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Advanced solar technology of Solarus applied to landmark Vineyard Hotel

THE 207-room luxury Vineyard Hotel, in Claremont, Cape Town, is the site of a 60 panel demonstration installation of Solarus Sunpower's hybrid solar PowerCollectors which will see the 90kWp hybrid photovoltaic-thermal system provide 75kW peak thermal and 15kW peak electric output to the hotel. The system has been endorsed by the Dutch Government who are partially subsidising the cost of installation.

This is the first large scale commercial Solarus installation in South Africa – the company having piloted various residential and hospitality projects over the past two years to prove the concept which is now ready for commercial rollout.

Solarus was founded in 2006 and is headquartered in Venlo, the Netherlands, with a Research & Development centre in Gävle, Sweden.

“There have been many attempts by companies and research institutions to combine the benefits of both PV (Photo voltaic) and T (Thermal) in a single solar panel” explained Henning Brand, Solarus local representative and project manager.

“Achieving this combination has often been dubbed as the holy grail of solar. Solarus has successfully achieved this with our PowerCollector™, and we are now recognised as a leader in the field of hybrid solar (PVT) technology. We have won numerous international awards for both our technology as well as for the way we do business and we are very pleased to announce that the PowerCollector™ is now commercially available in South Africa” continued Brand.

“Solarus PowerCollector™ panels offer a unique benefit of being PVT – that is able to convert sunlight to electricity as a normal photovoltaic (PV) panel and also to provide hot water as a solar geyser (T) in one integrated panel. The introduction of the hybrid solar system has the potential to both reduce the Vineyard's current and future energy costs while adding security of supply in the maintenance of the hotel's hot water supply” said Brand.

Space saving

The advantage of this installation, the first of its kind in Africa, is that as both solutions are provided in a single unit providing significant space-saving advantages as



well as being more efficient than side-by-side units.

“The Vineyard Hotel and sister properties - Townhouse in downtown Cape Town and Oude Werf in Stellenbosch - are committed to continuously improving the levels of energy efficiency, especially where energy can be sourced from renewable sources,” says Director strategic business innovation Lex Petousis. “Our target was to increase our storage and conversion of solar energy and to produce thermal energy – for heating water, for example.

“The space-saving solution offered by the Solarus hybrid system is highly efficient on our limited roof space, making this system an attractive choice for the Vineyard Hotel and for supplementing an existing solar PV system. We are very proud that the Dutch Government recognized our commitment to sustainable practices and chose to subsidise the installation. We hope that the success of the project will encourage other hotels to follow suit” he said.

The system

The installation consists of 60 PowerCollectors™, which produce four times more total energy than traditional photo-voltaic installations of the same size, while providing heat to a thermal storage of 5,000l

– which can be likened to a ‘thermal battery’. Heating is supplemented by two heat pumps and hot water from the five 1 000l tanks gives up heat to mains cold water through a heat exchanger where it is distributed to the ten River Suite hotel rooms, the spa, gym and Splash Cafe. The hot water produced by the system is in a closed loop where energy efficient pumps circulate the water through the solar collectors and back to the storage tanks, never coming into contact with a running tap.

The 15kW of electrical power produced by the system is connected to a grid-tied inverter system. DC power from the panels is inverted to AC and used to power guest amenities, the system's circulation pumps, heat pumps (when necessary) and control system.

Advanced measurement tools have been installed to record the total output of the system as well as the carbon savings.

State of the art installation

The installation partner for this project is Greenability Installations, a leading service provider in the renewable-energy field in the Western Cape that specialises in solar installations, hydronic underfloor heating,

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Eland released at City's Blaauwberg Nature Reserve



THE last of eight eland (*Taurotragus oryx*) was released into the City's Blaauwberg Nature Reserve recently after being translocated from the Koeberg Nature Reserve.

“The other seven eland were introduced to the Blaauwberg Nature Reserve in December 2016 and in February this year. The animals were donated by the Koeberg Nature Reserve as part of their management of the eland population in that reserve. In September 2016 we also released five red hartebeest in the Blaauwberg Nature Reserve that were obtained from a private game owner,” said the City's Mayoral Committee Member for Transport and Urban Development, Councillor Brett Herron.

The release of these animals is part of the reserve's game introduction management plan that will serve to enhance management of the vegetation cover and other ecological processes. Apart from the red hartebeest (*Aloelaphus buselaphus*) and eland, grey rhebok (*Pelea capreolus*) is also earmarked for re-introduction.

“Thus far, eight eland and five hartebeest have been reintroduced. We plan to release more of the designated species in future, depending on the numbers that can be allowed,” said Councillor Herron.

The game introduction plan conforms with the historical incidence of larger mammals in the area, a description of the habitat and habitat conditions, suitable species for introduction and species review, habitat and game introduction management implications, and wildlife management and monitoring.

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Advanced solar technology of Solarus applied to landmark Vineyard Hotel

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building insulation and double glazing systems.

Joerg Schilling, CEO of Greenability says: "We are always looking to improve our offering with products that give our clients the best solutions on the market. With the PowerCollectors™ we are able to meet two of the most important needs of our clients; heat and electricity, in one system. In the past we installed separate thermal and photovoltaic solar collectors. As the PowerCollector™ ticks both of these boxes installation is quicker and more convenient. The system is also more effective than the independent units."

Schilling stressed the point that solar installations require in-depth knowledge of thermal dynamics and sophisticated control systems and regrettably there are many examples of underper-

forming, or even failed, installations installed by unskilled personnel.

Solarus' joint venture partner for the distribution and the development of projects using the Solarus technology in Africa, is Build Africa Energy, which is part of the Build Africa Group. The company also distributes the Power Up hybrid power control system which is the most advanced Solar backup power system available using Crystal battery technology. With the Solarus system covering electricity as well as hot water generation and the Power Up system offering safe clean backup power, the company has a complete and unique offering for cost effective green energy solutions for the hospitality industry, says CEO of Build Africa, Miles Oates.

Research and Development

Today's incarnation of the Solarus PowerCollector™ panel represents the culmination of a ten year research and development programme initiated by

European energy giant Vattenfall in collaboration with Swedish research institutions and companies including Uppsala and Lund Universities and the Swedish Energy Agency. The result is a panel that boasts 70% solar efficiency without the degradation of its PV properties due to high surface temperatures. Its receiver is able to effectively and uniformly cool the solar cells allowing them to work efficiently under concentrated sunlight through its patented Active Cell Cooling technology-ACC™.

Solarus was formed as a spin off from Vattenfall to market the new hybrid panel system and is currently upscaling its production facilities and rolling out projects to international markets.

"One square meter of such a module will at an input temp of 20°C and output temp of 50°C in Cape Town, give 168kWh/m²/year in electricity and 799kWh/m²/year in hot water, offering great value to prospective future users of solar energy" says Brand. South Africa is one of

several countries where Solarus has identified enormous potential.

Sustainability goals

"The Solarus vision is not simply profit motivated – we subscribe to the principles of B(enefit) Corp and Blue Economy and the Solarus PVT panel is the ultimate in sustainability – using the free energy from the sun to power human development. Using electricity to heat water is inherently inefficient, is wasteful, and creates pollution and tons of harmful CO₂ through the burning of fossil fuels.

"The potential of this region is enormous – the sun shines most of the time and there are millions of people who either don't have or have limited access to hot water and electricity. We also have a target market of millions of conventional domestic geysers to aim at that currently heat water in South Africa!" he said.

"The concept is catching hold in Europe and Scandinavia where we have installations running in do-

mestic applications where hot water is not only used for ablutions, but for central heating systems too. Similarly, in hospitals where an added advantage of the hot water produced by our panels can go to 70°C to make it bacteria free, unlike water at 50°C which actually encourages the growth of bacteria."

'The new power to fuel our future'

"We complain bitterly about the rising cost of energy in South Africa, but further north, they are worse off where many countries pay much more for interrupted and less secure energy supplies" said Brand. "We see great potential on the continent to fulfil our motto *Sunpower for the people!*"

"With the installation at the Vineyard Hotel, Solarus is making its official entry into the African market. More projects are in progress covering sectors including hospitality, housing, swimming pools, commercial office space, agri-processing and manufacturing" he said.

Cape firm digs deep for value

CAPE TOWN investment firm RECM & Calibre (RACP) is fast building a reputation for venturing boldly where most investors fear to tread.

The company – which is headed by well-known asset managers Piet Viljoen (formerly of Investec Asset Management) and Jan van Niekerk (ex-Citadel and Peregrine) – has made a series of brave investments over the last three years in companies that have been largely shunned by professional punters.

The investment style is commonly referred to as 'deep value' investing, which effectively entails looking past mainstream market misgivings and, sometimes, into murky corners neglected by most investors.

Officially, RACP makes long-term investments with the objective of generating high real returns, and aims to achieve this through the acquisition of assets where "size, liquidity, regulations or complexity act as a deterrent to most buyers".

What is astounding is that RACP – which carries a value of around R1.1bn on the JSE – have already started

making encouraging returns from its scariest investments.

The company looks set to see a lucrative outcome from backing beleaguered Paarl-based liquor business KWV Holdings. KWV was recently bought by Vasari – a global liquor firm controlled by entrepreneur Viv Immerman – for a price that far exceeded RACP's cost of buying a significant minority stake.

RACP also managed an exit from Eastern Cape-based poultry business, Sovereign Food Investments, at a time when the sector was ravaged by drought, an influx of cheap imports and weak consumer demand.

Successes achieved at KWV and Sovereign underlined RACP's philosophy that the best way to manage risk is to build a large margin of safety into the price paid when assets are acquired.

RACP CEO Piet Viljoen, writing in the company's annual report, explains that such a margin of safety may consist of a price far below intrinsic value or alternatively, it may reside in the high quality nature of the asset acquired.

He added that the

quality of is determined by factors including significant barriers to entry, the sustainability of these barriers and good management. KWV and Sovereign – although facing considerable operational challenges – ticked these boxes.

RACP's progress at Parow-based diamond miner Trans Hex Group and its associate West Coast Mining (WCM) will also be keenly watched in the next few years. RACP, along with retail tycoon Christo Wiese, are the majority shareholders in Trans Hex, which is hoping to re-invent itself as a vibrant producer of high quality gems with the help of WCM (which owns deposits formerly owned by De Beers).

But it's not only in deep value situations where RACP thrives. RACP has also secured a sterling return from exiting an early position in health care retailer Dischem, which listed on the JSE. The company is also generating compelling returns from a large investment in the alternative gaming market – via Gold Rush Gaming, which owns electronic bingo terminals, limited payout machines and

sports betting.

After managing profitable exits at two scary investment propositions, RACP might be forgiven for pursuing businesses with brighter prospects.

Hardly. RACP has strongly backed a long ailing mining services business called Sentula, and last month confirmed that it had taken a significant minority position in bombed out building supplies conglomerate Distribution & Warehousing Network (DAWN).

But these are dangerous times politically and economically, and questions will be asked of RACP's 'fearless' strategy.

RACP CEO Piet Viljoen recently argued that the last 12 months had seen a shift in factors that have driven investment returns. "Although returns from value investing seem to have recovered strongly, there is strong evidence to suggest this recovery is still in its early stages. This shift has important implications for where investors should expect to find returns over the next seven to ten years."

Clearly the cogs are just starting to turn for fearless RACP...



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Is BEE merely an additive at Chevron?

SOUTH AFRICA is, apparently, on the path to radical economic transformation—a thrust that should hasten government's plans to ensure that black industrialists start coming to the fore in droves.

There is already a surfeit of listed and unlisted black empowerment vehicles with access to capital, which should see mainstay industries reflecting more appropriate black ownership levels in the next five years.

In addition, the Public Investment Corporation (PIC) – which manages trillions of Rands of savings belonging to state employees, certainly has the capacity to back new black industrialists.

But surely the radi-

cal economic transformation agenda could be accelerated if key industrial assets were controlled by black investors.

It is then perhaps somewhat disappointing to hear that the assets belonging to global energy giant Chevron – including the well-known refinery at Milnerton – are to be sold for about R12bn (\$900m) to China Petroleum & Chemical Corp (Sinopec).

The oil sector is without doubt a strategically important sector in the local economy and a segment where local ownership should be encouraged.

Last year it became known that there were a handful of bidders in the running for Chev-

ron's SA assets – with oil trader Vitol Group and Sinopec emerging as front-runners when French oil major Total SA and Swiss commodity trader Gunvor Group opted out.

Were local investors – aside from other oil giants like Sasol – ever in the picture? The PIC has already showed some appetite for the oil sector, and now controls around 65% of oil exploration and production junior Sacoil.

Chevron, of course,

is a different prospect entirely. The local assets include the 110 000-barrel-a-day refinery, a lubricants manufacturing plant in Durban as well as nearly 850 Caltex service stations.

Chevron's website states a consortium of BEE and an employee trust hold a 25% stake in the South African operations.

The empowerment consortium comprised African Legend Investments (with a 15% stake), Lithemba Investments (5%) and

the SA National Tax Council (3%) as well as an employee investment vehicle (2%).

Whether the empowerment partners were keen to increase their stake to a controlling level is not clear. But considering that Sinopec is taking a 75% stake in Chevron SA, it seems safe to assume the BEE partners are not getting diluted in the sale arrangement.

Chevron put Chevron SA on the block roughly three years ago as part of a three-year

divestment programme that coincided with a weak crude oil price.

It is well known that Chevron was also miffed at plans for new fuel storage facilities in South Africa – a development that could threaten the viability of the 50 year old refinery at Milnerton.

There has been talk that Chevron would need to spend as much as \$1bn on upgrading the refinery to meet new 'clean fuel' regulations in South Africa.

The official word

from Chevron was that Sinopec was selected "due to the better terms and conditions of their offer".

Sinopec will retain Chevron's Caltex brand for the retail stations for up to six years before embarking on a rebranding strategy.

What might hopefully transpire in ensuing years is that Sinopec dilutes its stake in order to allow further (and more meaningful) participation from deep pocketed local empowerment investors.

Eland released at City's Blaauwberg Nature Reserve

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'The eland and the other large mammals will increase biodiversity in the reserve as their presence will assist other species in appearing. One of the eland has been collared for vegetation and habitat use monitoring within the reserve. Monitoring is critical as we need to ensure that the reintroduced animals also do not impact negatively on the reserve's critically endangered vegetation types,' said the City's Mayoral Committee Member for Area North, Councillor Suzette Little.

Apart from assisting with the management of vegetation in the reserve, the addition of the eland and red hartebeest will be an added attraction to those visiting the reserve.

The reserve is approximately 2 000 ha in size.

'It has a rich mosaic of natural, cultural and historical elements and with it being so close to Cape Town, the reserve has the potential to become an open-air classroom that is easily accessible. The reserve also has a self-catering unit which sleeps up to four guests. The unit was designed to be sustainable – photovoltaic panels charge the batteries that provide light, there is a gas stove, fridge and freezer, and

an outdoor shower with a gas geyser and a self-composting toilet, which in itself provides for a unique experience,' said Councillor Little.

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Room to grow?

THE luxury hotel sector in Cape Town has started to show signs of vibrancy after suffering a prolonged hang-over after the 2010 Soccer World Cup extravaganza.

In recent years the Cape Town hotel market – which includes well known properties like the Mount Nelson, the Taj, the One & Only, the Cape Grace, the Table Bay, the Radisson Blue in the Waterfront, the Westin and the 12 Apostles – has looked overtraded and unsustainable.

Occupancy rates as low as 40% were often

recorded, while room rates were slashed to unviable levels. Thankfully a weaker Rand has once again ridden to the rescue, and travellers once again seem to be viewing Cape Town as a very affordable holiday destination.

Most hotels do not disseminate financial information which would back-up anecdotal evidence of resurging fortunes for the hotel sector. But financial statements released by JSE listed leisure companies do strongly suggest Cape Town hotel fortunes are on the up.

