

CAPE Business News

<https://www.cbn.co.za>



FOUNDED 1980

National Distribution

JUNE 2022

<p>High efficiency electric motors</p>  <p>Drive cost savings. 3</p>	<p>Orion expands</p>  <p>Tank storage facility will boost exports. 5</p>	<p>Major intersection upgrade</p>  <p>Serves Sunningdale expansion. 11</p>
---	---	---

The world of waste – becoming an ESG warrior



Bertie Lourens.



Sorting of waste for recycling.

ENVIRONMENTAL, social, and corporate governance (ESG) is an approach to evaluating the extent to which a corporation works on behalf of social goals that go beyond the role of a corporation to maximize profits on behalf of the corporation's shareholders – Wikipedia.

As nations and cities urbanize, develop economically, and grow in terms of population, the World Bank estimates that waste generation will increase from 2.01 billion tons in 2016 to 3.40 billion tons in 2050. At least 33% of this waste is mismanaged globally today through open dumping or burning; - World Bank Report: What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050.

South Africa is part and parcel of these statistics

In 2017 the Government estimated that 83% of total waste ended up in the landfill with only 13% being recycled. Regulations have been tightened and include EPR (Extended Producer Responsibility) and tighter control at landfill sites through increased tipping charges to dissuade

dumping and encourage recycling by both companies and residents to adopt a more responsible attitude towards society and the environment.

The country is running out of landfill space, municipalities aren't investing in expanding these facilities, yet the amount of waste is steadily increasing, and the crunch point is on the horizon.

"It's about changing perceptions and cultures, and looking at the big picture and what's best for humankind and our environment" says Bertie Lourens, CEO of WastePlan, a national ISO certified waste management company that specialise in developing and implementing strategies to minimise the waste stream and promote recycling.

"It's not just creating the feel good factor, we run a business and that business must be profitable and the realisation is summed up in our motto "If we cannot save you money, we don't get involved".

The company's services extend to on-site waste management, recycling, zero waste to landfill and implementing waste management strategies, and while being involved in residential collection services, they concentrate their expertise and activi-

ties on industrial & commercial recycling. "Due to legislative and policy developments in protecting our environment, waste management has become an important component of managing any business. Failure to manage waste responsibly will have increasingly negative financial, social and reputational implications, not least in escalating landfill fees or fines. WastePlan manages all general, organic, hazardous and recyclable waste and reports on the entire waste stream in a manner that complies with HACCP and ISO 14001 standards" Lourens explains.

Case study: 75% waste diversion achieved in three months

What can be achieved is best summed up by this case study of a waste reduction and recycling programme implemented on behalf of Liberty Two Degrees (L2D) at the shopping malls they own.

The key numbers are that prior to the WastePlan strategy being implemented, L2D's shopping malls were sending 61%

Continued on P18

More gas, less talk, more action



Nick de Blocq.


By Robin Hayes

THE recent announcements that the IDC will be investing as a shareholder, anteing up R70-million for a 45% share in an SPV with a scoped framework, on top of a R10-million injection from Phefo Power, to speed up the development of the Kinetiko Energy / Afro Energy gas find in the Amersfoort – Volksrust areas of Mpumalanga, should be seen as a positive step, but is it enough to set the ball rolling?

The 'enough' relates not only to capital injection into the development of this huge gas find, but the elimination of corruption, red tape, regulation and silo mentality, political and/or vested interests and apparent Eskom recalcitrance to commit to making natural gas a relevant transitional fuel for power generation.

The Australian gas explorer Kinetiko Energy, through its local subsidiary and Rights Holder, Afro Energy, has been active in the development of its gas find since being awarded a license more than a decade ago, but the combination of a lack of appetite from local investors, Eskom woes and a lack of cohesion within government departments has meant that the project hasn't seen the sort of progress made in the Free State

Continued on P2





We engineer dreams

Unit 1 Platinum Park
Platinum Crescent
Montague Gardens
Cape Town

Tel: 021 551 2660
www.bonfiglioli.com

IN THIS ISSUE

- 11 Built Environment: Products / Materials Sustainability / Projects in Progress
- 14 Civil Engineering: Construction Material Technology / Consultants
- 16 Corrosion Control / Specialised Coatings
- 18 Recycling / Waste Management / Zero to Landfill
- 20 Plastics / Packaging Materials / EPR & PRO
- 21 Fishing: Aquaculture / Fish Processing & Handling
- 24 Petrochemicals Oil & Gas, Upstream & Downstream Value Chain
- 26 On the Contrary

More gas, less talk, more action

Continued from P1

gas find being developed by Renergen. To be fair, the discovery of the world's highest levels of helium there have blurred the gas picture more than somewhat, spurring investment and creating a potential bonanza for early punters.

Massive potential

Speaking exclusively to CBN, Kinetiko Energy's new CEO, Nick de Blocq, outlined the huge potential of the Mpumalanga gas fields. "Our area under rights and application covers nearly 7 000 km² (compared to the Free State resource of just 187ha) and so far we have sunk 30 core-holes and perm test wells, with a 100% success rate in cutting gas, and mapped close to 80 productive 'compartments' of proven 98% purity methane, giving us a 2C Resource certification of 4,9 million TCF (Trillion Cubic Feet). To put that into perspective, Sasol based its three-to-four decade drilling and production project in the Pande-Temane-Inhassoro area of Mozambique on 2.5 TCF and Moss-gas flowed profitably for its initial 20 years while producing just 1 TCF. Having recently flown about 12 000 line km of aeromag/gravity surveys and drilled and logged three more wells, we hope to see



View across the Africa Energy – Sasol boundary, Sasol's Secunda plant.

a positive reflection in our new resource report later this year.

"Recent investor interest – both locally and in Australia – during our May 2022 capital raise programme will allow the further exploration and proof-of-concept projects to be extended to at least 20 productive wells in an initial phase, and the establishment of mid-stream infrastructure suppliers with ready offtake markets. We are currently in discussions with nine interested parties with whom we could potentially partner for the drilling, production and processing phases of commercialising the gas.

"While our gas predictions are based on the cluster of wells in the Amersfoort area, we have barely scratched the surface (!) in the southern district area of Volksrust where gas has been found in every borehole that has been drilled although proof of concept for a GTP (Gas Treatment Plant) or LNG (Liquefied Natural Gas) still needs to be established. We have found a deeper basement with a higher potential for good pressure and flow rates in this southern part of Block 271. Our compartmentalised, gassy sandstone geology has proven to be productive wherever we have sunk a borehole, and after covering about 10% of our areas with aerial surveys, we have uncovered 79 such compartments ripe for exploration – and we have only dabbled in two or three of them

to date. There is a lot of work to do, and we are being well assisted every step of the way by the Petroleum Agency!"

Future prospects

"The future exploitation of the Amersfoort and Volksrust fields stands on three main legs:

1. Gas to power (GTP) and feed-stock
2. LNG & CNG production and virtual pipelines
3. Pipelines

"There is already a redundant gas generator in the nearby Majuba Power Station, just a few kilometres from our first exploratory wells, which seems to indicate that Eskom may have been experimenting with gas powered electricity generation from the recently canned underground coal gasification (UCG) project. It is entirely feasible, based on the pressure and quantities so far discovered, to pipe natural gas to this power station which could be partially or wholly converted to natural gas with a meaningful contribution to energy security while minimising the burning of coal and the cost of 1 500 coal-truck deliveries a day..."

"Furthermore, we share a boundary with Sasol's Secunda plant where they already process natural gas from the Pande-Temane gas fields in Mozambique via the 865km long ROMPCO pipeline. As might be expected,

the proximity of our resource has generated great interest from Sasol, especially as the Mozambique resource is in decline and is likely to be exhausted during the next decade or so. Natural gas is the key ingredient in the feedstocks that Sasol requires for products such as fertilizers, plastics, pharmaceuticals and fabrics, in addition to being an energy source. Sasol has also stated their intent to evolve their CTL (Coal to Liquids) Fischer-Tropsch system to a GTL (Gas to Liquids) facility in order to maintain cleaner liquid fuel demand and are already looking at ways to replace decreasing production from the Mozambican fields. Proximate, indigenous gas should always compete easily with imported content!

"The production of LNG (Liquefied Natural Gas) and CNG (Compressed Natural Gas) for transportation and industrial processes on site for onward transportation via virtual pipelines – road or rail – has enormous potential for industry and society, with production having already commenced at the Free State facility, and more widespread availability has huge potential in the production of hydrogen, alongside thermal industry which also trying to clean up its act.

"The third and longer term 'leg' could be realised via the partial replacement of the Pande-Temane source from our northern Block 270

directly into Secunda and the connection of Amersfoort/Volksrust gas into the existing Lilly pipeline from Secunda to KZN. This line runs through three of our Rights areas" concluded de Blocq.

No omelette without scrambling eggs

Just as the invention of the motor car changed society fundamentally and put saddlers and blacksmiths out of work, so the time of the coal industry is rapidly running its course. And what a run it has had, fostering commerce and industries all over the world – from steam locomotives to battleships and of course, power generation.

Energy pundits predict that energy from coal will necessarily be with us for many years to come, but like oil and coal itself, the transition to other forms of energy from creation to widespread acceptance accelerates rapidly once proven; and natural gas has been proven and even has the label of a renewable resource along with nuclear, wind, solar and biomass.

The test as far as South Africa is concerned, lies in resolving the political morass, Eskom corruption and maladministration, union response to job losses, and the vested interests that pervade the coal industry. Tough nuts to crack, but climate change momentum and the energy supply crisis will see the smart money placed on gas.

CAPE Business News
Where industry speaks to industry

DIGITAL SUBSCRIPTION COMPETITION

Subscribe and receive **10% MARKETING DISCOUNT** from your next digital marketing campaign with Cape Business News

To qualify for entry to the competition:

1. Subscribe + download our publication
2. Subscribe to CBN's daily ENewsletter
3. Follow us on

www.cbn.co.za



Need a Storage Solution?

Dexion offers efficient, cost effective solutions of all your storage requirements. Dexion racking is designed and manufactured in compliance with the S.E.M.A code of practice, providing you with a quality, fully adjustable storage solution.

- » Rack inspections, rack maintenance and certification
- » Static Racking
- » Cantilever Racking
- » Shelving
- » Mezzanine Floors
- » Conveyors
- » Mobile Racking
- » Mobile Archive Shelving
- » Small Parts Storage & Bins
- » Staff Lockers

DEXION

Smarter thinking.

Cell 083 264 6043 Email ron@dexioncape.co.za
Tel 021 552 0220 Fax mail 086 517 2949

Southern Storage Solutions (Pty) Ltd
t/a Dexion Storage Solutions
Unit 22 • Frazzitta Business Park cnr Koeberg & Freedom Way • Milnerton • Cape Town • 7441

www.dexionrackingandshelving.co.za



Correction

In our May edition p24, we included an article 'RTF's make inroads on farms' which incorrectly stated that the lifting capacity was certified by the SABS. A report confirms that the lifting capacity was tested by the SABS and as they pointed out in the article in the same issue, p16, the two terms are not interchangeable.

Our interviewing journalist accepted the statement in good faith and we apologise for a potential misrepresentation of the fact.

High efficiency electric motors drive savings

IN the absence of legislation to drive energy efficiency in South Africa, it is vital that local industries recognise the commercial benefit of converting to high efficiency motors, says Zest WEG sales manager for electric motors Francois Labuschagne.

In pursuit of global targets to reduce the pace of climate change, many countries have legally enforced the use of certain efficiency classes of motor, but not South Africa. Labuschagne points out that as much as 40% of the power consumed on the national grid is to drive electric motors. This means that any improvement in motor efficiency would significantly reduce the total electricity load, and help reduce carbon emissions from coal-fired power generation.

“However, even without being forced by law, motor users have a strong com-

mercial incentive to install high efficiency motors,” he argues. “This is because a motor’s purchase price typically makes up only about 2% of its lifecycle cost over 10 years. With another 3% of this cost consumed by maintenance, a full 95% of the cost of running a motor is the energy it consumes.”

It is clear, then, that reducing the energy consumption is the best way of saving costs when it comes to operating motors. One of the challenges, though, is that many companies incentivised their procurement departments to save money on upfront capital purchases – rather than on the broader cost to company.

“Where a purchaser does not understand where their motors’ real costs are incurred – that is, in their energy consumption – they will continue to pursue a false economy

by choosing products with the lowest capital cost,” he says. “The small amount saved upfront is very quickly lost through higher running costs.”

He points out that, as a global electric motor manufacturer, WEG has been making efficiency innovations to its motors for decades – positioning it well to meet current and future market trends. In South Africa, Zest WEG has gone as far as to offer its IE4 super premium efficiency motors from 37 kW upwards at the same price as the IE3 premium efficiency units.

“We have recently taken another important step in our efficiency and sustainability journey, offering the market our new IE5 motor – and taking our offerings into the ultra-premium energy efficiency class,” he says. “These motors are well suited for fan applications, and have



A typical HVAC fan application.

great potential in the agricultural sector in environments such as chicken farms.”

Using smaller fans in these situations can give users the opportunity to install

multiple units where they used to have only one large fan. As temperature conditions change throughout the day, one or more of the fans can be switched off com-

pletely, further reducing energy consumption.

“We are very excited about this electronically commutated motor, which also comes with an inte-

grated variable speed drive (VSD) and can be locally or remotely controlled,” says Labuschagne.

For more information visit: www.zestweg.com

Driving clean engine technology in SA

By David Poggiolini

THE launch of the Quester and Croner Euro 5 truck technologies in a country that still operates with a Euro 2 fuel standard is a bold move by UD Trucks. This original equipment manufacturer (OEM) wants to ensure that it is able to start driving the uptake of the technology as early as possible to position itself as a leader in the field as South Africa gradually transitions into a “green” economy.

“The uptake of the technology will start with large fleet operators that have already expressed a keen interest in the technology because they want to be major drivers of sustainable transport. This is over-and-above the role that the technology will play in helping them to reduce fuel consumption and prolong service intervals. Over time, we believe that smaller third-party logistics providers will also follow their example,” Jacques Michel, Senior Vice President

of International Sales of UD Trucks, says.

The fuel efficiency of these trucks, alone, is a strong enough selling point. One of the OEM’s clients spends about R1-billion a year on diesel and is very cautious about the future. The company has shown a keen interest in the Euro 5 truck technology because it promises a 4% to 5% saving in fuel. Add to this a marked reduction in total cost of ownership and downtime. This is in addition to the wealth of data that is generated by these vehicles to ensure their optimal functioning.

Trucks were carefully selected for South Africa. They include a Croner 250 HP freight carrier in the 16t heavy commercial vehicle (HCV) segment. This is UD Trucks South Africa’s largest market segment. It is closely followed by the 15,5 t HCV segment which will be serviced by a 240 HP Croner freight carrier. These models are complemented by two more Croner models, one being a 4x2 truck tractor and

another with a 6x2 axle configuration freight carrier, for distribution and regional haul, a growing market for the OEM.

Meanwhile, UD Trucks has introduced Quester models to service the top-end long and regional haulage markets. They include a freight carrier and two truck tractors for onerous applications. This is in addition to a 460 HP truck tractor configuration that will enable the company to grow its market share in the top-end truck tractor market for long-haul applications.

Certainly, another major market for the Euro 5 technology is local municipalities. They are increasingly exploring cleaner truck technologies for waste-management services. The City of Cape Town, in particular, is at the forefront of this drive, and Rory Schulz, Sales Director of UD Trucks South Africa, also commends the Western Cape Department of Transport and Public Works for the stellar role that it is playing in driving the uptake of



clean truck technologies in the province.

Selective Catalytic Reduction (SCR) technology was deployed to meet Euro 5 standards. Launched in 2004 as an industry first by Nissan Diesel/UD Trucks, the afterburn technology entails forcing a chemical process within the exhaust system after the diesel fuel has been burnt. This is achieved by adding a urea, known as AdBlue commercially, in a specific

ratio to the fuel.

One of the biggest advantages of this technology is that it enables the OEM to map and select an engine that provides the best possible fuel consumption for a specific application. Due to high-injection pressures, very efficient fuel consumption is achieved without having to limit the performance of the engine to comply with the latest international emissions regulations.

Meanwhile, the fully automatic transmission on the Croner trucks has undergone slight upgrades to operate optimally with the new Euro 5 engine technology.

The Easy Safe Controlled Transmission (ESCOT) on the Quester trucks have also been upgraded to ensure excellent fuel combustion in all local conditions.

Certainly, with South Africa increas-

ingly relying on imported fuel, Filip Van den Heede, MD of UD Trucks Southern Africa, believes that the launch of the technology is timely. “The country currently imports about 60% of all its fuel and this is expected to increase as more local refineries close. Meanwhile, all countries across our borders import fuel of the required 50ppm or 10ppm,” Van den Heede concludes.

Future proof your fire protection system with FireDos®

Speak to the company that knows foam systems best

Efficient • Effective • Easy to use & test

FireDos foam dosing proportioners and skids • Monitors and water cannons • Mobile dosing and monitor trailers • Bund, tank top and rim pourers

dosetech fire 30
special risk fire protection

+27 (0) 861 111 544 • Mike – mgf@dosetech.co.za
firedos@dosetech.co.za • www.dosetech.co.za

ALL INDUSTRIAL, MOBILE, SPRINKLER REQUIREMENTS

IO-Link master: Connection of sensors to the PLC and to the IT world



a separate IoT Ethernet socket the IT network can be set up completely separated from the automation network. Sensor information is transferred into the IT world via the established TCP/IP JSON interface.

Robust field bus modules for demanding applications

Thanks to their special housing materials and high ingress resistance (IP 67 or IP 69K), they can be used in coolant applications or directly in wet areas in the food industry. The ecolink technology guarantees reliable, permanently ingress resistant M12 connections of the connection cables.

For more information visit <http://www.ifm.com>

- Industry 4.0 ready via new IoT core
- Separation between automation and IT network
- 4 or 8 IO-Link ports with full V1.1 functionality
- PROFINET, EtherNet/IP, EtherCat, Modbus TCP, TCP/IP JSON or Powerlink
- Master and device

configurable via the LR DEVICE software

The decentralised IO-Link master modules serve as a gateway between intelligent IO-Link sensors and the field bus. Besides, important information of the intelligent sensors can simultaneously be sent into the IT world. With

Stress free and cost efficient removal solutions to and from the Cape



CAPE Town is undoubtedly South Africa's most popular destination for tourists and locals alike. The picture-card Western

Province region offers an envied lifestyle of work-hard-chill-hard ethos which is hard to emulate. The region's myriad of activities of

water sports, mountaineering, trail activities including hiking and mountain-biking, surfing, hang-gliding, you name it; it's all found in Cape Town.

Cape Town's drive to grow its tourist, technology, IT and green energy economies has grabbed the attention of many South Africans looking for employment opportunities and a better life. This drive has impacted the furniture removal industry and Cape Furniture Removals set itself up to capitalise on the relocation movement between all South African cities and Cape Town.

