Innovative features include a newly developed ultra-fast bridge frame which is more torsionally rigid, gives greater accuracy and better edge quality. Bystronic’s detection eye technology identifies the edge of the sheet in six seconds, allowing cutting right up to the edge of the sheet with great accuracy. This significantly reduces a fabricator’s scrap rate.

However, the ByStar’s new levels of productivity could be diluted if the loading and unloading of the machine are not able to match its production rates. To maximise the ByStar’s productivity potential, Bystronic therefore developed a range of loading and unloading automation solutions. Notable among these, the ByTrans Extended loaders are linked to the ByStar and will au-

tomatically load sheets onto the laser’s shuttle table. After the cutting cycle is completed, they are able to unload finished parts and residual sheets.

The ByTrans requires only 60 seconds in which to carry out the complete loading and unloading cycle. This means that the automation system is always faster than the cutting plan that is being processed. For fabricators or manufacturers, this means that the laser can cut uninterrupted for an extensive period of time. While the ByTrans loads one shuttle table, the fiber laser is cutting components from the raw material on an alternate table.

The ByTrans and the ByTrans Extended are operated using the ByVision touch screen. Bystronic has seamlessly integrated the control of the two automation systems into the laser’s operating software, which enables users to perform all the operating steps on a single touch screen.

## Cryozone exposes cyclists

AIR Products is a key player when it comes to innovation and technology and a prime example of this is the supply of liquid nitrogen to their customer Cryozone for the process of cryotherapy. This intensive cold treatment, which was initially designed to treat circulatory diseases, has been adapted for use in rapid sport recovery and rehabilitation. Air Products provided the liquid nitrogen to Cryozone for the exhibition at the Cape Town Cycle Tour, which took place in Cape Town on Sunday 11 March 2018.

### Intense cold used for rapid recovery.

The cryochamber is cooled using liquid nitrogen, but clients do not come in direct contact with the gas. Cryozone provided cyclists and visitors at the event with an opportunity to experience what cryotherapy is all about.

Air Products, a leader in the industrial gas market, is known for its quality products, outstanding customer service and ways of improving the service offerings through the use of technology and innovation.

Air Products has the ability to provide liq-

uid product to customers’ sites via CryoEase, which is a useful alternative to cylinders.

Nita Muller, Regional Sales Manager in the Western Cape com-

ments: “Air Products’ role in cryotherapy proves that besides supply of gas for industrial applications, product can be supplied for medical, food and beverage

and other specialized applications which require specialty gas. The use of gas in the cryotherapy process adds another exciting aspect to our gas products”.

## Dedicated gas solutions for the **hospitality industry**

As the leading supplier of gases to the hospitality industry in southern Africa, Afrox offers the Sureserve range of dedicated gas solutions from liquefied petroleum gas (LPG) for cooking and heating, to Suremix for dispensing beverages, and Afrox Partigas which is refined helium used to inflate balloons or blimps.



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Available in four variants, Suremix is a range of food and beverage grade carbon dioxide (CO<sub>2</sub>) and nitrogen gases used for dispensing of soda fountains, wines, draught beer, lagers, ales, pilsners and stouts. Suremix conforms to all major soft drink manufacturers’ specifications, ensuring that the best taste and highest quality is achieved in the final product. Our customers have access to manifold installations and mixing panels specifically designed and manufactured for higher volume dispensing applications.

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Balloon gas (Partigas) high pressure gas cylinders are available in three different sizes depending on the quantity of balloons to be inflated. An inflator must be attached to the cylinder when filling latex or foil balloons and Afrox supplies a leading brand and range of manual and automated filling units.

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## VIKING Welding Helmet with Integrated Flip-Up Grind Shield

Enhanced field of view and safety offered with 4C lens technology

LINCOLN Electric's VIKING 3250D Welding Helmet features an Integrated Flip-Up Grind Shield to increase the operator's field of view in both open and closed positions.

Designed for the professional welder, this helmet features a Flip-Up Grind Shield to increase the operator's field of view in both open and closed positions through the integration of a clear face shield and side windows. These features can not only reduce the amount of time needed to conduct material set-up, inspection and weld operations, but may minimize any potential hazards that come from having to frequently remove the helmet and store it at the worksite.

The VIKING



3250D FGS Welding Helmet also boasts an industry leading optic design, 4C® Lens Technology, which eliminates blur, distortion and eye strain by reducing color saturation in the liquid crystal display (LCD) while also providing a consistent shade at any angle. This technology scores a perfect 1/1/1 rating on the only auto-darkening lens quality standard in the world (EN 379).

The 12.5-square-inch auto-darkening viewing area is the largest for this product type industry wide, making it ideal for a range of industries that use multiple welding processes.

4C stands for the following attributes:

- Clarity – Optical clarity at the highest EN379 1/1/1 levels
- Color – Real color view
- Carat – Lightweight auto-darkening filter
- Cut – Even shade from any angle

Lincoln Electric designed this VIKING helmet with a multitude of key features that can improve productivity, enhance optic quality, revamp comfort and promote safety.

## Countdown for Africa's biggest coatings show

THE countdown has begun for the biggest coatings show in Africa: Coatings for Africa 2018 is scheduled to be held at the Sandton Convention Centre from May 29 to 31.

This major showcase of paint and coatings products and technology is being staged by the South African Paint Manufacturing Association (SAPMA) and the Oil and Colour Chemists' Association of South Africa (OCCA). The exposition organisers are dmgevents.

This is the third year of the Coatings for Africa show in its present format and the first as a joint venture between dmgevents, SAPMA and OCCA.

Terry Ashmore, chairman of SAPMA, says the show is the largest dedicated coat-

ings event in Africa for raw material and service suppliers, equipment manufacturers and paint manufacturers in the coatings industry. "The origin of the show dates back to a series of technical conferences arranged by OCCA throughout South Africa, culminating in a biennial conference at Champagne Sports Centre in the KZN Drakensberg. In 2010, a cooperative agreement between OCCA and SAPMA was concluded and the show was moved to the more central location of Johannesburg under its present 'Coatings for Africa' title," he states.

Ashmore says the Coatings for Africa Show 2018 will collate the components and expertise of the paint and coating industries'

manufacturing, raw material and equipment suppliers, as well as global technology transfer experts. "It will this year be staged by vastly experienced and successful coatings show organisers, for a three-day event that will promote the latest technology for the entire continent's environmental, manufacturing and industrial needs. The show will provide coatings industry members the opportunity of spending time exploring business requirements, establishing meaningful international networking partnerships, and meeting representatives and decision-makers from the world's leading manufacturers and suppliers."

Furthermore, Coatings for Africa 2018

will have a broader interest base than before through expansion of subject matter from the all-important transfer of technology to include global management challenges - with a full day being set aside for "Issues that keep Coatings CEOs awake at night".

...a joint venture between dmgevents, SAPMA and OCCA.

In addition, a series of free business presentations will be given by exhibitors in the exhibition hall. "The show will be a celebration of coatings and we are looking forward to a record attendance," Ashmore adds.

## SAIW to run 'revolutionary' apprenticeship scheme

THE SAIW foundation has decided to run an apprenticeship programme for 20 students and is looking for industry partners to invest in the scheme.

"This is no ordinary exercise," says programme convener SAIW's Etienne Nell. "It is a 'dual system' apprenticeship programme that combines

technical education and simulated practical training at the SAIW with authentic work experience in a fabricator's workshop."

Nell adds that these workshops typically belong to SAIW industry partners and the simple equation is that the SAIW Foundation, the students and, in the end, the country,

need these partners' participation in the programme to make it successful.

"This is not a straightforward hand-out system," Nell says. "A company will be reimbursed R165 000 per annum per student it employs in addition to getting the relevant tax rebate, BBBEE points and the productive val-

ue of the apprentice's work.

He adds that there are further advantages for the company after the training including: skilled employees trained to industry standards and acculturated to the company; enhanced employee retention and lower recruitment costs. "All in all, it's an ideal win-

win arrangement," Nell says.

The programme aligns itself with the Quality Council for Trades and Occupations (QCTO) Artisan Welder Curriculum which is aimed at producing: a skilled and capable welding workforce to support economic growth; an increased availability of intermediate welding skills and an increased delivery of properly qualified artisan welders.

The differences below demonstrate how revolutionary this new training model is.

**Current System:** Public providers and TVET colleges offer welder training; Qualifications are not linked to occupational competence; many curricula outdated; trade theory front-loaded, with long intervals between theory and practice; most college students get no practical training or work experience; most students selected by college without reference to employers; few linkages between public colleges and industry.