Arguably the most

tangible evidence of brisker upmarket hotel trade was the recent deal by newly listed Cape Town-based property investment company Spear REIT to acquire the 15-on-Orange hotel on the outskirts of the Cape Town city centre.

Spear paid R298m for the property – a deal underpinned by a profit warranty that pencilled in net income of over R28m for the first year of trading.

A further breakdown of financial information forecast by Spear estimated rental income of R25.6m and net property income of R19m in

the eight months to end February 2018. For the 12 months to end February 2019, the rental income figure grows to R41m with net property income topping R30m.

This is a far cry from the hotel – then owned by original developers Quantum Property Group (QPG) – that was liquidated after it was unable to generate sufficient cash flow to service its loan to Absa Bank in 2012. When 15-on-Orange was placed into liquidation, debt laden QPG – whose only asset was the luxury hotel – held a market value of less than R30m.

Spear is well versed in the hotel trade, already owning the Upper East Side hotel in Woodstock.

Spear CEO Mike Flax said the acquisition was in line with Spear's strategy to invest into high-quality assets in the Western Cape and to increase its exposure to Cape Town's hospitality sector. He said the sector continued to perform strongly given a healthy tourism market.

Spear must have taken some heart from recently released results from gaming and leisure giant Sun International, which showed a dramatic improvement in the performance of the Table Bay Hotel in 2016.

The Table Bay produced revenues of R310m (2015: R252m) and pumped up operating profit to R51m (R29m).

Interestingly the Table Bay lease expires in May 2022, and Sun International directors have indicated that discussions have commenced with the landlord to determine the best options for the property. These include the possibility of early renewal.

Writing in the recently released annual report, new Sun International CEO Anthony Leeming said the Table Bay continued to perform well with international room nights up 14%.

He said overall oc-



cupancies were up 11% to 74% and the average room rate was up 13%.

South Africa's other big leisure and gaming conglomerate, Tsogo Sun, is also strongly backing resurgent growth at the top end of the hotel market in Cape Town.

The group, which is controlled by Cape Town-based empowerment company Hosken Consolidated Investments (HCI) – recently entered the final stages of construction on a new dual-brand 19-storey hotel development on the corner of Bree, Buitengracht and Strand streets in Cape Town.

The development is set for completion by September this year, and will cost R700m.

The two hotels will add 504 rooms to the Cape Town tourism market, and will comprise of the upmarket SunSquare Cape Town City Bowl and the more affordable StayEasy Cape Town City Bowl.

Tsogo Sun – which

also controls the Hospitality Property Fund – already operates a handful of full service hotels in Cape Town's CBD – The Cullinan, Southern Sun Waterfront and Southern Sun Cape Sun, as well as the Garden Court Nelson Mandela Boulevard and SunSquare Cape Town Gardens.

In addition Tsogo Sun also owns the Westin at the Cape Town International Convention Centre, Radisson Waterfront and Protea Victoria Junction hotels through Hospitality.

Tsogo Sun CEO Marcel von Aulock believed the continued development and rejuvenation of Cape Town's city centre would cater to growing demand for hotel accommodation.

The 202-bedroom SunSquare Cape Town City Bowl hotel will host five conference venues, a Vigour & Verve casual dining offering, a rooftop pool and bar, retail space and a fitness centre.



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Yokogawa to change its name

YOKOGAWA Meters & Instruments Corporation will change its name to Yokogawa Test & Measurement Corporation on 1st October 2017.

The decision was taken to better reflect its focus on providing test and measurement solutions to its customers following its withdrawal from the panel meter business.

As the core company in the Yokogawa Group's measurement business, Yokogawa Meters & Instruments

Corporation has been developing measuring instruments that are indispensable "mother tools" for industry. In recent years, there has been an arising need for the highly precise measuring instruments required to develop energy efficient equipment for a more sustainable society.

By steadily improving the high-precision measurement technologies that Yokogawa has cultivated over the past 100 plus years, Yokogawa Test & Mea-

surement Corporation will be able to provide high value-added measurement solutions for the power, optical communications, and plant maintenance markets. Although the company's panel analog meter (panel meter) was terminated in March this year, the company will continue to assist its customers through the development of innovative new technologies and by working to improve the safety and efficiency of their facilities.

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Venturing forth

THE Western Cape venture capital sector has caught fire of late with a number of intriguing deals being clinched.

KNF Ventures, a section 12J venture capital company dedicated to investing in innovation-driven ventures, last month invested in online ticketing services solution scale-up company, Quicket.

KNF is managed by Cape Town-based venture capital firm, Knife Capital.

KNF's investment should allow Quicket to streamline its service offering in the local market and focus on key markets in the rest of Africa.

In brief, Quicket is a cloud-based ticketing solution that allows anyone to instantly start selling tickets and marketing and managing their own event within minutes.

Quicket director James Hedley said that as more companies, festivals, adventure sports, schools and individuals opted to plan and manage their own local events and meetings, the need for event-related technologies would continue to grow.

He said Quicket's cloud-based technology platform allowed the company to provide a seamless user experience – whether it was for larger events where event management support may be required or for smaller self-managed events.

Quicket is one of the companies that has emerged from Knife Capital's year-long entrepreneurship development programme called Grindstone (which has previously been reported on in CBN).

"We admire the team's bootstrap tenacity and strong positive company culture..."

KNF Ventures investment partner Keet van Zyl said Quicket did not necessarily require funding. "It currently almost doubles in revenue year-on-year off a decent base while being cash-flow positive."

"We admire the team's bootstrap tenacity and strong positive company culture. Through Grindstone we've implemented a few strategic interventions together and realised that there is a good cultural fit and a considerable gap in the African ticketing space if we accelerate the growth of Quicket together".

Hedley said KNF's investment in Quicket came at a time when strong digital customer engagement - that links real-world experiences - created a competitive advantage for African businesses.

Invenfin, the venture capital fund, owned by Stellenbosch-based investment giant Remgro, has also topped up its investment portfolio with two new investments.

Invenfin has acquired meaningful stakes in Atlantis-based Joya Foods as well as Port Elizabeth based Dynamic Commodities.

Dynamic Commodities is a specialist producer of a range of unique frozen fruit-based delicacies which are exported to the USA, Canada, Japan, South Korea, Australia and Europe.

With 95% of its revenue from exports, Dynamic Commodities is well-positioned to exploit the continued growth in global demand for quality frozen desserts and fruits.

Joya Brands produces a range of high quality soft-filled candy under the 'Amajoya' brand, 'Titanium' lozenges as well as 'Hop-pity Poppity' popcorn at a factory situated in Atlantis.

The business was founded by neurosurgeon Jonathan Lamprecht, who previously successfully built and sold a candy business to international confectionery giant Mars Inc.

"As an organisation understanding the ethos of entrepreneurship, Invenfin is a sound strategic partner for Joya Brands.

Both Joya and Dynamic Commodities – along with other food and beverage investments like confectionery specialist Le Bonbon, artisanal chocolate maker De Villiers Chocolate and rooibos tea-based soft-drink producer Bos Brands – align Invenfin with Remgro subsidiary RCL Foods.

RCL owns some of the best known food brands in South Africa, and there is speculation that Invenfin's food and beverage investments could be 'graduated' into the food brands giant over time.

In another intriguing development, Hasso Plattner Ventures Africa and empowerment partner Identity have exited their investment in Cape Town-based online auctioneer Clear Asset.

The new anchor investor is empowerment giant Thebe Investment Corporation, which has secured a 51% stake in Clear Asset.

Clear Asset services the mining, construction, maritime and agriculture sectors, and has auctioned over R1bn of assets in the last year.

Thebe Services CEO Jerry Mabena believed there would be opportunities to expand Clear Asset's business across the company's portfolio and into other targeted areas. "We believe the systems, governance and price transparency that Clear Asset provides will continue to be more and more valuable as a mechanism to dispose of redundant or over-age assets."

Queries, changes disrupt building contracts, JBCC warns

QUERIES regarding incomplete or inadequate design documentation, or specifications issued late during the construction phase, seem to crop up more often than any other issues the Joint Building Contracts Council (JBCC) has to face.

Uwe Putlitz, CEO of the JBCC, says in the JBCC's free "Frequently Asked Questions" service to users of JBCC agreements, most frequent queries and disputes relate to:

- Late changes to the specified works;
- Consequent revision of the construction period;
- Partial or late payment to the contractor; and,
- Termination of the contractor's appointment - when all else have failed.

"JBCC has found that a significant number of queries relate to incomplete or inadequate design documentation or specifications issued late in terms of the contractor's programme. These issues should have been dealt with speedily - and at little cost - in the pre-contract phase of a project while the employer was still initiating a project," Putlitz states.

He says essential questions to be asked – and answered – right at the outset to manage contractual risk include:

- When is the facility required? "This is to ensure realistic expectations: invariably employers and consultants believe the inception, design, procurement and execution of the works can be completed in ridiculously short periods.;"

- Are specialist design and execution skills required, ranging from geotechnical engineers, town planning, urban design, acoustics, kitchen design, interiors, and landscaping so that these disciplines can be integrated timeously in the final solution?
- Will the use of new materials and/or the specification of untried construction technologies be involved; and
- Who does the 'design' – will it be done within the employer's organisation, or by professional consultants appointed by the employer, or by the contractor in a 'design and build' method or similar solution?

"Buildings have become more complex to cater for more sophisticated technological operating systems and to deal with environmental performance criteria during construction and during operation. Generally, this requires a larger number of skilled designers whose work must be coordinated and integrated before the procurement documentation is issued and contractors are appointed. Quality design takes time. Such professional consultants must be fairly rewarded for their skills and the professional risks they assume on behalf of their clients.

"Failure to respect the design process in terms of the time and the skills required - and payment for appropriate professional fees - may result in the late issue of incomplete construction information to the contractor who may consequently

be entitled to a revision of the date for practical completion, and possibly also additional costs. And delays in completion, mean delays in tenant income for the client.

"Then will follow the search in the building contract agreement for a clause to blame someone who can be made to pay for the expense and loss incurred. If the professional designers are singled out for blame – should their professional indemnity insurance compensate the client for expense and/or loss incurred? Remember, the more avoidable claims are submitted to the insurers, the higher the premiums will be in future."

Putlitz says the situation could get even worse if the parties sought restitution by resorting to legal action, calling for money and time to resolve issues that should have been dealt with in the project initiation and design phases.

He adds that it must be remembered that professional fees are not like a manufactured product that can be discounted provided the overhead costs have been recovered once a new range is introduced. Excessively discounted professional fees also hamper the advancement of skills and the updating of computers and associated software that are an integral part of the building professional's career.

"Thus potential delays as a result of inadequate design solutions, incomplete construction information, under-budgeted obligations, poor contract management, and efforts to have fees cut, must be eliminated to achieve timeous project delivery, within a realistic budget," Putlitz added.

Downgrades hammer fuel price - AA

FUEL price rises will be the first major expense to hit South Africans in the wake of depreciation of the Rand against the US dollar, which has affected buying prices for international petroleum. This is according to the Automobile Association (AA), which was commenting on unaudited mid-month fuel price data released by the Central Energy Fund (CEF).

At the time of writing – mid April - The AA's mid-month data forecasted petrol to increase by up to 55 cents a litre in May, diesel by around 39 cents a litre, and illuminating paraffin by an estimated 41 cents a litre.

"The loss of confidence by investors, and the sovereign ratings downgrades by ratings agencies Fitch and S&P, have led to the Rand slipping heavily against the US dol-



lar, down from around R12.35 at the beginning of the month to its current position of around R13.40.

The Association said the Rand's weakness contributed three-quarters of the expected fuel price increases at the end of the month, with hikes in international petroleum prices accounting for the balance.

"However, it is a long time till month end, and there is no certainty that the impact of the downgrades has been fully priced into

the economy. The picture for May could be substantially different," the AA noted. The Association contrasted the current position with the previous month's.

"If the Rand had stayed on its previous upward course against the US dollar, it may have been strong enough to overcome the significant increases in international petroleum prices, resulting in a smaller increase in May," the AA concluded.

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Classroom war heats up

RIVALRIES in the fast growing private school market in the Western Cape is hotting up with a handful of education companies vying for lucrative positions.

Initially observers felt the Cape Town – and Western Cape market – might not be as conducive to the private education thrust as other provinces. Cape Town is blessed with a strong southern suburbs school belt, and there are a good number of highly regarded facilities in Paarl and Stellenbosch.

There was also a surfeit of private education institutions – including specialist offerings like Abbotts.

Reddam House put down the initial marker in the nineties when it launched its first school in Constantia. But Reddam has expanded cautiously in the province, and has opened further

campuses in the City Bowl, Somerset West and Durbanville.

The impetus of the Western Cape private schools market arguably really started in 2012 after investment house PSG Group listed its private education subsidiary Curro Holdings on the JSE.

A well-capitalised Curro – which has raised money almost every year since listings – has made strong inroads into the Western Cape private schools market with its lower cost offering.

Currently Curro operates its eponymous school brand in Brackenfell, Durbanville, Century City, Hermanus, Mossel Bay, Sitari and Langebaan. The company also operates a low fee Meridian school in Pinehurst.

It is clear from the locations of the schools that Curro has pitched

into suburbs or urban centres that might be under-served with quality education.

Curro has since shown that this niche is highly viable, and its profits have been growing by around 50% a year.

Curro remains strongly committed to the Western Cape, and recently indicated that it would open another 20 classrooms at the Hermanus campus.

In 2018 Curro will be entering the vibrant Sunningdale suburb (near Milnerton) with a Curro Castle (nursery school) and a primary school. In addition, a high school will be opened at Curro's Sitari campus near Somerset West.

Curro has also been subject to perennial rumours that it could break into Cape Town's southern suburbs school belt where government

schools like SACS, Westerford, Grove Primary, Rustenberg, Rondebosch and Wynberg still hold sway.

There had been talk some years ago that Curro had identified a slab of land suitable to host a private school campus in the southern suburbs. This chatter has, however, dissipated – although Curro has lately been linked to a possible private school development at Fish Hoek (which could service the surrounding Noordhoek, Kommetjie, Oceanview, Glencairn and Capri suburbs as well).

Whether or not it is viable to invest in a sizeable private school in the competitive southern suburbs school belt remains to be seen. For now private schools seem to be paying far more attention to the northern suburbs and west coast.

Not surprisingly Advtech – Curro's main rival – has lately starting showing an interest

in the Western Cape market.

At first Advtech's private school presence was limited to Abbotts. But last year the company acquired Glenwood House in George and then made much more substantial investment in Elkanah House.

Advtech CEO Roy Douglas described the Elkanah House deal as a strategic acquisition to further expand the company's footprint in the Western Cape. "Together with our two Abbotts College campuses in Cape Town and the recent acquisition of Glenwood House in George, we now have 11 schools in the region."

Elkanah gives Advtech critical mass in learner numbers with more than 1 300 students and a built capacity for 1 500 students at six schools on three campuses in Cape Town's popular Blouberg and Sunningdale suburbs.

There appears to be

considerable scope for growth. Alex Isaakidis, the CEO of the ADVTECH Schools division, pointed out those Elkanah campuses were situated in popular suburbs which have seen strong growth in recent years thanks to the growing trend of new residential estates. "This promises sustained and growing demand for quality schooling."

Cape Town-based investment company Trematon Capital is also making good progress in building a specialist private education brand under Generation.

The first Generation school in Sunningdale outperformed expectations, and has needed to be extended. Subsequently Trematon has unveiled plans for three more Generation schools in Hermanus, Langebaan and Noordhoek.

At a recent investor presentation, Trematon CEO Arnold Shapiro said the company would be disappointed if the

number of Generation schools had not doubled by the end of 2019.

Generation schools are based on Montessori education principles. The property outlay is not demanding, which means there could be a rapid growth in school numbers over the next five to eight years as long as Trematon – which has considerable property expertise – can locate suitable sites for development.

Last month a new private school – Pembury Lifestyle Group (PLG) – listed on the JSE. The main thrust at PLG has been in Gauteng, but directors have indicated a determination to advance on other provinces.