Cape Furniture Removals & its South African partners

The regionally focused furniture removal & storage business was founded in October 2012 in Cape Town with the objective of providing a collective brand that would represent four to six independent removal teams which all had the same service delivery commitments but lacked technology integration and regional brand identity.

The business model was extremely well received by the localized removal teams and in other South African cities. The success of Cape Removals and its formula was duplicated in other key regions throughout South Africa and included partners; JHB Furniture Removals, Pretoria Moving Company, Durban Furniture Removals, and Storage Chief which serves all its clients storage needs.

Cape Furniture Removals & its partners successes has been

confirmed through positive reviews on reputation platforms like Hello Peter and Google Reviews where clients have expressed their appreciation of work ethic and dedication in providing clients with a professional and smooth furniture removal service.

The partnership was soon expanded with more routes and load options to less popular destinations by partnering with new cohorts and introducing them into a national moving company brand namely, SAFR Furniture Movers.

Utilising the existing infrastructure and capabilities of SAFR Movers and Biggles Moving Company, Storage Chief was brought to market early 2022 to consolidate both moving and storage operations. Storage Chief also offers storage units to complement the group's removal and packing services.

Shared load service

For clients that don't have enough furniture to fill a large truck, Cape Removals also offers a shared load service covering all South African cities.

One Cape removal truck can accommodate items from three to seven large houses, so the price of removal is only based on the space used which drastically reduces costs. Shared & Small Load Moving Company services cater for long-distance removals and are offered weekly to all SA cities & interconnecting towns.

For independent reviews visit: <https://www.hellopeter.com/cape-removals>

CAPE REMOVALS –

A FURNITURE REMOVAL COMPANY PROVIDING SAFE, SECURE, LOCAL AND NATIONAL REMOVAL SERVICES

Finally, a Moving Company that represents the very best in furniture removals and packing solutions. We are a furniture removal company based in Cape Town with local movers and teams that are localised and trained to facilitate all your moving requirements. We have comprehensive local teams covering all corners of The Western Cape and as well as a weekly schedule of Long Distance removal services that cover all South African cities.



Our local furniture removalists' teams in Cape Town are friendly, efficient & very obliging. Cape Furniture Movers understand our objective of providing professional & safe moving service for our clients. Our staff are trained to move large to awkward furniture in the safest possible way. Protective wrapping, blankets & TLC are part of our moving company Cape Town service to minimise as much risk as possible. Hoisting, disassembling & reassembling are only some of the skills in our furniture moving companies Cape Town.

Cape Removals share a national infrastructure with SAMoving Company who share their infrastructure in all South African cities to create efficiency and cost saving opportunities for our clients.

MINI MOVERS SERVICES | HOUSEHOLD REMOVALS | OFFICE REMOVALS | LONG DISTANCE REMOVALS



Local Removals – Cape Town
 Direct: 061 418 7093 or 021 203 5977
 Email: office@caperemovals.co.za

National Removals (South Africa)
 Direct: 065 952 6312 or 087 147 4560
 Email: info@caperemovals.co.za



“The new exports to Europe, due to this tragic situation that we hope will be resolved peacefully soon, are an example of how working together here in South Africa to solve local challenges can create opportunities for support elsewhere,” Mr. Painter said. “Our European customers are looking to replace approximately 40% of their carbon black needs that were served by Russia, Belarus and Ukraine. This is a chance for our South Africa operation to fill a gap and provide crucial support to Europe,” says OEC’s Group Chief Executive, Corning Painter...

ORION ENGINEERED CARBONS – SOUTH AFRICA INCREASES ITS EXPORT TO THE EUROPEAN MARKETS



PATHING THE WAY FORWARD: OEC Group CEO, Orion Engineered Carbons – South Africa increases its export to the European markets.

South Africa, Gqeberha, 30 May 2022 – the Coega Development Corporation (CDC) continues to demonstrate the success of its 9003ha Coega Special Economic Zone (SEZ), as a preferred investment destination on the African Continent, by recently jointly hosting a successful sod turning ceremony with its new global investor, namely Orion Engineered Carbons (OEC). OEC announced that for the first time in history, its South African operations started to export its products to Europe, mainly because of the global geo-economic instability caused by the Russian/Ukrainian war, said the OEC’s Chief Executive, Corning Painter.

“The new exports to Europe, due to this tragic situation that we hope will be resolved peacefully soon, are an example of how working together here in South Africa to solve local challenges can create opportunities for support elsewhere,” Mr. Painter said. “Our European customers are looking to replace approximately 40% of their carbon black needs that were served by Russia, Belarus and Ukraine. This is a chance for our South Africa operation to fill a gap and provide crucial support to Europe.”

Mr. Painter added, “Because of the new confidence we have in the Coega SEZ project, we are upgrading several key pieces of equipment and feel excited about the facility’s potential and future. Overall, we have a terrific story in South Africa. We import raw materials from the U.S., perform high-value manufacturing in Nelson Mandela Bay and export high-grade carbon black to Europe. Let’s keep this great momentum going.”

The OEC black oil tank project investment at the Coega SEZ is valued at more than R60 million with the Department of Trade, Investment, and Competition (the dtic) providing an additional R200 million to facilitate the solution for Orion Engineered Carbons to preserve jobs in the province and municipality and ensure the sustainability of the industry. The project entails the development of two 18,000 m³ tanks for the storage of carbon black feedstock with ancillary infrastructure over a 10-month period and is estimated to create over 150 jobs (50 construction phase, and 100 jobs during the operational phase of the project). This was announced at the Sod Turning ceremony in April 2022 that

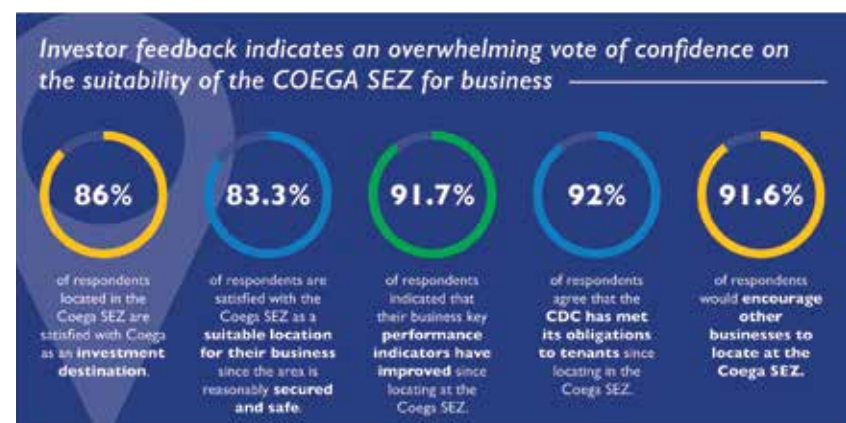
was attended by the Honourable Deputy Minister of the Department of Trade, Industry and Competition (the dtic), Mr. Fikile Majola and the Honourable MEC for the Eastern Cape Department of Economic Development, Environmental Affairs, and Tourism (DEDEAT), Mr. Mlungisi Mvoko, who were amongst the leaders of business in the Nelson Mandela Bay Municipality (NMBM).

Had it not been for the interventions, collaboration and support of the parties involved, the region would have lost a project of significant value which would have led to an increase in unemployment, loss of government revenue, and formed a perception that the region is not an attractive investment location. Approximately 7,000 people are employed in the associated tyre manufacturing value chain, most of whom would have lost their employment. It is with thanks to the collaborative effort of the CDC, OEC, TNPA and the dtic that such a risk has been averted, and it is against this backdrop that the CDC sees all these parties as strategic stakeholders for this project.

Orion’s CEO, Mr. Corning Painter, emphasised the importance of the OEC black oil tank project to the company and how it will stimulate the entire value chain of the automotive sector. This project is in line with Orion’s identity as a premium supplier of carbon black, generating long-term benefits for stakeholders while remaining committed to responsible business practices through a focus on team culture, reliability, and sustainability.

“The project will see the relocation of the liquid fuel storage facilities (Dom Pedro Tank Farm) from the Port of Port Elizabeth (PoPE) to the Port of Ngqura. The Dom Pedro Terminal in the Port of Port Elizabeth is due to be closed to liquid vessels by the end of December 2022,” highlighted TNPA, Managing Executive-Central Region, Mr. Siyabulela Mhlaluka.

“As the Coega SEZ, it is important that we can respond to complex problems that seek to disrupt the value chain in a positive way. When we were called upon by the dtic and TNPA to intervene to find a lasting solution to the project, we sought to do so in a way that would have a meaningful impact for the people of the Eastern Cape, and country as a whole, said Ms. Asanda Xawuka, CDC’s Executive Manager of Business Development. Moreover, the Coega SEZ is forecasting significant growth in the number and value of its investors in 2022. This is further strengthened by the recently conducted Coega’s Investor Perception Survey at the end of 2021 in which the following results demonstrated the Coega SEZ’s prowess, as the global investment destination of choice in Africa:



Coega SEZ Investor Perception Survey Results, 2021.



Digital transformation of the education industry holds mixed implications for developing countries

“HIGH-SPEED internet access has brought about an education revolution for countries that have embraced digital delivery. The most motivated learners have been able to move much farther ahead, at their own pace, using resources outside the academic institution to further build their skills. The ability to own your educational path has created enormous up-side potential for the most talented. It has also allowed the most innovative

institutions to rise in prominence,” says Murray de Villiers, EMEA Emerging, Education Head, SAS Institute.

“Unfortunately, the negative aspects of digitalisation revolve around access. For many learners in

developing countries, lack of access to high-speed internet hampers development and equality of opportunities. Industries are also changing faster than academia can adjust to disruption, which means that a gap is

developing between elite institutions with the resources to keep pace and those that cannot,” adds de Villiers.

To bridge the gap, de Villiers says academic institutions need to work in partnership with govern-

ments and private sector organisations. “Academic institutions need to stay on top of technological advancements in business – and adopt some of those changes to processes themselves, for the improvement of the customer expe-

rience. The same accountability for delivery that traditionally featured in physical content delivery needs to apply to online delivery.”

SAS has more than 3 000 education customers in 56 countries, helping institutions to anticipate the future and respond proactively to changing trends by harnessing data and analytics. By moving beyond merely collecting and reporting data to applying sophisticated analytics, universities can achieve systemic improvements through deeper insights and improve student outcomes.

The reason SAS invests in the secondment of staff as well as educational content to academia is that universities struggle to keep up with industry developments and related theoretical advancements without direct input from organisations. Graduates with expertise in an industry standard like SAS, as well as open-source skills, stand out in the competitive job market. Digital credentials that validate expertise, augment and enhance degrees do carry significant weight with savvy employers seeking people who can get the job done.

“We help train faculties to deliver the latest in technology, but this is done in a collaborative triangular approach that includes our customers. They, too, bring their top-tier research and professional talent to create practical experience programmes, technical experience programmes and professional networking,” de Villiers adds.

The last element – professional networking – is crucial and took a blow during the pandemic, says de Villiers. “Mentorship and career development are important in the development of professionals, not just the bearers of skills. When we expose young people to successful leaders in their career fields, we create a standard to emulate. This is what moulds the next generation of industry leaders across the world. It is the role of universities to ensure students have access to top experts and thought leaders. That is where their competitive edge will come from.”



OUR GOAL IS TO ENSURE SAFE & COMPLIANT PRODUCTS IN SOUTH AFRICA



The SAFEhouse Association is a non-profit, industry organisation committed to the fight against sub-standard, unsafe electrical products and services imported and manufactured in South Africa.

PROUD MEMBERS OF THE SAFEHOUSE ASSOCIATION



For more information contact: connie.jonker@safehousesa.co.za | barry.oleary@safehousesa.co.za | safehousesa.co.za

Crystal, a game-changer in online business fleet data reporting

CTRACK, with 35 years' experience in vehicle tracking and fleet management, has completely redesigned and consolidated their offering into a new product, *Crack Crystal* which allows for the management of movable assets, no matter how big or small, in a new and innovative way.

is needed at that time resulting in quick and decisive decision-making.

This is done by focusing on critical parameters such as what needs to be done today, what assets worked and which did not, presented with graphics, detailing jobs scheduled, jobs remain-

ing, jobs completed, unscheduled jobs, fleet alerts, and geofence visits, amongst others.

Better driver management will result in less risky driving behaviour but better driver engagement and performance, including safer more fuel-efficient drivers.

The optimal manage-

ment of a fleet of vehicles or moveable assets has a direct bearing on factors such as collision, insurance and fleet costs as well as total cost of ownership which in turn results in better utilisation of vehicles and increased profitability.

Similarly, a fleet

health summary gives an easy to understand status on assets and allows fleet managers and business owners to keep a handle on maintenance, servicing and regulatory issues.

The executive dashboard allows decisions to be made more rapidly by highlighting trends

based on 72-hour data, selected from any date on the platform, as opposed to the 24-hour view that was given previously.

This functionality ensures a 24-hour, 365 days a year view of assets prescribed by the user from anywhere on the planet.

Conclusion:

Crack Crystal will be implemented in a phased rollout, culminating during quarter four of 2022.

To download the Crack Crystal video, visit: <https://www.dropbox.com/s/g2pi4d1n8v4i1w3/Crack-CrystalFINAL.mp4?dl=0>

Cloud-based

By integrating with hardware installed in vehicles, data is now transmitted to the cloud and hosted within the Microsoft Azure environment; a much faster and more secure solution.

No software is located on computers or tablets as the platform runs from the device browser, meaning added security and seamless transition between a variety of devices using the same user credentials. This means tracking and tracing solutions are available in real-time, with live updates every 15 seconds. It is no longer necessary to wait for data to refresh.

Interactive functionality

Crack Crystal is user customisable and features improved functionality such as a live map with traffic views, the ability to send a message to the driver and the setting up of user-defined locations amongst a myriad of other options, from one location, all designed to save time and costs.

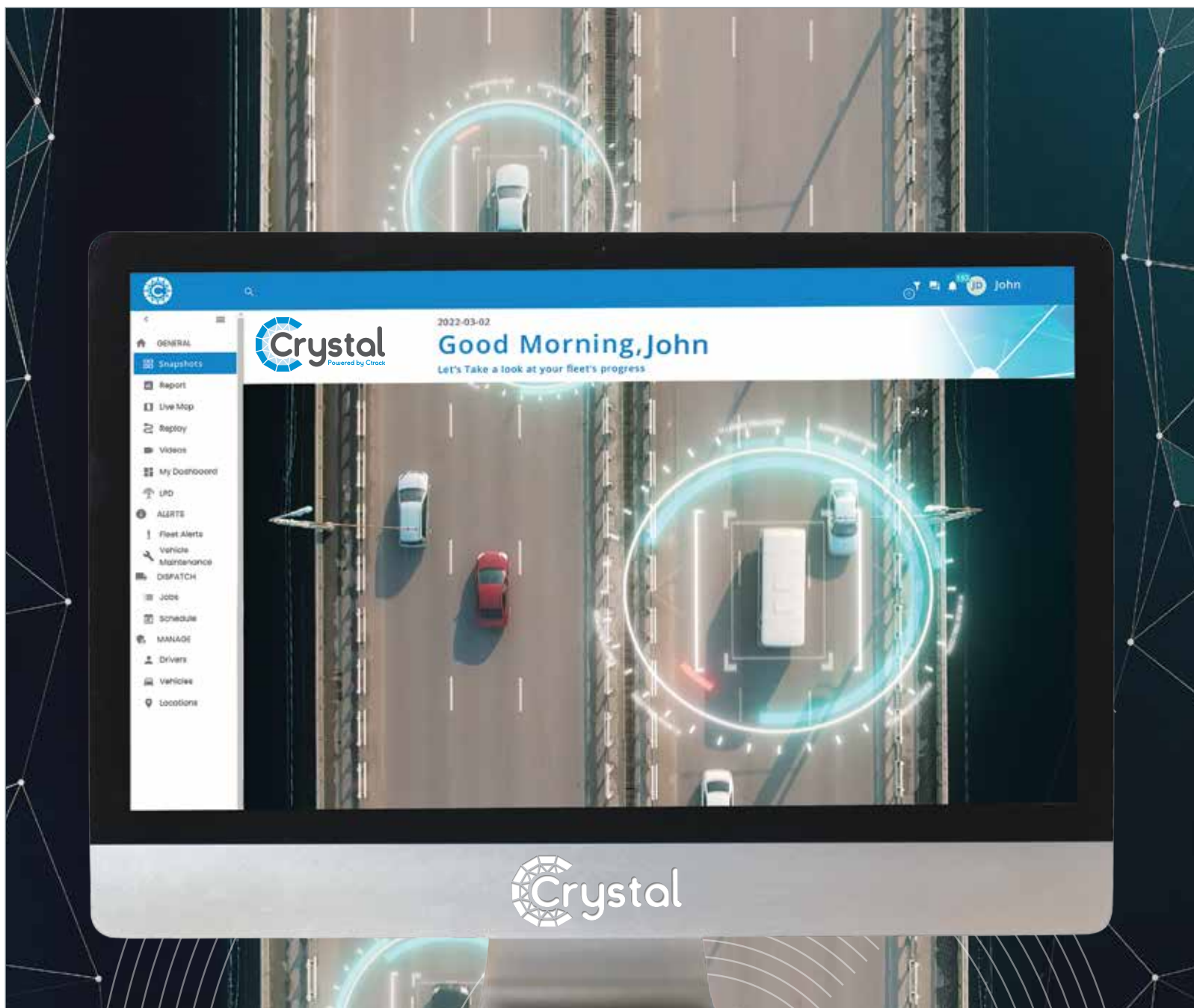
Analytics generated by Crack Crystal offers a graphical representation of large data sets, giving insight into your business through prediction models and trends analysis.

Crack Crystal users will be able to choose from a variety of customisable packages and add functionality as their particular needs change, including innovative features like voice commands and live in-cab camera views.

As with many of the functions of Crack Crystal the in-cab camera system can be paired with Artificial Intelligence software. As an example, this clever software sifts through the data gathered by in-cab cameras and only reports on the transgressions defined by the fleet manager, instead of on every transgression.

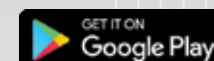
New management reports and dashboards

The snapshot dashboard offers a high-level overview and highlights the most important areas where attention



Crack Crystal

Clear and precise fleet data in the palm of your hand.



Crack's Innovative Solutions supports managers with

- Intelligence on Safety and Risk Mitigation
- Advanced Driver Assistance
- Vehicle Safety Inspection
- Daily Jobs & On-Route Tasks
- Camera AI Data Intelligence
- Efficient Planning with tailored Data Summaries
- Inventory & EPOD* Integration
- Asset Efficiency and Replacement Planning
- Identify Fleet Risk with Heatmaps*
- Voice Commands via Mobile Device*

* Some product functions not immediately available in Africa. Image for illustration purposes only.



www.ctrack.co.za | sales@ctrack.com | Call Centre: +27 (0)860 333 444

Always Visible

Students now have access to an unlimited number of courses

GLOBAL education technology company Cengage has launched a first-to-market subscription service for textbooks for South African higher education institutions. The company says the subscription service, Cengage Unlimited for Institutions (CUI), allows students to access an unlimited number of courses

from a library of 10 000 digital products including eTextbooks, online learning platforms and study tools covering 675 courses - all from one source at one affordable price irrespective of the number of materials used.