**New System:** New qualification reflects occupational competence; new, industry-designed curricula; trade theory, simulated practice and work experience tightly interwoven; all students will now get practical training and work experience; employers select and manage their own apprentices; close interaction between the



The growing efficiency of the investment\*

Year	Wage	Productivity
First	28%	35%
Second	32%	65%
Third	41%	85%

\*The figures represent the percentage of a qualified artisan

Source: "Final Report of Cost-benefit-Quality Project." MerSETA & University of Bremen; June 2016

SAIW and employers.

In order to get this going companies need to commit to the QCTO curriculum and Dual System approach of apprentice training; secure apprentice contracts; register the apprentice contracts with SETA and QCTO; apply to the respective SETA for grants; work with the SAIW to ensure the best possible outcome by helping in quality assuring workplace learning.

**The Role of the SAIW Foundation**

Among other things the SAIW Foundation

will commit R1.5m over the next two years to subsidise the 20 apprentices and will remain committed to the QCTO curriculum, together with Dual System Learning for Apprentices' programme.

"In addition to this the SAIW will assist in maintaining the required Statements of Results, which is a prerequisite for external assessment, as required by QCTO and the SAIW will remain an active member at NAMB in the development of the new Trade Test," says Nell.

## Welding – the miracle career

There is no better career choice for a young man or woman than welding. It offers a wide variety of activities from inspection to administration through to actual welding in a host of different applications. And most importantly, with a welding qualification, you're certain to get a job.

So, see below for a list of our many courses and contact us for more information on how to bring a miracle into your life.

### Courses offered by the SAIW

Welding Quality Control; Welding Inspection; Welding Coordination; Codes of Construction; Heat Treatment; Competent Persons; Welding Symbols; Welding Metallurgy and Failure Analysis; Practical Welding; Non-Destructive Testing – Visual Testing, Magnetic Testing, Penetrant Testing, Eddy Current Testing, Radiographic Testing, Ultrasonic Testing.

For further details refer to the Course Prospectus on our website.



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# Cutting costs in materials - handling supply chain

THE latest trend in materials-handling has seen sectors such as warehousing, packing, and pick-and-place use cheaper components for light-load conveyor applications in order to reduce total supply-chain costs. In response to this latest customer requirement, SEW-EURODRIVE South Africa has launched its new ECDriveS® 24 V drive system.

The ECDriveS® is an acronym for Electronically Commutated Drive System, a brushless DC gearmotor. It also stands for 'easy drive', a simple and cost-efficient drive solution for roller-conveyor applications, SEW-EURODRIVE South Africa National Sales Manager Norman Maleka explains.

A standout feature of the new drive system is that it is easily integrated into existing solutions, as it features both Ethernet and PROFINET communications for seamless interfacing. "The ease of integration is a major selling point for this product, as there is no need to change networks. Other advantages are precise positioning and ramp-up and ramp-down, and the ability to vary the conveyor speed accordingly."

Sensor input and output is provided for easy monitoring, with an alarm triggered in the event of any problem. The drive system has an IP 54 protection rating, in addition to an IP 66 version for more demanding applications such as industrial and food-and-beverage applications. The temperature range is -10°C to 40°C, while the roller speed is up to 5 m/s. Gearbox speeds range from 8.5r/min to 645r/min for added flexibility.

"This so-called 'easy drive' is easy to work with, set up, install, and maintain. This means it is particularly suited to African operating conditions, where on-site technical skills are often limited," Maleka comments. Set-up is either by dual in-line package (DIP) switches, or the drive system can be programmed using SEW-EURODRIVE proprietary software. Despite the simplicity of the drive system, it even boasts a built-in encoder for precise positioning. "The encoder allows for accurate positioning of items whenever the conveyor is stopped, which is of

particular benefit to customers with sorting applications."

ECDriveS® is a highly-compact solution, with roller size ranging from 300mm to 1 200mm, meaning it is especially tailored

for smaller conveyor applications. "These are used mainly in pack houses in agricultural and farmers' co-operative applications, where the bulk of the items are packed manually, and then

placed on a conveyor to be loaded onto a truck. No parameterisation is required, which means no complex elements such as a PLC. It is truly a 'plug-and-play' system that saves customers time and money."



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## Controlling dust, insects and heat

COMPANIES continue to bemoan the fact that ineffective control of dust and insects, coupled with variances in temperature, result in hygiene, and health and safety compliance problems.

Wim Dessing, managing director of Apex Strip Curtains & Doors, says that high quality strip curtains offer an affordable and viable solution for a number of applications.

“Our Balledge® PVC strip curtains are equally at home in the food, pharmaceutical and heavy engineering industries as effective control mechanisms against various foreign elements,” Dessing says.

Apex Strip Curtains are transparent allowing unimpeded visibility which eliminates accidental collisions between pedestrians and vehicles, yet at the same time the specially formulated PVC is durable for extended longevity.



*Apex Strip Curtains are equally at home in the food, pharmaceutical and heavy engineering industries as effective control mechanisms against various foreign elements.*

Six specific elements are controlled by using Apex Strip Curtains: humidity; noise; temperature; hygiene; dust; insects; health and safety.

In highly sensitive environments such as pharmaceutical or printing, control of the level of humidity is critical to ensure a high quality level of finished product.

Noisy machinery, especially in the printing and engineering environments, can be ef-

fectively enclosed with PVC strip curtains without obstructing the operator and hindering production.

“Tests have, in fact, shown that noise levels can be reduced over a range from 7 to 15 decibels to improve working conditions,” Dessing says.

In food processing and handling facilities such as the dairy industry, keeping temperature at specific optimum levels can mean the difference

between an acceptable product and one which has to be rejected due to spoiling. “Temperature control is crucial to the quality of valuable perishable cargoes destined for either export or domestic use,” Dessing adds.

In pharmaceutical and chemical plants PVC strip curtains are used to ensure dust free and hygienic manufacturing areas. The curtains are also used around pill packaging areas, in powder rooms, mixing rooms and warehouses.

In the food processing sector, there is a definite need for strip curtains in wash areas, deboning sections, mixing rooms, vacuum packing facilities, holding and freezer rooms or delivery trucks.

Open areas at dust filtration and extraction units can be enclosed using PVC strips and other applications are found in mine hostels, kitchens, food preparation areas and workshops.

## Torre fights back

CAPE Town-based industrial products group Torre – which looked badly bent out of shape a year ago – now looks well on the way to a convincing recovery.

Recently the group announced that revenues grew 3% to R778 million in the half year to end December. Gross profit lifted 8% to R298 million, and earnings before interest, tax, depreciation and amortisation jumped more than 60% to R58 million.

Executive director Jon Hillary said Torre’s analytical services segment performed well – achieving good revenue growth which largely offset a decline in revenues from the capital equipment division.

In his divisional review, Hillary said the parts and components division – which includes the well-known Gabriel shock absorbers brand – increased revenue by 3% to R462 million. This was thanks mainly to an increase in Gabriel sales.

The results were, however, hit by a foreign

exchange loss and an increase in marketing and distribution expenses.

Hilary said the parts and components division was expected to benefit from the new branches that were set up around South Africa.

The Tractor and Grader Supplies (TGS) business came under pressure in the interim period – but Hilary said the business was well positioned to take advantage of its longer-term strategy of becoming a preferred supplier to blue chip clientele.

He said Elephant Lifting had endured recent management changes amid some disappointing half year results. “We remain fully supportive of this business and are driving hard to deliver the returns that are associated with Elephant Lifting.”

Torre’s analytical services segment increased revenue by 23% to R159 million due to higher analysis volumes by key subsidiary WearCheck.

Hilary said the AMIS division’s focus on large

er production batches (which reduced the cost of production) contributed to a higher margin.

He said Set Point Laboratories performed well during the period and was busy with a reset of its strategy to target growth opportunities going forward.

The capital equipment division was a drag in the interim period. Hillary noted the division’s revenue dropped by 10% to R156 million due to lower tower crane sales as customers moved from outright purchase to rentals.

He said the financial results were also impacted by a R2 million foreign exchange loss.

Despite the difficult trading, the Letaba and Manhand businesses were set to deliver an improved performance in the second half.

Interestingly developments at Invicta – another Cape Town-based industrial products supplier – seem to support the notion of an improved performance in this segment.

## KONECRANES PLUS

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## Shackles, beam clamps, slings, chain hoists Plus



LIKE any machine cranes and hoists consist of many moving parts. With over 100 years’ experience all over the world, Konecranes’ parts and lifting accessories have evolved to be highly technologically advanced and to suit various industries and different environments.