PLG pitches its fees below Curro – although the schools do not offer mainstream sport. There should be a niche for PLG to tap in the Western Cape, although challenging the big three – Curro, Advtech and Reddam – won't be easy.



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Cape firm digs deep for value

CAPE TOWN investment firm RECM & Calibre (RACP) is fast building a reputation for venturing boldly where most investors fear to tread.

The company – which is headed by well-known asset managers Piet Viljoen (formerly of Investec Asset Management) and Jan van Niekerk (ex-Citadel and Peregrine) – has made a series of brave investments over the last three years in companies that have been largely shunned by professional punters.

The investment style is commonly referred to as 'deep value' investing, which effectively entails looking past mainstream market misgivings and, sometimes, into murky corners neglected by most investors.

Officially, RACP makes long-term investments with the objective of generating high

real returns, and aims to achieve this through the acquisition of assets where "size, liquidity, regulations or complexity act as a deterrent to most buyers".

What is astounding is that RACP – which carries a value of around R1.1bn on the JSE – have already started making encouraging returns from its scariest investments.

The company looks set to see a lucrative outcome from backing beleaguered Paarl-based liquor business KVV Holdings. KVV was recently bought by Vasari – a global liquor firm controlled by entrepreneur Viv Immerman – for a price that far exceeded RACP's cost of buying a significant minority stake.

RACP also managed an exit from Eastern Cape-based poultry business, Sovereign Food Investments, at

a time when the sector was ravaged by drought, an influx of cheap imports and weak consumer demand.

Successes achieved at KVV and Sovereign underlined RACP's philosophy that the best way to manage risk is to build a large margin of safety into the price paid when assets are acquired.

RACP CEO Piet Viljoen, writing in the company's annual report, explains that such a margin of safety may consist of a price far below intrinsic value or alternatively, it may reside in the high quality nature of the asset acquired.

He added that the quality of is determined by factors including significant barriers to entry, the sustainability of these barriers and good management. KVV and Sovereign – although facing considerable operational challenges – ticked these boxes.

RACP's progress at Parow-based diamond miner Trans Hex Group and its associate West Coast Mining (WCM) will also be keenly watched in the next few years. RACP, along with retail tycoon Christo Wiese, are the majority shareholders in Trans Hex, which is hoping to re-invent itself as a vibrant producer of high quality gems with the help of WCM (which owns deposits formerly owned by De Beers).

But it's not only in deep value situations where RACP thrives. RACP has also secured a sterling return from

exiting an early position in health care retailer Dischem, which listed on the JSE. The company is also generating compelling returns from a large investment in the alternative gaming market – via Gold Rush Gaming, which owns electronic bingo terminals, limited payout machines and sports betting.

After managing profitable exits at two scary investment propositions, RACP might be forgiven for pursuing businesses with brighter prospects.

Hardly. RACP has strongly backed a long ailing mining services business called Sentula, and last month confirmed that it had taken a significant minority position in bombed out building supplies conglomerate Distribution & Warehousing Network (DWN).

But these are dangerous times politically and economically, and questions will be asked of RACP's 'fearless' strategy.

RACP CEO Piet Viljoen recently argued that the last 12 months had seen a shift in factors that have driven investment returns. "Although returns from value investing seem to have recovered strongly, there is strong evidence to suggest this recovery is still in its early stages. This shift has important implications for where investors should expect to find returns over the next seven to ten years."

Clearly the cogs are just starting to turn for fearless RACP...

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DIGITAL CONSTRUCTION

A picture of health

AN ARUP UNDERTAKING

DUE to the cost and complexity inherited in healthcare projects, BIM tools and processes are an effective platform to aid design, construction and operation. Above saving time and money, if we consider the scope and size of a healthcare project, it is necessary to develop a detailed BIM model in order to adopt the tool and maintain the process fluency of information across all stages of the project.

The process for considering BIM on healthcare project in South Africa is still a relatively new concept, but is being implemented by companies like Arup on current projects - the BIM Institute takes a look.

The Comprehensive Community Based Rehabilitation in Tanzania (CCBRT) Maternity Hospital project - Dar es Salaam

CCBRT is a social enterprise that runs healthcare services in Tanzania, as part of a government partnership and with support from international donors. The new maternity hospital in Dar es Salaam - built to international healthcare standards recently opened. The project comprises ±16,500m² of theatres, treatment and procedure rooms, a laboratory, a central sterile services department, and standard and private wards. Its six two- and three-storey blocks are interconnected at various levels by external walkways.

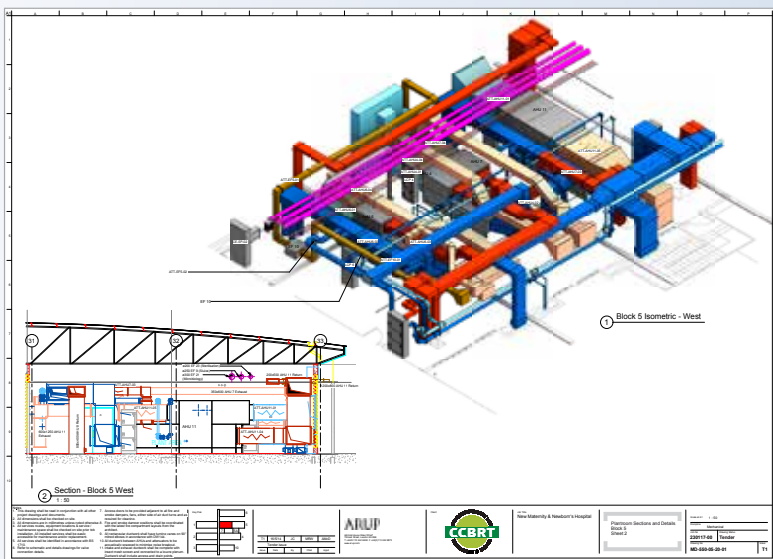
The plan

The Arup team provided advice, design and coordination for the mechanical, electrical, wet services and medical gas infrastructure for the hospital site, taking into account its proposed "masterplan" for future development. This plan includes assessing the expected electricity and water loads across the site and advising on what infrastructure should be purchased as part of the maternity hospital development in order to enable cost effective expansion at a later date.

Arup also provided some specialist input when issues arose, to assist the client and the architectural team. This included a geotechnical comment on a site investigation report, some acoustic advice and an Information Communications Technology (ICT) specialist, who led three days of meetings with client representatives to develop an ICT brief for the new hospital to enable CCBRT's future development plans on the site and beyond.

Arup worked with the team to provide advice and supervision during the construction. As part of this, they used advanced modelling in Revit and live excel links to provide data for costing, energy usage, operation and maintenance.

From Arup's African building design experience, they indicated to the client the need for there to be



knowledgeable staff onsite, monitoring the installation quality on behalf of the client and being able to communicate and resolve any issues with any of the specialist consultants using the live models and associated data sheets. They further indicated to the client the value of being able to utilise digital data created during the design processes, to reach a higher level of expertise in the CCBRT's maintenance team so that they would be able to cost effectively maintain the systems throughout the building's life.

BIM implementation

The existing architects and structure had already started with 2D CAD drawings and construction was already quite well underway with the contractor when Arup was brought into the project. A BIM execution plan was therefore set internally by the Arup team and project manager, to define the structure of the team, standards, level of detail etc. This was implemented in phases from Arup's involvement forward, reflecting specific aspects of the project, and using appropriate methods in each discipline.

BIM model reviews were held at the end of each phase, and experiences were discussed within the implementation team.

Project Delivery Co-ordination

The digital models played an important role in co-ordination. The Revit work set was configured to allow multiple users to work in one building model simultaneously. Models from multiple disciplines were linked into a common model, allowing clashes to be detected and resolved.

Two-dimensional drawings and open source models were efficiently exported using Revit and issued for construction to the contractors to co-ordinate with their workflow.

Design development

Live data sheets were used to develop and define the Mechanical Engineering and Plumbing (MEP) requirements for each room. It allowed the user to see a simple plan of the floor with room

numbers, and then identify and approve the ventilation, cooling, electrical, data, lighting, etc. that needed to be provided in that room. The user and the designer could then easily compare the provision with other rooms nearby to ensure consistency.

This information was produced in the building information modelling Revit MEP model, and the output was displayed and analysed in other ways to suit the client's preferences, including by outputting to an excel file, or to Room Data Sheets (RDS) with one sheet per room.

Results of analysis

Analysis was easier to visualise with this specialised software. Clash detection helped resolve many issues on the design side and insured optimisation was facilitated.

Design challenges

Arup was appointed at a late stage of the project process (with the structure already designed and partially constructed). Typically, they would work closely with the architect and structural engineer at the start of the project to optimise spatial planning for all of the building service systems. This was not possible as the structure was already under construction. Arup therefore worked with the team and the contractor to develop the most economical way forward - which included increasing the area of concrete roof available to allow for the ventilation plant. The chiller location also went through a number of iterations to address concerns about economics, noise and impact on existing structures.

Some benefits to adopting BIM on the project at such a late stage

- Meet the client's standards for sustainability, air quality, water, wastewater management, and energy performance optimisation. The design had to be developed in close communication with other disciplines and the existing structure, time and cost constraints. This provided a basis for partial BIM implementation within the structure, building services and specialist

installation requirements, as well as to allow for accurate costing and analysis of the buildings post occupancy performance.

- Immediate checks on potential technical issues; rapid visualisation and communication were major advantages within the team as well as with other disciplines. The model also allowed for more efficient drawing production.

- Help architects understand the detail drawings, especially the sloping metal roof - a difficult element for the architectural team to draw accurately in a traditional, AutoCAD environment.

- Optimise the detail drawings, making it possible for architects to visualise and develop 3D construction details.
- The preliminary design drawings were delivered directly from the BIM models. Data, including building areas, fire compartment volumes and drawing lists were exported to tabular formats.

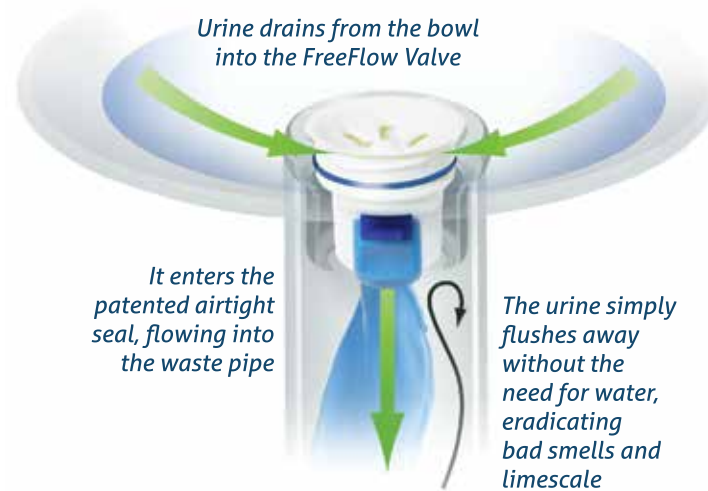
- A BIM process works best when the entire team and client plan agree on deliverables and requirements at the inception of a project - as is the norm with many Arup projects. CCBRT proved that BIM can be an asset at any stage assisting and aiding in saving on construction time, accurate documentation generation, coordination resolution, analysis relating to systems optimisation and the related cost savings.

- A tool for planning and clash detection. The use of a digital model on the project was used for interference detection and helped reduce the number of requests for information during the construction process and save money (as clashes are digitally detected and fixed before they become problems onsite.) The Arup team on the project used BIM to enable walk-through decisions about locations of MEP services and major routings through the hospital, which minimised the possibility of construction rework. This made the complexity of mechanical/electrical/plumbing systems within healthcare building a valuable tool.

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Most diverse field for 2017 Canon Disabled Golf Open

THE 19th edition of the Canon South Africa Disabled Golf Open boasts the most diverse field of entrants since the inception of the competition by the South African Disabled Golf Association (SADGA) 19 years ago. Over 80 local and international golfers have confirmed their participation in the 2017 Canon South Africa Disabled Golf Open.

South Africans have historically dominated the tournament, with Ben van Zyl winning the event from 1998 to 2003; Pieter Jansen in 2004; Nico Wentzel in 2008; Igin Grobblaar in 2009 and 2010; and Daniel Slabbert from 2011 to 2013, and again in 2015. Travelling to South Africa to compete are Bob MacDermott (Canada); Martin Williams (Wales); Shaun Bak-

ker (United Kingdom); George Mecs (France), Cian Arthurs (Ireland) and Manuel De Los Santos amongst others. De Los Santos, a regular competitor in Canon South Africa's annual PRO Golf Series, hails from the Dominican Republic and since losing his leg in a vehicle accident in 2003, has won many international events for disabled golfers in Europe. In 2007,

he became the first amputee to play in the French Golf Grand prix alongside high level able bodied amateur golfers. The event takes place at King David Mowbray Golf Club in Cape Town from the 15th to the 17th of May. "We are thrilled with the tremendous enthusiasm with which golfers from around the world have entered this year's tournament. Competi-

tion will indeed be stiff, with some of the world's very best golfers with disabilities competing. The field is extremely diverse, with players of all ages with various disabilities, from around the world. We have competitors as young as 12 competing this year," says Reinard Schuhknecht, Brand Ambassador for the 2017 Canon South African Disabled Golf Open

and widely considered one of South Africa's best disabled golfers. The Canon South Africa Disabled Golf Open is hosted annually by SADGA, offering a platform for disabled golfers to pit their skills against some of the best in the world in a credible competition that has at its heart the goal to inspire and unite players with varying disabilities, and acknowledge their achievements. The tournament attracts the world's top golfers with disabilities. In 2016, 30% of the field boasted single figure handicaps and more than half of the competitors have handicaps of 18 or lower. The maximum handicap for men and ladies is 36. Disabled golfers with handicaps of 18 and under will play 54 holes, medal stroke play while those with handicaps of between 19 and 36 will play 54 holes stableford. The overall Champion Golfer will be the player achieving the lowest cumulative gross score over the 54 holes.

Deaf golfers with handicaps of 9 and under will play 54 holes medal stroke play while those with handicaps of 10 and over will play 54 holes stableford. The overall Deaf Champion Golfer will be the player achieving the lowest cumulative gross score over the 54 holes in the deaf division.

Canon South Africa became the official sponsor of the tournament this year. However, Canon SA's association with SADGA stems back to 2001 when the company sponsored a small prize for a golf tournament. Since then, its involvement with SADGA has continued to grow, with its sponsorship focusing on SADGA's First Swing initiative, a development programme for children with disabilities. The primary focus of the programme is on rehabilitation and psychological development of disabled children. It is operational in 35 schools across the country, with some 750 children benefitting every week.

Young players who have risen through the ranks of the First Swing Programme will be competing in the 2017 Canon South Africa Disabled Golf Open. They include 16 year old Enrique van Wyk who was born with a physical disability condition and Grade 11 learner, Jabu (Cameron) Price Moor, whose arm was paralysed in a car accident when he was one year old. These are children who have shown dedication, commitment and passion to learn, to try, and to never give up on their dreams of playing a sport

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Hypenica continues to drive transformation in the built environment

HYPENICA, one of the continent's most innovative smart media and event organizations, has successfully hosted and launched The Kwazulu Natal Construction Expo - the region's only dedicated trade show for the built environment.

Of the main economic sectors, the fastest growing in Kwazulu Natal is construction (comprising 4% of the provincial economy). The province has benefited significantly from major rail, road and port projects under the National Infrastructure Plan and the province plans to invest close to R20 billion in public works and low cost housing projects in 2017.

Under eThekweni's mayor Zandile Gumede, the city has also launched its 'radical transformation plan' with the aim of developing eThekweni's local economy - a big focus of the strategy is to ensure that emerging subcontractors play a more substantial role, mandating that any local government and/or municipal project with a contract value between R5-million and R30-million would have to set aside 30% of the project for subcontractors.