Cengage is already supporting more than three quarters of public and private South

African universities with in-person, blended and online courses. Cengage digital resources are used to support student outcomes and improve student engagement, digital literacy, the learning experience and employability skills.

University of Pretoria, North West University, University of

Cape Town and the University of Johannesburg are some of the institutions successfully using Cengage's digital platforms to address their higher education needs.

The Department of Mathematics and Statistics at University of Cape Town is using Cengage's WebAssign, one of the platforms included in Cengage

Unlimited for Institutions, to provide content, online study functionality, and efficient homework assigning and grading to a large Calculus course of 800 students.

The platform is specifically designed for STEM subjects and provides course content, homework, tests and practice problems with instant assess-

ment and has been shown to improve student grades.

"Cengage Unlimited has been successfully piloted in EMEA over the last 12 months in Ireland, Switzerland and Saudi Arabia to ensure the diverse needs of our instructors and students in the EMEA regions are met through this new subscription plat-

form."

"The pandemic had major implications for students and institutions alike. During this time, Cengage worked closely with its customers to support the transition to remote learning.

Throughout the process, Cengage developed a deeper insight into the ways eLearning can be supported," said Andrew Robinson, Vice President, General Manager of International Higher Education at Cengage.

Dr Eoin Langan, Dean at the Faculty of Business, Technological University Dublin (TUD), said, "As a technological university we aim to deploy the latest technology solutions to advance and supplement our students learning. Cengage Unlimited provides instant access to quality course material across laptops, tablets and mobile phones, and students can access the material from anywhere."

"Cengage Unlimited provides an affordable alternative to the cost of purchasing textbooks for students and our library. Lecturers can benefit from Cengage Unlimited for both formative and summative assessment purposes, including automatic grading, which helps monitor student progress and understanding."

"Besides cost savings, TUD students have benefited from Cengage Unlimited in more ways," Dr Langan added.

"All our students travel to campus, and want access to their material on their journey. Students appreciate being able to access their learning materials from anywhere, integrated with our virtual learning environment which aids them in their studies."

"They can also easily find content by using the search feature on Cengage and save important information with bookmarks and highlighting, and more importantly, they don't have to carry physical textbooks to campus."

"MindTap, WebAssign and Cengage EMEA's extensive range of digital learning materials are now available through Cengage Unlimited. "Institutions now have the opportunity to support each of their students with the same access to more than 10,000 eTextbooks, but a vast range of other digital resources and study tools from day one of their courses, with no student left behind," says Andrew Robinson.

20 Years NCPC

INDUSTRIAL EFFICIENCY IN SOUTH AFRICA

The **NCPC-SA** is a national industrial support programme that drives the transition of local industry **towards a green economy**

Services and focus areas include industry and sector knowledge-sharing, company technical support; green skills development; and advocacy and awareness-raising.

Since 2002, the NCPC-SA has:

-  Advised and assessed over **1700 companies**
-  Saved almost **7 000 GWh of energy** in industrial plants
-  Helped mitigate over **7 million tonnes of GHG emissions**
-  Trained over **6 500 professionals** in resource and energy efficiency



2002 – 2022

The National Cleaner Production Centre South Africa (NCPC-SA) was established at the Joburg World Summit on Sustainable Development in September 2002. Its success since then has made it a true legacy project of the summit.



www.ncpc.co.za
www.industrialefficiency.co.za



ncpc@csir.co.za



the dtic
Department:
Trade, Industry and Competition
REPUBLIC OF SOUTH AFRICA



CSIR
Touching lives through innovation

Funded by **the dtic**, hosted by the **CSIR**

The dual advantage of investing in energy-efficient technology

BLOOMBERG Green puts South Africa as 12th in the world when it comes to the emission of greenhouse gases, with 65% of the country's emissions being attributed to electricity and heat. With South Africa's emissions having increased by 10.4% between 2000 and 2017, the need for energy efficiency in the country is ever more urgent which is why it's important that South Africans consider the impact that the population's energy usage has on the local environment.

This is the opinion of Chief Executive Officer of Defy Appliances, Mustafa Soylu, who extends the call for energy efficiency to both the public and private sectors as well as civil society. As he comments: "We urge the South African business community in particular, to invest in the future of our country and the world at large, by joining Defy in its mission to contribute towards energy-efficient practices, processes and products."

As a 'future market,' the African continent is set to become an increasingly central part of the global economy. This progression is illustrated by the European Union's efforts to strengthen its ties with the continent to promote the trade of sustainable and clean energy. Initiatives like the Africa-Europe Alliance for Sustainable Investment and Employment aim to unlock Africa's potential for rapid progress toward a green and circular economy, including sustainable energy and smart cities.

Given these developments, it is Soylu's opinion that the role of South African businesses in the product design and development sectors is of vital importance. In his role as CEO, Soylu has, for example, placed a key business development focus on the brand's Solar Hybrid cooling solutions, which uses a combination of electricity and solar energy to save money and reduce electricity consumption.

In a socioeconomic context in which the country is facing several headwinds relat-

ing to its unstable energy supply, environmentally sound product solutions are the only viable way forward. In South Africa, only 90% of the population has access to the electricity grid, and it is estimated that more than 600 million people in Sub-Saharan Africa will lack access to electricity by 2030. Therefore, investing in energy-efficient technology has a dual advantage for the planet and for its people. Soylu encourages brands to join Defy in championing eco-friendly innovations and climate-friendly products.

Extending his appeal to South African consumers, Soylu encourages a more "conscious" approach to buying decisions: "With each purchase we make, we contribute, or detract, from the global objective to reduce carbon emissions. South Africans need to come to an acute understanding that their collective buying power has the ability to drive change and their actions over the next few years will play a crucial role in the planet's future."

Compact cranes go underground

CONDRA has won the crane and hoist order for Mupani Mine, one of several Zimplats operations in the mineral rich Hartley Geographical Complex, Zimbabwe.

Situated southwest of Harare, Mupani is undergoing an upgrade to replace production at Rukodzi and Ngwarati mines, and part of Mupfuti Mine. These are projected to deplete over the next six years.

The order for the lifting equipment was placed on Condra by Australian consulting and project management company Worley. It comprises thirteen machines for installation underground: two workshop-duty double-girder electric overhead travelling cranes, a jib crane for ore transfer, and ten short-headroom hoists for miscellaneous functions.

All units have been designed for ease of transportation within the confines of a two-kilometre-long underground access route. When manufacture is complete, only the short-headroom hoists will ship without being dismantled. The 5-ton jib crane, 10-ton overhead crane and sister 30-ton machine will first be extensively disassembled to enable mine tunnel navigation. Crane girders will be separated from endcarriages and crabs, while the crabs

themselves will ship minus their hoists for the same reason.

All three cranes are already under manufacture at Condra's Germiston works. The hoists are being assembled to specification at the same factory.

After delivery, underground installation on gantries supplied by the mine will be executed by Worley technical teams using chain-blocks attached to rock bolts reinforcing the hanging walls.

Industry observers point to Condra's competitive pricing and a willingness to adapt design to customer-specified dimensions as factors likely to have helped close the Worley order. Crane adaptation is often more difficult and more expensive for rival firms because of the need to import parts.

Additional factors in Condra's favour are thought to have been robust design and a long pedigree of reliable performance in underground mining environments.

The company's engineers designed the Mupani overhead cranes to suit reduced installation dimensions aimed at minimising blasting and excavation not directly associated with ore removal. Compacted to fit within these confined operating spaces, the cranes can nevertheless deliver the lifting heights required by



Typical of the type of Condra jib crane destined for Zimplats.

the customer.

Notable features include variable-speed drives along all axes, and motors with silicon rotors in place of the more common aluminium castings to achieve higher torques. All motors will be pro-

tected against seepage by weather covers.

Control of the cranes is by radio remote, while the short-headroom hoists will be supplied with pendants.

The company has also installed solar

panels at its Germiston factory to provide an estimated 70 percent of the electricity requirement. Cape Town works is soon to follow suit.

Visit Condra's website: www.condra.co.za

CAPE BUSINESS NEWS

Cape Business News, founded in 1980, is primarily a promotional vehicle for companies that have the Cape Business community as a primary target market.

ADVERTISING

For all your advertising requirements, contact our Sales Team on sales@cbn.co.za



EQUIPMENT THAT DOES IT ALL



BOMAG
FAYAT GROUP



BULL



LIEBHERR

GROUND-BREAKING | EXCAVATING | COMPACTING | CRUSHING | SCREENING | LIFTING | HANDLING



McCloskey
EQUIPMENT



KEMACH FORKLIFTS

Contact us:
sales@kemach.co.za
 Head Office: 011 826 6710
www.kemach.co.za
 f t i y d in

Mantashe banks on energy pipedream

AS Kevin Mileham – DA Shadow Minister of Mineral Resources and Energy, put it in a recent post: *At the Mining Indaba yesterday, Minister of Mineral Resources and Energy Gwede Mantashe revealed once again how out of touch he is with South Africa's energy crisis. Pinning his hopes on hydroelectric power from the Grand Inga project in the Democratic Republic of Congo and a new nuclear build, Mantashe is ignoring the elephant in the room: the 4 000MW to 6 000MW shortfall in electricity generation we face right now.*

It is beyond comprehension that a government minister can simply regurgitate out of date information (Integrated Resource Plan (IRP) in 2019) for us to believe that our energy woes will be solved by the promised Grand Inga hydro electric scheme in the DRC.

I won't go into the details of the scheme – readers and perhaps Minister Mantashe can simply Google, Grand Inga, and all will be revealed about this on-off pipedream of a generation project that will electrify Africa and half of Europe with its 40GW+ potential. Numerous technical, engineering and financial studies have been performed over the past 60 years with the latest putting a +/- \$100-billion price tag on construction costs and a build time of about 10 years. Those familiar with the building of such colossal infrastructures estimate that construction costs and time lines can double – look no further than our own most recent Medupi and Kusile power stations. So bank on \$200-billion or R3-trillion in our money if my maths

is correct and a 20 year build time.

Then there's the small issue of transmitting the power 4 157km, across four countries before it gets to Johannesburg.

This utopian project is unlikely to fly anytime soon – the DRC's energy provider SNEL cannot even rehabilitate the dilapidated Inga I and II stations let alone build this mega station due to political interference, widespread corruption and satisfying various, often conflicting, private interests. Sounds familiar? Traditional funders such as the World Bank have come to the conclusion that the risk of failure is just too great an albatross to hang around the bank's neck and have run for the hills.

Kevin Mileham went on to say:

Despite being warned more than 3 years ago

that the Grand Inga scheme was extremely unlikely to generate electricity in the short to medium term, Mantashe and the Department of Energy insisted on including Grand Inga and the potential for new nuclear generation in the Integrated Resource Plan (IRP) in 2019. Nuclear is problematic in that it is not a short term solution to South Africa's electricity supply needs, with a new nuclear plant only likely to start generating in 10 to 15 years' time.

The IRP is South Africa's premier policy document for electricity generation, and is intended as a short- and medium-term roadmap for decisions regarding new generation capacity. As such, it is intended to be updated regularly (at the very least, every two years). When questioned on this, however, the department has indi-

cated that it lacks the personnel resources to do this, and therefore has to rely on outdated models and assumptions that are no longer valid or justifiable. (This beggar's belief! Ed)

As an immediate step to addressing the short-term electricity supply gap, Mantashe must prioritize the review of the IRP, in order to bring new generation capacity online as quickly as possible. It is clear that ESKOM is not up to this task, and it will therefore fall to private investors and independent power producers to pick up the slack. Additionally, Mantashe must take concrete steps to remove unnecessary red tape and bureaucracy at NERSA, in line with the President's commitments at SONA 2022, in order to allow sub 100MW generators easier access to the grid and to promote

generation for own use by businesses and consumers.

I have a better idea:

- Put Mantashe and his entourage out to pasture to be replaced with a lean and mean department of technically competent individuals, headed by a competent pragmatic business person.
 - Open up the generation space to anyone who is competent and scrap the 100MW cap.
 - Accelerate the switch to natural gas and nuclear SMR's by repurposing the ancient coal burning fleet where feasible – much of the existing infrastructure can be reused.
 - Place smaller gas fired and SMR stations, where they
- are needed rather than where the coal is located.
- Rehabilitate – privatise - the rail network to allow the fast and efficient transportation of natural gas to the major centres where Metro's can generate and manage their own power.
 - The Ankerlig and Gourika OCGT (1 327MW and 740MW respectively) were each built in about a year. As a short to medium term solution to our power deficit why not build six more and run them on natural gas directly from the gas fields?
 - Privatise Eskom.
- Well, I can dream can't I?
Eish.

Risk assessments accelerate Booyco PDS adoption

RISK assessments by surface mines are a vital part of operating trackless mining machines (TMMs) safely, and are also required by the Mine Health and Safety Act.

"It is therefore significant that we see mines continuously conducting risk assessments on their mobile vehicles and traffic management systems," says Anton Lourens, CEO of Booyco Electronics, a South African proximity detection system (PDS) and collision prevention system (CPS) developer. "These risk evaluations are essential in identifying appropriate risk mitigation responses and technology for each site."

Lourens says that surface miners have largely implemented Level 7 PDS and CPS systems, which can warn of possible collisions. They have also embraced Level 8 systems, which can identify and advise on corrective actions. Further testing is being conducted on Level 9 systems, which come with a controlled 'slow-down and stop' engineering control intervention.

Industry has also made significant headway in the testing of PDS technology, he says. Simulation testing has been conducted by the Vehicles Dynamic Group at the University of Pretoria, in a process developed by the Minerals Council. This



The Booyco CXS solution providing a comprehensive and integrated response to Level 7, Level 8 and Level 9 safety levels – as defined by the Earth Moving Equipment Safety Round Table (EMESRT).

testing is able to demonstrate the capabilities of PDS solutions so that these can be submitted to the stakeholders.

Booyco Electronics continuously improves the performance of its systems, allowing the company to progress to single and multiple machine tests on mine sites. The tests are ongoing at some surface mines, with positive results. Another important step forward has been the integration of these CPS systems with OEM equipment, says Lourens.

"Industry recently adopted the ISO 21815-2 (2021) standard, which deals specifically with how a CPS solution should integrate with OEM offerings," he says. "This allowed for a common interface between all CPS suppliers and the different OEMs."

As mines conduct their risk assessments in preparation for apply-

ing PDS, he points out that the risk of both vehicle-to-vehicle and vehicle-to-pedestrian collisions should be fully considered. It would appear, he notes, that many surface operations place more focus on using PDS to mitigate vehicle-to-vehicle risk. This may be due to mines applying mitigation strategies such as traffic management, fixed barriers or pedestrian walkways to address vehicle-to-pedestrian risk.

"By creating a separation of people from moving machinery, part of the risk can certainly be mitigated," he explains. "However, with the development of our systems from Level 7 to Level 9, today's CPS offerings make them a more comprehensive solution."

To ensure that mines around the world can make the most of CPS solutions, Booyco Electronics collaborates

with a number of technology partners – or system integrators – in various regions. Lourens points out that rapid technological advancement within the mining sector makes it difficult for mines to develop and retain specialised skill sets in CPS and related technologies. These system integrators help mines to effectively apply CPS, bridging the gaps between different areas of expertise to promote safety and efficiency.

"There has been a great deal of work on PDS and CPS going on in the background in recent years, paving the way for mines to install the optimal solutions," he says. "This is undoubtedly achieving ongoing progress towards the industry's goal of zero harm."

For more information contact Booyco Electronics www.booyco-electronics.com

WCape Government signs MoU with Denmark to improve wastewater treatment

A new research paper recently published by the Department of Environmental Affairs and Development Planning, which looked at the impact of the 2015 to 2017 drought on the Berg River Estuary, shows that the Berg River ecological systems are in a worse condition than previously thought.

The Research concluded that to preserve the Berg River's ecological systems, more freshwater needs to flow through the Estuary to maintain the desired level of ecological health.

This means better monitoring and regulations are needed in terms of water extraction, but we also need better quality water released from wastewater works situated along the Berg River. The research showed that during winter, sufficient water reaches the Estuary, but too little water reaches the Estuary during the summer.

The Premier of the Western Cape, Alan Winde, elaborated: "The MoU aims to foster the exchange of knowledge relating to 17 wastewater treatment works situated along the Berg River. This programme,

which is funded by the Kingdom of Denmark, will focus on improving management and technical skills for these plants to operate more effectively."

Minister Bredell added that the Danish MoU will play a crucial role in improving the quality of water released back into the Berg River by wastewater works and added that the fact that the Berg River Estuary was recently recognised as a Ramsar site of International Importance adds to the urgency to intervene and step-up efforts to return the entire Berg River to a better environmental status.

The Berg River Estuary is also of significant economic value. Not only is the estuary one of the most important systems in the country in terms of estuarine biodiversity, but also produces goods

and services worth at least R378 million per year, not counting the value of carbon storage to the rest of the world. The annualised contribution of the estuary to property value accounts for R168million annually. The asset value of the Berg River Estuary is currently just over R5 billion. This is according to a previous study by the Department of Environmental Affairs and Development Planning.

Premier Winde explained that going forward: "The outcomes of this project for the Berg River municipalities will be presented to all the stakeholders and role-players involved in river systems with pollution challenges. This will include a demonstration of how different methodologies and techniques can be used by municipalities."



LED high bay lighting for workshop

BEKA Schröder has supplied a LED high-bay lighting solution at Liebherr-Africa's crane workshop in Springs near Johannesburg. The company was approached by Liebherr-Africa as they were looking for a reliable LED lighting luminaire manufacturer and supplier.

BEKA Schröder's ECOBAY, an LED lowbay and highbay lighting range, was the luminaire of choice due to its reliable performance, low dust accumulation, versatility and no need for re-lamping and regular maintenance.

The ECOBAY has been designed and manufactured in South Africa and is the ideal luminaire for lighting industrial facilities at



The locally designed and manufactured ECOBAY illuminates Liebherr-Africa's crane workshop

optimized light levels. The ECOBAY offers substantial energy savings, high performance and is able to operate at high ambient temperatures. Available

with four typical lumen packages and various light distributions, the ECOBAY is perfectly suited for multiple indoor lighting applications.

The ECOBAY not only lowers the initial investment; it maximises it by providing a comfortable environment for staff while limiting energy con-

sumption to what is absolutely necessary.