Konecranes Southern Africa has produced a comprehensive 80 page catalogue under the name ‘Konecranes PLUS’, listing a wide range of lifting products, systems, components and accessories.

They range from manual products to electric workstation hoists, with trolleys, power feeding lines, and chain blocks in between. Shackles,

eyebolts, turnbuckles, various slings and wire ropes as well as clamps and binders are also listed. Detailed charts allow for determining the exact type of component required.

“Safety is paramount at all times”, says John MacDonald, Service, Sales and Marketing Director for Konecranes Southern Africa.

“Especially in Southern Africa we often work in very demanding and harsh conditions and in hazardous environments. One faulty component can cause costly down time or an injury. Our innovative designs and ergonomic features help to ensure that operators can rely on their equipment – and go home safely at the end of their shift.”

## Slogging-tools - quick-safe and efficient

BMG's extensive range of tools and equipment now encompasses the versatile Slogging Hammer and Wheel Slogger, developed and manufactured locally by precision engineering and tooling specialists, Slogging International.

"The new Slogging Hammer and Wheel Slogger series, which is used to loosen and tighten bolts and nuts quickly and easily, also improves safety for operators," explains Andrew Johns, business unit manager, tools and equipment - BMG. "There are many advantages of this system over conventional slogging methods. Productivity is significantly improved because downtime is minimal and these tools are handled easily, safely and efficiently by a single operator. When the Slogging Hammer is used in combination with the Wheel Slogger, applications are significantly extended.

"The Slogging Hammer was originally designed to improve operator safety when loosening bolts and nuts by traditional methods - hammer and slogging spanner. A wheel version was subsequently developed to improve the operation of pipe and spanner, synonymous with the loosening of commercial vehicle wheel nuts.

"The Slogging Hammer is suitable for use in diverse industries, including mining, chemical and petrochemical plants, agriculture, construction and civil engineering, as well as in power stations, shipping and offshore oil rigs. This versatile tool, in Wheel Slogger version, enables the safe and effortless loosening of nuts and bolts in earthmoving equipment, as well as military, freight and commercial vehicles."

Safety features of the Slogging Hammer include a built-in hand-grip, which means there is no need for the operator's hand to be near the impact zone and an eye bolt prevents accidents in overhead working conditions. No heavy lifting is necessary, as only the shaft weight needs to be managed. This tool is used easily in confined spaces and in areas that are normally difficult to access. The Slogging Hammer provides greater direct impact, ensuring the job is completed quickly and safely, with fewer blows than with conventional methods.

The Slogging Hammer is available from BMG in four size configurations from M16 to M76 and in models for open air, underground, spark free

and under water environments.

The open air range is constructed with an aluminium tube and steel impact head, while the spark-free design uses a copper impact head.

The underground range is available in standard with stainless steel tube and steel impact head and also in spark-free with stainless steel tube and copper impact head, ensuring a safe solution for use in potentially explosive areas in underground mining, power stations and petrochemical industries.

The underwater configuration for marine enterprises and offshore oil rig operations has a stainless steel tube, handle and impact head and a nylon nut. Only one diver is required to complete the task.

Slogging Hammers are supplied by BMG in an optional convenient carry bag. A range of OEM compliant spanners and accessories, including 3/4" and 1" socket extensions is also available, as well as wearing part spares, including bobbins, retaining rings, pins and impact heads.

When a Slogging Hammer is applied in the Wheel Slogger variation, a single operator is able to safely loosen, tighten and torque wheel nuts for the quick release and replacement of the damaged tyre. The operator can also be confident that the torque applied meets the manufacturer's specifications and the risks associated with overtightening are mitigated. Standard torque settings are 450, 550, 600 and 650 Nm, but custom torques up to 1 000 Nm can be accommodated on request.

This system has been well received by all facets of the transport sector, particularly on large trucks, buses, long distance haulers, agricultural and military vehicles.

With this system, there is minimal downtime and there is no need to incur the costs of calling for assistance to change wheels. The Wheel Slogger has a built-in footplate for operation on any surface. All torque settings on the tool are controlled by OEM specified torque clips, which means no calibration is required, even after years of usage. BMG's extensive range of tools and related equipment is used to enhance reliability of equipment in all industries. The company's extensive branch network offers a technical advisory and support service to ensure the correct product is selected for each specific application.

# Big strides in long term rental

DESPITE national and local political turmoil, unprecedented drought, economic downgrades and a gloomy business outlook, some companies opened their doors for business in 2017. That's called optimism, and for some, it's paying off handsomely.

"It's all down to experience' says Pieter Nieuwenhuis, Western Cape Regional Manager for the nationally represented plant rental company Afritech Equipment Solutions, which began trading from its Paarden Eiland depot in August last year.

Afritech have experience in spades with senior members of the company contributing more than 100 years of hands on knowledge in the plant hire and equipment rental business.

Nieuwenhuis who has more than 19 years in the field, heads up a team of a dozen, or more sales and technical staff supplying industry and business with a wide range of equipment and plant ranging from mobile compressors and welding machines, generators and lighting plants, lifting and rigging equipment, lighting towers, small tools and consumables, in fact "Anything used to cut, join, bend, or assemble steelwork" said Nieuwenhuis.

The tried and tested fundamentals of quality, well maintained equipment, prompt response and efficient customer service and understanding the client's deadlines, drives the Afritech business model and to good effect.

"We are not in the DIY, corner shop hire business' said Nieuwenhuis, "our target market is in medium and long term hire - typically to the petrochemical and marine industries, although of late we have satisfied clients in the event business where staging of concerts required our specialized equipment.

Afritech Equipment Solutions was successful in obtaining distributorship agreements for Miller/Weldcraft equipment and welding consumables.

Afritech has also designed and developed in-house brands being Dura-Arc and Dura-Lift which relates to inverter welding machines and rigging equipment respectively. These in-house brands were specifically developed for the

African construction industries.

### Refineries

"Afritech Equipment Solutions recently supplied all the required diesel driven equipment, tool and consumable Stores as well as the management thereof for the recent Regen that was executed at a prominent refinery in Milnerton, Cape Town. During this Regen, no downtime on any equipment or tools was recorded. This supply scope forms part of the Afritech Equipment Solutions term contractual agreement that the company has with this refinery.

### Marine environment

Afritech are also currently working in Cape Town harbour on a contract with a major Diamond Producer, where one of its mining vessels is undergoing major overhaul, repairs and maintenance.



"This is a 24/7 operation lasting for around three months where we are supplying welders, generators, compressors and a myriad of small tools. As the ship's engines and auxiliary generators are out of service, there is a need for generators and temporary lighting for both day and night working. We have supplied more than 1 600 globes and lamp holders, con-

ected by 3km of cable, 60 off 50m long extension leads, distribution boards as well as compressors, welding plant and small tools for this project.

In Saldanha, the construction of a bulk fuel storage facility by the main contractors, has involved Afritech in a supply contract involving compressors, welding and lighting plant amongst other equipment and consumables.

### Service and experience

"We are steadily establishing a reputation of being a reliable supplier of quality industrial grade equipment, at competitive prices backed up by experienced support staff who understand the client's business requirements and deadlines - simply said, but not always easy to achieve - but we're working on it!" concluded Nieuwenhuis.

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## Mattei versatile compressors



MATTEI vane compressors are the solution for many commercial, industrial, OEM and transit applications throughout a diverse range of industries.

Rotovane are the local distributors for Mattei compressed air products, offering compressor sales, parts service, refrigerant dryers and filters.

Mattei rotary vane compressors are constructed completely from cast iron and boast superior efficiency and performance when compared to traditional rotary screw compressor systems offering improved volumetric efficiency, due to minimal air leakage, minimizing the amount of energy required to compress air, driving up volumetric efficiency and reducing the required power per measuring unit of delivered air.

Claimed mechanical efficiency is +/- 90% and as the rotary vane stator is not subject to thrust force, it remains balanced under loads as pressure is equalized along the length of the rotor.

Cast iron construc-

tion significantly enhances wear resistance. So much so that a number of optional extended warranties are offered. Mattei rotary vane compressors boast an operating lifespan of over 100 000 hours; two to three times the life of the average rotary screw compressors.

Innovative integrated design, a low rotational speed, and direct coupling, contribute to the machines inherent safety features and all compressors are fitted with high quality filtering systems to ensure the air is suitable for any type of use.

Mattei rotary vane compressors are highly productive, making them among the most cost-effective compressor systems available boasting energy savings of up to 15% compared with other makes. And because they are designed to last longer, lower replacement and repair costs can be expected.

Mattei manufactures the world's largest range of rotary vane compressors with capacities from 1,5 to 250kW.