"Subcontractors or service providers shall be selected from the wards where the service or project is being undertaken." If the project was across a number of wards, opportunities would be granted to subcontractors in all the benefiting wards, said Gumede in a recent statement.

"With government's commitment to empower smaller and medium contractors and to ensure they are more involved in projects both at a national and regional level, we felt it critical that this emerging group have convenient access to these very exciting opportunities," says Soren du Preez, Programme Director of Hypenica.

However, as this is a non-professional segment of the construction sector, who are not required to register with an industry body and engage in continuous professional development like architects, surveyors and engineers, there is a risk of some skills gaps amongst these smaller contracting companies.

"The KZN Construction Expo offers a number of free training and skills development opportunities, which is critical in the journey of transformation and empowerment," explains du Preez.

Two additional highlights of the tradeshow included the Stakeholder Engagement Forum (a morning networking event where crucial infrastructure conversations facing the construction sector across KZN took place), and the co-located Smart Buildings & Infrastructure Summit, Africa's only platform to present a clear roadmap for smart buildings and infrastructure and was sponsored by Vodacom, Conlog and Autodesk.

With unprecedented media, association and

stakeholder support, including organisations like the South African Institute of Building Designers (SAIBD), the Association of Schools of Construction of Southern African (ASOCSA), BIM Institute, Electrical Contractors Association and Master Builders KwaZulu-Natal, this must attend trade show and it's co-located events are set to become a recurring feature in the industry's calendar. The 2018 edition is scheduled to take place on the 7 - 8 February 2018.

Visit www.kzn-construction.co.za

About the organisers: Hypenica

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Cape Town invention stops large-scale water wastage

WITH Cape Town praying that rain will come before the city's dams run dry, Mike Mayne believes he has a home-grown solution to the most immediate, easiest and least expensive way to save water. "The average urinal flush uses 2 litres of potable water each time it is used," explains the founder of Cape Town-based Sannitree, a major manufacturer of biodegradable bio-enzyme products which it markets in South Africa and exports to 30 countries

"Greater Cape Town has a population of around 5 million, about half of whom, or 2,5 million, are males. Let's be conservative and say that 1,5 million of them use urinals, with the rest using other types of toilets. The 1.5 million use urinals three times a day, with 6 litres being flushed away daily by each user. That's 6 million litres of water a day literally flushed down the drain every single day. And remember,

this is potable water."

Mayne came across a potential solution to this wastage when he used a waterless urinal in the US some 17 years ago. He started importing the valve that operated the waterless urinal but found it to be inefficient. An alternative Swiss product became too expensive, so he worked with a Cape Town plastics engineer to design the Sannitree Waterless Urinal Valve.

Manufactured in Cape Town, the patented invention replaces the existing outlet trap in the base of the urinal bowl. The Sannitree valve contains a simple silicone flap which opens when urine passes through it, allowing the fluid to flow into the outlet pipes. When the urinal stream has stopped, the flap springs closed, sealing the valve and preventing odours from escaping into the toilet cubicle and obviating the use of chemical odour suppressants and cleansers.

"Urinals have been flushed for over 80 years solely to carry urine to waste pipes," says Mayne. "Urine consists of 96% water, 2.44% urea, 1% salt and 0.6% of various acids. We simply don't need water to transport water."

The Sannitree Waterless Urinal Valve costs less than R200. "A large building with a number of urinals could be retrofitted in a day or two," says Mayne. "The expense could be offset in a month or so by water savings." Valves need to be replaced every six to 12 months, and in some cases only the silicone flap needs to be replaced.

The water-free toilet environment is also hostile to bacteria and viruses, which need water to exist, adds Mayne. "Particles of urine left on the urinal bowl surface deposit 1% salt and small amounts of yellow dye. This does not smell. The typical pungent smell of stale urine is



caused by ammonia evolving from decomposition of urea when mixed with water."

Sannitree has already sold over 5 000 waterless valves in Cape Town and is exporting the product. It has also won international recognition, with power generation multinational Cummins placing the Sannitree Waterless Urinal Valve among the top 10 finalists in its annual energy saving competition. This recognises another benefit from the product: its ability to reduce the amount of electricity used to pump water and maintain water pressure in municipal supply systems.

Daikin sets new standard in chiller technology



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A bright future for First Car Rental

FIRST Car Rental has installed its first solar power plant, cementing its continued commitment to reducing its environmental impact.

The solar power plant is located across three large rooftops containing 415 photovoltaic (PV) panels (of 320W each) at the Pomona branch, which will produce on average 226.8 MWh of electricity per annum.

The installation company, SolarXgen, started building the solar power plant in November 2016 and took three weeks to complete the project. Guaranteed for 25-yrs, SolarXgen will additionally maintain the solar system for First Car Rental.

The solar power plant is linked to the power mains via an inverter and offsets the power normally consumed from the utility company. This system does not store power – all the power generated from the PV system at First Car Rental

is used on-site.

The solar power plant at First Car Rental Pomona continuously runs in tandem with the utility power grid. During the day, when the solar system outputs power, it becomes the primary provider and the utility is secondary.

Says Wayne de Jager, Executive Director and co-founder of SolarXgen (South Africa), “The solar power system is monitored via Supervisory Control and Data Acquisition (SCADA) control system and a Programmable Logic Controller (PLC). These systems allow remote monitoring and reporting. Our management system is able to match PV output to the building’s energy demand, ensuring optimally timed consumption.”

As electricity costs continue to rise, solar power is becoming a more viable and cost-effective solution. The installation of the solar power plant at First Car Rental Po-

mona will elicit an average monthly saving of 52.9% on the cost of electricity. The expected gross savings on electricity over the 25-year lifespan of the solar power plant equates to R28million.

The use of solar power is in line with First Car Rental’s decade-long commitment to clean energy and sustainability. Over the guaranteed portion of the plant’s lifetime, First Car Rental will be reducing its carbon footprint by 4 964 tons of CO₂.

Melissa Storey, Executive Head: Strategy, Development & Marketing at First Car Rental, said “Over the years, First Car Rental has initiated many environmentally-friendly projects that still exist today. These include, but are not limited to, various energy and water-saving initiatives, saving tens of thousands of litres of water and reducing our carbon emissions by 44 tons per annum.

Esor’s Tuboseal delivers world-class trenchless technologies

THE acquisition of trenchless technology specialist Tuboseal by Esor is set to unlock a wealth of future business opportunities for the construction and civil engineering contractor.

Since its founding by local pioneer Jean-Louis Frey in 1987, Tuboseal has established itself as a highly specialised discipline which enables pipes to be cleaned, rehabilitated or repaired almost completely underground without disturbing the surface area over the length of the line.

The company created the Cured In Place Pipe (CIPP) market initially in the Western Cape then nationally and as far north as Bulawayo.

Commenting on the acquisition, Esor CEO Wessel van Zyl said Esor has positioned itself to exploit the burgeoning market of infrastructure maintenance and rehabilitation, especially ageing pipelines.

Essential to the preservation of infrastructure

“We’ve reached a point where several municipalities and some businesses are piping water and sewage in lines that are 50+ years old” says Van Zyl, making the point that what was constructed on the surface when the pipes were originally laid has often changed beyond all recognition. “Pipelines will inevita-



View of a rehabilitated pipeline.

bly have to be replaced or rehabilitated, but in busy urban areas, major industrial installations or roads and freeways, gaining access by digging is simply not an option.

“Many lines were laid at depths of between 4 and 15 metres, which would entail highly disruptive excavations to create a safe working area with adequate support to protect the crew. In any event, the likelihood of the presence of other utility lines like power cables would make this impossible,” he says.

Successfully meeting technical challenges

Esor Tuboseal’s research and development technical solutions specialist, Daniel Bruwer, describes two recent projects in which trenchless technology was applied successfully.

Eskom Kusile Power Station

An underground pipe required repairs to a

crack at a depth of 17m.

“Having established the exact location of the damaged section, we designed and installed a CIPP liner capable of withstanding ground water pressure and soil loads thereby reinforcing and sealing the damaged pipe for a full design life of 50 years. The repair took less than eight hours and was carried out without any disruption to services on site,” says Bruwer.

BlackMac bulk sewage pipeline - a key conduit between the Cape Town suburbs of Blackheath and Macassar.

“The City of Cape Town approached us in 2013 to investigate the possibility of rehabilitating the pipeline and utilising its much needed capacity after many years of being degraded beyond use.” The trenchless rehabilitation project, comprising the CIPP lining of more than 3,300 metres of bulk sewer pipes ranging from 800mm to 1200mm in diameter, crossing underneath the N2 freeway


and Baden Powell Drive.

The construction programme was expedited to ensure cleaning, final design, material manufacturing, shipping lead times and installation happened concurrently. The dovetail effect of these activities placed the project firmly on track for completion well ahead of the programme.

“The rehabilitated pipeline runs alongside an ecologically sensitive wetland and the use of trenchless technology ensures that the ecological impact of the project is negligible. Already 40% complete, we are on track to complete 3,300 metres of pipeline renewal without any significant excavations.”

On the horizon


Research and development is a strategic priority at Esor Tuboseal and 2018 is, quite literally, expected to be a watershed year. It will be introducing new high pressure CIPP products using specially developed resins and composite materials compatible for safe use in potable water systems and capable of withstanding pressures of up to 40 bar. Municipalities and other high volume users of water for domestic consumption can now have ageing pipe systems rehabilitated ensuring a clean, safe and efficient flow of drinking water to households and individuals.

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2017 Entrepreneur of the Year® competition now open for entries

THE instrumental value that entrepreneurs add to the South African economy is undisputable – they are an important cog in the creation of the much needed jobs in the country. It is therefore encouraging that the challenges and obstacles which impede this valuable sector are receiving some much-needed attention from both the public and private sectors – with the inclusion of small and medium enterprises (SMEs) in the State of the Nation Address (SONA) and National Budget Speech – beckoning for a more focussed approach to entrepreneurial development in the country.

Celebrating its 29th year, the Entrepreneur of the Year® competition sponsored by Sanlam and BUSINESS/PARTNERS competition seeks to promote entrepreneurship in South Africa as a viable career path, by honouring dedicated entrepreneurs who have made great strides in their businesses and whose passion for growing their businesses and communities inspires and stimulates the nation.

73% of the country’s adult population sees entrepreneurship as a good career choice (2017 Global Entrepreneurship Monitor (GEM) re-

port), so industry leaders should be leveraging this to drive entrepreneurial participation in South Africa.

With five categories, entrepreneurs from emerging to small and medium businesses can enter. Prizes valued at over R 2 million can be won, which include cash prizes of R60 000 for each main category winner, and R160 000 for the overall winner. Competition winners will also receive valuable mentorship support, networking opportunities and national media exposure.

“Entrepreneurship can be a lonely endeavor, but also one of the most

rewarding. Through the competition, we want to share the successes of these inspirational individuals who are making a difference, as well as create an environment in which entrepreneurs can engage, network and learn from each other.”

Entrepreneurs interested in entering the competition can download entry forms online at www.eoy.co.za as well as interact with fellow entrepreneurs and entrants on the competition’s social media platforms www.twitter.com/@EOY_SA and www.facebook.com/EOY.SA. The closing date for the competition is 31 May 2017.



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SEW-EURODRIVE SA supplies largest drives to Canadian mine

A 24 t ZDN hoist drive, representing one of the largest single units from SEW-EURODRIVE South Africa to date, is to be supplied to a mine in Canada for a hoisting application. Traditionally known as specialising in smaller geared motors for conveyor applications, the project highlights the OEM's capability to manufacture custom components up to the size and complexity of girth gears.

Rudi Swanepoel, Head of Projects, states. "I believe that this is the biggest unit that SEW-EURODRIVE South Africa has ever supplied. It is a real feather in our caps, especially seeing we were awarded the project by a leading competitor, which gives us a good foot in the door in securing future orders."

The global presence of SEW-EURODRIVE is another major factor in securing this flagship project, with the ZDN 3 HSN 1670 hoist drive being designed and manufactured in the Czech Republic. The unit has a 35-week lead time, due to the fact that every single component has to be custom-machined due to its size. This is a reasonable timeframe, given that the gross weight of the unit is just on 24t.

The hoist drive has two input shafts, driven by two 1 000 kW motors, driving helical bevel gears that, in



turn, drive the single output shaft of the gearbox, and thereby the specific hoisting application. "The reason we had to do this was in order to comply with the specific requirements of the customer, who is looking to standardise on 1 000 kW units on-site. This means a more streamlined and cost-effective stockholding for all applications."

The hoist drive features special oil coolers fitted for thermal and heat dissipation, including additional auxiliary equipment. Heat dissipation is a critical consideration, because the higher the kilowatt rating, the higher the required thermal rating of the gearbox will be, which calls for additional cooling.

The huge amount of torque generated on the output shaft is an astonishing ± 1.5 million Nm, as opposed to 475 000 Nm for the largest X-Series industrial gear unit produced by SEW-EURODRIVE to date. Due to the high torque requirements, the OEM was also able to assist with special tangential keys on the output shaft. "The application of the hoist drive is to convey

both mineworkers and goods, which meant that strict health and safety requirements and safety factors had to be accommodated," Swanepoel highlights. This also meant that a much higher service factor had to be taken into consideration.

SEW-EURODRIVE South Africa subsequently clinched a major order for the second stage of the project, a ML Series unit for a goods-only application, which is currently being assembled at the OEM's manufacturing facility in China to international DIN standards. The power rating of this second hoist drive is 1 000 kW, with a nominal torque of 293 000 kNm.

"The second unit is going to the same mine, but the application is a goods-only hoist lift in a deeper underground section for ore transportation. This is also a one-off order, with special attention paid to the service factor and maintainability in order to increase its cost-effectiveness," Swanepoel explains. The second unit, clocking in at about 11 t, will have a 24-week delivery period.

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The 'fastest first cut'

IN the highly competitive cutting and tooling sectors, customers rely on stringent quality, robustness and technically sound products which will not only last them a life-time; but will provide excellent accuracy, performance and return-on-investment. In a nutshell, the 'fastest first cut'.

Since First Cut, a leading South African manufacturer and distributor of capital equipment and cutting consumables began manufacturing hacksaw blades 19 years ago under licence from Neill Tools (Spear and Jackson's parent company) the relationship – as well as local market leadership - has

grown and flourished.

Spear and Jackson has an especially lengthy heritage of cutting tool excellence dating back more than two centuries. With origins in the heart of the UK's iconic Sheffield steel industry, the company has become a household name in gardening tools and metal, wood and masonry saws.

The Spear and Jackson Group has two main 'house' brands: Spear and Jackson, which produces artisan-type tools as well as garden implements; and Eclipse, which is focused on metal cutting and metal holding tools. The Eclipse brand of hacksaw blades has for many years occupied the dominant market posi-

tion in South Africa.

Recently, Spear and Jackson's Export Sales Director, Steve Turner, visited South Africa to assist First Cut in launching the innovative new Eclipse Predator reciprocating saw blade range.

"This new range of blades has been designed to serve the power tool market, a major area of development for Spear and Jackson as the demand for power tools and accessories grows – and one in which we can really achieve brand and market leadership," Turner explains.

The blades are available in three types, High Carbon Steel (HCS), Bi-metal and Tungsten Carbide (TC).

The HCS blade range has been designed for wood cutting, although they are highly suitable for cutting other soft materials such as lam-

inated chipboards and soft plastics. The bi-metal blades with their electron beam-welded heavy-duty bi-metal construction feature a M42 HSS steel cutting edge containing 8% cobalt for robust, longer lasting teeth.

The TC range features blades with tungsten carbide tipped teeth, which allow for fast, easy cutting through construction material such as brick, porous concrete and masonry. All blades are supplied in five-packs with the exception of the brick blade which is sold in singles.

"With these blades, reciprocal saw users will be able to exploit the full potential of these versatile tools," he comments.

Importantly, these new reciprocal saw blades also fit with the prevailing business strategy at Spear and Jackson.