The right lighting makes the difference

As the average annual energy bill continues to rise, owners, operators, and managers of industrial facilities need to cut costs and improve employee productivity. BEKA Schröder's LED lighting solutions enable the transformation of lighting from a necessary expense to a strategic asset by:

- reducing energy and operating costs considerably
- complying with health and safety standard light level requirements
- creating a com-

fortable working environment for better productivity and quality of work

- providing a quick return of investment
- BEKA Schröder's in-house lighting design team is able to assist to ensure an optimised lighting solution for the area to be illuminated. Its after-sales service ensures complete satisfaction with the installation. BEKA Schröder locally develops and manufactures energy-efficient LED lighting products, designed and suitable for local conditions.

For further enquiries, contact Pieter Venter at 011 238 0000 or p.venter@beka-schroeder.co.za.

Major intersection upgrade to serve Sunningdale expansion

IN preparation for the construction of residential, community housing and commercial developments in Sunningdale Phases 12A, 13 and 14 opposite the Table Bay Mall in Cape Town's western suburbs, major work to upgrade the R27 and Big Bay & Berkshire Boulevards intersection is underway.

Undertaking this R44-million plus intersection upgrade is Baseline Construction on behalf of the developers, Garden Cities NPC who are covering the cost as part of its Services Agreement with the City in lieu of development contributions.

The project is expected to take 60 weeks and the scope of work is extensive besides roadway improvements which involve the addition of lanes and partial duelling of the respective roads approaching the intersection.

A portion of a new bulk stormwater pipeline will also be constructed which in future will route stormwater runoff from Sunningdale Phases 12A, 13 and 14 to the existing Big Bay outfall pipeline located at the eastern boundary of Big Bay.

Upgrade of the intersection

The scope of Baseline's scope of work will include the construction of:

- Additional lanes on all the intersecting roads; namely the R27, Berkshire Boulevard and Big



A manhole location during construction of the bulk stormwater pipeline, comprising approximately 300m of 1050mm diameter concrete pipes.

Bay Boulevard. This will include the installation of the following:

- Kurbing, channelling and concrete edging;
- Asphalt surfaced pavements;
- Road marking and road signs;
- Non-motorised transport facilities on Berkshire Boulevard and Big Bay Boulevard;
- Road drainage such as stormwater catch-pits, pipelines, manholes, subsoil drains and roadside channel;

- Stormwater side drain along the R27 western verge;
- Street lighting and additional services sleeves;

- Relocation of telecommunication services, irrigation pipelines and valves, fence line, etc.;
- Other road construction related tasks.

Bulk stormwater pipeline

The extent of work covered under the construction of the bulk stormwater pipeline consists of construction of approximately 300m of 1050mm diameter concrete pipes and manholes. The pipe excavation depth of the bulk pipeline ranges from 1,5m at the inlet, increasing rapidly to a depth of 4,2m at the termination point. The project necessitates the use of a form of shoring for the pipe excavations due to the deep excavation depths and restricted working space. The pipeline

crossing the R27 was installed by means of trenchless technology with a cover of 1.94m - 2.34m to the road finish level.

Planned developments

Garden Cities Group Manager: Engineering & Planning Renier Smith outlined the extent of the development.

- Sunningdale Phases 12 - Linked to approximately 663 SR (Single residential) Erven and various Group Housing, Local Business and Community sites. Phase 12 is almost completed in terms of the SR, with a couple of General Residential, General Business and Community zoned sites remaining.
- Sunningdale Phase

13A - 429 Units (aka Northridge Coastal Estate) has commenced with the perimeter fencing/walling of the Green Star, Sustainable Precinct now in place and the clubhouse, guard house and admin building nearing completion. The first scheme has commenced after which others will follow at a rate of units being completed at between 8 to 16 units per month; depending on the building programme.

- Sunningdale Phase 13B - 5.3ha Group Housing Site
- Sunningdale Phase 13C - 95 SR Erven
- Phase 14 in its various sub-phases consists of 775 SR Erven, 8 Group Housing Sites (ranging between 1.5 ha to 2.5 ha), a General Business site, Local Business Site and various Community zoned sites.
- Sunningdale Phase 13A - Northridge Coastal Estate.
- Sunningdale Phase 13B - The Group Housing scheme is still in planning stage with no confirmed project and/or timeline.
- Sunningdale Phase 13C and 14 - Commencement in line with our building programme.

Garden Cities Group CEO, John Matthews, says that since its establishment 103 years

ago, the company has adhered to a strategy that incorporates constant change to maintain its leading role on the Western Cape's development landscape and to stay ahead of shifting economic conditions.

Among the achievements is being the first South African developer to receive the Green Building Council of SA's (GBCSA) 4-star Green Star-rating for a Sustainable Precinct Development, Northridge Coastal Estate, in Sunningdale. Through research into alternative building materials, Garden Cities has also been able to control construction costs and keep the price of the houses down, by manufacturing the innovative Benex blocks and panels used in the houses at the Greenville Garden City development.

And in Sunningdale on the West Coast, which has been the company's flagship for nearly 30 years, changes in Garden Cities' town planning have spawned a new offering of apartments and town houses. The homes at Saint Square for example, are within financial reach of first-time buyers and others looking for more affordable accommodation.

Saint Square is also aligned to green building principles in the construction as well as water re-use and recovery technology that irrigates the indigenous landscaping. Homes have solar thermal systems.

ONE
ADHESIVE
For countless applications on the construction site



The original fast tack adhesive

- Instant grab
- Exterior & interior
- Extreme strength
- GBCSA standard
- Adhesion of multiple materials



Den Braven Sealants
Do it right the first time

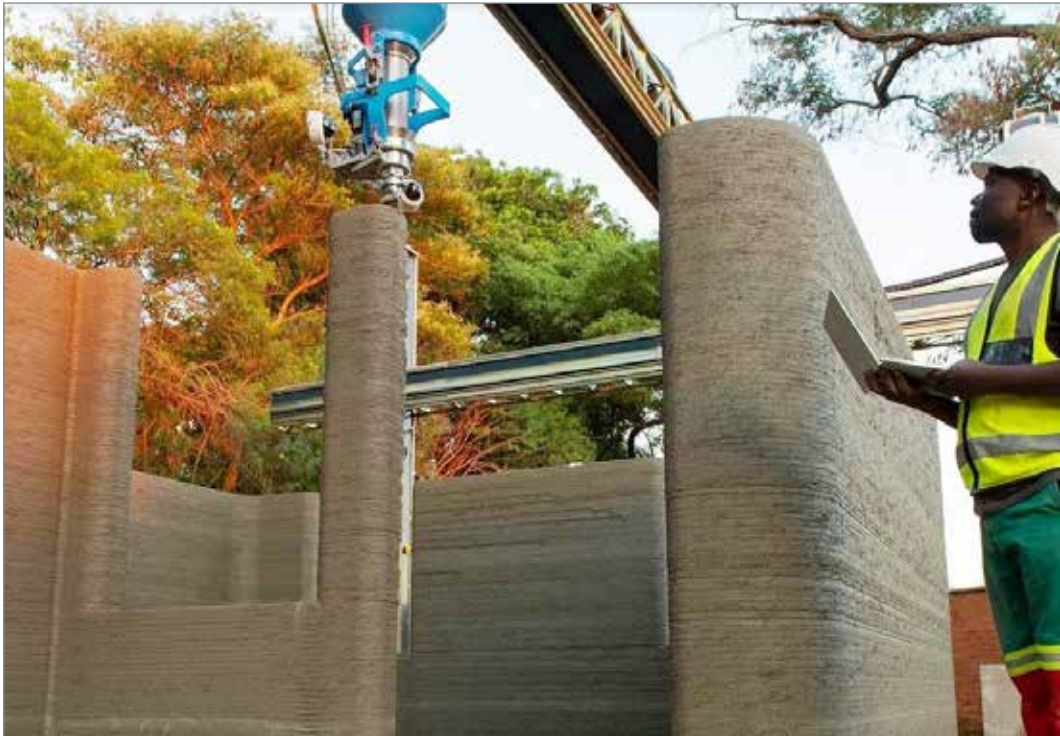
For technical assistance:
021 552 9674

sales@denbraven.co.za
www.denbraven.com/en-sa



Den Braven Sealants South Africa

Is the construction industry ready for 3D printing?



A school in Malawi constructed using 3D printing.

WITH around 20 per cent of South Africa's urban households living in informal settlements, President Cyril Ramaphosa's recent announcement that government is to pilot 3D printed homes certainly sounds like good news for the country's housing crisis, but is South Africa's construction industry ready for 3D printing?

Databuild CEO Morag Evans believes it is. "The sooner our construction industry embraces 3D printing technology, the sooner we will reap its manifold benefits," she says. 3D printing is not new to construction. Since the first 3D-printed commercial building was constructed in Dubai in 2016, the technology has been used all over the world – including Africa – to create office spaces, homes, schools and even pedestrian bridges. Indeed, Malawi recently became home to the continent's first 3D printed house and the world's first 3D printed school.

The technology involves the use of enormous 3D printers which

extrude or 'print' layers of a specially mixed material, not unlike concrete, to create the required structure.

"A significant advantage of the technology is that recycled materials can be used to create the concrete, which reduces the build's impact on the environment," says Evans. But the benefits go much further, she adds.

Faster construction

Developers and contractors are faced with increasingly shrinking budgets and tighter deadlines, which make for very small profit margins. This is where 3D printing can play a pivotal role.

"The beauty of the technology is that it is significantly quicker to execute, with projects being completed in a fraction of the time it would take using conventional construction methods. For example, it can take up to several weeks or even months to build an average-sized home, but with 3D printing technology a residence can be constructed in less than 24 hours."

Cost-effective builds

3D printing facilitates also facilitates savings on production costs, Evans continues.

"Because the printer uses the precise amount of materials needed for the build, accurate materials quantities can be ordered, which means little to no construction waste is generated on site. Additionally, the printer receives dimensions from a software program, so the structures produced are virtually error-free, which results in further cost savings."

Improved safety

But perhaps one of the biggest benefits of 3D printing is that it reduces the number of injuries that occur on site.

"The industry has a bad reputation when it comes to worker safety. Risky construction activities, as well as site and environment conditions are the main contributing factors to accidents and fatalities on construction sites. The automated nature of 3D printing, however, means workers can do their jobs more easily which

ultimately leads to fewer injuries and fatalities."

But what will 3D printing mean for the future of jobs in this sector?

3D printing has the potential to create numerous jobs in the construction industry, says Evans. "Besides the skills needed to manufacture, sell and maintain 3D printers, the technology will fuel the demand for specialised skills in areas such as design, model making and prototyping.

Evans points out that 3D printing only enables the frame and walls of a building to be constructed. "Windows, plumbing, electricity and other elements must be installed separately so the demand for jobs in these areas will remain."

More and more construction role players are committing to green design and sustainable construction practices. Consequently, as 3D printing technology matures, it won't be long before 3D-printed structures are the norm rather than the exception, Evans predicts.

For more information, go to: <https://www.databuild.co.za/>

A tool for every occasion



ADENDORFF Machinery Mart is proud to present their 62-piece lifetime guarantee MAC AFRIC toolbox to all Cape Business News Readers. This toolbox is a true stand out amongst its peers offering 62 pieces of durable, high-quality tools – that includes everything you need for almost any job.

The five compartment cantilever design is filled with durable chrome vanadium steel tools, including – 18 Combination Spanners (6-22,24mm), 18 ½" drive Sockets (10-

24,27-30-32mm), ½" Drive Quick Release Ratchet Handle, Side Cutter, Long-Nose and Combination Plier, 3 Flat Screw Drivers, 3 Phillips Screw Drivers, 9 Allen Hex Ball Keys, a 12" Inch Drive Sliding Bar, Universal Joint, Spark Plug Socket(21mm) 3 Extension bars, and a Power Bar.

Adendorff Machinery Mart are leaders in the tools and machinery market with 25 stores nationwide and over 5 500 products in their range, customers are spoilt with choice with such a wide range of quality tools and

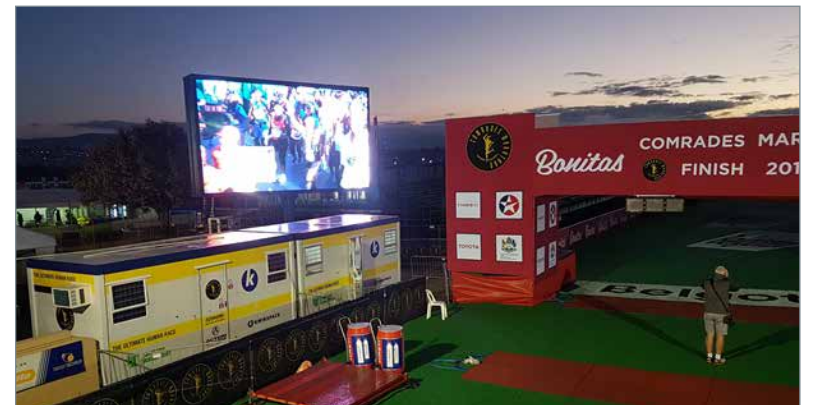
machinery.

Furthermore, Adendorff customers can expect exceptional customer service both in store and online. Every store has well-trained and knowledgeable staff that can help you find the right tool for your application.

For your convenience, a qualified in-house technician is available at our branches and headquarters to service your machine(s).

You can find your closest Adendorff store by visiting www.adendorff.co.za/store-locator/ or calling 011 434 7000.

Modular solutions for sports and recreation events



Two single-wide prefabricated units were supplied to the Comrades Marathon for use as offices for the time keepers and co-ordinating staff.

LARGE sports or recreational events often require short-term buildings and facilities for remote offices, administration and support services, clinics, accommodation and more. Kwikspace is meeting these demands by supplying robust, plug-and-play and mobile buildings on short-term rental contracts as required by event organisers.

"You'll find Kwikspace mobile buildings in use at sporting events such as the Comrades Marathon and the Blue Lagoon Triathlon to large once-off events like musical concerts," Kwikspace's Gerry de Beer explains.

The structures are ideal for a range of uses, such as temporary media centres, hospitality suites, a control room, admin

and ticket offices, ablutions, kitchen and dining facilities, satellite security stations, or first aid rooms.

With Africa's largest rental fleet of modular buildings, Kwikspace ensures rapid delivery and on-site setup of modular buildings, wherever they are needed, with rental buildings usually supplied within five to 10 working days.



MAC AFRIC
62 PCE 1/2" HEXA
TOOL BOX

TT00LB062

R 2995
INCL. VAT



VISIT OUR WEBSITE WWW.ADENDORFF.CO.ZA OR CONTACT US ON 011 434 7000

How digital services help deliver exceptional building performance

By Mark Freeman, Offer Manager – Digital Buildings, Schneider Electric South Africa

ALTHOUGH there are varying opinions about the strategies building owners and managers should employ to recover from the effects of the pandemic, its structural effects, and resulting economic disruption, “business as usual” shouldn’t be part of the plan.

For example, there has been a of sea change in occupant expectations with regards to indoor air quality (IAQ), and facilities should take measures to create a safe interior environment.

Unlocking building performance through smart, connected technology

Studies have repeatedly validated that successful efficiency initiatives increase building asset values, reduce operating costs, and boost occupant satisfaction.

For HVAC systems, reports say:

- More than 55% of maintenance tasks are not condition-based.
- 40% of occupants are unsatisfied with their comfort levels.
- Over 80% of equipment fails prematurely, resulting in substantial avoidable costs.

Today’s building systems need to perform optimally and within the parameters of minimal budget and maintenance resources.

EcoStruxure Building Advisor is versatile and proven suite of analytics driven services that leverages best-in-class Digital Twin technology. It can be deployed at a single site or benchmark performance across a global portfolio of properties, regardless of the building management system.

Over the last three years, the advanced cloud-based platform has continuously optimised systems in multiple building classes, with data points analysed from over 200 000 HVAC equipment. It has automated over 250 000 hours of maintenance tasks and identified 25 000 IAQ-related equipment issues.



Mark Freeman.

High-performance buildings are sustainable and productive

EcoStruxure Building Advisor’s advanced capabilities deliver enhanced building performance and tenant peace of mind benefits in four ways:

Hyper efficient – maximise performance by optimising systems and workflows:

- Diagnose HVAC issues that contribute to excess energy usage and avoidable costs.
- Leverage automation to service a more extensive portfolio, doing more with the same service team.
- Reduce time and effort; improve troubleshooting accuracy using a digital twin for automated fault detection (FDD) and diagnosis of complex HVAC systems.

Resilient – quicker recovery from disruptions:

- Manage sites remotely with a team of experts, avoid costly in-person visits, and improve response times.
- Prevent critical asset failure and disruptions with condition-based monitoring and diagnosis.
- Manage critical alarms, provide triage, and avoid disruptions.

Sustainable – consume less, extend asset life, and invest strategically:

- Actively manage energy efficiency initiatives and evaluate progress to sustainability goals.

People-centric – provide a comfortable, productive, and healthy setting for occupants.

- Manage indoor air quality to deliver comfortable environments.
- Empower diverse facility teams to make the right decisions for their departments.
- Reduce on-site engineers by using remote experts.

Achieving sustainability, hyper-efficiency, and active IAQ management while ensuring quick problem response and streamlining maintenance with smaller teams is impossible without solutions like EcoStruxure Building Advisor.

- Extend the useful life of assets and protect capital investments.
- Benchmark performance from similar sites and rationalise modernisation.

ESG considerations for construction and design companies

AS well as the ‘embodied carbon’ of buildings, which are the emissions associated with their overall construction and its supply chain, the built environment also generates emissions from heating, cooling, and lighting systems.

Investors and consumers are voicing concerns about ESG issues, with legislation, regulation, and reporting requirements evolving quickly in many jurisdictions around the world. In the UK, all companies bidding for government contracts worth more than £5m a year must now commit to net zero by 2050, while new proposals in the EU call for the mandatory disclosure of the emissions potential of new buildings over

their whole life cycle, effective from 2027 to 2030.

Questions insurers may ask about design and build

- Will the construction company and its design provide services that are significantly environmentally impactful, such as working in a protected area like a wetland?
- Will the project use raw materials that are mined? What other natural resources will it use?
- Where does the company operate? Regulations vary by jurisdiction and the geography of each region presents different challenges

and risks.

- What is the company’s ESG policy and how is this overseen, communicated, and implemented?
- What are the reputations of the company’s partners and suppliers?
- What is the insurance loss history of the company, including on similar projects they have undertaken?
- Are standard or tested contracts issued that clearly communicate the requirements and expectations for all parties?

Information from Diego Assef and Glen Mangold from Allianz Global Corporate & Specialty.

“ CONTINUOUS INNOVATION, COMPELLING NEW STYLES ”

WWW.CERAMIC.CO.ZA

Our heritage has shown that we are innovators in style and technology. Surround yourself with the most beautiful technological advancement you can find – Ceramic Industries have been quietly turning out world-class products since 1975. Our innovative production techniques reduce carbon emissions and result in the kind of high-quality products you’ll want to come home to again and again. World-leading equipment producing innovative, stylish products - locally!