## Compact, lightweight and mobile

DESIGNED for secure integration into utility trucks and other OEM applications, the Utility range incorporates the latest advances in Atlas Copco's pioneering air element design, offering improved efficiency, reliability, increased machine lifetime and longer service intervals.

The current Utility line-up comprises three compressors (U130, U175 and U190) available in flow ranges between 3.7 to 5.4 m<sup>3</sup>/min, working

pressures between 7 and 12 bar and FAD (free air delivery) up to 190 cfm. Stanford adds that the range will be extended during 2018 which will not only expand application opportunities but will also offer customers a wider choice.

The footprint of the space-saving 8 Series Utility range is 10% smaller on average than comparable compressors.

In addition, with a full-size fuel tank, an aftercooler and even

with a built-in generator (optional), these compressors weigh less than 750kg which is as much as 150kg lighter than comparable models. Thanks to this compact size/lightweight combination the compressors now fit into more vehicle types thus expanding their use in applications such as highway works and crash barrier repair.

Simplicity of service has been factored into the design of the Utility range. With 1 000



hour service intervals, the machines only require an oil service after two years of operation. Thanks to wide doors that provide easy

access to parts, it is possible to replace all consumables within the compressor in under an hour with no special tools required.

## High-pressure washers for agriculture

THE Italian-manufactured Maer range of high-pressure washers will be displayed prominently by Goscor Cleaning Equipment (GCE), part of the Goscor Group, at Grain SA's NAMPO Harvest Day from 15 to 18 May 2018 at Bothaville, in the Free State.

Agriculture has traditionally been a significant market for high-pressure washers, as farmers need to ensure that costly machinery such as combine harvesters, crop sprayers, and tractors

are maintained properly by removing any dirt particulates, dust, and general grime on a daily basis in wash bays, GCE National Sales Director Peter Esterhuizen explains.

High-pressure washers are also a necessity for animal pens such as pig sties, chicken coupes, and cow sheds in order to ensure compliance with local and international hygiene and cleanliness standards. "The application determines the specifications in terms of pressure and flow

rate. Other factors that need to be taken into account are the power supply and water availability," Esterhuizen comments.

"We offer custom solutions to meet specific customer requirements. For example, GCE can trailer mount an engine driven pressure cleaner with a water tank for cleaning in remote areas, where there is a lack of power or water connections," Esterhuizen adds. The Maer range includes electric-, petrol- and diesel-driven versions



from 220 V to 380 V, and pressure ratings of anywhere from 100bar to 500bar.

NAMPO attracts over 75 000 visitors each year, comprising

prominent local and regional players in the agricultural sector. This is one of the main reasons the show is held in such high esteem in the sector.

## Preventative maintenance: key to productivity and sustainability

RAND-Air, portable compressed air and power generation rent-

ers understands that for an air compressor to perform optimally,

regular services and preventative maintenance is essential. It

is for this reason that businesses are advised to rent equipment as opposed to buying - this ensures a preventative maintenance approach and eliminates the stress of reactively maintaining equipment when the need arises.

"By appointing a reputable company with the required capability and skills to undertake complete responsibility for both the technical and safety issues of equipment rental, businesses are able to concentrate on their core business," says Craig Swart, Fleet Manager at Rand-Air. "There are a number of reasons that we follow a scheduled, preventative approach on our air compressors but quality and safety remain the overriding influences."

One of the most significant aspects of proactive maintenance is that downtime can be scheduled. "Addressing compressor failures only when there is a need has the potential to stop production and can result

in missed deadlines and project completion. Calling out a technician on such short notice is a costly exercise and can delay production even further if emergency parts need to be ordered," he adds. A rental partner that has a full equipment solution package ensures best practice in terms of compressor maintenance which in the long run can save businesses money.

"By appointing a reputable company... businesses can concentrate on their core business."

While there are many positive aspects of well-maintained air compressors, the ability to comply with rising environmental regulations also increases. Not only that, small fixes that work according to a program helps compressors run efficiently at all times and benefits businesses from a fuel and energy saving perspective.



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# New training academy opens

HYDRAFORM, an alternative building technology provider, recently offered courses at its new training academy at its Boksburg headquarters. The course attracted participants from all over Africa, accommodating a total of 26 participants from South Africa, Ghana, Ivory Coast, Morocco, Uganda, Senegal, Botswana, Benin, the Democratic Republic of Congo (DRC) and Nigeria.

The Hydraform Training Academy focuses on the core elements of block making, as well as imparting crucial knowledge on how to manage a successful block making business. "The Hydraform interlocking block technology course places particu-

lar emphasis on soil-cement technology and all the key components for successful block making," says Ryno Saayman, marketing coordinator at Hydraform. "The comprehensive course handles all the aspects of the Hydraform system – all the way from machine setup through to construction." On completion of the programme, participants will be equipped with comprehensive knowledge of the system and the application thereof.

According to Saayman, the recently-completed intake had a variety of participants, including architects, engineers and existing business owners, but it was the potential construction entrepreneurs looking to break into the market

who represented a fair share of this intake's total complement.

### Breaking new ground

Jean-Paul Aganze, a building engineer who currently works for a large telecoms company in the DRC, was contemplating his opportunities of self-employment, and views the Hydraform block making technology as his golden ticket to starting his own block making business in Kinshasa, the DRC capital. Having initially visited Hydraform in December 2016, he was immediately impressed by the value offering of the Hydraform block making technology, and decided to enrol for the training academy to understand more about the technology.

### Existing businesses seek expansion

Existing Hydraform machine owners were also part of the training course intake as they sought to sharpen their technical and business acumen. Bolade Apampa, an architect at Shola Wunmi Enterprises in Nigeria, says his company has been on a campaign to educate local communities in Lagos about the benefits of the Hydraform solution. The company already owns two M7M1 machines and is looking to expand its fleet as its business continues to grow.

Abdeljalil Aainani, project manager – Building at ACOME, an Ivory Coast-based company, says his company already owns



seven Hydraform machines, comprising six M7 units and one M7MI Super. There has been a large acceptance of its blocks in the country and the company is aiming for a 60% share of the building market in Ivory Coast.

Hydraform's mission is to innovate, partner, train and build with its stakeholders in the developing world and successful training sessions like the Academy held in November demonstrate why it remains the leading alternative technology partner

for serious businessmen and women across the continent. "As we celebrate our 30-year anniversary in 2018, we look forward to continuing to breaking new ground and partnering with our customers for a prosperous Africa."

## Dual System Apprenticeships are putting employers in the driver's seat

THE establishment of two Centres of Specialisation (CoS) in Mechanical Fitting and Rigging is not just a significant development for the False Bay Technical and Vocational Education and Training (TVET) College in Cape Town but an important step in addressing the skills shortages in the country. Centres of Specialisation in the TVET College sector, is a new concept and programme that is fast gaining track. These centers are an initiative of the Department of Higher Education and Training (DHET) and have been designed to meet two objectives simultaneously. Firstly, to address the demand for priority trades needed for the implementation of government's National Development Plan in general and its National Infrastructure Plan more particularly. "Secondly, to contribute towards the building of the capacity of its public TVET College system", said Karin Hendricks, Principal (Acting) at False Bay College.

Speaking at the launch of the CoS for mechanical fitting and rigging, she said artisan development was a critical element in the strategy to boost the manufacturing and engineering components of the economy and to support job creation.

"The CoS will see industry in partnership with TVET colleges drive a strategy to increase the pool of available artisans to meet the needs of the major 18 Strategic Integrated Projects (SIPS)

across 13 priority trades in engineering fields, which have been selected for the CoS project" said Karin Hendricks.

"Currently the average age of an artisan in South Africa is about 54. It is therefore no surprise that there is a critical shortage of qualified artisans and that it threatens economic growth. The past few years have seen a sharp focus on the return to artisanship," said Hendricks.

### The CoS approach

Through this programme, 13 trades will be trained at a public TVET in partnership with the private sector that will provide the practical side allowing for learners who graduate from the programme with an improved understanding of the workplace with relevant and up to date knowledge. These trades include – bricklayer; electrician; millwright; boilermaker; plumber; mechanic; diesel mechanic; carpenter and joiner; welder; rigger; fitter and turner; mechanical fitter and pipe fitter.

According to Eugene Vermaak of the Steel Engineering Federation of South Africa, the programme will deliver a far more skilled and capable workforce. "The dual system combines an apprenticeship in the workplace with a technical education at a TVET college. Not only are the learners exposed to high quality theoretical training and practicals, but it is combined with authentic work ex-

perience," he said. "This is a single integrated learning programme presented through a re-iterative process with employers in the driver's seat."