"We are often asked if we supply both profes-

sional and DIY ranges which are priced accordingly. Spear and Jackson has the philosophy that we supply professional quality tools which are accessible to the DIY user, who can then effectively 'trade up'," continues Turner.

"Spear and Jackson is one of the few companies in the world that can claim a more than 256 year history. This remarkable longevity has been based on the company's dedication to quality, innovation and realistic pricing," he adds. Throughout its history, Spear and Jackson has refused to compromise its brands by sacrificing quality in the name of cost-cutting. "We see no value in a 'race to the bottom'. Rather, we want to provide excellent quality products and tools which are priced for maximum cost-effectiveness," says Turner.

Welding – the miracle career

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Balledge® Design gives Apex welding screens the edge on safety

THE patented Balledge® design used on Apex Welding and Safety Screens is a major advantage as this aids access into cordoned off areas for workers without snagging or scratching, increasing safety in the workplace.

Wim Dessing, managing director of Apex Strip Curtains, explains that the reinforced

edge on the individual strips allows these to part easily, facilitating access for both personnel and equipment.

Locally manufactured Apex Welding and Safety Screens have contributed significantly to improved safety in many manufacturing facilities in southern Africa. The innovative p.v.c. screening material is used to

cordoned off welding and grinding bays.

Made from specially formulated material, which incorporates a heavy duty ultra violet light absorber, the Apex Welding and Safety Screens give end users assurance that dangerous u.v. radiation is safely contained in the curtained off area. This protects workers in close vicinity to welding and grinding activities.

Extensive tests conducted by the SABS proved the Apex Welding and Safety Screen material is superior to conventional material used for these products.

Tested for ultra-violet transmittance, the conventional material gave readings of 0,005%, 0,008% and 5,0% as opposed to the Apex readings of 0,005%, 0,001 and 0,005%. When tested for total visible light transmittance, the tests were conclusive - the conventional material allowed 78% while the Apex material allowed only 15,5% light transmittance.

Apex Welding and Safety Screens are impervious to burning, and this is of particular importance should the material come into contact with welding splatter.

Available in several configurations to suit individual applications, the most popular version is the free-standing frame that facilitates both easy handling and portability. The screens' angled feet allow optimum utilisation of the floor space as the screens can be butted together at 90 degree angles.

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Gases for laser cutting and welding processes

LASER application technology has seen substantial progress and development since the invention of the laser in the 1960s. At the time it was recognised that nitrogen cutting was possible, giving an unoxidised edge, but laser power was simply too low to make this commercially attractive. The 1980s, 1990s and into the new millennium saw a steady increase in CO₂ laser power up to 6kW for cutting. At this power level it became realistically possible to cut stainless steel with nitrogen at a reasonable speed, with the big advantage of oxide-free, bright cut edges. It became viable to even cut thin mild steel plate with nitrogen, as the high laser power enabled a higher cutting speed than with oxygen, with the added benefit of a clean edge that could immediately be painted. The advent of high-powered CO₂ lasers and the development of reliable laser cutting machines created an entirely new market segment of laser cutting job shops, delivering custom-cut components, from one-offs to thousands of parts, at very short delivery times. High power Nd:YAG lasers were also used for cutting, primarily in the automotive industry where fibre-guided delivery made robot applications a reality.

“Our specialist expertise enables Afrox to advise on every aspect of laser usage, whether it’s assist gases, supply mode or laser mixed gases and supply,” says Hennie van Rhyn – Application Development Manager - Cutting, Heating and Safety for Afrox.

Afrox started penetrating the laser cutting market around 2005 and the company’s growth in this field and market share of laser cutting has dramatically increased since then. Afrox has the latest state-of-the-art laboratory with highly skilled operators to mix any Lasermix requirement to meet required tolerances for any OEM supplied laser machine to the industry. This includes four part mixes for new 6kW high-powered CO₂ laser in South Africa. Afrox is licenced, as a member of the Linde Group, to sell five part mixed laser gases in South Africa and is very competitively priced, says van Rhyn.

Afrox’s Trifecta technology is used as a pressure boosting system, capable of boosting the liquid pressures up to 34bar, vaporising downstream, then regulating pressures from the operating point with spe-



cial low pressure high flow regulators. Some gas suppliers still offer skid pump systems and other pressure raising methods in combination with conventional lower pressure cryogenic nitrogen or oxygen vessels. To cater for customers whose demand for nitrogen or oxygen exceeds the capacity of cylinder bundles and where higher delivery pressures are required, Afrox has included the Trifecta system offer, operating with lower pressure cryogenic bulk tanks. Features include constant supply with no down time, less blow off rates compared to high pressure units, and no pauses in production while tank filling takes place, making the Trifecta system a very efficient option.

The recovery period after the global econom-

ic downturn in 2008 witnessed a step-change in laser technology for laser cutting and welding: the fibre- and fibre-delivered laser. This development was no coincidence: it became clear that laser and fibre technology originally developed for telecom applications was able to handle the very high power needed for cutting and welding. The advance of these lasers for metal fabrication was driven by the development of cost-effective, reliable high power diode lasers needed to ‘pump’ fibre lasers. The gap in investment in new equipment by industry during 2008-2009 provided the window for the fibre-delivered laser manufacturers to enter the market with new, attractive lasers showing rapid growth in uptake and even replacing old CO₂ laser machines for

cutting, and especially welding. Today, more and newer laser welding machines are powered by a fibre-delivered laser.

Fibre-delivered lasers have a much shorter wavelength than CO₂ lasers, and apart from the major advantage that this wavelength can be transmitted by optical fibre, there is also another significant difference, caused by the wavelength, in how these two types of lasers interact with metal, both for cutting and welding.

At the shorter wavelength of the fibre-delivered laser, steel has a much smaller so-called Brewster angle than the CO₂ laser. The detailed explanation goes beyond the scope of this article, but the consequence is that when cutting thin steel sheet with nitrogen, the radi-

ation of the fibre-delivered laser is used much more efficiently than the radiation of a CO₂ laser. Therefore a fibre-delivered laser cuts thin sheet up to three times faster than a CO₂ laser of the same power. However, in order to remove the molten metal effectively at this very high cutting speed, a higher nitrogen pressure is required. Moreover, as a consequence of the smaller Brewster angle, the cut front is less steeply inclined and therefore a slightly large nozzle must be used. The result of these two factors is that nitrogen consumption per hour is higher, but nitrogen consumption per metre cut length is very similar.

Although not available yet in South Africa, an investment programme over the last three years has seen the introduction of 300bar nitrogen cylinder bundles in the industrial hubs of Pune and Bangalore in India. Compared to a 200bar bundle, the 300bar bundle holds 50% more nitrogen. Furthermore, when the 200bar bundle has reached a pressure of 40bar, it needs to be replaced by a full one, leaving 20% of the nitrogen unused. In a 300bar bundle, the remaining unused nitrogen is only 13%. A 300bar bundle holds approximately 190m³ of useable nitrogen gas.

New VIKING 3350 Hot Rodders Welding Helmet



CLASSIC hot rod cars inspired Lincoln Electric’s latest helmet design in its VIKING™ 3350 Series, the Hot Rodders™ concept. The hand-drawn artwork’s vibrant colour scheme blends various welding and hot-rod-inspired themes to form a design intended for car enthusiasts from every era. There’s more to this VIKING 3350 helmet than its eye-catching graphics. It also provides premium optical clarity delivered in one of the industry’s largest viewing areas, thanks to Lincoln Electric’s 4C™ Lens Technology.

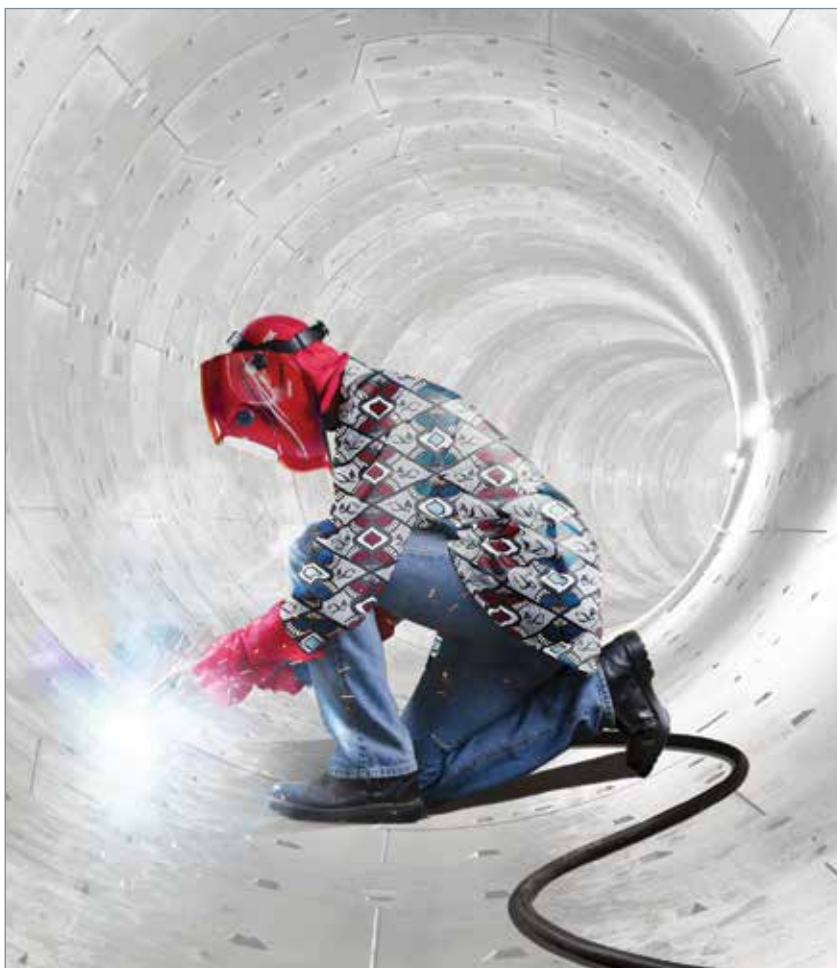
This 4C technology reduces eye strain by minimizing the traditional green colouring in the helmet view screen in both active and inactive states. It is ideal for a range of industries that use multiple welding processes, such as SMAW, MIG and TIG, including general fabrication, power generation, shipbuilding, structural, offshore and pipeline.

All VIKING 3350 Series helmets offer a pivot-style headgear designed for greater comfort and optimal fit. VIKING 3350 helmets feature:

The 4C stands for the following attributes:

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- Cut – Even shade from any angle

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BySmart Fiber: Now with automation

BYSTRONIC expands the BySmart Fiber laser cutting system with suitable automation solutions. Customers now have the choice between the ByTrans and the Byloader.

Automation solutions for fiber laser cutting offer a decisive competitive advantage. They maximize the capacity utilization of the laser cutting system and reduce the user's workload with regard to the time-consuming material handling. Both these factors mean that cutting jobs are performed faster and at lower cost.

Now Bystronic is opening up the new generation of the BySmart Fiber for appropriate automation solutions. Because even for entry-level users, automated laser cutting is increasingly becoming the key criterion for success. "Our experience shows that particularly in highly competitive markets,

companies that automate their laser cutting system have a competitive edge. Hence, Bystronic is now also offering various automation modules for the BySmart Fiber," Bystronic Product Manager Martin Bauer explains.

ByTrans for automated non-stop cutting

Customers have the choice between two systems: ByTrans and Byloader. The ByTrans loading and unloading solution organizes the material flow on the BySmart Fiber fully automatically. It loads raw metal sheets onto the laser cutting system's shut-

tle table. After the cutting process, the ByTrans also unloads the finished parts and residual sheets.

ByTrans requires only 60 seconds for the complete loading and unloading cycle. This means that the automation system is always faster than the cutting plan that is being processed. For users, this means: laser cutting without the interrupting set-up times. Because the ByTrans loads one shuttle table while the BySmart Fiber is cutting on the other table.

Byloader for space-saving loading of raw sheets

The Byloader automation system is a com-

pact loading unit that is positioned on the side of the laser cutting system's shuttle table. The system supplies raw metal sheets to the laser cutting system without taking up unnecessary space. This is automation on the minimum amount of space.

The ByTrans and Byloader are operated using the BySmart Fiber's touch screen. Bystronic has seamlessly integrated the control of the two automation systems into the laser cutting system's operating software.

This enables users to perform all the operating steps on a single touch screen.



SAIW Foundation funds successful IWT graduate who is the next King?



Ndwakhulu Mufamadi (King) receiving his IWT certificate from SAIW President, Morris Maroga.

SAIW Foundation bursary recipient, Ndwakhulu Mufamadi (known as King), has successfully completed his International Welding Technologist (IWT) training course. He obtained both a National Diploma and B.Tech degree in Engineering Metallurgy from the Vaal University of Technology (VUT) and completed his training in 2012. He used his SAIW Foundation bursary to do the IWT training.

Following the completion of his studies at VUT, King worked for a period of time at the University of Johannesburg Metal Casting Technology Station during 2014 and 2015. When he applied for the SAIW Foundation IWT bursary in early 2016, he was working at Metal Protection Engineering on a volunteer basis in order to obtain working experience so that he could unearth work opportunities.

As Metal Protection Engineering is a welding company and King displayed a passion for welding, it was a match made in heaven for SAIW Foundation to provide King with additional skills to improve his prospects in the welding field.

"King is a dedicated student and made full

use of the opportunity to do the IWT programme. His dedication was reflected in his results - he was one of the top achievers in the class, having passed all his exams on the first attempt, many with distinction," says Sean Blake SAIW executive director.

King is now a fully-fledged employee at Metal Protection Engineering (MPE) and is filling the position of a Welding Co-ordinator. The training he received on the IWT programme is adding value to MPE as he helps to ensure that the welds the company performs are of the highest quality, as required by ISO 3834.

"SAIW Foundation is proud to have provided King with this opportunity and we know he will use the knowledge he has acquired to help improve the welding industry," says Blake.

Meanwhile, ArcelorMittal South Africa (AMSA), which has been sponsoring SAIW with flat and tubular steel material for training purposes, has entered into an agreement with the SAIW Foundation to train six Grade 12 learners in welding at AMSA's Science Centre in Sebokeng.

This is one of the three Science Centres which are located close

to AMSA's operations in Vanderbijlpark, Newcastle and Saldanha respectively. These - AMSA's flagship corporate social investment projects - are a perfect example of a public private partnership that is addressing both a national development challenge and a serious and urgent business need. At the same time, they are a way for ArcelorMittal South Africa to "grow its own timber" by developing a pipeline of learners studying in engineering and related fields and who could potentially be future employees.

The six selected learners are Mohale Albert Mohale, Tebello Radebe, Bonkolo Luvuyo, Zelda humalo, Rose Mfabane and Princess Mpembe.

Blake, says he is most grateful to AMSA for their long-standing help and looks forward to reciprocating in this most valuable way.

The SAIW Foundation was started by the Southern African Institute of Welding as a public benefit organisation to provide training to disadvantaged individuals in a wide range of areas including welding and inspection, the training of trainers for welding and related technologies and many more.

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Mini and off-grid electricity offers potential in rural Sub-Saharan Africa”

Lucio Monari, Director, Energy and Extractive Global Practice at the World Bank discusses “Financial Viability of Electricity Sectors in Sub-Saharan Africa”.

WORLD Bank has cross-border projects such as OMVG (The Gambia, Guinea, Guinea-Bissau, and Senegal), OMVS (Guinea, Mali, Mauritania, and Senegal), and CLSG (Côte d’Ivoire, Liberia, Sierra Leone, and Guinea), all in West Africa; and the Ethiopia-Kenya power systems interconnection project. The Lom Pangar hydropower project in Cameroon tackles chronic power shortages in that country. In Rwanda, we are increasing access to households, public institutions, and small and medium-size enterprises through the Electricity Access Scale-up and Sector Wide Approach (SWAp) Development Project. In South Africa, the Sere wind farm project is generating enough power for more than 120 000 households.