CERAMIC INDUSTRIES • WORLD-CLASS PRODUCTS MADE LOCALLY

PROUDLY SOUTH AFRICAN

CERAMIC INDUSTRIES

Tiles & Bathroomware

Creators of style



TERRAFORCE®

The original, reversible, hollow core retaining block



DESIGN GUIDE

Terraforce presents in this document, material that was developed to guide engineers in designing segmented block retaining walls in accordance with design standards in various countries.

Starting off is a theoretical analysis and design procedure with 3 worked examples for gravity retaining walls:

SECTION 1: A GUIDE FOR TERRAFORCE GRAVITY RETAINING WALL DESIGN by Wolf Technau of Hawkins, Hawkins and Osborne, page: 6 – 65 (Based on the original manual of 1992 and adapted by TERRASAFE and Wolf Technau 2022).

In addition, this document provides guidance for designing reinforced soil Terraforce walls:

SECTION 2: A GUIDE FOR TERRAFORCE REINFORCED SOIL RETAINING WALLS in accordance with BS 8006 and SANS 207:2011 South African National Standard: The design and construction of reinforced soils and infills, by Johan Joubert of Wave International page: 69 – 110.

The design of reinforced soil retaining walls can be a challenge if the design engineer is not conversant with retaining wall design and with standards such as SANS 207:2011 (based largely on BS 8006), a very comprehensive 245-page document, explaining fundamental soil reinforcement mechanisms and principles, design principles and testing required for the design of reinforced soil structures.

The Terraforce guide will explain the design procedure and sequential steps that must be followed when designing a reinforced soil retaining wall in accordance with BS 8006 which is applied and accepted in several countries.

Minimum requirements in the standards (SANS 207 and BS 8006) that are sometimes questioned by engineers, such as the seemingly excessive minimum width of the reinforced soil structure will be explained, and guidance will also be provided for specifying shear resisting mechanisms. (Section 2: Wave International)

Engineers are welcome to download and study the online guide to their best advantage. The benefits are obvious, besides the fact that professionals can make use of the gathered information to confirm the output obtained from the new design software Maxiwall PRO. **For a copy of the new Terraforce Design Guide, contact us via www.terraforce.com/contact-us/**

MAXIWALL PRO DESIGN SOFTWARE

During August 2018 Terraforce launched Maxiwall Pro a privately labelled version of the most comprehensive and widely used SRW design software in the industry, the Vespa MSE Design suite (updated to the latest standards 2020).

Maxiwall Pro allows Designers to easily produce complete Wall Designs utilizing the award winning Terraforce line of SRW products. With all Block and Geogrid information preloaded, Designers can select from a wide range of proven Terraforce systems from easy to navigate drop down menus.

Compared to other MSE Design Software options, Maxiwall Pro increases design efficiency, improves accuracy, and promotes a seamless flow of information between design stages and parties. It generates full wall layouts with accurate quantity estimates and comprehensive reports. The Calculation Engine can simultaneously run Static, Seismic, and ICS Analysis in accordance to NCMA, AASHTO (LRFD), AU (Australian Standard), and British Standard Design Methodologies.

Maxiwall PRO can be downloaded for a modest fee here: <http://bit.ly/30gKnbn>

TERRASAFE DESIGN SERVICE

Designers and specifiers who are unable to produce their own designs with either of the aforementioned tools, can contact the Terraforce affiliated design service, Terrasafe CC. Terrasafe offers, for a modest fee, a basic cross section design, that can be extended according to the clients wishes and as negotiated.

Visit: <https://www.terraforce.com/terrasafe-design-services/>

The Terraforce Table Creator (link below) will assist in preparing rough cost estimates for gravity retaining walls and should not be seen as an alternative to robust design input.

Visit: <https://www.terraforce.com/planning-design/design-table-creator-for-single-skin-walls/>



TERRAFORCE®
The original, reversible, hollow core retaining block

WWW.TERRAFORCE.COM

Visit the web site for your closest supplier or call TERRAFORCE on (021) 465 1907 | Email: info@terraforce.com

Abrasive solutions for the construction industry



CONSTRUCTION projects range from large scale green energy installations, to smaller at home DIY and general maintenance projects with a further classification into buildings, infrastructure and industrial construction. Advances in science and technology have resulted in improved materials being utilised, as well as new composites and hybrid materials.

Hybrid materials are now being used in electronics, mechanics, energy conversion and storage as well as self-healing coatings for corrosion control paints. Hybrid construction methods also involve utilising multiple material types (such as wood, steel, glass) in new and unconventional ways. Composite materials provide several benefits (depending on the project requirement), such as a higher strength to weight ratio. Ceramic, carbon, and polymer

composites are becoming very popular in the green energy generation, aircraft and aerospace, civil and general construction, as well as automotive industries.

The focus on occupational health and safety is now more than ever in the spotlight, which highlights the need for correct product selection to ensure a safe working environment.

The general lack of infrastructure projects, long process of contracts being approved and awarded, and pandemic induced factors means that more value is now required out of previously over-looked costs – consumables such as abrasives being an example. It is easy to find an abrasive product, but the question to ask is what kind of result is required.

Grinding Techniques, as a local manufacturer and supplier of premium abrasive solutions, is at the forefront of product development suited to these changing condi-

tions. Constant testing and development are required to ensure that these new age materials are processed within the required tolerances and at an economical rate. Ceramic grains and super abrasives (diamond and CBN) are becoming the popular choice, but proper training and education is required to ensure that operators understand the differences, and correct, safe usages of these products. The loss of skilled workers over the years has seen a higher percentage of unskilled workers operating on construction projects. With this in mind, Grinding Techniques attempts to mitigate some of this risk by offering training programmes at retail and informal market levels.

True “Value for Money” abrasives are tailored to optimise any construction project, such as the Superflex Professional range of cutting and grinding

discs which will help to reduce material wastage, reduce overall working time, and provide a better finished product. Superflex and Andor diamond saw blades are optimised for construction material applications while ceramic coated abrasive products (such as sanding discs and belts) for stainless steels and other difficult to work materials, provide superior results.

The introduction of cordless power tools on construction sites have brought about new dynamic in cutting and grinding, meaning that abrasive products need to be optimised to retain the best possible balance of performance for these machines. Grinding Techniques can assist in selecting the correct abrasive product for the application.

The global shift towards renewable energy and energy saving projects encompasses abrasive products that reduce operating time, speed up processes and reduce waste - all adding to the greening process of the construction industry. It may only be a small part to play, but the sum of all small changes can and will add up to a major shift in the right direction.

Grinding Techniques is equipped to assist in every phase of a construction project to ensure that product selection is optimised to meet these goals.

For more information
Tel: 011 271 6400,
email: info@grindtech.com
or visit: www.grindtech.com

Longest roof span covered by single metal corrugated sheet

MACSTEEL, in partnership with Tate & Nicholson, Fortress, Pick n Pay and WBHO, recently broke the world record for the longest roof span covered by a single metal corrugated sheet. Its roofing unit roll-formed the sheets spanning the width of 280 metres across the widest part of the roof covering the new Pick n Pay flagship distribution centre in Kempton Park.

The technology which enabled Macsteel to achieve this feat is its Novotexi 440 roofing product, roll-



formed onsite, using its Sky Forming process. The product was developed by to resist high winds on large-scale roofing projects and to meet the challenges engineers face in providing solutions

for extreme weather conditions caused by climate change. Sky Forming is a process where the roll-forming container producing the Novotexi 440 sheet is lifted to the level of the roof so that the

product can be applied at height and at speed. Says Mike Benfield, Macsteel CEO: “We are very excited to be part of this development project with our partners. We remain true to the spirit of ‘Pursuing Reinvention’ which is the driving force behind our business strategy and has become the foundation on which we initiate and manage all our customer engagements.”

Reprinted from BI-Zcommunity: <https://www.bizcommunity.com>

CMA, 49 years young

THE Concrete Manufacturers Association (CMA) continues to represent the precast concrete industry in South Africa and drive high standards of professionalism and quality in this industry. Since its inception 49 years ago, the CMA has also helped to grow a vibrant and strong sector. This is by promoting the significant role that precast concrete plays in the built environment. The technology accelerates improved project management and successful project delivery. Contributing aspects would include: The speedy delivery of critical services infrastructure, the construction of robust and high-quality assets, the facilitation of the construction of complex engineering and architectural designs, and high levels of quality and safety on worksites.

Henry Cockcroft, General Manager and Director of the CMA, remains proud of the extensive skills and experience of the association's strong membership, consisting of the country's foremost manufacturers of precast concrete products. “The biggest benefit of CMA membership is that it demonstrates a commitment to the highest possible standards, in terms of quality, honesty and adherence to a strict code of conduct. This has helped to drive the high uptake of precast concrete in South Africa over the years. However, the real potential of the technology is yet to be fully harnessed by local client bodies and their professional teams and the CMA will, therefore, continue to work hard to promote precast concrete as the construction material of choice in the country,” Cockcroft says.

Considering the support and loyalty of its members over the years, the CMA is operating on a sound platform. This will enable the association to continue offering even more benefits to its members.

A case in point is the CMA's Awards for Excellence. Held bi-annually, this prestigious event in the South African construction industry's calendar recognises distinction in the design and application of precast concrete. This year's event again demonstrated the world-class capabilities of the association's members which continue to deploy their



Henry Cockcroft, General Manager and Director of the CMA.

products and systems in unique and innovative ways throughout the country.

The CMA also hosts general meetings and workshops and represents its members at leading exhibitions every year. This is in addition to publishing and disseminating

Certification Body, the company services a demand in the market providing efficient, quick and cost-effective precast concrete product certification. The company recently extended its scope and is now also accredited to certify compliance with ISO 9000/9001

“The biggest benefit of CMA membership is that it demonstrates a commitment to the highest possible standards, in terms of quality, honesty and adherence to a strict code of conduct.”

brochures, literature and publications that are very well received by professionals. The CMA harnesses a wealth of information crucial to skills development career path development (CPD).

Moreover, the association uses various digital platforms to broaden its reach. The CMA launched its social media marketing strategy during the hard lockdown that was implemented during 2020 and 2021 to contain the spread of the Covid-19 pandemic. It has had a profound positive impact on the marketing of precast concrete and the various services of member companies. The CMA will, therefore, continue growing its digital presence moving forward.

Meanwhile, the CMA's product certification initiative, CMA Certification Services (CMS CS), is growing in leaps and bounds. Being a SANAS Accredited

quality management systems. This is helping the CMA's members maintain the highest levels of quality in product delivery. Architects, engineers, specifiers, developers and contractors have confidence in specifying and using products carrying the CMA CS “Mark of Approval”.

The CMA also continues to collaborate with other leading industry bodies to promote the use of precast concrete in the built-environment industry. These partnerships also create continuous opportunity for career and skills development that will contribute to economic growth and market stability. “The CMA, therefore, endorses, urges and recommends industry professionals to consult with and join relevant associations and institutes. There is strength in unity as we continue to demonstrate as an association,” Cockcroft concludes.

How to enhance concrete durability for super abrasion resistance?

CONCRETE is hard, but not always hard enough. Some concrete floors wear out before their time. To make them last longer, the marketplace offers a wide range of products, including dry-shake hardeners, sealers, and concrete admixtures.



Hard-Cem® perfect Admixtures for Skate Parks

“When added to concrete, Hard-Cem’s proprietary technology increases the hardness of the concrete paste...”

Hard-Cem® is an Integral Hardening Admixture used to increase Abrasion and Erosion resistance of concrete. Hard-Cem® is added to the concrete at the time of batching to increase the strength and durability of the concrete and extends the sur-

face wear resistance throughout the life of concrete. It outperforms and overcomes deficiencies of labour intensive surface applied hardeners, and is used to enhance durability of both air-entrained and non-air-entrained concretes. Since it is integral,

Hard-Cem® is compatible with horizontal, vertical or inclined concrete and shotcrete surfaces.

How it works

When added to concrete, Hard-Cem’s proprietary technology increases the hardness

of the concrete paste and reduces fine and coarse aggregate exposure that creates degradation to concrete surfaces. By increasing the abrasive-erosive service life of concrete, maintenance costs are reduced, and the surface wear life of the concrete is substan-

tially extended.

Features and Benefits

- Extends concrete wear life up to 6 times under harsh conditions
- Easy to use and easily added to the concrete compared to surface applied

(dry shake) hardeners

- Lowers installation costs
- Expedites construction schedules
- Reduces maintenance costs and improves concrete sustainability
- Improved work site safety and conditions (Hard-Cem is dust free)*
- Improved quality control
- Hard-Cem is the only hardener that can be used on air-entrained concrete.
- No side effects on concrete water demand, workability, set time, strength development or shrinkage.
- Full depth concrete hardening*
- Can be used in horizontal, vertical or inclined concrete

Recommended uses

Hard-Cem® can be used in any Ready Mix, Shotcrete or Precast concrete to improve abrasion and erosion resistance, and extend the wear life of the concrete.

It is typically used:

- Manufacturing and Distribution Warehouse Floors
- Service and Repair Bays
- Highway Pavements and Intersections
- Bridge Decks
- Parking Structures, Ramp and Aprons
- Tunnels and Shafts
- Skate Parks
- Storage Sheds and Tractor Garages

For more information about Hard-Cem® visit website www.sanika.co.za or phone 011 425 3061



KRYTON KIM adds durability and longevity to concrete by protecting it against chemical attack and corrosion of reinforcing steel

Corrosion of reinforcing steel causes expansive cracking that leads to premature concrete deterioration and expensive repairs.

By blocking the penetration of water that carries contaminants and safeguarding the concrete reinforcements against corrosion, Kryton KIM® will prolong the lifespan of concrete structures.

Unlike external membranes, Kryton KIM® does not deteriorate when exposed to harmful UV rays, aggressive chemicals and harsh weather elements.



“Not Just Rust”

CORROSION is often viewed as a “necessary evil” to be tolerated and ignorance often the cause of many premature, unexpected and expensive failures.

Research has shown the economic loss of corrosion costs in South Africa is ±4% of its GDP. That means the direct cost of corrosion to each of us is around R250 per month. The economic loss of corrosion worldwide is estimated to be greater than US\$2.5-trillion, while in South Africa, the direct cost of corrosion is estimated to be around R130-billion. Indirect costs are at least three times the equivalent to the direct costs. However, several independent studies have also shown that 25% of the abovementioned effects and costs of corrosion can be prevented by applying known technology.

Based on the research, one ton of steel could turn to rust every 90 seconds and 50% of every ton of steel is used to replace corroded steel. Indirect costs are at least three times the equivalent to the direct costs. However,

several independent studies have shown that 25% of the abovementioned effects and costs of corrosion can be prevented by applying known technology. This places a significant emphasis on the importance on corrosion education.

Education

When it comes to the science of corrosion, research, and the study of corrosion mitigation in general, there is not enough done at schools and universities to make people aware of and to study corrosion. Typically, at universities one finds that a single module dealing with corrosion is part of a programme such as metallurgy or material science. At postgraduate level it is dealt with if a student selects to do a research project that is concerned with corrosion. At secondary school level no students are exposed to the studies of corrosion apart from an annual invitation to attend our annual World Corrosion Awareness Day. This year we hosted WCAD at our CorriSA “home”, 38 Allan



Petra Mitchell.

Road, Glen Austin, Midrand on 25th April 2022.

For more info on the Institute and its activities please visit: <https://www.corrosioninstitute.org.za>

There is a perception that corrosion mainly involves materials and chemicals and although this forms part of what cor-

rosion encompasses it is by no means only students within these disciplines that come face to face with corrosion issues. One finds that even engineers and scientists in other disciplines also come to deal with matters caused by corrosion. For example, the steel reinforcing in reinforced concrete can rust, the electronic boards in control sys-

tems can corrode and even a structure’s strength can be compromised. Thus civil, electrical, mechanical and structural engineers/technologists/scientists will also have to deal with corrosion at some point in their lives. However, corrosion is not introduced into the course in such disciplines and many of these engineers and scientists and technologists are only introduced to the theory of corrosion and its mitigation by courses such as those offered at the Corrosion Institute of Southern Africa.

Why should we care? There is a massive health and safety risk, financial implications and environmental impact if we do not take care of our respective assets. The Corrosion Institute of Southern Africa is the only body that offers in depth corrosion training programmes, equipping you with the right skills and knowledge.

For more information on what the Corrosion Institute offers please contact our offices at 010 224 0761. Petra Mitchell Executive Director CorriSA

Steinmüller Africa transforms lives at Bethal primary school

STEINMÜLLER Africa recently sponsored the refurbishment of Vukanani Primary School, neighbouring the company’s Bethal-based facility. The official handover, attended by one of Steinmüller Africa Directors, Mohamed Khan, took place on 8 of April 2022.

Steinmüller Africa provided project management and financial support for the initiative, extensively sub-contracting local businesses for the much-needed refurbishment of the school’s kitchen and 12 classrooms. Renovations included interior painting, the removal and replacement of tiling, upgrading of electrical systems. Installations of shelves, a water pump station and a 5.5kVA solar photovoltaic system was carried out. Furthermore, carparks of 12m x 35m were erected in the school’s parking, and an accompanying pavement was built.

“We are proud to have participated in the refurbishment of the school to uplift and give back to the Mpumalanga province. The school’s 850 students are now able

to learn in a renovated and safe environment. By investing in schools and their students, we invest in the leaders of tomorrow and the future of South Africa,” says Khan.

The opening included the attendance of South Africa’s Deputy Minister of Education, Honorable Reginah Mhaule, Provincial and District Officials, the school governing body, and members of the community.

“Steinmüller Africa strives to extend a helping hand in developing communities it operates in to ensure a secured future for the children that reside in these communities. One of our company values is “we care” - we care about our business, our employees and the wellbeing and development of communities in which we operate,” says Khan.

For over 50 years, Steinmüller Africa has offered comprehensive expertise and project management in pipe bending, welding, manufacturing and maintenance for high-pressure, high-temperature heat exchange plants or applications in South Africa.

Comprehensive solutions for metalworkers

PFERD-South Africa offers the metalworking industry integrated solutions for surface preparation, material cutting as well as finishing.

By drawing on the more than 200 years’ expertise and experience of its parent company in Germany as well as its own since its establishment in 1968, PFERD-South Africa can offer users in Sub-Saharan Africa a full-circle-service in the form of tailored solutions specific to each customer’s requirements.

The tool drives, consumables, operating procedures and the necessary skills all form part of the holistic approach to ensure each user gets the maximum benefit and achieve optimum cost-effectiveness.