While most TVET colleges in the country offer all the approved programmes of the trades the CoS focusses on, many of the curriculums are outdated and qualifications are often not linked to occupational competence.

"The new approach" said Vermaak, "Is that employer's partner with TVET through their apprenticeship programmes and so addressing the artisan skills shortage."

"Selecting certain colleges to focus on particular trades in this programme was purposefully done to lay the foundation for differentiation in the college system" said Vermaak. Whilst some other colleges may later specialise in the same trades, it is desirable that others develop expertise in other trades and occupations so there is reduced duplication and increased quality specialisation.

At False Bay College, mechanical fitters and riggers will be trained under the CoS.

"We have been training fitters for many years and have built up strong relationships with industry players in this space. We are confident that industry partners, old and new will take hands with the College to build a state of the art world class CoS for Mechanical Fitting," said Hendricks.

"Rigging is completely new for us as a college but we are excited by the challenge to grow the CoS Rigging from scratch together with our industry partners. One does not always have the chance to build something from the ground, from the spatial design of the centre, to sourcing the right tools and training equipment, to ensuring the relevance of the curriculum content and course design under the QCTO, to the actual course roadmap."

This year the College is developing its new campus, Swartklip, along Swartklip road, bridging the communities of Mitchell's plain and Khayelitsha. This campus will grow to see up to 3000 engineering students' enrolled at any one time. The focus of the training at Swartklip campus will be on artisan development

"Our CoS for Rigging will be established at the Swartklip campus in January 2019. This is a campus that will be built on partnerships with SETA's, government departments, community linkages, but most importantly, business and industry. Carving and shaping a new campus, a new programme for our College namely - Rigging and a new CoS," she said.

In total, 30 riggers will be trained under the CoS in 2019 as part of the pilot of this programme.

### Why participate

According to Vermaak, there is much benefit

for companies to get involved with CoS.

"Skills training can be a moneymaker and not a money taker," he said indicating that industry was often skeptical of apprenticeships as they were costly to a business. "In the United States employers get an average of \$1, 47 back from \$1 dollar invested in an appren-

ticeship." Changing the mindset around apprenticeships is critical if South Africa is to successfully address the artisan skills shortage.

Vermaak said "A three-year apprenticeship costs around R507 435. By our calculation the net loss to a company is around R212 000, but the value

of the apprenticeships is R290 000. That is without the grants that the employer gets, back the BBBEE points that is scored or the SARS rebates. There are major financial benefits to apprenticeship programmes such as these."

(Article provided by Lifting Africa)

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## 'Clamping' down on safety

WHEN it comes to quality, reliability and safety, companies responsible for supplying the nation with power cannot afford to make mistakes. That is why Vital Engineering, a long-established manufacturer of gratings, stair treads, expanded metals, pressed floors and safety handrail, was selected to supply 500 000 Vitaclamps as part of the largest gratings, handrail and stair tread supply contract in Africa.

The contract included the supply of 250 000 Vitaclamps to Medupi Power Station in the Limpopo Province and 250 000 to Kusile Power Station in Mpumalanga. As part of the project, Vital Engineering also supplied some 200 000m<sup>2</sup> of grating panels and 70km of hand railing and 8 000 stair treads.

"After carefully assessing the quality and durability of our products, our superior fixing product was



chosen because it suited the client's particular requirements and application," explains Glen Pringle, Technical Director of Vital Engineering.

"Their decision shows that the market recognises our products as synonymous with high quality, performance and safety."

Vitaclamps are a patented, top-fixing grating panel unit intended to save installation time and costs, by improving installation turnaround times, reducing scaffold hire and improving overall operational safety in the mining, petrochemical and other in-

dustries.

"Vitaclamps reduce costs while improving safety, by enabling a unit to be tightened from the top - unlike the traditional clip on the market which is fixed underneath," explains Pringle.

As always, safety was a key aspect in both the Eskom power station projects. Vital Engineering worked proactively with the principal contractor, MHPSA (Mitsubishi Hitachi Power Systems Africa) to meet and surpass specified quality and safety goals.

As a strong advocate in the industry of the importance of

making an informed choice when it comes to safety products, Vital Engineering is wary of the number of sub-standard products that are 'passed off' as being equivalent to specified products by engineers or quantity surveyors.

The three Vita-clamp ranges — light, medium and heavy — are suitable for various applications and environments within mines, petrochemical plants and other on other industrial sites.

"We do find that demand for these and many of our other patented gratings, stair treads, pressed floors and safety handrails products within South Africa - and from the international market - is growing, thanks to their innovative design and safety features. Vitaclamps are a really excellent example thereof, as their selection at some of our country's leading power stations signifies," Pringle concludes.

## Fire solutions for food and beverages

WHEN setting up a processing facility, retail supplier, or commercial farm, the value of the equipment and infrastructure is substantial. Hence it is essential for companies to have resilient fire-suppression systems in place to guard against the potential destruction of vital assets, Fire & Security Techniques CEO Neil Hughes comments.

Much of the technology and panelling used in cold-storage facilities, in particular, is quite flammable. Here the use of standard water sprinklers to douse any fires is not always sufficient. "It is best to tackle a fire at source, and prevent it from spreading before it becomes totally unmanageable," Hughes notes.

Many end users in the cold-storage supply chain have incurred substantial losses from fire damage due to the use of water-based fire-suppression sys-



tems. These are doubly problematic as they also result in a new hazard of ice build-up once initiated, which poses a safety risk for workers.

In this regard, Fire & Security Techniques is able to provide effective alternative solutions that are also safe to apply in food-and-beverage applications.

The aim is to control and contain any fire incidents, thus preventing serious fire-related damage at clients' operations using Fire-Eater INERGEN® IG 541 and

an application suited fire-detection systems.

INERGEN® IG 541 is available as an engineered or pre-engineered solution. It is environment-friendly, as its extinguishing principal is oxygen replacement. The sea-level oxygen content of 20.9% is reduced by 10% to 14%, at which point common fires are extinguished. While other extinguishing agents simply lower the oxygen level to under the flame threshold, INERGEN® ensures breathability for any occupants.

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## Securex South Africa 2018 celebrates a landmark 25 years



SECUREX South Africa 2018 is returning to the Gallagher Convention Centre in Midrand from 22 to 24 May 2018.

This year's show is set to be a bumper edition, as the expo celebrates its 25th year, explains Sven Smit, Portfolio Director at Specialised Exhibitions Montgomery. "Securex has grown from strength to strength, entrenching itself as the largest trade show of its kind on the continent today. The fact that the show is marking 25 years of success is a true testament to its excellent reputation with exhibitors and visitors alike."

The 2018 show is set to feature more than 160 exhibiting companies, showcasing the full range of security-related products and services, including access control, biometrics, CCTV, cyber and IT security, fire

detection and prevention systems, perimeter fencing and protection, retail security, training, vehicle and personnel tracking devices, x-ray scanning and screening equipment and more.

Not only will this year's expo keep attendees abreast of the latest market trends through its ever-popular free-to-attend seminar theatre featuring more than 20 highly topical seminar sessions, but also a brand-new Cyber Lab, powered by XGRC Software, is being introduced for the very first time. Furthermore, Pseudo Scent and Dogs SA will be holding regular live demonstrations of highly trained security and detection dogs.

"We can also confirm that the South African Intruder Detection Services Association (SAIDSA) will be honouring its own

50th birthday milestone at Securex 2018, stating that the expo is the ideal platform for its commemoration," says Smit. "SAIDSA will once again be running its Tech-man competition at Securex 2018, where SAIDSA-certified technicians will compete against one another in a practical challenge."

"In addition, visitors will be able to conduct direct discussions with specialists, network with peers, and learn about new technologies and legislation," Smit adds.

Co-located with A-OSH EXPO, Africa's leading occupational health and safety (OHS) exhibition, visitor entrance to both shows is free. For more information, or to register to attend, please visit [www.securex.co.za](http://www.securex.co.za), [www.aosh.co.za](http://www.aosh.co.za), or contact Specialised Exhibitions Montgomery on +27 11 835-1565.

# Technical support brings solutions to the fore

WHEN economic pressure increases, companies often adopt a cautious stance. Conversely, Countapulse Controls has survived by instituting technological innovation in the face of socio-economic uncertainty.

In its more than 60 years in business, this leading supplier of sensing solutions has created a sustainable business model by focusing on anticipating and exceeding market demands. The resultant range of high quality sensing and monitoring devices has often been first to market.