We are also involved in projects in Kenya, including the Electricity Modernization Project—which will extend access to 630 000 Kenyans, improve service quality for existing consumers, and strengthen the financial position of the utility—and a solar off-grid access project under preparation. The World Bank Group also has a program called Scaling Solar.

Data compilation

It remains surprisingly difficult to get basic bread-and-butter data such as tariff schedules, operational performance data, and financial statements. We focused very heavily on raw data collection directly from utilities in 43 countries in Africa (39 for technical and financial utility data, and another 39 for tariffs, with 35 countries where we had both). The three databases—tariff, technical and financial—are the first of such scale in Sub-Saharan Africa. We should qualify that many study conclusions are based on a snapshot of tariffs at a specific point in time, and similarly the comparison of revenues with costs also depends on world oil prices and other prices in the year the data were collected in each country.

Seychelles and Uganda - financially viable electricity sector?

These results should be looked at in context. The point is not so much that these countries were doing well, but that the electricity sector was in poor financial health in nearly every country we examined. These two countries have continued to display

good operational performance. Uganda has made substantial progress in reducing transmission and distribution losses. Seychelles recently introduced tariff increases to reach cost recovery.

Key findings of South Africa’s utility sector

South Africa is the most developed and complex electricity sector in Sub-Saharan Africa. The installed capacity in South Africa alone is equivalent to the rest of the continent. Eskom remains the dominant player in the sector, but South Africa is unique in the vast number of municipalities, essentially acting as small distribution companies. The sector faces many critical challenges, including a lack of generation capacity which has led to some periods of scheduled brownouts in the last few years.

It should be noted that our report gives some helpful high level indicators, but the analysis is simplified in order to be able to compare dozens of countries. Results for any individual country should not be used as a substitute for an in-depth country-level analysis, which would be needed to provide the basis for policy decisions.

That said, our report looked at the financial viability of Eskom and of the four issues it examined for the gap between revenue and expenses—

tariff levels being too low, excessive system losses, failure to collect payments, and comparison of certain performance indicators with those in comparable countries in Latin America—and low tariff levels are identified as the major issue. As Eskom moves away from aged coal plants to modernize its generation fleet, prices will likely need to increase to cover the investment costs for capacity rehabilitation and expansion, or else the utility will continue to pose a fiscal burden to the government.

Technical and non-technical losses did not appear to be a major problem for Eskom, which seems to be one of the best performing utilities in the region on these indicators.

Key messages

The report suggests several ways of recovering the cost of supply and making electricity affordable, which include:

- Absent system-wide optimization, very few African countries have full cost recovery. Only two countries have a financially viable electricity sector. Only 19 countries cover operating expenditures. Several countries lose in excess of US\$0.25 per kWh sold. In this context, it will be difficult for utilities to maintain existing assets, let alone facilitate the expansion needed to reach univer-

sal access goals.

- One third of countries may become financially viable through improving operational efficiency. If utilities could reduce combined transmission, distribution, and bill collection losses to 10 percent of dispatched electricity, deficits could disappear in one-third of the countries. However, expanding access to areas that are not yet covered will likely be more costly, potentially requiring tariff increases.

- It is almost certain that increasing tariffs will be needed in the remaining two-thirds of the countries studied. In these countries, the funding gap cannot be bridged solely by eliminating operational inefficiencies, requiring tariff increases. Small and frequent tariff increases may find wider acceptance, as long as electricity access is reliable.

- Installing individual metering. Deterred by the high upfront cost of connection, poor households tend to share one electricity meter. That often makes several poor households appear as one rich household consuming a lot of electricity to the utility, making them ineligible for subsidized lifeline rates. Individual meters in poor households can help utilities target cross-subsidies better. Aside from helping the

poor, metering every customer separately and accurately is an essential component of making utilities financially viable.

- Installing prepaid meters that would benefit both utilities and customers. For low-income households, the ability to pay in small increments helps align electricity payments with income flows, while utilities are guaranteed payments upfront. Prepaid meters also mean that users pay only for electricity consumed (and not for estimated consumption), and they are protected from disconnection.
- Sharing connection costs. The first priority in increasing access to electricity is to make the initial connection affordable to the poor. One option is to share the costs across all electricity users, including large- and medium-size firms.

Renewables impact on utilities

With prices falling internationally, renewables such as solar can make a difference in the utility cost structure and help diversify fuel sources. The World Bank has a new regional project under preparation that aims to help countries integrate large-scale solar photovoltaic into the grid.

Surprising outcomes

We work in most of the countries in the study

and were already familiar with these trends. What this study did was to quantify what we knew qualitatively.

Among the quantitative findings, we looked at the affordability of grid electricity access and use to households in 22 countries with national household expenditure surveys conducted in recent years. In 14 countries, the lowest possible cost for grid connection was equivalent to at least one month’s worth of household income for the poor, and as high as five times in one country. It is no wonder multiple connections are prevalent.

In four countries, consuming 30 kWh a month—assuming the household is individually and accurately metered—would still have cost more than 10 percent of the household income among the poor. In most other countries, however, 30 kWh was affordable, meaning that more sharply targeted cross-subsidies for both the initial connection and electricity consumption would go a long way in helping to achieve the U.N. goal of universal access by 2030. With advances in energy efficiency, we may not need 30 kWh a month to meet essential needs, except where electricity is used for heating in winter. That is, more efficient appliances make electricity use even more affordable.

Future view

With technology moving so fast in the sector, it is hard to predict where we will be in 10 years. But what we hope is that there will be a better balance between access and affordability for clients and profitability for the utilities.

World Bank recommendations

Privatization and unbundling can work where the conditions are right. To make the power sector more viable, sector governance and utility management need to be strengthened. The regulatory framework should be clear and predictable, providing incentives for the utility to improve their performance. Unbundling does have transaction costs that need to be considered and weighed carefully against the benefits of creating new institutions.

This study focused primarily on grid electricity. While connecting to the grid is a solution for all urban Africans and many people living in rural areas, rural electrification cannot rely solely or even largely on grid extension.

Mini and off-grid electricity, especially from sources like solar, offers increasing potential to electrify homes in many rural areas of Sub-Saharan Africa.

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Highest number of renewable energy installations in SA

SPECIALIST electrical contractor, Brand Engineering, has carried out the highest number of utility scale solar Renewable Energy (RE) installations in the RE industry in South Africa. It has become a key construction partner for RE developers, and is responsible for the generation of 360MW of power for Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) projects and other related renewable energy initiatives.

Established over 45 years ago, Brand Engineering, together with its two BBBEE companies, Besamandla (Western Cape) and Besamandla (Eastern Cape), operates in southern Africa and the

African continent.

“Our exposure to the multi-disciplined nature of the RE projects enables us to offer engineering, procurement and construction (EPC) solutions for the civil, electrical and mechanical scopes of these projects,” explains Herman Kriel, Group Managing Director of Brand Engineering. The company is the only South African contractor with experience and exposure to all types of renewable technologies.

REIPPPP

Brand Engineering ventured into the RE market when the REIPPPP commenced.

The solar photovoltaic (PV) REIPPPP projects which the company has

completed to date and which are fully operational are:

- 6,8 MWp Rustmo1 plant – North West (NW)
- 10 MWp Konkoon-sies plant – Northern Cape (NC)
- 10 MWp Aries plant – NC
- 22 MWp Herbert plant – NC
- 11 MWp Greefspan plant – NC
- 10 MWp Aurora plant – Western Cape (WC)
- 10 MWp Vredendal plant – WC
- 94 MWp Sishen plant – NC
- 86 MWp Prieska plant – NC

In addition it has completed six separate grid connection projects totalling 127 MW.



The company has completed six separate grid connection projects totalling 127 MW.

Also as part of the REIPPPP, Brand Engineering was appointed to carry out three EPC wind power projects in the Eastern Cape, which are now fully operation-

al. They are:

- 63 MW Grassridge wind farm
- 24 MW Waainek wind farm
- 21 MW Chaba wind farm

The company has multi-year operation and maintenance (O&M) contracts in place for various projects. It guarantees the stipulated power generation, availability and carbon savings for all the projects.

“Utilising online technology, we monitor environmental conditions and all procedures and progress on an ongoing basis from our Cape Town head office,” says Kriel.

In addition to the PV and wind REIPPPP installations, Brand Engineering has commenced a Concentrated Solar Power (CSP) initiative. It is responsible for the electrical infrastructure, more specifically electrical cable and collector installation, for the 100MW Ilanga CSP in the Northern Cape, which is currently under construction.

PV rooftop initiatives

It has also completed thirteen solar PV commercial rooftop projects around South Africa in excess of 3 400kWp. Included are three strategic rooftop installations for Eskom’s offices in East London, Bellville and Pietermaritzburg and the company consider solar rooftop as the future of RE in South Africa.

Battery storage solution

The provision of consistent solar power output even in peak periods has been a challenge to the RE industry. “A solu-

tion to this challenge is storage provided by means of batteries,” explains Kriel. “Brand Engineering is undertaking multiple battery solar storage initiatives which will store in excess of two MW hours.”

Solar power generation for airports

In a more recent, ground-breaking RE development, Brand Engineering completed the construction of two solar plants, which are now each generating 500kWp to power Upington and Kimberley Airports. These were full EPC contracts and the Brand Engineering Group was responsible for mechanical, electrical and civils work, as well as grid connection and ongoing O&M.

Socio-economic requirements

Brand Engineering subscribes to and is fully compliant with the socio-economic requirements of the projects it undertakes and in fact exceeds stipulated targets. It focuses on employing local workers where the projects are located. “Transferring and developing skills is part of our commitment to our employees, and this applies to both permanent and project-based employees,” says Kriel.

Depending on the size of each project, Brand Engineering employs from 20 to 600 skilled and unskilled people per project.

The company emphasises ‘safety first’ and has a five Star Safety Grading.

Quality management

ISO 9001:2008 certified for Quality Management Systems, Brand Engineering last year won the Electrical Contractors Association’s (ECA) ‘Reticulation Contractor of the Year’ award for renewable projects. The ECA Presidential Excellence Awards recognise quality workmanship and professionalism within the electrical industry.

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ABB inaugurates traction transformer plant in South Africa

ABB has inaugurated a new traction transformer production facility adjacent to its South African headquarters in Longmeadow, Johannesburg. ABB CEO Ulrich Spiesshofer inaugurated the new factory with The Director General of the Department of Trade and Industry, Lionel October. "ABB is proud of this new traction transformer facility in South Africa, reiterating our philosophy of locating manufacturing units close to our customers," said Ulrich Spiesshofer, CEO of ABB, speaking at the inauguration event. "It reinforces our Next Level strategy focus on strengthening our presence in Africa

and supports our ongoing commitment to sustainable mobility."

This unit will produce traction transformers to help power trains and support South Africa's growing railway network. Traction transformers feed power at safe voltages to essential train functions like traction, brakes, lighting, heating and ventilation, as well as passenger information, signalling and communication.

The 2,450m² facility is expected to employ 60 people by the end of 2017 and the first major order to be executed at the new facility will be the supply of traction units for 240 Bombardier electric

locomotives. The local manufacturing of these traction units supports the South African government's local procurement and employment requirements.

Since 2012, South Africa has invested in the development of its rail network as an opportunity to rejuvenate the economy, create jobs and support a major shift from road to rail transport for both passenger and freight travel. The expansion of the country's rail network is also expected to contribute to its vision of becoming a key logistics centre in sub-Saharan Africa.

ABB has more than 130 years of experience in producing traction transformers that are powering more than half the world's electric locomotives and train sets. As part of its ongoing commitment to innovation ABB recently launched Effilight®, its next-generation traction transformer which uses a patented high-technology cell design that can reduce the amount of oil re-

quired by up to 70%, without compromising functionality. To meet higher energy efficiency needs, ABB has optimized the design for a load loss reduction of 25%, compared with a classic transformer of the same weight.

ABB has operations in 23 African countries and employs about 5 000 people across the continent. As a pioneering technology leader serving utilities, industry and transport & infrastructure customers globally,

ABB supports Africa's growth with innovative solutions designed to address local challenges, from access to electricity, to industrial development, to sustainable transport. As part of its commitment to Africa, ABB pro-

vides scholarships and internships for talented engineers who need financial support to complete their studies. ABB has annual sales in Africa of around \$1.5 billion and manufacturing operations in Egypt and South Africa.



ABB traction transformer for freight locomotive.

Siemens supplies converter technology to Amprion and TransnetBW for successful grid expansion

POWER generation is currently experiencing the greatest upheaval of its history. Germany is turning its back on atomic power and intends by 2050 to derive around 80 percent of its electricity from renewable sources. Fluctuating amounts of power must sometimes be transmitted to consumers hundreds of miles away. The new energy sources are not only distributed over large geographic areas but also fluctuate a great deal over time.

Our grids, on the other hand, were not originally designed for this mix of sources. Distributed power generation poses new challenges for operators of high-voltage grids that call for technologies such as high-voltage direct-current transmission (HVDC). HVDC's special control and protection functions make it particularly important.

Not only does it transmit power over long distances with minimal losses via a "power highway" but it also supports the voltage of the AC grids to which it is connected.

With the aid of power electronics, HVDC



makes it possible to selectively control the power flow, stabilize the voltage, and smooth out frequency fluctuations.

In a joint venture, transmission system

operators Amprion and TransnetBW are implementing the UL-TRANET direct-current project, the first of three planned links between northern and southern Germany.



Keep the systems running.

OVR QuickSafe surge protection.

With the new OVR QuickSafe (QS) range ABB offers a new generation of surge protective devices (SPD) to protect residential and industrial buildings against transient voltages. Thanks to the innovative technology of this new range of OVR no dedicated back-up protection is required for selected applications. QS technology increases the rated current in the power system so that the main upstream protection up to 125A MCB (B or C characteristics) or 160A fuse (gG or gL) can be applied. Compliant with the IEC/EN 61643-11 standard, the OVR QS range is the ideal choice to simplify maintenance and increase the safety of installations. abb.com/lowvoltage



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SABS thermal test chamber for refrigerated vehicles welcomed by Serco

THE establishment of a test chamber which gives thermal ratings for refrigerated vehicles has been welcomed by leading South African truck and trailer body manufacturer, Serco. Built in Johannesburg and managed by the South African Bureau of Standards (SABS), the chamber is the first of its kind in the country. It offers manufacturers the option of sending their refrigerated vehicles for a thermal rating certified by the SABS.

Managing Director of Serco, Clinton Holcroft, said the establishment of the chamber was good news for the market place. "We will definitely send our units there for testing and make our ratings available for customers.

"Official thermal ratings have been a mandatory requirement in the industry in Europe for a long time and are something long overdue in our country where the thermal capacity of refrigerated vehicles has not been certified before by a highly respected body such as the SABS," said Holcroft.

"The new facility in Johannesburg will play a major role in raising the standard of refrigerated trucks and trailers built in South Africa which should help reduce CO₂ emissions." Holcroft said an improvement in the quality of refrigerated vehicles would also assist in maintaining the effectiveness of the cold chain.

Transport played a vital role in maintaining the cold chain, making it possible for goods to have an optimum shelf

life. "Usually there are parameters set and agreed to between the transporter and the customer as to what temperature perishable goods need to be transported at, based on industry norms.

"In the transport industry it's all about maintaining optimum conditions in the vehicle until the load is delivered to its end destination."

Holcroft says Serco has invested in a new injection polyurethane foaming plant at its factory in Durban which is expected to improve the thermal properties of the insulated panels of the company uses for its refrigerated truck bodies and trailers. "The new panels are already being manufactured and they will set new standards compared to previous."

Serco, which also has factories in Johannesburg and Cape Town, specialises in building refrigerated truck bodies and trailers using polyurethane foam panels of different thicknesses and reducing thermal bridges to achieve superior insulation. Also on offer is temperature monitoring solutions and load dividers to enable optimum temperatures management in vehicles.