“PFERD offers a broad range of tool drives and abrasive consumables—from cutting and grinding, to milling, deburring, filing, brushing, polishing, cleaning and creating defined surfaces—combine this with the wide range of materials, applications and product offerings within the industry, and it


can result in quite a difficult and time consuming decision-

making process. Contact PFERD-South Africa for

further details. Tel: +27 (0)11 230 4000 E-mail: info@pferd.co.za

sales@pferd.co.za Website: www.pferd.co.za





Steinmüller Africa (Pty) Ltd. is one of the enterprises in Bilfinger Power Africa (Pty) Ltd., the South African subsidiary of German based Bilfinger. Our presence in the local market, spanning 53 years, is testimony to our unrivalled expertise in the steam generation industry. Services offered range from the design and manufacturing to the construction and maintenance of boiler pressure parts. At our South African based manufacturing facilities, we also specialise in fabrication of high-pressure feedwater heaters, pressure vessels, pipe supports and compensators. On-site maintenance crews provide support to the power generation and petrochemical sectors.

www.steinmuller.bilfinger.com

- Engineering design services ▪ Boiler pressure parts
- Commissioning, field and testing services ▪ Bellows
- Headers ▪ Induction bending of HP/HT piping
- Heat treatment (workshop and in situ) ▪ HP Heaters
- Piping technology ▪ Pipe supports
- Plant erection services ▪ Explosive welding

WE
MAKE
POWER
WORK

Converting plastic waste into a useful healthcare and education platform

After its initial success of reaching over 2 million users, the Community Tablet has started scaling its operations to build “Interactive Villages” around rural communities.

THE Community Tablet (www.TabletComunitario.org) is an innovative mobile digital infrastructure that has been used as an e-school and e-healthcare platform in Africa for the past six years. Built and developed in Mozambique by a young Mozambican team, the Community Tablet played a vital role during the pandemic as everyone saw a need to access the internet and connect with the virtual world. In 2020, a cold chain compartment feature was introduced in the Community Tablet to fully engage in vaccination programs using an “all in one model”, which includes awareness campaigns, digital citizenship database registrations, online medical consultations, vaccine management and logistics. As we transition out of the pandemic, the Community Tablet continues to operate in remote areas with a lack of infrastructure and electricity – cut-

ting the need for locals to walk long distances to access basic services and routine activities in the education and healthcare sectors.

After its initial success of reaching over 2 million users, the Community Tablet has started scaling its operations to build “Interactive Villages” around rural communities. These Interactive Villages will enable different organisations to deliver their health and educational programs via a Community Tablet unit. Whenever the units are not in use, they can be used as local internet cafés with daily timers per individual in order to allow access to all. Registered locals would use their biometrics to access a daily login code to browse the internet, e-library and research for 15 to 30 minutes. As a means of encouraging women and girls to pursue technology in these communities, login pri-

ority will be given to local women and girls who are currently enrolled in any type of academic course. These Interactive Villages will also support local internet hotspots in partnership with strategic partners, one of which is a leading satellite communication provider enabling free internet access around the country. In the near future, these Interactive Villages could be rolled out to other countries and refugee camps around the world where there is a need for connectivity, eradicating digital illiteracy or providing e-health and basic services.

The Community Tablet has recently been awarded another U.S design patent (no. D942,319) this time for its Amphibious model, which aims to break the barriers to digital development in island countries. The prototype will initiate its construction shortly. “Plastic waste

normally bound for landfill sites is now being repurposed to provide critical healthcare solutions and educate the nation”, – says CEO and Inventor Dayn Amade. After a few months of research, Dayn Amade and his team have taken a further innovative step forward to refine their contribution to the circular economy by now adopting recycled plastic as the new raw material to manufacture the Community Tablet. With the successful concept assembly of its first recycled plastic waste-based Community Tablet unit earlier this year, one Community Tablet can now reduce 200kg of plastic waste from the planet. As of 2022, the Community Tablet has become even more environmentally friendly, with more than 85% of the Community Tablet being made of recycled wood plastics and powered entirely by solar energy.

The Sustainability Journey

“Don’t overthink sustainability – rather start the journey” – is the opinion of Reg Barichievy, Western & Northern Cape Partner at Smart Waste.

SUSTAINABILITY is new, complicated and like any other journey at the outset looks daunting. It can also be an adventure which will broaden your understanding of the world we live in and change some of your ideas fundamentally. It all depends on how you approach it.

practices are sustainable in terms of anything except cost. The use of water for growing and dyeing and the carbon footprint incurred in the transport is horrendous. And contrary to sustainable principles.

Nevertheless, the textile mill has a problem which is affecting

which takes time and may or may not yield results. Frustrated he gives up and defers the entire process. The starting point is usually simpler – manage what you can control.

A major problem with implementing sustainable practices, in our experience, is that the party involved either overthinks it or tries to do it all at once. A better approach might be to develop a plan, set realistic goals and undertake the journey at a realistic pace. It is all about the implementation, which is where a lot of companies come unstuck.

The things which the CEO can control are the marketing, the practices and culture of the staff and the waste management. The first priority should be to change the culture of the staff. This requires training the staff and getting them to understand the need and urgency to change the company culture to one which is more sustainable.

This in itself is a journey involving providing the information in a usable format, having someone spend time training staff and obtaining their buy in. Goals will need to be agreed together with a timeline. Once the goals start to be achieved champions will start to appear and a culture of sustainable practices and thinking will start to take root.

For more information visit www.smartwaste.co.za

“The things which the CEO can control are the marketing, the practices and culture of the staff and the waste management. The first priority should be to change the culture of the staff.”

There is no doubt that implementing sustainable practices in a business is complicated. It involves changing business operations and mindsets. The operations may be the easier of the two. Getting people to change old habits is harder.

To take a topical example; imagine a small, textile mill which for years has been selling quality garments into a niche market. The business is successful and has a good reputation. The problem is some of the clients are starting to ask where and how the products are made.

Fortunately, it is not as bad as those businesses which grow the material – say cotton – in one country and then send it to another country – say Vietnam – for manufacture. Only to import it again. None of those

its market and which it needs to do something about. The CEO decides to become more sustainable and so the journey begins. The first problem is where to begin. The mills looms are old, energy inefficient and costly to replace. He decides to defer that until the economy has improved.

The material the products are made of come from farms where he suspects the labour is treated badly, has inadequate housing and poor working conditions and are paid the bare minimum. These farmers have however been loyal suppliers and have contributed to the success of the business for many years. That is another fight best left until later.

In desperation the CEO hires a consultant who takes the business on a path,

The world of waste – becoming an ESG warrior

Continued from P1

of their waste to landfill and only 39% was being recycled.

In just a short space of three months of WastePlan’s management operations, recyclables had climbed to 75% and Lourens estimates that by June this year the recycling performance will be above 90%.

“A number of measures were applied, not least an education and training programme for the food tenants to explain how proper waste management can bring opportunities to minimise waste costs

and increase value.

“A raft of measures was adopted around waste management which includes; the separation of wet and dry waste and, recyclables and non-recyclables, the improvement of signage, regular refuse collection and exchange, a waste data management and weighing initiative controlled with an easy bar code system allowing the documentation accurate measurement of the waste stream, amongst others. The Landlord also developed a differential billing model to drive

behaviour and make the process of waste cost allocations to tenants much more accurate based on waste generation by type and the data more transparent. Rebates obtained are passed back on a contribution basis to tenants to award them for proper separation at source activities.

“The target is to achieve a 100% recycle rate although some complex materials cannot be recycled economically, as they are too small or the composition of the material requires sophisticated processes

for recovery, there is however very little waste that does not have a recycling solution.”

Lourens concludes: “We view our involvement as a partnership with our clients – which includes some of the country’s biggest corporates – where our performance is linked to the client’s goals, and financial incentives and bonuses form part of the package. We believe that our model benefits everyone and the environment – If we cannot save you money, we don’t get involved!” he reiterates.

SPECIALIST WASTE MANAGEMENT SOLUTIONS FOR RETAIL, BUSINESS AND COMMERCIAL CENTRES

WE FIND VALUE IN YOUR WASTE AND SAVE YOU MONEY.





Head Office
082 331 7200

Cape Town Branch
021 851 9235

www.smartwaste.co.za
info@smartwaste.co.za



World Environment Day - Are you making this mistake in your home?

ONE of the biggest mistakes that people make in their homes, at schools and in their businesses is not separating wet and dry waste.

This is according to Fibre Circle, the producer responsibility organisation of the paper and paper packaging sector, which is charged with promoting paper recycling awareness and encouraging consumers to separate paper products for recycling.

“Recyclable paper such as office paper, cardboard boxes and dry food packaging should not get wet or dirty,” explains Edith Leeuta, CEO of Fibre Circle. “Because paper is effectively a natural product, any contact with moisture – such as tea bags, food scraps or dirty items – will set off the degradation process.”

Keeping paper products dry, separate and

available for recycling is good for three reasons:

- It is easier, cleaner and quicker for waste collectors to retrieve these items.
- You will begin to notice your own waste footprint and how you can further reduce it, by composting your food waste, for example.
- Paper fibres retain their integrity, which means a better quality product when the paper is recycled.

Another great reason to recycle, and do it properly, is that it reduces the amount of waste going to landfill. “A day like World Environment Day on 5 June often gives us the opportunity to give a little more thought to what we do every day and how we can do better when it comes to the environment,” says Leeuta.

Get your recycling and waste reduction back on track

These paper products are recyclable.

- Common cardboard boxes of any kind dry food, cosmetic and medicine boxes; roll cores, packing cartons (flattened)
- Paper grocery and take-away bags
- Pizza boxes, burger boxes and paper-based clam shells – remove any food residue
- Newspapers, magazines and brochures, including glossy varieties
- Office and shredded paper, envelopes
- Old telephone directories
- Paper giftwrap (sticky tape removed)
- Damaged hardcover and paperback books
- Food and beverage cartons
- Paper cups – rinse lightly and dry

Keep these out of your paper recycling

- Tissues, toilet paper and serviettes
- Food waste
- Wet/dirty paper and cardboard
- Sticky notes
- Used paper plates
- Disposable nappies
- Wax-coated, foil-lined or laminated boxes
- Foil gift wrapping, carbon and laminated paper

Keep these in a separate recycling bin:

- Tins and cans
- Glass
- Plastics

Set-up a home composting system or work with your neighbours: Approximately 30% of all household waste being disposed of at landfill consists of organic waste that could potentially be diverted from landfill by means of household composting.

Widest range of waste and recycling equipment



REC-O-QUIP has been providing quality products and services to its African customers and surrounding Indian ocean islands through its strong distribution network, covering a broad range of fields from Mining, Construction, Demolition, Marine, Civils, Agriculture, Forestry, Solar/wind power, industrial automation, Generators and the recycling of waste, paper, plastic, Ferrous and non-ferrous metals, rubber tyres and wood.

REC-o-quip provides the broadest range of products from over 150 manufacturers from Europe and believes

in providing customers with solutions which help them achieve higher levels of productivity and profitability by engineering the best systems for their requirements. This means studying customer applications to find new and better ways to create value.

REC-o-quip sister company - Kiff systems distributes specialized machinery to the waste processing and manufacturing industries through a strong distribution network. It offers problem solving solutions through its research and development teams in partnership with manufacturers, cover-

ing all waste streams. Kiff provides installation, training and after sales service and offers a large selection of high quality manufacturing equipment from Europe, Canada, Denmark, Norway, Finland, South Africa, Australia and USA. For cheaper solutions it also has a range of equipment from well-established Chinese suppliers.

REC-o-quip also provides quality used refurbished equipment from its manufacturers to accommodate customers budgets and start up needs.

For further information visit www.recoquip.co.za

International Day for Biological Diversity 2022

Better food and organic waste management will protect our biodiversity



WE need to conserve our biodiversity for our own benefit and the benefit of future generations. A healthy environment and rich biodiversity will support the natural water cycle, helps with our food production, and recycles the air that we breathe. Biodiversity is not just the wildlife and nature that you can see, it is also the small micro-organisms within soil that play a big part in the health of the entire ecosystems. With this, it is clear that a healthy, biodiverse ecosystem support our own health through providing clean air, water and quality food.

Sunday, 22 May 2022 was International Day for Biological Diversity, focused on highlighting the importance of biodiversity, especially

for a sustainable future. For Biodiversity Day this year, the campaign highlighted 22 actions that businesses and citizens can do to protect biodiversity.

In recognition of taking action towards protecting biodiversity, BiobiN South Africa highlights three key actions that businesses and citizens can take to protect biodiversity.

1. Divert food and organic waste from landfill.

“South Africa is still very reliant on landfill to dispose our general waste streams. With food and organic waste, the best way to divert this stream is to compost it. We have the composting technology readily available to divert food and organic waste from landfill,” says Brian Kusel, Direc-

tor of BiobiN South Africa. “By diverting organic waste, we can reduce our reliance on landfill and prevent the need to extend existing landfill site that may disrupt or impact the surrounding environment and biodiversity.”

“Clearing land to create more landfill space is becoming more prominent nowadays as many of our landfills in South Africa are approaching their capacity. This type of land conversion will only exacerbate the existing environmental impacts of a landfill site,” says Kusel. “As many of our landfill sites approach capacity, we need to adopt waste diversion technologies on-site. Alternative waste treatment technology like composting units allows a facility to circulate organic waste,

creating high-grade compost, which can be used on-site or at a nearby garden or farm. It is an ideal model that circulates organic waste all within a local or regional area, instead of having to transport it over distances for final disposal.”

2. Recycling carbon through waste. Emulating the natural functioning of an ecosystem and biodiversity, all waste is reused or recirculated as a resource. Everything is recycled. By composting food and organic waste, we are recycling carbon, one of the most important elements for life, right with oxygen.

Organic waste breaks down and carbon is stored within the soil content. In soil, carbon helps with water retention and soil fertility, and ultimately plant growth. Improved plant growth and health will convert more atmospheric carbon dioxide into oxygen. “By composting we restore carbon in soil. Healthy soil bodies are crucial in supporting great ecosystems.”

3. Looking after our soil with essential nutrients. It’s not just carbon that composting our food waste will provide our soils. Our food waste is rich in nitrogen, phosphorus, and potassium, three elements

that promote healthy plant growth. Most synthetic fertilizers contain these three elements, however one of elements used in excess from fertilizers can run-off into waterways to cause algae blooms. Algae blooms is a common environmental impact from agricultural fertilizers that adversely impacts the local biodiversity, especially in wetlands

and rivers. An algae bloom will decrease the level of oxygen in a water body and eliminate the aquatic species that rely on that water source. Using compost, the chances of agricultural run-off from excess nutrients is a less likely occurrence.

“We encourage all businesses to look at the way that they manage their organic waste

stream and to identify better waste management options,” says Kusel. “As a responsible citizen, we encourage you to support businesses and retail especially, who have implemented organic waste diversion initiatives, like composting.”

To find out more about BiobiN South Africa, visit www.biobin.co.za

SPECIALISED HANDLING, PROCESSING AND MANUFACTURING LINES

REC-O-QUIP covers the largest range of quality handling, processing and manufacturing equipment, covering the broadest range of industries into Africa and covering the Indian ocean islands.

MINING
CONSTRUCTION
DEMOLITION
WASTE RECYCLING
FORESTRY & AGRICULTURE
MARINE
USED EQUIPMENT
INDUSTRIAL AUTOMATION
RENEWABLE & TURN-KEY PROJECTS
SOLAR INVERTERS

Steven Harmsen | info@recoquip.co.za | +27 72 647 9214 | www.recoquip.co.za

Plastic, chemical pollution beyond planet's safe limit: study



By Marc Pr el.

LESS than 10 percent of the world's plastic is recycled.

The torrent of man-made chemical and plastic waste worldwide has massively exceeded limits safe for humanity or the planet, and production caps are urgently needed, scientists have concluded for the first time.

There are an estimated 350 000 different manufactured chemicals on the market and large volumes of them end up in the environment.

"The impacts that we're starting to see today are large enough to be impacting crucial functions of planet Earth and its systems", Bethanie Carney Almroth, co-author of a new study told AFP in an interview.

The study, by the Stockholm Resilience Centre, comes ahead of a UN meeting in Nairobi on tackling plastic pollution "from source to sea", said UN Envi-

ronment Programme head Inger Andersen.

Chemicals and plastics are affecting biodiversity, piling additional stress on already stressed ecosystems.

Pesticides kill living organisms indiscriminately and plastics are ingested by living things.

"Some chemicals are interfering with hormone systems, disrupting growth, metabolism and reproduction in wildlife," Carney Almroth said.

'Enough is enough'

Recycling has so far yielded only mediocre results.

Less than 10 percent of the world's plastic is currently recycled, even as production has doubled to 367 million tons since 2000.

Today, the total weight of plastic on Earth is now four times the biomass of all living animals, according to recent studies.

"Maybe we have to put a cap on production. Maybe we need to say, 'We can't produce more

than this.'"

For several years, the Stockholm Resilience Centre has been conducting studies on "planetary boundaries" in nine areas that influence Earth's stability, such as greenhouse gas emissions, freshwater usage and the ozone layer.

The aim is to determine if mankind is in a "safe operating space" or if the limits are being exceeded and threaten the future of the planet.

Breaching planetary boundaries

The impact of so-called "novel entities"—or man-made chemical products such as plastics, antibiotics, pesticides, and non-natural metals—has until now been a big question.

And the answer is complex.

"We are only beginning to understand the large-scale, long-term effects of these exposures," Carney Almroth said.

Not only are there thousands of these

products but the data on the risks they pose is often non-existent or classified as corporate secrets.

Additionally, the chemicals are relatively recent, most of them developed in the past 70 years.

"And we're talking about 350 000 different substances," Carney Almroth said.

"We don't have knowledge on the vast majority of those, in terms of how much are produced or their stability. Or their fate in the environment or their toxicity."

Even the most comprehensive databases, such as the European Union's REACH inventory, only cover 150 000 products, and only a third of those have been the subject of detailed toxicity studies.

'No silver bullet'

As a result, the team of researchers focused on what is known, and this partial information was enough to draw an alarming conclusion.

"Looking at changes over time and trends in production volumes lost in the environment ... and connecting that to the little bit we do know about impacts, we could say that every arrow is pointing in the wrong direction", Carney Almroth said.

There is still "time to revert this situation" but it will take "urgent and ambitious actions ... at an international level", she added.

Tantec surface treatment technologies reduce time and wastage



GREENTECH Plastics Machinery, a major supplier, installer and servicer of premium European-designed plastics machinery, offers a range of high quality Tantec surface treatment systems to customers across the Southern and East African regions.

Choosing the right plastic ancillaries is just as important as a high quality injection moulding machine to ensure streamlined production. "As an end-to-end partner in plastic production processes, we support our injection moulding machines with best-in-class ancillary equipment to assist customers in significantly reducing time and material wastage," says GreenTech Business Development Manager, Martin Hollinger. "We are in fact one of very few companies in the world offering all electrical surface treatment technologies."

Danish-company, Tantec, is ISO 9001 and ISO 14001 accredited, and has more than 40 years of experience as a manufacturer of quality, high-end surface treatment products for applications in automotive, pipe, medical/life science, electronics and packaging. GreenTech supplies Tantec Plasma and Corona surface treatment systems as well as leak detection technology (LeakTEC) for the detection of a crack or pinhole in a plastic material.

Hollinger explains that surface treatment with Tantec Plasma technology offers innovative solutions to adhesion and wetting problems in many

industries. "Component preparation is an important step prior to bonding, painting, varnishing and coating processes. Plasma treatment provides an economical solution for the cleaning and activation of component surfaces before further processing. Moreover, Plasma surface treatment improves wettability and adhesion of ink, glues and coatings on many different surfaces."