Since introducing Hengstler mechanical counters to South Africa in the 1950s, the company has witnessed drastic advances in sensing and monitoring technology. Managing directors, Gerry Bryant says that it is critical for companies to keep abreast of ever developing sensing technology.

He emphasises however that all this technology is worth nothing if the technical support



is not available. "The sharing of applications knowledge plays a crucial role in increasing productivity and reducing downtime, especially as many companies no longer have internal technical support divisions."

An aggravating factor for customers is the emergence of a plethora of online shops offering sensing and monitoring technology at bargain basement prices.

In the complex process and manufacturing environments, utilising sensing, monitoring and measuring instruments that have not undergone due diligence and that do not have a great deal of

reputational weight is highly risky. The failure of such products causes major production line issues and the safety around such products cannot be guaranteed.

Bryant says that the wise alternative to online shopping is one-on-one technical instruction and support. "A reputable supplier will leverage the years of hands-on experience and expertise resident in its technical staff. OEM training provides the supplier's team with specialised knowledge and skills pertaining to specific instrumentation. By focusing on tried and tested matching of products to applica-

tions, suppliers are able to ensure best fit in all instances."

Bryant says the company's hotline is one way of investing its experience and capabilities back into the industry. "This product and applications knowledge is delivered as a value-added benefit to our customers."

Bryant maintains that when one considers the customer's application, it is important to understand that selecting sensors is not as simple as matching a model number to a requirement. "One needs to carefully assess the operating environment. Parameters that should be considered include the range of the sensor, the speed of the automatic process, the background conditions and type of product, auxiliary equipment and the circuits within the process. By adopting a structured approach to selecting the most appropriate sensors or flow monitors for a given application, customers will experience enhanced operational advantages."

# Electric motor protection for harsh environments

THE WEG MPW range of motor protection circuit breakers offer customers reliable operation in the harsh operating environment found on the African continent. All motor protection circuit breakers in the WEG MPW range are manufactured in accordance with IEC 60947 and UL 508 international standards giving absolute assurance in terms of operational parameters and quality.

The devices offer the benefit of being compact and modular, facilitating space saving within the electrical panel itself. This means the panel can be smaller or where necessary more components can be included in the panel. The WEG MPW range are robustly constructed for optimal reliability and facilitate the protection of a wide range of electric motors from



All motor protection circuit breakers in the WEG MPW range are manufactured in accordance with the IEC 60947 and UL 508 international standards.

0.16A up to 100A. Significantly, the range has both thermal magnetic versions facilitating protection against potential short circuit and overload conditions as well as magnetic only versions which provide protection against short circuits.

Use of the thermal magnetic device will reduce the number of components required when manufacturing a motor control centre. This can translate into a significant cost saving. The magnetic-only version allows the use

of electronic overload protection devices which can reduce costs further.

The WEG MPW motor protection circuit breaker is available with a full range of accessories including auxiliary contacts, shunt trips, under voltage releases, door mounting handles and free standing enclosures. The devices are certified to Type 2 allowing continuous operation until replaced. This is important in a production critical environment.

# Hygienically safe: ultrasonic sensor with ingenious cable gland

UNLIKE standard sensors, the installation of hygienically sound sensors on packaging or processing machinery also forms a fundamental component of guidelines published by the European Hygienic Engineering and Design Group (EHEDG). When hunting for hygienically sound and simple sensor installation, the company found what they needed at LAPP. Melanie Harke, Head of Marketing at Microsonic, recalls that a few cable glands were tested, yet it was only the SKINTOP® HYGIENIC from LAPP that satisfied requirements.

Resistance to twisting is a problem area when combining sensors and cable glands. After all, the sensor needs to be firmly fixed in place after its simple assembly. It must not twist in its mounting – i.e. the cable gland – while maintenance or automatic cleaning procedures are in progress.

The secret of the SKINTOP® cable gland's ability to prevent twisting so effectively is in its special construction, the ge-



ometry of the individual parts and the selection of materials for the latter. Although conventional cable glands also contain an elastomer seal, attention is already paid during the development phase at LAPP to fix and seal all materials installed for cables, conduits and pipes as effectively as possible.

**Water-tight to 100 metres**

The cable gland's seals are not only intended to prevent twisting, but also to protect and guide the electrical connection cable out of the equipment and prevent liquids

from entering. SKINTOP® HYGIENIC cannot be infiltrated by water and particles, in compliance with IP69. This is tested in the LAPP Group's laboratory by spraying the products at high pressure. SKINTOP® HYGIENIC also passes IP68, the criteria of which require the cable and gland to be immersed in water and subjected to a pressure of 10 bar, which corresponds to a depth of 100 metres. Alongside the internal seal, the SKINTOP® HYGIENIC features two additional seals for this requirement: one where the cable gland meets the housing and

another underneath the domed cap nut. The seal which is in contact with the housing takes the form of a flat seal in accordance with hygienic design principles, and not that of an O-ring, which would usually be fitted on or in one section of the housing. After all, food residue could accumulate in this indentation that might not even be removed when using a pressure washer.

Previously, users in the food and beverage industry have used conventional cable glands and resigned themselves to accepting idle times for maintenance or increased cleaning effort due to design deficits. "The awareness of hygienic design and the normative framework for this first needed to grow," according to Erik Büchner. Recently, however, the LAPP Product Manager has observed increasing interest among potential customers in the SKINTOP® HYGIENIC and other LAPP products for food and beverage production, such as the cables in the ÖLFLEX® ROBUST series.



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# Advantages of articulated forklift trucks

GOSCOR Lift Truck Company's (GLTC) Western Cape sales manager, Gregg Tarr, says that articulated lift trucks are just as effective in manufacturing facilities as they are in warehouses. "Trucks that can bend are renowned for their space-saving qualities in warehouse situations but not that many operators in the manu-

facturing environment in the Western Cape realise that they can substantially improve efficiencies in their environment too," he says.

GLTC distributes Bendi, the original and still the world's most popular articulated lift truck.

VNA (very narrow aisle) forklift trucks are capable of working in much narrower aisles,

approximately 1.7 - 2m, than conventional trucks, helping to make the maximum use of storage space.

However, due to the close tolerances within the narrow aisle, a number of criteria have to be fulfilled e.g. special flooring with very fine tolerances is required to meet the flatness required by narrow aisle machines;

rail or wire guidance is used to enable the truck to be millimetre perfect whilst travelling up and down the aisle and this guidance adds significant cost; ironically, large spaces (transfer aisles) measuring up to 4 - 6m at the end of each aisle are required to allow the narrow aisle trucks to transfer from one aisle to the next which wastes valuable storage space and is a slow process.

In addition, traditional VNA trucks are also only suitable for in-aisle operation which means that other more conventional trucks are required to feed the narrow aisle system and take goods away.

The fact is that all efforts to reduce aisle size comes with compromises and the more space saved, the more compromises arise. Bendi articulated a forklift was developed to eliminate these issues with a fast moving, narrow aisle, general purpose forklift. In short, one truck that could do everything - inside, outside and that was mass-produced to fit all applications.

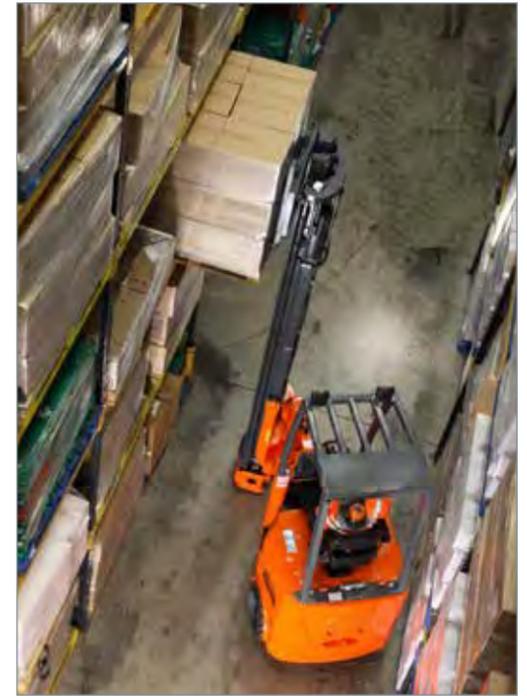
Rising property, energy and maintenance

costs are all major factors in the increasing cost of operating a warehouse or factory. Businesses throughout the Western Cape are being forced to streamline their operations, which has led to an increased number of companies trying to condense their operations under one roof. "This is when the Bendi comes into its own," says Tarr.

Bendi's 220° mast and axle rotation enables the truck to operate in aisle widths of only 1 800mm, less than half of what it would take to operate a conventional 2-ton counterbalance truck. This means double the storage capacity or increased area for the facility. It also means fewer trucks and increased productivity, which in turn can mean huge cost savings.