"We offer two main solutions for multi temp vehicles – plug-in partitions or partitions fitted onto a sliding rail system. Our partitions have been rated to ensure the thermal performances are in line with European standards as South Africa do not have official standards currently," said Holcroft.



Serco's new Protec steel body.

Serco manufactures multi-temp vehicle bodies in which different products can be transported in the same vehicle at varying temperatures, using moveable partitions to separate zones.

Customers have the choice of either glass fibre or PVC partitions inside the vehicle. The moveable partitions make it possible to carry fresh, frozen and dry goods in a single vehicle.

The lightweight PVC partitions can be moved manually to adjust the inside space configuration while the heavier glass fibre partitions are moved using an assisted lifting mechanism.

Holcroft says there is a continuing trend to improve control of the cold chain using telematics and remote temperature monitoring systems. Serco's long standing partnership with telematics company Ikhaya Automation has kept Serco up to speed with the latest innovations.

Stringent health laws on food safety made traceability in the cold chain essential. Added

to this, the current challenging economic climate meant transporters and retailers were under increasing pressure to find ways of reducing waste and return as well as to provide accurate data in the event of insurance claims for rejected loads which are out of temperature specification.

Holcroft added that recently local standards had been increased whereby pharmaceutical products now had to be transported in insulated vehicles. This follows trends in Europe whereby temperature monitoring solutions are becoming the norm for perishable goods and pharmaceutical products.

"Having a web-based temperature monitoring system, allows transporters to be able to take immediate action should the temperature vary from the set level. Spins-offs include reduced risk of loss as early detection can assist in resolving problems proactively".

The system, developed by Ikhaya for refrigerated vehicles, allows operators to set pre-determined temperature zones for each load and provides alerts via email or sms.

The system records a history of data and generates graphical reports either on request or at set intervals to email for easy analysis. A major advantage of the system is peace of mind and the relatively low cost compared to other products.

"The alerts that the system sends out when things go wrong are vital," said Holcroft. "For example, let's say a customer wants a load of fresh produce transported between Durban and Johannesburg to arrive at a temperature of between -18degC and -20degC. If there is no monitoring system and something goes amiss causing the temperature to be say between -12degC and -15degC on arrival, the customer either rejects the load and the transporter has an insurance claim against it or the customer accepts the consignment and possibly the shelf life is compromised meaning the retailer ends up with losses while the customer loses confidence in the store."

Holcroft says Serco builds a large quantity of refrigerated trucks and trailers for large retailers and supermarkets such as Shoprite which uses trailers fitted with insulated roll over doors and multi-temperature load dividers. Shoprite is very aware of maintaining the cold chain efficiently, and are also in the process of installing temperature monitoring solutions.

"As specialists in the area of manufacturing high quality refrigerated trucks and trailers, we have a lot of experience assisting our customers maintain the cold chain correctly."

The hidden advantages of fleet outsourcing

IMAGINE a service or a solution that would assist any company with a fleet of vehicles to lower fleet costs, ensure predictable expenses and overall better fleet management. You would expect business owners who may not possess fleet management expertise to sign up.

Such a solution does exist, says Dr David Molapo, Head of Standard Bank Fleet Management. It is called fleet outsourcing. Yet South African businesses have been very slow in adopting the model that has become dominant in large parts of the rest of the world.

Currently, many in the state sector in South Africa – government departments and municipalities – are aware of the advantages of fleet outsourcing, whereas some in the private sector seem to be lagging behind.

Why is this? Dr Molapo believes the reasons are complex, but one of the main aspects is the pervasive misconception that outsourcing fleet management is more expensive than doing it yourself.

A key reason is that pricing seems more expensive for any number of services: procurement, maintenance, finance, fuel management, tolls and traffic fine management, vehicle inspections, insurance, accident management, vehicle tracking and monitoring, vehicle usage optimisation, driver optimisation and even route optimisation.

Each of these services has to be done for any vehicle deployed for business purposes, and companies routinely pay for them, if not in direct costs then indirectly with the salaries of staff employed to spend their time on these functions. Were a fleet manager or CEO to tally all the separate costs of a vehicle managed in-house, the true picture emerges.

Each of these services, when outsourced to a reputable fleet

management specialist, is likely to be done better, more efficiently, with greater bulk-buying power and with deeper specialist industry knowledge than companies without fleet specialist skills.

The point is that fleet outsourcing is potentially a more efficient option to manage a fleet, says Dr Molapo. But in order to see it clearly, a company has to compare the outsourcing cost with the full cost of ownership of a vehicle.

Often only companies with quite sophisticated financial and operational systems are able to analyse and produce such figures. Smaller companies, where the role of fleet manager is often given as a side-line function to a general staff or office manager, very seldom have the inclination to make a proper comparison.

But apart from the fact that the total cost of ownership of running a vehicle is not immediately apparent, there are other related mindset hurdles that prevent fleet managers from adopting outsourcing.

One is an over-optimism that pushes away thoughts of breakdowns, accidents and even predictable wear-and-tear on a vehicle. It makes it difficult for the users of a brand-new company car to imagine what it might look like in five years' time.

In contrast, the fee that a company pays to an outsourcing partner can be a brutally realistic expression of all the costs of a vehicle, including future maintenance costs, but smoothed into monthly payments so as to make it a predictable expense item.

Another mindset hurdle that stands in the way of the outsourcing option is the culture of ownership. Fleet outsourcing can take make forms, but one of its basic principles is that the ownership resides not with the company using the car, but with the outsourcing partner.

Dr Molapo says outsourcing does not mean a company gives up control of its fleet, or that the fleet disappears altogether from the focus of the company management.

On the contrary, if a fleet is outsourced to a specialist company worth its salt, a huge amount of information can be unravelled about the fleet's operations which give the company even greater control over its fleet.



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Supply chain crash diet

JOHN Valentine Director at Real Telematics explains that there's a diet plan for every fad, and it's no different in the world of Supply Chain optimizing.

"Daily we are brain-washed and exposed to catchphrases and keywords to get us to follow new trends that will benefit us, our families or our businesses. Professional speakers smugly tell us what we already know, with a bit more glitter and proceed to plan their next Ferrari purchase. But every now and again a disruptor comes along that truly delivers on its promise.

"Forklifts are an essential component in today's Supply Chain, and a whole host of secondary and tertiary services have sprung up to support them, each with its own system-cleansing shakes and bottom-line laxatives, all designed to give you a figure hugging budget. Today's profit margins are under threat like never before, with ambush economics and dirty politicians only a part of the daily challenges.

"Which is why good old fashioned reliability,

that delivers time after time is the diet that most interests me and not the latest fad promoted by industry quacks. I want tried and proven.

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"Just when you think Real FMX has stopped benefitting, you realize that it's currently the only product on the market that can be refurbished and transferred to another machine, thus making your operation leaner and meaner."

Turn your fleet into an advertising asset

BRANDED vehicles are seen by 3 000 potential customers every hour they are on the road. Fleet vehicle advertising boosts name recognition 15 times more than any other form of advertising, and truck advertising has been rated as the second most effective form of outdoor media (AMPS 2010).

With statistics like these it is worthwhile considering using your fleet as an advertising platform.

"The return on investment for fleet branding is substantial and is one of the highest for any media platform," says Murray Price, managing director of Eqstra Fleet Management and Logistics, which has been advising clients to reduce the TCO (total cost of ownership) of their fleets by using their vehicles for mobile advertising. "Companies tend to think of only branding trucks, but branding company sedans is equally as effective and should be included



in the marketing mix."

Advantages of fleet branding include:

High visibility – depending on the size of your fleet, your branded vehicles will be seen by thousands of potential customers on a daily basis. Your advertisements will travel into the view of the customer instead of waiting for the customer to see them on television, in newspapers or on radio. The lead possibilities from mobile exposure are nearly endless. In fact, many businesses gain more contacts and customers from vehicles wraps than from their websites.

Additionally it is consistent road users who are most likely to

see the advertisements. These people tend to be employed and therefore have a higher income. They are probably in your market.

Local advertising - vehicle wrap advertising is targeted because a company is likely to be advertising to its local market. The people who will see the vehicle wrap will be the people in the area who will frequently perceive the vehicles to be delivering goods or services to neighbours, and therefore assume the products are being used and enjoyed in the neighbourhood. This generates positive feelings towards a brand.

Increased Security - Custom graphics

reduce the risk of hijacking and theft. The graphics make the vehicle easily identifiable and therefore reduces the risk of theft.

Factors to consider before deciding on fleet branding include cost and installation time (it can take upwards of a day to apply a vehicle wrap on a truck), inventory management and resale value.

"Fleet costs remain an important element," says Price. "Optimising vehicle inventory is a critical task of any fleet, but even more so when vehicles are branded. It is important for fleet operators to anticipate fluctuating volume needs to avoid incurring a surplus."

"Fleet managers should also ensure that branding the vehicles does not alter budgeted resale value by ensuring the material used for branding can be removed without damaging the vehicle body. Most branding materials used today conform to this standard."

Branding can be as simple as a company

logo or as elaborate as a full colour wrap. The object is to get the message across quickly and clearly as the "advertisement" is a moving object and most often, the viewer will not have a lot of time to read it. An eye-catching yet simple design will make the best impression, with copy kept to a minimum – in addition to the company name, website address and telephone number, a short tagline can be a memorable addition that will differentiate a company from its competitors.

"Fleet branding is a cost-effective method of advertising and gives added value to a fleet," concludes Price. "However, driver behaviour plays an important role – bad driving can send a negative message to your target markets, communities and other drivers. Controlling driver behaviour not only improves company/product image, but also reduces vehicle operating costs and remains a critical element of any fleet operation."

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Thirty eight machines in the last 12 months... Goscor and Weir Mineral partnership sparkles

THERE are some companies whose quality is instantly apparent and Weir Minerals in Alrode, Gauteng is one of them. From the security personnel at the gate and the reception staff who are bright and welcoming to the shining white lines that demarcate the parking to the condition of the magazines on the waiting room table, everything is professionally and carefully organised and maintained.

"We must be like that," says warehouse and logistics manager, Billy Dooling. "We receive more than 8 000 parts per day and ship out more than 10 000. Also, we handle very heavy plant and machinery and safety is a major priority. The bottom line is that absolute professionalism and attention to detail are a prerequisite," he says.

Given this business ethic, it is obviously a

significant compliment to become an important supplier to Weir and, according to Dooling, Goscor Lift Truck Company (GLTC) fully deserves this privilege.

"We decided to do things a little differently about a year ago, and put the materials handling contract out to tender. Goscor won this on the basis of their outstanding product, a competitive pricing structure, their superior service and sup-



Billy Dooling, warehouse and logistics manager, at the Weir Minerals Alrode premises.

port ability – we had had some experience of this in the past – and, very importantly, because of their ability to supply us a range of machines for various applications. In this sense, they are a one-stop-shop for us enabling us to increase efficiencies by dealing with one supplier across a range of machines," says Dooling.

He adds that part of the deal is that Goscor supplies a permanent on-site technician, which is a major advantage as downtime is kept to the barest minimum.

In the past year Weir has acquired 38 Goscor machines including 4 x Crown turret trucks; 3 x Bendi forklifts and 31 Doosan forklifts ranging in capacity from 2.5t to 9t.

In addition, Goscor has provided a fully equipped battery bay with a spare battery for every machine. "This facility is a significant boost to our efficiency as it, in conjunction with the system we follow, also helps to minimise downtime," says Dooling.

"With the turret trucks we can work at heights of up to 12m in narrow aisles, with the Bendis we can operate in extremely narrow aisles both inside and outside with the same machine and, with the Doosans, we can lift a wide range of items from the smallest pallet of stationery for our stores to the heaviest crusher or pump," he says.

Darryl Shafto GLTC MD says that that Goscor's relationship with Weir Minerals is an excellent example of how a partnership between supplier and customer produces the best results.

Founded in 1871 Weir Minerals is a global business employing circa 14 000 people in 70 countries. It designs and manufactures highly-engineered products and services for the minerals, oil and gas, and power industries. Weir's products include slurry and dewatering pumps, crushers, screens, cyclones, valves, mill liners and a range of rubber products.

SIKO's optical distance sensors

SIKO, represented locally by Instrotech, has on offer the SIKO's range of optical distance sensors; the LT5000; LA60 and LA170, whose technical specifications, like linearity and resolution, are comparable with those of wire-actuated transducers.

Which is why SIKO has decided to integrate these new sensors into their existing Linear-Line product range.

As technology and handling of the optical distance sensors are different from the wire-actuated transducers, SIKO foresees the possibilities of using the new sensors for applications where the wire-actuated transducer can only be used with difficulty or possibly not at all. Although the measuring principle is optical and the casing made of plastic, the standard values in regards to environmental conditions are more than acceptable with a IP67 protection class and an operating temperature of -20°C to +60°C.

Applications for SIKO's Optical Distance Sensors are:

- measuring distances for which SIKO's SG5 with 600mm wire is too large;
- position measuring – eg. for storage/warehouse applications - where wire-actuated transducers cannot be used due to mechanical wear resulting from continuous operation, and
- applications where wire-actuated transducers, so far, are

only used as a compromise solution, as wire is too difficult to guide.

SIKO'S LT5000, for large distances is a laser-based measuring system with transit time technique. This means that a position value can be captured on almost any reflective surface, up to a maximum distance of up to 5000mm.

SIKO's LT5000 is compact in size for measuring distances of up to 5.000 mm, easy to commission and handle and can claim IP67 / IP69K protection class. The LT5000 works in a standard temperature range of between -40°C and +60°C and has a output of 4..20 mA or 0 – 10 VDC. In addition, there is a freely programmable switched output and a highly-visible laser light spot (laser class 1) for precise alignment and eye protection.

SIKO's LA60 and LA170 for the near zone, feature an optical measuring system with LED, based on the triangulation measuring principle, which means that within a range of 20...80mm – for the LA60 and 30...200mm for the LA170, the reflected beam of light (depending on the angle of irradiation) gives the corresponding position value.

The LA60 and LA170 have all of the same features of the LT5000 and have a voltage output of 1 – 10 VDC, plus an additional two adjustable switching points.

Accessories and various options of mounting angles and cable connections are available.

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Maxiflex welcomes customers to their doors

MAXIFLEX has been a specialist and trusted supplier of a fully comprehensive range of high quality, efficient and reliable door and dock loading solutions to the Southern African industry for 27 years. Alongside the renowned in-house Maxiflex brands, the company also boasts sole distribution rights to foremost international brands, Crawford, Albany and Megador under the ASSA ABLOY Entrance Systems banner.

The effective and reliable operation of the company's range of door products add value for customers and end-users; alongside seamless traffic flow for maximised uptime and improved productivity, the doors also deliver substantial cost savings. The excellent seal and insulation properties help to control air infiltration and reduce heating and cooling loss, creating a more stable interior climate and optimising the overall efficiency of a building or work space. Reduction in energy consumption by air-conditioning systems leads to substantial savings on electricity bills. Additionally, by keeping out draughts, dust, heat, cold, birds and insects, the doors help to increase hygiene and cleanliness for a safer and more comfortable internal environment.

Established in 1990 as Janssen Products cc. by Frans Janssen, the company manufactured, supplied and installed Maxiflex PVC strip curtains, protection screens and impact doors from humble premises in Meadowbrook on Johannesburg's East Rand. Maxiflex soon becoming a well-established, proven and popular brand and the company started trading as Maxiflex Door Systems. The acquisition of sole distributorships and consequent product expansions led to steady growth and the company relocated to larger self-built premises in Spartan, Johannesburg, in 1996. But it was not long before more space was needed to accommodate ever-expanding door system solutions and a growing staff complement as well as to be able to sustain the high-quality levels in product manufacture, installation and for services that the company has become renowned.

Choosing to remain in the industrial hub of Spartan, Maxiflex moved to their current facility which houses a

2 000m² warehouse and office space, as well as a fully equipped showroom where working models of a selection of doors and docking solutions are showcased for customer viewing. The company employs a total of 75 staff members and Johannesburg head office is supported by branches in Cape Town, Port Elizabeth, East London and Durban.