According to Hollinger, PlasmaTEC-X and Vacuum Plasma are two popular products in the Tantec Plasma range.

Tantec's Vacuum Plasma range is designed for plasma treatment of a large number of different injection moulded parts. Available with both single and multiple tray configuration, this technology offers very fast treatment times and optimum adhesion properties for downstream coating, gluing, painting, and printing applications. It is appreciated by industry for its simplicity of operation, reliability in production, and fast process speed.

Another surface modification technique, Tantec Corona treatment, optimises the adhesion properties on polymer-based materials, ensuring the bonding of the surface with printing inks, coatings and adhesives. The low surface energy of polymer-based substrates often leads to poor adhesion of inks, glues, and coatings which by nature present significantly high surface energies. Corona treatment is widely used as a suc-

"Tantec's leak detection technology, LeakTec, is a powerful electronic tool for non-destructive leak detection..."

cessful surface treatment method in the plastic film, extrusion, automotive and medical industries.

Tantec's leak detection technology, LeakTec, is a powerful electronic tool for non-destructive leak detection of non-conductive single layer materials, helping customers to maintain products of the highest quality. This fully automatic test is capable of detecting pin holes even smaller than 3 microns by introducing an electrical potential between a detecting electrode and an electrical ground while the plastic part itself acts as the insulator. The LeakTEC ensures full process control and traceability and is typically used in field applications to surface test moulded and welded joints in medical devices like medical tubes, containers, pipettes, cannulas and extruded film for medical bags, etc.

"With a combined experience of 220 years in the industry, our highly skilled team of technicians deliver professional customer service, backed by our strategic network of offices in Gauteng (HO), Kwa-Zulu Natal, the Eastern and Western Cape as well as in Nairobi, Kenya," concludes Hollinger.

Checkers diverts 68 tons of unrecyclable material from landfill

CHECKERS is the first South African retailer to replace its rotisserie chicken packaging with fully recyclable, responsibly sourced cardboard boxes. This will prevent 68 tons of non-recycled multi-layer laminated material from being landfilled every year.

This is part of Checkers' ongoing commitment to environmental sustainability as the retailer continues to make changes that are better for our planet.

It is also in line with the Shoprite Group's commitment to designing its packaging with sustainability in mind. To promote the circular economy, the Group has committed to en-



suring that 100% of its own-brand packaging is reusable, recyclable and compostable, and that it contains on average 30% recycled material content by 2025.

Good progress has already been made, transitioning key packaging categories, including:

- All paper and carton board packaging

used at in-store deli's, bakeries and fresh fish sections are now 100% responsibly sourced.

- Private label Crystal Valley Fresh Milk's bottle cap colour has been changed from blue and red to white, which enables recyclers to eliminate down cycling into

darker cap colours like black.

- In the next two months PET thermoform plastic sandwich punnets will be replaced with a Kraft carton sandwich wedge which has a small window, for easy removal before recycling.

In addition, the Group currently recycles the following volumes of material per hour through its reverse logistics operations

- Plastic: 4 653 tons per year = 531kg per hour or 0,5 t/h
- Cardboard: 40 327 tons per year = 4 604kg per hour or 4,6 t/h.

FROM ACORNS, OAK TREES GROW



Zamani



Factory workers in St Helena Bay



Oom Arthur (1 of 3 pelagic vessels)



Raka (1 of 4 squid vessels)

IT's taken Arthur Shipalana and the now deceased Willem Walters more than 20 years to break into the capital intensive deep sea hake sector. Willem and Arthur registered the company way back in 1997 in order to apply for a pilchard and anchovy quota. Their early attempt at securing a quota yielded them a small non-viable pilchard quota. This sad state of affairs placed them in an awkward position as no bank would finance a non-viable enterprise and for that matter a startup company. Through their determination, hard work and more than a little luck they approached Willem's brother who ran a small fishing company in the West Coast. He too was in a similar position of trying to manage a company with an unviable quota. It was agreed to run the two entities as a joint venture initially. It was also agreed that with a passage of time the black shareholders of the other company will acquire shares in the West Coast based company (Visko) in order to make it compliant with BEE legislation.

In 2005 the two joint venture companies applied for a deep sea hake quota and were both lucky each to be awarded a small combined non-viable allocation. Despite this setback their determination to participate and succeed in this highly competitive and financially challenging industry propelled them to acquire a vessel from Morocco owned by Spanish national.

Those familiar with the quota system for deep sea hake and pelagic species will agree that the system of regulation and the apportionment of quotas isn't particularly user friendly process and is particularly hostile to small players with limited resources even to those who are supposed to be seen as making meaningful contribution towards the transformation agenda.

And the fishing industry is fraught with risk and not for the fainthearted. The sea can be an unforgiving, dangerous place with unpredictable weather patterns that affect catch sizes, highly regulated employment and labour practices, fluctuating operational and maintenance costs and the logistics of getting the catch to market in pristine condition, not to mention plenty of competitors.

EARLY DAYS WITH BIG AMBITIONS AND MOUNTAINS TO CLIMB

For their venture to succeed it needed to be involved in more than one specie and involved themselves in hake deep sea, small pelagics (pilchards and anchovy) and squid. Each of these species has their own challenges in terms of method of harvest, type of vessel, marketing, times of harvest. Participation in more than one specie offers the participating companies an opportunity to survive during the collapse of one or two species. This has been the case over the past four years where the catches of pilchards and squid have been severely depleted, threatening companies reliant on this resource with closure.

Their tenure in the hake deep sea sector has been met with many challenges relating to cost of maintenance, crewing, cost of diesel oil and inadequate quota allocation. Due to a lucky break, they were able to link up with a fish marketing company in Spain which was willing to enter into a long term relationship: the Spanish were prepared to assist in raising capital needed to finance the purchase of the vessel and other costs associated with major maintenance and breakdowns. In return for the assurance, all catches are sent to Spain. This arrangement became a catalyst for interdependence and complete trust, allowing growth by tapping into a bountiful export market.

EXPANSION

One of the most notable achievements in their journey to become a significant player in the fishing industry is attributed by the long vision of identifying youthful talent to help drive the business. Today the founding members Arthur Shipalana, Frederick Walters and Lulamile Xate have identified young and dedicated professionals to help steer the company. Pheobius Mullins is the Operations Executive, Jacques Van Zyl, the CFO and Morne Sinden, the Fleet Executive.

Operations have been split into four areas: deep sea hake trawling, squid and small pelagics, trawling division and the factory processing facility. A recent upgrade of its factory into a HASSIP compliant facility complements what vessels are processing at sea,

The four squid vessels which are all Gqeberha (Port Elizabeth) based as squid is caught around Gqeberha / Cape St Francis Bay / Humansdorp areas. Despite initial reluctance to market squid, the Spanish marketing partner now can't get enough product to satisfy customer demand!

Before the disappearance of pilchards the newly converted factory used to pack bait which was in high demand outside RSA, principally to the Australian and Fiji markets.

In the course of analyzing its business operational cost structure the company identified logistics is a potential area of saving if done internally. A young and highly knowledgeable young man was recruited in order to form a company. This decision was a great saviour of our operations.

CONCLUSION

The success of these entrepreneurs is the epitome of what develops a thriving economy and that means creating in their case, security of employment for close to 200 people while developing an expanding export business that generates valuable foreign exchange for the country. Their journey has not been easy one often dogged by red tape, abuses and unnecessary bureaucracy but faith and determination has won through. What an example!

Contact:

Mr Arthur Shipalana

e: arthur@inxfreight.co.za t: +27 (0) 21 510 6912 m: +27 82 774 5165





First of three Multi-Mission Inshore Patrol Vessels delivered

IN a ceremony held at Simons Town Naval Base, the first of three, state-of-the-art, Multi Mission Inshore Patrol Vessels (MMIPVs) has been handed over to the South African Navy. The vessel marks the culmination

of four years of work for Damen Shipyards Cape Town (DSCT). The vessel being delivered will augment South Africa's maritime security by enhancing the country's capability to respond effectively,

rapidly and cost-effectively to threats such as illegal trafficking and fishing.

The 62m by 11m vessels have been designed by Damen to deliver a rapid response capability that is both effective and cost efficient.

The vessel is the first Damen Sea Axe vessel to operate in South Africa where, along with its sister ships, its primary role will be to counter piracy, illegal fishing and smuggling operations. However, their ability to accommodate at short notice containerized mission modules gives them a true multi-mission capability. The patented design delivers exceptional seakeeping behaviour with the straight-edged bow cutting through the water thereby improving comfort and safety while reducing emissions and fuel consumption.

The MMIPV project is also playing an important role in creating skilled new jobs and acting as a catalyst for the development of regional supply chains. On its own, the MMIPV project is expected to generate more than one million man-hours of work during the construction of the three MMIPVs and will support more than 1 000 direct and indirect jobs at Damen Shipyards Cape Town (DSCT). In addition, the yard is also focusing on nurturing small businesses to maximise local content.

Mr Sam Montsi, Chairman of the Damen Shipyards Cape Town Board, commented: "The delivery is a significant milestone in the story of Damen Shipyards Cape Town. It is the first time that a naval vessel of this calibre has been built at the yard and it is also the first of its class! Despite the COVID 19 pandemic, this beautiful vessel has been built to the required quality level which is an achievement that was realised by South African people, as most of the work and materials that went into the construction were sourced locally.

"The yard has significantly grown during this process both in the quality of work and the safety standards achieved. This project has also allowed the yard to increase the impact of its transformation strategy by consistently delivering relevant development to the communities of South Africa."

Work on the remaining two vessels is well underway at DSCT, with the second vessel handover being planned for 2023 and the third for 2024.

BEKA Schréder
Experts in lightability™

ECOBAY

LED lowbay
and highbay

OVER
100
years

40+
YEARS
of
Lighting Excellence



The ECOBAY is the ideal luminaire for **lighting industrial facilities** at optimized light levels. It offers substantial **energy savings**, high performance and is able to operate at high ambient temperatures. Available with four typical lumen packages and various light distributions, the ECOBAY is **perfectly suited for multiple indoor lighting applications**. Thanks to its **reliable performance, low dust accumulation and no need for relamping and regular maintenance**, the ECOBAY is the luminaire of choice.



+27 11 238 0000
www.beka-schreder.co.za

LOCALLY
manufactured

No squid sees profits slump

Premier Fishing interim results for the six months ended 28 February 2022

PREMIER's reduction in revenue by R62m to R224m is due to the scarcity of the squid resource, usually one of the biggest contributors to the Group's overall profitability. This is an industry-wide challenge, reliant as it is on seasonal changes to the environment.

Premier's remaining divisions continued to steadily support operations, posting strong performances particularly in the lobster, deep sea hake and abalone divisions. The abalone sector continues to perform well, with Far East markets rebounding post COVID-19 pandemic economic restraints, and an increased per kilogram selling price for these delicacies, as well as significant improvements in volumes sold.

Earnings before interest, taxation, depreciation, and amortization (EBITDA), however, decreased by 30% to R25 million from R40 million, along with a decrease in the profit before tax to R13m from R21m. This was mainly attributable to a decline in operating profit as a result of the increased pressures from a reduced squid sector.

Commenting on the Group's performance for the first half of 2022, Chief Financial Officer, Brent Robertson remarked: "Even though the Group's

revenue has declined by factors outside of our control, we have managed to control our margins as some of our margins have improved; thereby placing less pressure on cash reserves. This is testament to the cost saving initiatives that we have implemented over the past 6-18 months."

Premier's board elected not to pay a dividend in this period.

Outlook:

Robertson was also optimistic about the Group's prospects saying, "The Group has lots to look forward to, having just completed its Fishing Rights Application Process ("FRAP"), and obtaining strong scorecard ratings from the submission of our applications and hence managed to retain our fishing rights for the next 15 years."

The Group recently completed its FRAP and were granted its fishing rights for the following sectors:

- South Coast Rock Lobster
- Small Pelagic Anchovy
- Small Pelagic Pilchards
- Squid
- Hake deep sea trawl
- Hake long line.

Premier currently

employs more than 800 people (permanent, seasonal, and contractual) on the coastal regions of South Africa. Transformation and empowerment of the sector remains a deeply rooted commitment for the Group, driven by

its own transformation credentials as a proudly black owned and managed operation.

For additional information and the full results, please visit Premier's website at www.premierfishing.co.za



Moving



Stores Entrance on Falcon Lane

VEGA Controls has moved to a new address at Lanseria Corporate Park in Johannesburg.

Important closure and re-opening dates:

- The Stores department closed on 26 & 27 May, and will re-opened at its new location on 30 May 2022.
- The main office closed on 3 June and will re-opened on 6 June 2022.

New address: 40 Amelia Lane, Lanseria Corporate Park, Lanseria, Gauteng. Stores Entrance is located on 35 Falcon Lane at Lanseria Corporate Park.

Joint Analytical Cell for fisheries monitoring and enforcement

INTERNATIONAL organizations aim to transform global ocean governance by enabling access to data, technology and analytics at scale

A new collaboration aims to boost equitable access to vital fisheries intelligence, data analysis and capacity building assistance to help developing maritime States combat illegal, unreported and unregulated fishing. Founded by the International Monitoring, Control and Surveillance Network, Global Fishing Watch and TMT, the Joint Analytical Cell, or JAC, will harness innovative technology and fisheries expertise to facilitate collaboration among State and non-State actors and transform ocean governance.

The announcement comes in advance of the International Day for the Fight Against Illegal, Unreported and Unregulated (IUU) Fishing on

June 5 and the second United Nations Ocean Conference taking place in Lisbon, Portugal June 27-July 1st which the Joint Analytical Cell will be showcased by States that recognize the importance of novel collaboration and new technology to help sustainably manage the ocean.

"The establishment of the Joint Analytical Cell marks a sea change in fisheries intelligence and analysis. It will set a precedent for a global shift toward greater use of open data, data analytics, and integrated technology to provide greater transparency of activities occurring in the maritime domain and strengthen fisheries monitoring, control and surveillance efforts," said Mark Young, Executive Director of the International Monitoring, Control and Surveillance Network.

RADAR IS THE BETTER ULTRASONIC



80 GHz level sensor with fixed cable connection (IP68)

All advantages of the radar technology:
www.vega.com/vegapuls

Gas power addresses a more sustainable energy transition in mining operations

SPEAKING to customers on the sidelines of this year's Mining Indaba conference in Cape Town, South Africa, GE Gas Power's Executive, Oluwatoyin Abegunde said, "The complementary strength of gas and renewables plays a critical role in delivering lower carbon, and more reliable electrical power generation. As Sub-Saharan Africa balances the need for more access to power, along with the push towards more sustainable energy sources, the accelerated and strategic deployment of renewables and gas power together can reduce carbon emissions quickly."

GE has been collaborating with energy stakeholders to deploy innovative technologies tailored to respond to the needs of the mining sector. In Botswana, GE gas turbines are providing Orapa diamond mines' 90MW turbine

power plant facility with reliable power, as well as supplementing the country's energy needs. In Nigeria, GE's gas turbine technology is supporting Dangote Cement in Obajana located in North Central Nigeria, to reduce unplanned downtime, improve operational efficiency and become energy self-sufficient.

"Adding renewables as quickly as Africa can afford to, while also switching significant coal or diesel generation to gas, will be required to help address climate change with the required pace and scale," said Abegunde. "In Africa, where historically diesel and Heavy Fuel Oil (HFO) have dominated the power generation landscape, GE's technology offers a reliable, cost effective and sustainable pathway for reducing carbon emissions for industry players in the mining and metals, plastic, paper and pulp, and

chemicals industries, among others."

The mining industry is keenly focused on sustainability goals, and it is imperative that the power generation industry achieves that objective. That means, in part, lowering reliance on carbon-heavy fuels like coal, diesel and HFO. As one of the world's largest manufacturer and supplier of gas turbine technology, GE Gas Power offers a wide array of equipment options and models to help meet the most challenging energy requirements. Thermal hybrids solutions, for example, improve energy security, reliability and sustainability for captive power generation for industries, including mines.

Thermal hybrid applications, involving the interfaced operation of a thermal asset with a renewable and/or an energy storage asset, are expanding the possibilities of electricity generation.

GE's aeroderivative gas turbines are the ideal solution for mining operations as they are light weight with a smaller footprint and with lower carbon emissions, high cycle elasticity and shorter downtime than competing technologies. Aeroderivative gas turbines can also be used in thermal hybrids for a variety of industrial applications like mining and metals.

GE's gas turbines can operate on a wide variety of gas and liquid fuels including natural gas, liquefied natural gas (LNG), flare gases, lean methane, refinery gases, as well as ethane, propane, and other higher molecular weight hydrocarbons, i.e., natural gas liquids (NGLs) and liquid petroleum gas (LPG). Liquid fuels include diesel (also known as light distillate or diesel fuel oil, biodiesel, condensates, crude oils, and heavy/residual fuel oils).

Top 5 Largest Oil and Gas Projects in Africa by Investment



By Matthew Goosen,
Energy Capital &
Power

WHILE accounting for roughly eight percent of global oil production in 2020, Africa is home to massive untapped natural resource wealth, with a view to becoming a global energy powerhouse. Between 2021 and 2025, an estimated 428 oil and gas projects are expected to start operations on the continent, which is set to become a hive of activity over the next decade.

Tanzania LNG liquefaction plant

Led by Shell, the \$30-billion Tanzania Liquefied Natural Gas (LNG) Liquefaction Project, also known as the Likong'o-Mchinga LNG Project, is expected to commence construction in 2023, with completion aimed for 2028. The LNG export terminal will be built at Lindi in the southern part of the country, and will have the capacity to produce 10 million tons of LNG per year.

Rovuma LNG

With FID on the project expected by 2023, the \$30-billion Rovuma LNG Terminal is set to begin production in 2025. Located approximately 40km off the Cabo Delgado coast in northern Mozambique, the Rovuma LNG project is based on three gas reservoirs in the Area 4 Block of the Rovuma Basin, which contain an estimated 85 trillion cubic feet

of natural gas. Exxon-Mobil is leading the construction and operation of the facility, which is set to promote skills development and create over 5 000 local job opportunities. As one of the largest projects in Africa, the Rovuma LNG facility has a planned capacity of 15.2 million tons of LNG per year and is expected to transform the country's natural gas industry over the next decade. The project's initial phase will develop the Mamba reservoirs in Area 4, and will see the construction of two onshore trains, each with a capacity of 7.6 million tons of LNG per year.

Mozambique LNG

Currently under construction on the Afungi Peninsula in the Cabo Delgado Province, the inception of the Mozambique LNG facility began with the discovery of vast quantities of natural gas off the country's northern coast in 2010, which led to a \$20-billion FID on the project in 2019. The large-scale development will tap into an estimated 75 trillion cubic feet of recoverable natural gas from Mozambique's Offshore Area 1, and utilize a two-train liquefaction plant with a capacity of 12.9 million tons per year to deliver LNG and start production by 2024.