## Advantages to the Manufacturing Industry

Manufacturing, unlike many other industries, has to cater for numerous and varied handling tasks including off-loading and storage of the raw materials, transportation through-



Warehouse operators are recognising that the space-saving abilities of Bendi articulated trucks improve general efficiencies, helping to trim warehousing costs.

out the manufacturing plant, feeding production lines and storage and distribution of the finished goods. Historically this has resulted in the need for different types of handling equipment, each ultimately being underutilised thus increasing the truck fleet costs. Also, double-handling product also leads to further operating inefficiencies and increased risk of damage.

Thanks to the in-

novative design of the Bendi, which enables the truck to operate safely in narrow spaces of only 1 800mm, double-handling is a thing of the past. Also, manufacturers using Bendi need only one truck to unload vehicles, transport and feed the production lines, store the finished product and then distribute. This has led to huge cost and efficiency gains throughout the manufacturing process.

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## Nexus Network expands its world-class e-fulfilment service

THIRD-party logistics (3PL) specialist Nexus Network has moved into a new 10 000 m<sup>2</sup> facility in Wadeville, Germiston.

This is the next step to boost its capacity to offer its customers a world-class service.

The company re-located at the begin-

ning of August 2017 to a reconfigured 9 000m<sup>2</sup> warehouse on a 33 000m<sup>2</sup> site. "This means we now have the ability to build and expand our business as it grows," Nexus Network Sales and Marketing Manager **Robbie Ferns** comments. "Scalability for our clients is crucial, and they now have the peace of mind that we can cater for their own developing operations. We also have more than enough capacity at the moment to attract new customers interested in our services."

Established over a decade ago, Nexus Network is a specialist in marketing and promotion fulfilment for large South African brands. "What we essentially do is package promotional items in kit form, which we then distribute across the country. This ensures market awareness not only in terms of the promotional component, it also generates brand loyalty," Ferns explains.

Customers range from the financial sector to food and beverage suppliers, and even mobile phone operators. "We currently

distribute to about 24 000 points around the country from four centralised distribution centres. The other part of our business relates to special promotional projects. We manage all aspects of the supply chain, thus providing a complete distribution solution without involving any middlemen. This gives us total control of every stage of the process," Ferns elaborates.

The new facility is important for Nexus Network to enhance its customers' growth paths, and to ensure that they achieve their expansion aspirations. Due to its size and cutting-edge technology solutions, the new facility is primed to unlock this potential. Its strategic location in Gauteng's industrial and commercial heartland positions Nexus Network perfectly to add to its existing high-quality service offering.

In this regard, the company has installed warehouse management systems and processes unique to promotions and marketing materials for optimal distribution efficiency.

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## No CO<sub>2</sub> emissions when burning fossil fuels?

Continued from back page

With this new method, should it prove to be cheaper in the real world outside the laboratory, carbon dioxide wouldn't need to be buried; it could be made into useful products.

US industrial companies have already taken note, some calling the process significant and exciting, making it closer to commercialization. One reason is that the foundation of this research goes back 40 years. It is not a flash in the pan. It has had the support of the US Department of Energy for most of this period and some big suppliers of syngas are already collaborating with the Ohio State university scientists.

According to the university, "Babcock & Wilcox Company (B&W), which pro-

duces clean energy technologies for power markets, has been collaborating with Ohio State for the past 10 years on the development of the CDCL technology".

B&W call it "the most advanced and cost-effective approach to carbon capture we have reviewed to date and are committed to supporting its commercial viability through large-scale pilot plant design and feasibility studies. B&W believes CDCL has potential to transform the power and petrochemical industries".

There you are then. No need to panic about carbon dioxide emissions. Help is on its way. No need to jeer at those who think that wind and solar power are not the panacea for allegedly free and clean

energy.

Green scientists think so too.

With dozens of new coal fired power plants being built around the world – even in countries that have signed up to the climate change agreement glued together in Paris a couple of years ago.

Modern economies and heavy industry need more power than either windmills or solar panels can so far provide. It is pure nonsense to think that India or China were ever going to strangle their economic growth just because Greens think so.

Source:

<https://news.osu.edu/news/2018/01/02/a-fossil-fuel-technology-that-doesnt-pollute/>

## Nuclear build's contribution to SA's GDP will be "staggering"

"How all these energy sources can complement each other"



Koeberg Power Station.

"NUCLEAR energy is certainly not any more expensive than any other energy source" says nuclear expert Dr Antonie Cilliers, explaining that "the large 9 600MW nuclear programme has created an impression of a single expensive mega-project, when in fact the purpose of the fleet approach was to drive down costs over time and increase the learning rate. This should be broken up into smaller chunks, for example, should two nuclear reactors be added to the current plant at Koeberg, the cost would be no more than the guarantees already provided by treasury for the current IPP programme, whilst two nuclear reactors would produce more units of electricity per year (and more reliably) than the units on the IPP programme." He adds: "I agree that South Africa's fiscus is constrained at the moment, I believe this will change and when it does we need to be prepared. If we cannot afford nuclear new build we cannot afford any new build. We also have to remember that the new IRP has not been gazetted and with an outdated IRP, I find the approval of any energy projects (including nuclear) irrational."

### Nuclear Power Africa

Dr. Antonie Cilliers is the National Coordinator of SAN-NEST (South Af-

rican Nuclear Education, Science and Technology) the R&D Programme Manager: Advanced High Temperature Reactor (AHTR) and Honorary Research Fellow at the University of the Witwatersrand. A regular commentator and speaker at African Utility Week, he returns this year as a panellist during the Nuclear Power Africa conference at the event from 15-17 May in Cape Town. "Nuclear is certainly part of the energy mix in Africa" says Daniel Njoroge Butti, Energy Economist at the Karatina University in Kenya, another expert who will share his views at African Utility Week and asked whether there is appetite for investors to fund nuclear energy projects, he replies: "the definitive answer is YES." With regards to costs he explains that "in my view, nuclear energy has significantly high initial costs but very low operating costs vis a vis other energy sources like renewable energy which has relatively low initial costs and periodical costs involved in operations which eventually become very high. On the other hand, coal energy presently is considered an outdated source of energy given that it does not meet various conditions as a clean energy. Hence the only conversation that should be sustained is a decent conversation of how all these energy sources can complement each other."

"We need to replace coal with nuclear"

"In South Africa" says Dr Cilliers, "the common belief is that we have excess electricity that we do not need nuclear energy in the short term. This is a slight misnomer as the excess electricity stems from the recent high prices which in turn are constraining our economic growth. The reality is that South Africa needs more electricity at an affordable cost to support economic growth – for this an intervention by government is required. We also tend to forget that many of our coal stations are reaching end of life within the next 10 years, we are already seeing the operation and maintenance cost of these plants rising. We need to plan to replace these coal plants with nuclear plants, we have no other option." According to Dr Cilliers: "specialists in South Africa are currently working on a project to determine the macro-economic impact of nuclear build programmes on a country in partnership with the International Atomic Energy Agency and 15 other countries. What we are seeing is that the contribution to the GDP from these projects (during construction and operation) is staggering as it becomes an enabler of economic growth and job creation, directly, indirectly and inducing new jobs in other sectors – far more than industries that rely heavily on import and local assembly."

### Balanced combination of energies

"The energy sector should play a more versatile role by providing safe, reliable, affordable and clean energy for the country" is the opinion of Des Muller of NuEnergy Developments and a member of the Nuclear Industry Association of South Africa's Supply Chain Development Sub-Committee. He adds: "this can only be achieved through a balanced combination of Thermal, Renewable/Hydro and Nuclear Energy. Sustainable energy systems should also be able to augment our water supplies, power an imminent electric transport sector and reduce our high transmission losses through decentralised power generation at the load-centres."

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# Just another riot in a small town

## OPINION

“Answers! I like answers,” proclaimed Luke the Dude as he raised his pint in a toast to sobriety. “Last time we met we talked about farm murders and land grabs and the dangerous example set by politicians. That little schoolyard bully Malema mouthing off about cutting throats and what have you. And we asked if there was a link.”

“Quite so,” agreed The Prof. “We wondered whether criminals are encouraged by the words and actions of unthinking politicians.”

“Or more to the point,” advised Adv Stevie the Poet, “If Julius Malema proclaims that South Africa’s land was stolen by whites, all of it, that the victims of this crime were African, all of them, and that Africans should therefore ‘take back’ or expropriate land in white hands without paying the owners a cent, then what message does he send his audience? That they should go ahead and do what he says, not so?”

“That’s what I’m talking about!” grinned Luke the Dude. “In our quaint philosophical way we asked the question and the hard world out there provided the answer.”

“Yes it has,” said Irene the Queen. “It is very sad. Listen to the sirens. Walk outside and look at the cloud of black smoke as vehicles and buildings go up in flames. Listen to the shots as teargas canisters are fired. Our friendly little town has been turned into a war zone.”

Silence descended on the local Pub & Grill as the usually convivial congregation of conversationalists considered the loss of safety and property, the fear, the futility, the barbarity of it all.

“And it is happening here,” lamented Bob the Book, “where we are living happily with each other, with only the odd intrusion in the civility and good neighbourliness of our lives. Or so we thought.”

“Useless!” exclaimed Jon the Joker in disagreement. “This has nothing to do with any of us who live here. The mobs of Economic Freedom Fascists were bussed in to come and wreak havoc where none was needed or contemplated. I have counted six buses with CA registration numbers on the old circus grounds.”

This was met with a general murmur of approval as we have all heard from the people with whom we work and about whom we worry that, far from being sympathetic to the violent destroyers, our town’s African population are the primary victims.

“I agree,” spoke Big Ben in a momentous break from his usual disdain for our deliberations. “My assistant phoned this morning and said he would not come to work as he couldn’t risk leaving his home and property unprotected. There were thugs everywhere.”

“Wise man,” agreed Irene the Queen, “the nurse who helps with my husband feared for her two kids and fled with them to the municipal hall. When her neighbour arrived later, she was told that her little house had been cleared out. The neighbours even tried to stop the criminals but were driven off with threats of violence.”

“In the meantime shops are closed, businesses are closed, people are losing their income. It is particularly hard for workers who are paid by the day or the hour. If they don’t work, they don’t get paid. How are they going to feed their children?”

“Oui Mon Ami,” declared Jean Jay, “this is how our Monsieur le President Ramaphosa, that one with the promises, this is how he cares for the South Africans he calls ‘our people.’”

“What was Ramaphosa thinking anyway,” lamented Bob the Book, “when he provided the fuel for Malema’s fire? No matter how many amendments the ANC brought to the EFF bill in Parliament, when they supported it, it was an EFF bill that passed, for goodness sakes! Off course Malema, Shivambu and all those little fascists will shout from the rooftops that it was their bill and that they were giving all ‘our people’ free land. Help yourself, as they did outside Pretoria. And are trying it here.”

“I don’t agree,” frowned Big Ben, back to form. “President Ramaphosa said, when he supported the bill, that smashing and grabbing of land would not be allowed. Those were his words. And he repeated them after that nonsense in Tshwane, when he clearly said that it was not revolutionary to smash and grab.”

“Ha! And what good did that do?” taunted Luke the Dude. “He also said no no, we are not going to do anything now, we are first going to have an enquiry, we are very good at enquiries you know, a parliamentary committee will get everybody who has anything to say to participate in our free and transparent process, so it will be all-inclusive. Then we will write a report that will be fair to all. So you people who are not our people, just relax now while the water in the pot gets hot.”

“I don’t know why you are so sarcastic,” baritone Big Ben, “my president did give all those undertakings and I take him at his word. I think we should congratulate him.”

“Just pour me a double please Governor,” ordered Luke the Dude while staring dramatically at the ceiling. “Now here’s the problem, Ben old son. Even if everybody in the ANC agreed with you, and I doubt they do, that would still make no difference. The frog in the drinking water is that Sello Malema doesn’t agree with you or Ramaphosa, and he is crowing as if his motion was accepted and as if he convinced the ANC to agree with him!”

“Evidently so,” nodded The Prof. “The violent mob terrorising our townfolk are clearly not convinced that an orderly, constitutional process is needed. They want it all, they want it now and they believe that Malema has got it for them. The organisers who brought them here have no doubt confirmed their conviction and told them that our town is the place where they have to come and get it.”

Big Ben looked unconvinced as The Governor took the opportunity to shout, “Orders please!” While sweet Angie the Angel did the necessary pouring, Bob the Book agreed with The Prof:

“The way the land grabbers went about their criminal business supports The Prof’s thesis,” pontificated he. “The first sign that something untoward was in the air, was when strangers were spotted doing measurements and taking pictures, much like estate agents. Not that I am casting any aspersions on estate agents, of course. Then, a few days ago, the occupation proper sprang into action.”

“When they were satisfied that their claims had been staked, what did they do? Off they marched to the municipal offices to address the municipal manager. This gentleman, as we know him to be, was kind enough to see them without prior arrangement or appointment and they informed him that they were new residents in his town, gave him their new addresses and demanded water and electricity. Without delay, please.”

“No doubt startled by this unbudgeted charge on the municipality’s finances, over and above the planned capital expenditure on housing, which is considerable, he must have been relieved to realise that, thank goodness, the law was on his side. So he proceeded to explain, in his kind and civil manner, that what they were doing was illegal and that the reasonable thing to do would be to return to the addresses which were not theirs to claim and to restore law and order – as could be expected of good citizens.”

“Oh dear,” sighed The Prof. “What happened next?”

“That’s when the real trouble started, Prof, you guessed it,” confirmed Bob the Book. “That is when the weight of expectations came crashing head-on into the immovable wall of life in the real world – where municipalities have to tax its citizens in order to have a budget and where people pay for services such as water, electricity, for housing and yes, even for land.”

“One can understand their disappointment and anger,” mused Irene the Queen. “Their leaders lied to them, they were conned.”

“Sadly the fraud went much deeper than that,” said The Prof. “They were so thor-

## ON THE CONTRARY



.....  
Pieter Schoombie  
.....

oughly deceived that they continued to believe their lying leaders had done nothing wrong and, as a result, that they were being wronged by the town and its manager who would not let them in. No doubt his skin colour was a supporting argument; the race card seldom fails.

“Then they vented their anger in destructive violence, not against the false leaders who abused them, but against the town, its property and its people.”

“Thanks Prof,” said Jean Jay thoughtfully, “but the question that will remain unanswered is this one: How did President Ramaphosa not foresee such an outcome?”

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## No CO<sub>2</sub> emissions when burning fossil fuels?

It had to happen. After 30 years of promoting panic over carbon dioxide emissions, some scientists have found a way to produce power from fossil fuels such as coal and crude oil without emitting this allegedly dangerous gas.

This news, which comes from the University of Ohio in the US, should gladden the hearts of the Green lobby – including those who believe oil companies are the devil incarnate -- but of course it won’t because the war on carbon emissions has far deeper motives than saving the planet. Conservation for such people has morphed into a war on modernity, on private ownership and in some cases technology to become a secular religion that defies logic and reason.

Be that as it may, bio-molecular engineers at Ohio State University have developed materials that they claim can convert fossil fuels and biomass into useful products including electricity without emitting carbon dioxide to the atmosphere.

Their findings have been published in Energy & Environmental Science. The process changes shale gas (the stuff sane people hope will be found in the Karoo) into methanol and gasoline, while gobbling up carbon dioxide. It can apparently do this when burning coal, oil or biomass (i.e. anything that rots giving off gas).

These scientists are not your average oil company apologists, so anyone reading this so far, can relax and read on because they are passionate Greens in their own way.

For example, they recognise that solar and wind power is a long way from being able to replace traditional ways of producing electrical energy. This is a truly honest assessment.

So, they have been working for some time on what they call “chemical looping”

## THE OTHER SIDE OF THE COIN



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Keith Bryer  
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a process they have already patented which halves the usual cost of producing synthesis gas (syngas is a feedstock for producing ammonia, plastics and carbon fibres). This technique uses metal oxide particles in high-pressure reactors to “burn” coal, oil or gas, with metal oxides producing the necessary oxygen.

This is what they call chemical looping. It is a technology, they say that can provide clean electricity until renewable energies such as solar and wind become both widely available and affordable.

Back into Green mode they add, “Renewables are the future (but) We need a bridge that allows us to create clean energy until we get there — something ....we can use for the next 30 years or more....”

Ja, well, and no, fine, as they say. But good luck to them.

Already this team have shown that coal-direct chemical looping (CDCL) combustion, can release energy from coal while capturing almost all the resulting carbon dioxide.

So far they have proved it can be done for eight months at a stretch under laboratory conditions. Next they plan to test the process on a bigger scale.

The significance of all this is broad. The common way to remove CO<sub>2</sub> from the flues of power plants that burn oil, coal or gas, is pricey, especially as the recovered gas must be buried deep underground to prevent it getting into the atmosphere.

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