Ogidigben Gas Revolution Industrial Park

Fully owned by the Nigerian National Petroleum Corporation, the \$20-billion

Ogidigben Gas Revolution Industrial Park is a planned downstream refinery and petrochemical complex set for construction in Nigeria's Delta Region. Covering over 27 km², the industrial park is planned to feature fertilizer, methanol, petrochemical and aluminium plants to make use of Nigeria's abundant natural gas volumes as feedstock, and is estimated to create over 250 000 direct and indirect jobs. The project aims to tap into 18 trillion cubic feet of proven natural gas reserves located in the nearby Odidi, Okan and Forcados fields.

Zabazaba and Etan integrated development

In water depths ranging between 1,200m and 2 400m, the Etan and Zabazaba oil fields are located in OPL 245 offshore Nigeria in the Niger Delta. The 300 000km² delta is the world's twelfth-largest oil and gas resource, estimated to contain 34.5 billion barrels of oil and 93.8 trillion cubic feet of proven natural gas reserves.

Together, the Zabazaba and Etan Fields are estimated to contain a combined 560 million barrels of oil equivalent. The \$13.5-billion integrated development project is being undertaken by the Shell Nigeria Exploration and Production Company, Eni and Nigerian Agip Exploration – the last of which will serve as operator for the project.

Source: Energy Capital & Power.

SEASCAPE MARINE SERVICES (PTY) LTD

Complete Propulsion Solutions for a wide range of applications

**124 Marine Drive, Service Road,
Paarden Eiland, Cape Town,
South Africa**

seascape_marine_services
 +27 21 511 8201
 info@seascapemarine.co.za

www.seascapemarine.co.za

Can gravity batteries solve our energy storage problems?

By Alasdair Lane of the BBC

THERE is a riddle at the heart of the renewable energy revolution. When the wind blows, the sun shines, and the waves roll, there is abundant green power to be generated. But when skies darken and conditions are calm, what do we do?

This new field of energy storage technology is remarkably simple in principle. When green energy is plentiful, use it to haul a colossal weight to a predetermined height. When renewables are limited, release the load, powering a generator with the downward gravitational pull.

Gravitricity, an Edinburgh-based green engineering start-up, is working to make this a reality. In April last year, the group successfully trialled its first gravity battery prototype: a 15m steel tower suspending a 50 ton iron weight. Inch-by-inch, electric motors hoisted the massive metal box skyward before gradually releasing it back to earth, powering a series of electric generators with the downward drag.

The demonstrator installation was “small scale”, says Jill Macpherson, Gravitricity’s senior test and simulation engineer, but still produced 250kW of instantaneous power, enough to briefly sustain around 750 homes.

“We proved that we can control the system to extend the lifetime of certain mechanical components, like the lifting cable,” says Macpherson. “The system is also designed so that individual components can be easily replaced instead of replacing the entire system throughout its lifetime. So there’s real scope for having a decades-long operational life.”

While the Gravitricity prototype pointed upward, the company’s focus is now below ground. Engineers have spent the last year scoping out decommissioned coal mines in Britain, Eastern Europe, South Africa, and Chile. The rationale, explains managing director Charlie Blair, is pretty straightforward: “Why build towers when we can use the geology of the earth to hold up our weights?”

It seems like a neat solution. The globe is pockmarked with disused mine shafts deep enough to house a full-sized Gravitricity installation, which will stretch down at least 300m, and possibly much further. There’s political will to make it happen too, Blair says, with policymakers



Gravity batteries work in a similar way to pumped hydro, which involves funnelling water uphill before releasing it through turbines to generate energy (Credit Getty Images)

keen to tap into public enthusiasm for a so-called “just transition” – the notion of a new, low-carbon economy that secures the livelihoods of fossil fuel workers and their communities. And so, with enough funding, a subterranean prototype (most likely located in the Czech Republic) should be functioning by 2024.

Not all innovators see the merits of a below-the-surface solution, however. In a valley in southern Switzerland, the striking steel and concrete prototype from Energy Vault, another leader in the gravity battery space, stands more than 20 stories tall. When green power supply exceeds demand, one of several AI-controlled cranes lifts a pair of 30-ton blocks upwards. When demand outstrips supply, back down they go, generating enough energy for thousands of homes.

With its technology tried and tested – and having received some \$402-m worth of investment – Energy Vault is ready to start a commercial rollout. For that, the company has designed something a little more aesthetically pleasing than the angular Swiss prototype: a modular building dubbed “EVx” that stores thousands of weights on a trolley system.

“Think of it as a warehouse of energy elevators,” says Robert Piconi, Energy Vault’s CEO. “When clean electricity is coming in, the blocks – made of recycled material – go up, and when the grid needs supply, they go back down. An EVx with a storage capacity of 100MWh can power around 25 000 homes for a day.”

Each installation’s size and layout will

determine its overall storage capacity, but even at the lower end, the buildings will cover dozens of acres. Could this be problematic? No, Piconi says, as the systems are likely to be situated near wind and solar farms far from urban centres.

“We won’t have to dig any deep holes either, or have any other big limiting factors on location. Basically anywhere you can construct a 20-storey building will work,” he says.

It’s a message that seems to be resonating: Energy Vault’s order book is filling up fast, with interest coming in from across Europe, America, the Middle East, Australia, and China. The latter is particularly exciting, says Piconi, who is hopeful that it could signify a change of direction for the world’s largest emitter of greenhouse gases.

Balancing the grid

The sheer mass of a gravity battery’s weight coupled with its incredibly slow descent generates a huge amount of torque, allowing the system to deliver maximum power almost instantaneously. This makes the technology particularly adept at maintaining grid equilibrium, reducing the risk of serious infrastructural damage and blackouts by ironing out second-by-second fluctuations.

Re-published from the BBC Future website. Article edited for space. To read the full article visit: <https://www.bbc.com/future/article/20220511-can-gravity-batteries-solve-our-energy-storage-problems?>

Energy researchers invent chameleon metal

By University of Minnesota

A team of energy researchers led by the University of Minnesota Twin Cities have invented a device that electronically converts one metal so that it behaves like another for use as a catalyst in chemical reactions. The device, called a «catalytic condenser,» is the first to demonstrate that alternative materials that are electronically modified to provide new properties can yield faster, more efficient chemical processing.

The invention opens the door for new catalytic technologies using non-precious metal catalysts for important applications such as storing renewable energy, making renewable fuels, and manufacturing sustainable materials.

The research is published online in JACS Au, where it was selected as an Editor’s Choice publication. The team is also working with the University of Minnesota Office of Technology Commercialization and has a provisional patent on the device.

Chemical processing for the last century has relied on the use of specific materials to promote the manufacturing of chemicals and materials we use in our everyday lives.

Many of these materials, such as precious metals ruthenium, platinum, rhodium, and palladium, have unique electronic surface properties. They can act as both metals and metal oxides, making them critical for controlling chemical reactions.

The general public is probably most familiar with this concept in relation to the uptick in thefts of catalytic converters on cars. Catalytic converters are valuable because of the rhodium and palladium inside them. In fact, palladium can be more expensive than gold.

These expensive materials are often in short supply around the world and have become a major barrier to advancing technology.

In order to develop this method for tuning the catalytic properties of alternative materials, the researchers relied on their knowledge of how electrons behave at surfaces. The team successfully tested a theory that adding and removing electrons to one material could turn the metal oxide into something that mimicked the properties of another.

“Atoms really do not want to change their number of electrons, but we invented the catalytic condenser device that allows us to

tune the number of electrons at the surface of the catalyst,” said Paul Dauenhauer, a MacArthur Fellow and professor of chemical engineering and materials science at the University of Minnesota who led the research team. “This opens up an entirely new opportunity for controlling chemistry and making abundant materials act like precious materials.”

The catalytic condenser device uses a combination of manometer films to move and stabilize electrons at the surface of the catalyst. This design has the unique mechanism of combining metals and metal oxides with graphene to enable fast electron flow with surfaces that are tuneable for chemistry.

“Using various thin film technologies, we combined a nano-scale film of alumina made from low-cost abundant aluminum metal with graphene, which we were then able to tune to take on the properties of other materials,” said Tzia Ming Onn, a post-doctoral researcher at the University of Minnesota who fabricated and tested the catalytic condensers. “The substantial ability to tune the catalytic and electronic properties of the catalyst exceeded our expectations.”

IN THE NEXT ISSUE:

- Agri-Processing & Harvest Supply Chain
- Automation Systems / Instrumentation & Process Control
- Boilers & Burners/ Combustion Technology / Heating Control
- Breweries / Wineries / Distilleries
- Compressors / Plant & Equipment
- Materials Handling & Equipment
- Occupational Health & Safety
- Power Solutions / Energy Efficiency / Power Generation/ Transmission & Distribution
- Pumps / Valves / Fluid Technology / Filtration
- Warehousing: Storage / Distribution & Logistics
- Water Engineering: Water Reuse/ Water Storage / Grey Water Systems Waste Water Treatment Solutions

Cape Business News is always on the lookout for stories of companies that are shaping the Cape business landscape. If your company has a story to share, in these, or any other business sector, send your story to editor@cbn.co.za for consideration.

CAPE Business News

Chairman:

Rudi Leitner

rudi.leitner@hypenica.com

Publisher:

Robin Dunbar

robin.dunbar@cbn.co.za

Editor:

Robin Hayes

editor@cbn.co.za

Production Manager:

Elise Jacobs

elise.jacobs@cbn.co.za

Sales & Marketing Director:

Robin Dunbar

robin.dunbar@cbn.co.za

Sales Team:

Heather Ferreira

heather.ferreira@cbn.co.za

Shaun Austin

shaun.austin@cbn.co.za

Subscriptions:

subscriptions@cbn.co.za

Cape Business News

sales@cbn.co.za

Cape Business News has taken all reasonable care to ensure that the information contained in this publication is accurate on the stated date of publication. It is possible that the information may be out of date, incomplete or the opinion of the author. It is therefore advisable that you verify any information before relying on it. Cape Business News accepts no responsibility for the consequences of error, or for any loss or damage suffered by users of any of the information and material contained in this publication. Materials published in this newspaper are subject to copyright and other proprietary rights.

50LT BREWING TANK WITH STAND

PLASTICS FOR AFRICA



3 Montague Drive, Montague Gardens
021 551 5790 | www.plasticsforafrica.co.za

CAPE Business News

Cape Business News, founded in 1980, is primarily a promotional vehicle for companies that have the Cape Business community as a primary target market.

ADVERTISING
For all your advertising requirements, contact our Sales Team
sales@cbn.co.za

GRIPPER & CO (PTY) LTD
INDUSTRIAL AUTOMATION & PNEUMATIC EQUIPMENT

TECHNICAL EQUIPMENT SUPPLIERS & AGENTS

cmatic ASCO numatics JOUCOMATIC piab Findava
CUMMINS DIESEL PUMP ROTOCURE Dwyer Vaculex

158 Lower Main Rd, Observatory, Cape Town
Tel: 021 447 7203 • Fax 021 447 6981
www.gripper.co.za

Look who's smiling here

AS happens on the rare occasion, I was sitting quietly in a corner of the local pub and grill, sampling the art of the brewmaster. Luke the Dude would have none of this peace and tranquillity. "Democracy is broken," he announced.

Struggling to swallow his gulp of beer, Big Ben denounced sputteringly, "That is preposterous!"

"Non-non, Monsieur, not so quickly to rev the mouth while the brain is idling," admonished Jean-Jay. "Your Monsieur Churchill, he who never surrendered, that one, he agreed."

"Quite so," nodded The Prof, "Churchill was fully cognisant of the flaws of democracy. In fact, he said it was the worst form of government – except for all the others."

"But we have the best Constitution in the world!" insisted Big Ben, determined to hold his ground against all comers.

"That may well be true," consoled Stevie the Legal Poet, "but that is no guarantee of a perfect democracy. In fact, the Constitution itself is under attack. The Malema troublemakers and ANC counter-reconciliationists like Minister Camo Model Lindiwe Sisulu are insisting that it is broken."

"I am talking about more than the Constitution," countered Luke the Dude. "I am talking about democracy. Won't you do me a favour, Prof, and describe democracy for the enlightenment of the people congregated here?"

"It's a system," interrupted Bob the Book uninvited, "where the people decide who governs them. Each constituency elects a leader to represent them in a council where laws are made and a government is formed to get things done."

"Useless!" laughed Jon the Joker, "what can go wrong?"

"You see what I mean?" asked Luke the Dude.

Irene the Queen raised her eyebrows:

"No, I don't," she questioned, "what on earth is wrong with that?"

"Not being a mind reader and all," reminded Colin the Golfer.

"The thing is broken!" spat Luke the Dude. "The people get to choose who governs them? Doesn't happen here, does it? We don't even know the cadre deployed to represent our own constituency."

"What are you talking about?" fidgeted Big Ben, "it's your own fault if you take no interest!"

"Okay," grinned Luke the Dude deviously. "Pray tell me, big man, who is our MP? Your personal representative in parliament? Surname will do."

Silence.

"Oops," said Colin the Golfer.

"Okay, let's be fair to Ben," advocated Stevie the Poet, "Does anyone else here know the name of our MP? Also called 'Constituency Head'?"

We did not. Except maybe for Bill the Beard, the well-known intellectual and electrician: "We do now," informed he, "since he has been suspended by the DA under a cloud about his travel expenses." But even The Beard could not recall his name.

"See what I mean," confirmed Luke the Dude, "we don't know who they are because we did not vote for them. We voted for a political party, didn't we? So, we don't get to decide who represents us, the political party does. For the ANC it's factionalists or kinsmen or buddies. Lovers sometimes. How democratic is that?"

"It does not have to be like this," advised Stevie the Poet. "In fact, in 2003 Cabinet appointed a team of experts led by Dr Van Zyl Slabbert to investigate electoral reform. They produced excellent recommendations which the ANC buried. The government also steadfastly ignored Dr Slabbert after that."

"But why," enquired Irene the Queen

incredulously. "Didn't the ANC ask for the investigation? Why would they pretend it didn't happen?"

"The answer is evident," elucidated Stevie. "The leadership cabal had by then realised the flawed system is exactly what they want. They have all the power to do as they like with their majority. Inevitably, loyalty to the people is replaced with loyalty to the party and its hand-outs. Innocentius Zuma and Co said so quite openly: the ANC comes before South Africa."

"Congratulations Counsellor!" applauded Luke the Dude, "I rest my case. Democracy is broken."

"In fairness, the Constitutional Court ruled, two years ago, that Parliament had two years for amending the Electoral Act to allow independent candidates in provincial and national elections," added Stevie. "But ... Parliament is bungling this job so badly that nothing will change by the 2024 general election."

"But what about other countries," asked Irene the Queen, loath to believe the obvious. "America, for instance. They get to vote directly for the president, representatives and senators, don't they?"

"America?" grinned Luke the Dude, happy to continue his argument. "Sure, they vote individually for the president. But what happened in 2016? Hillary Clinton got about three million more people's votes, yet Donald Trump was democratically elected. Blame the system."

"For once Trump was right, the election was 'rigged' – in his favour."

"Also, today nobody doubts that the Russians connived for a Trump win in 2016. After all, Trump openly invited them to find Clinton's emails and they obliged the next day. They interfered again in 2020. And Trump? In 2018 he stood on a podium in Helsinki and chose Putin's 'very strong' denial above the factual findings of America's security agencies."

OPINION

ON THE CONTRARY

The columnist is a journalist and editor based in Onrusrivier.

His awards for journalistic excellence include the Mond and the Sanlam Awards.

Pieter Schoombie



"Say he did have a hold on Trump, what would Putin want him to do? Firstly, fire the director of the FBI and slander him. Remember that a day after James Comey was fired, a Russian delegation visited Trump in the Oval Office. Russian news pictures showed them having a jolly good laugh. No American journalists were allowed.

"Later, fire the deputy director of the FBI a day before retirement and slander him. Destroy public confidence in the FBI by constantly raising unsubstantiated suspicions and accusations. Factionalise America. Undermine America's global standing by reneging on international agreements, including on climate, Iran and the World Health Organisation. Use tariffs to alienate the US from trade partners and friends. Weaken Nato.

"Out of office, he's still at it full-time, sowing mistrust in America's democratic system and stoking virulent division – American against American.

"That's how broken democracy is there."

"I don't agree," fumed Big Ben. "You're imagining things!"

"Believe what you wish," said Luke. "But look who's smiling here: Surprise, surprise, it's Vladimir!"

E-mail: noag@maxitec.co.za

AI traffic light system could make traffic jams a distant memory

By Aston University

LONG queues at traffic lights could be a thing of the past, thanks to a new artificial intelligence system developed by Aston University researchers.

The system—the first of its kind—reads live camera footage and adapts the lights to compensate, keeping the traffic flowing and reducing congestion.

The system uses deep reinforcement learning, where a program understands when it is not doing well and tries a different course of action—or continues to improve when it makes progress.

In testing, the system significantly outperformed all other methods, which typically rely on manually-designed phase transitions.

In 2019, it was estimated that congestion across the UK's urban areas leads to the average UK resident wasting around 115 hours of time—and £894 (R17 880) in fuel waste and lost income—every year. A major cause of congestion is inadequate traffic signal timings.

The researchers built a state of the art photo-realistic traffic simulator, Traffic 3D, to train their program, teaching it to handle different traffic and weather scenarios. When the system was tested on a real junction, it subsequently adapted

to real traffic intersections despite being trained entirely on simulations. It could therefore be effective in many real-world settings.

Dr. Maria Chli, reader in Computer Science at Aston University, explained that they have set this up as a traffic control game. The program gets a reward when it gets a car through a junction. Every time a car has to wait or there's a jam, there's a negative reward. There's actually no input from us; we simply control the reward system.

At present, the main form of traffic light automation used at junctions depends on magnetic induction loops; a wire sits on the road and registers cars passing over it. The program counts that and then reacts to the data. Because the AI created by the Aston University team 'sees' high traffic volume before the cars have gone through the lights and makes its decision then, it is more responsive and can react more quickly.

Dr. George Vogiatzis, senior lecturer in Computer Science at Aston University, says that "the reason we have based this program on learned behaviours is so that it can understand situations it hasn't explicitly experienced before."

We've tested this with a physical obstacle that is causing congestion, rather than traffic light phasing, and the system still



AI traffic light system could make traffic jams a distant memory. Credit: Aston University

did well. As long as there is a causal link, the computer will ultimately figure out what that link is. It's an intensely powerful system."

The program can be set up to view any traffic junction—real or simulated—and will start learning autonomously. The reward system can be manipulated, for example to encourage the program to let emergency vehicles through quickly. But

the program always teaches itself, rather than being programmed with specific instructions.

The researchers hope to begin testing their system on real roads this year.

The research paper, Fully-Autonomous, Vision-based Traffic Signal Control: from Simulation to Reality, was presented at the Autonomous Agents and Multi-agent Systems Conference 2022, held recently.