Keeping it in the family, Bram Janssen took over the reins from his father as Managing Director in 2010. Maxiflex is a proudly family-owned business that differentiates itself in the market by offering world-class quality door and docking solutions backed by courteous, honest, professional and expert advice and service. "We are proud of the fact that we supply more than products, we supply complete solutions," says Bram.

"With customer satisfaction our top priority, we understand their requirements. We are fully aware that our products are utilised in critical areas and understand just how critical it is that our door solutions are cost effective, solid, tough, resilient and reliable in order to deliver low operating expenses and extended operational life irrespective of how stringent the conditions. Our Maxiflex PVC product range serves as a perfect example. Redefining rugged reliability, our strip curtains and sheeting are manufactured from flexible, clear and durable PVC to provide strong resistance to force." Available in a variety of colours and formats including rolls, strips and flat or rounded-edge strips, the PVC range is ideally suited for sealing doorways and creating partitions in industrial and commercial buildings.

Maxiflex leads the market in door solutions for despatch and receiving loading bays, warehouses, distribution centres, factory entrances and partitioning, shopping centres, etc. with the Crawford range of industrial sectional overhead doors and loading dock equipment. The high performance of Albany high-speed doors ensures smooth material flow, keeps a constant room temperature and reduces energy costs. The Megador range, specifically manufactured for very large entrances typically found in mining workshops, aircraft hangars and shipyards, are de-

signed and engineered to operate reliably in rough tough environments. All imported doors are designed to meet all operational and safety requirements in the European Directives and the standards issued by the European Standardization Committee, CEN.

The company's extensive customer portfolio spans a wide spectrum of industries across the Southern African region including Botswana, Mozambique and Namibia and includes blue-chip companies within the automotive manufacturing, food and beverage, hospitality, pharmaceutical and mining sectors.

"Irrespective of industry, regular and preventative maintenance are fundamental to sustaining top performance of our door and docking systems and keeping energy losses to a minimum to help make our customers' business more sustainable," stresses Bram. "Excellence in product support, service and after-sales service go hand-in-hand with building long-term customer partnerships. Our countrywide branch network is backed by team of highly trained and skilled service technicians and we offer, on-call, 24/7 service to render quick and effective assistance to ensure minimum disruption to customers' uptime."

Jungheinrich safety solutions create more safety for man, machine and warehouse

EVERY year, in Germany alone, more than 12 000 accidents involving fork lift trucks are reported, several dozen of which have fatal results. The causes of most of the accidents are incorrect handling of the load or problems in the operational organisation. In addition, operational interruptions due to accidents cost the intralogistics sector billions in losses every year and the acceleration of ever more complex processes in the warehouse increases the risk of accidents. Furthermore, for many companies, the growing number of statutory provisions and regulations also increases the legal and administrative challenges in the field of safety.

With its products, solutions and consulting services, Jungheinrich has set itself the goal of contributing to a significant reduction in the number of accidents and to permanently prioritise the issue of safety for both people and warehouses. In addition to more than 60 years of expertise in especially safe trucks, numerous safety and assistance systems help the operator to identify critical situations in advance, to reduce the risk of accidents, such as collisions, as well as to reduce incorrect operation. There are also various functions such as the reversing camera with personnel detection and digital solutions such as indoor tracking, which marks particularly ac-

cident-critical areas of the warehouse using sensor technology. With Jungheinrich operator training and courses, practical preventive measures for functional safety are available to its customers. Jungheinrich works with the customer to analyse all challenges and possible risk sources using the new SAFEwalk.

Dr. Lars Brzoska, Member of the Board of Management at Jungheinrich AG responsible for Marketing and Sales: "As a family company, the safety of our trucks has always and will always be our priority. We want operators of Jungheinrich fork lift trucks to be able to complete their shift and return safely home without injury. The goal is the protection of the operator, machine and warehouse, while maintaining productivity during operation. The high-quality workmanship and reliability of our trucks, effective assistance systems and consultations are effective building blocks towards achieving this goal. More safety also means more investment protection and better cost control for our customers. Safety solutions from Jungheinrich can offer a clear economic advantage."

Jungheinrich's focus is on four areas with its safety solutions:

Jungheinrich supplies its customers with the new SAFEwalk: an analysis by a Jungheinrich expert, of conditions in the warehouse,

identifying hazards and advising how occupational safety can be optimised. A further preventive measure is the Jungheinrich operator training which offers professional training.

Prior to commencing operation, the operator receives check points via StartSafe, in accordance with which they verifiably check the required functions. accessCONTROL monitors the seat and belt on the truck. Manipulation of the system is not possible. This ensures that no operator is driving without wearing a seat belt. It is possible to specify which operators may drive which trucks. The parameters of the truck can be adjusted depending on the operator.

Load protection:- Jungheinrich offers various assistance systems on the truck such as protective screens and warning displays. Only by correctly picking up the load can its falling during transport be prevented. positionCONTROL enables the lift height to be adjusted to the respective warehouse situation. The desired lift heights can be stored as preselected settings in the trucks which are available at the start of operations. The use of a fork camera provides a direct view of the forks.

Collision protection:- Jungheinrich helps to minimise collisions through the use of various sensors, assistance systems, cameras, as well as markers and barriers in the ware-

house. The most reliable means of avoiding collisions to the rear of the truck is the detection of personnel via a reversing camera. The camera displays the view to the rear of the truck on a screen and issues both visual and acoustic signals as soon as people enter the danger area. When reversing, the operator has an overview of the area without having to turn his head. The truck uses indoor/outdoor sensors to determine whether it is indoors or outdoors and adjusts its speed accordingly. The speed is automatically reduced in danger zones. The Jungheinrich Floor SPOT projects an LED dot on the ground in front of and behind the truck as a means of announcing that the truck is approaching a junction, for example

Stability:- Jungheinrich safety solutions reduce the danger of trucks tipping over due to incorrect loading: curveCONTROL automatically reduces the cornering speed in accordance with the load. This means that it is possible for empty trucks to travel faster. The adjustable driveCONTROL secures the load when forks are raised and can be adjusted to any application. This protects the load against falling. The customer is able to decide from which lift height the option can be employed. operationCONTROL issues a warning signal when the residual capacity is exceeded.

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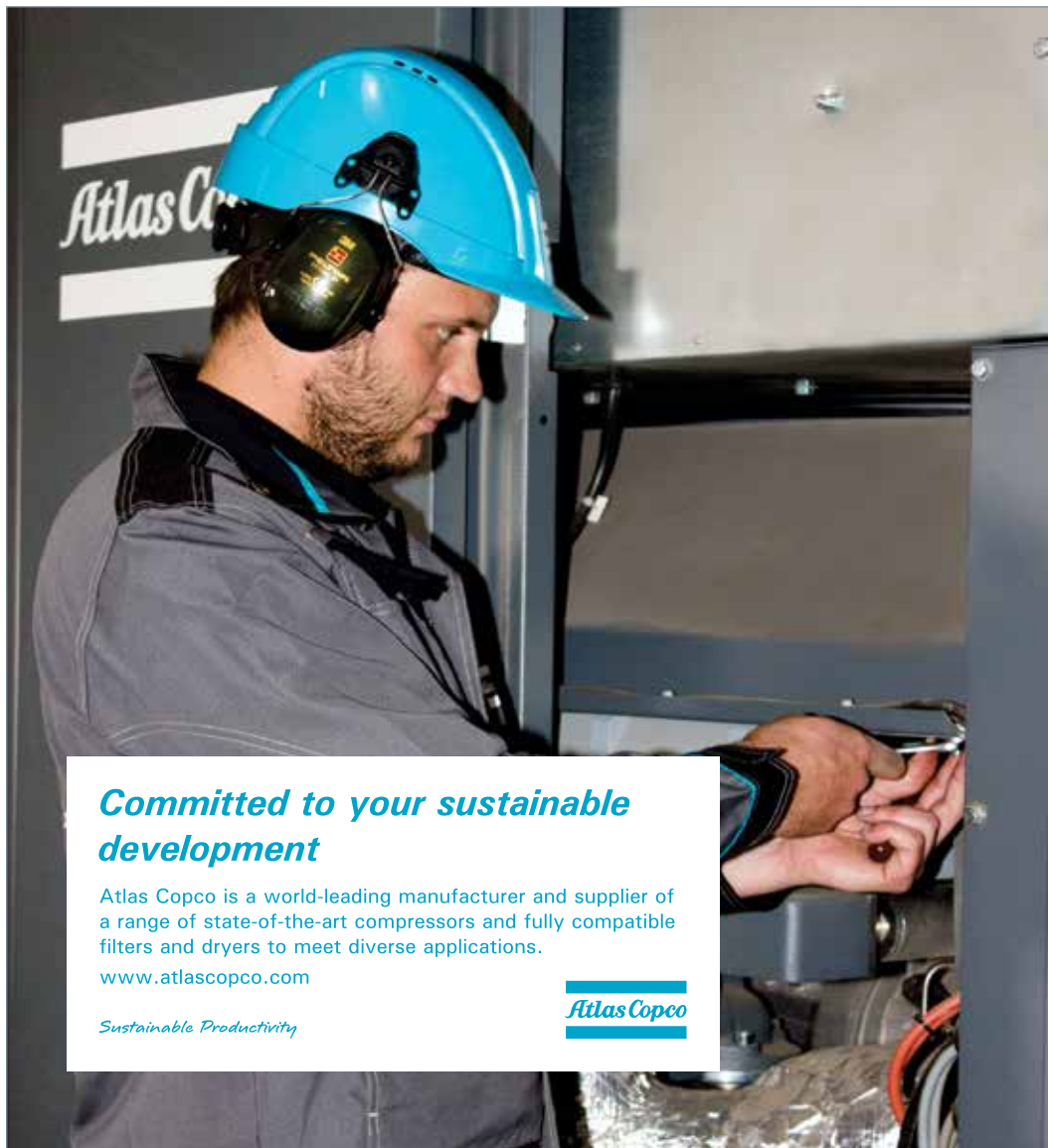
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Atlas Copco compressors and light tower win Red Dot Design Awards

ATLAS Copco has won two prestigious Red Dot Design Awards for 2017; for portable compressors and a LED light tower.

"We are proud to once again be recognised with this distinguished prize for outstanding design," said Andrew Walker, President of Atlas Copco's Construction Technique business area. "As always, our product design has focused on providing true customer benefits such as boosting performance and operator comfort while reducing fuel consumption and service needs."

The Red Dot Design Award for 2017 rec-



ognises Atlas Copco's 8-series portable compressor range as well as the HiLight H5+ LED light tower. Both products are designed and manufactured by the Portable Energy division in the Construction Technique business area.

The 8-series compressors are recognised for raising the design standards when it

comes to size, weight, efficiency and performance, partly by incorporating the latest tough and aesthetically pleasing HardHat® canopy. The light tower was recognised for its innovative optic lenses that maximise light coverage.

The official Red Dot Gala will take place in Essen, Germany, on July 3.

OMAL innovative valves and actuators from Tectra Automation



Process valves that empower performance



Ball valves | Butterfly valves | Pneumatically actuated valves | Electric actuators | Pneumatic actuators

As one of only four manufacturers in the world certified to manufacture valves and actuators for the oil & gas industry, Omal is a global benchmark in safety, quality and efficiency in process valve technology.

By channelling over 30 years of R&D into cutting-edge engineering and manufacturing technologies, Omal process valves provide complete fluid control solutions for industrial and plant automation.

The range of Omal valves are distributed and supported across sub-Saharan Africa exclusively by Tectra Automation.

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TECTRA Automation, part of the Hytec Group of Companies, is the sole sub-Saharan Africa and South African supplier of the OMAL range of valves and actuators, including the niche range tailored for use in the oil and gas industry. What separates OMAL valves and actuators from competing OEMs is that the entire manufacturing process is under OMAL's internal control. All valves and actuators are engineered, manufactured, assembled and tested in OMAL's three state-of-the-art production facilities in Northern Italy.

Tectra Automation's range of OMAL products include:

- **Ball valves:** comprising floating ball valves in wafer, split-wafer-contraction or split-body; and trunnion-mounted ball valves designed for most heavy-duty applications and high-pressure services.
- **Ball valves for high pressure:** designed specifically for compressed natural gas (CNG) service, the OMAL HERCULES series of ball valves for high pressure is a threaded-end ball valve series that equips CNG compressors and dispensers that require high cyclicity and long reliability. Its design has resulted in durability equal to six times more



Angle seat pneumatic actuated valve suitable to work for one million cycles without downtime.

than that of any other OEM's valves used previously by OMAL's customers around the world.

- **Empowered valves for the chemical industry:** The PRO-CHEMIE-60 series has been tested for Endurance Fugitive Emission Gas-Testing for 60 000 cycles – and certified by third party agents. These valves harmful emissions entering the atmosphere and comply with the most stringent regulations worldwide.
- **Pneumatic actuators:** Tectra Automation has a large portfolio of pneumatic actuators for a wide field of applications. Because they are based on the Scotch Yoke system, these actuators are lighter, more compact and less air-consuming, and have a long, maintenance-free lifetime.

Dual-stage pneumatic actuators with an integrated manual override allows for emergency

operation when there is no power available and its range of HD Actuators have been designed specifically for oil & gas, but can be used in all types of service such as BDV, ESDV, SDV and HIPPS, among others.

- **Pneumatic valves:** this range comprises automatic valves like the angle seat and axial valves. Suitable to work for one million cycles without downtime, angle seat valves are Y-shaped pneumatic valves with integrated and plastic-cased actuators. They can be manufactured in bronze or stainless steel and, with high velocity cycles, are the preferred valves for process machines.

The pneumatic axial valves make up OMAL's patented VIP-series. They are a special threaded-end brass axial valve designed for pneumatic applications with a life of 500 000 cycles. Their compact size makes them ideal for use in machines with limited space.



ABSA trends:

Improvement in feed costs to lead to more favourable feed: milk price ratio



THE latest Crop Estimate Committee report (CEC) showed that a total of 14.5 million tons of maize is likely to be produced in 2017. The estimated maize crop is 87% higher than the crop in 2016. As a result, maize prices have declined. This bodes well with the feed intensive industries as it suggests a decline in the cost of feed from the high levels seen during the past season. Lower grain prices have resulted in an improvement in the milk: feed price ratio. Ultimately, the decline in the grain prices as well as possible increases in the producer prices will support improved milk: feed price ratio, thereby increasing the profitability of milk production.

Highlights

Livestock

- Domestic livestock prices may retain its current positive momentum due to strong demand and improved consumption into the long weekend.
- An average national Class A beef prices

breached the level of R48/kg over the past week. This price increased from about R39/kg the same time a year ago.

- Weaner calf prices have increased to R30.28/kg this week on the back of improved demand and less available supplies. This price increased from R20.10/kg the same time a year ago.
- The outlook for livestock prices is positive for 2017 with higher beef, lamb and mutton prices, lower feed costs and favourable grazing conditions expected to benefit the industry. The higher expected crop of 14.5 million tons of maize likely to be produced in 2017 is favourable for the feed intensive businesses.

Limited silo capacity may add more pressure to maize price.

South Africa's much anticipated large maize crop of about 14.3 million tons has raised a concern for silo capacity in particular areas,

especially in the regions with great yields and limited facilities. Greater yields were achieved than initially anticipated in major maize producing parts of the country, thanks to favourable weather. Some market players are even expecting a crop size between 14.3 and 14.5 million tons. Some areas in the Free State region have reported a concern in terms of storage capacity. Bunkers and other alternative storage facilities are already being placed to address the great harvest. But should capacity be filled, producers will have to travel further to locate silo's that have availability, adding more to the price pressure.

Highlights

Grains & Oil seeds

- South Africa's expected exportable surplus may receive competition from the Zambian exportable crop, after the ban on exports had been lifted in Zambia.
- The latest import duty is R1190.19, compared to the ex-

- pected import duty of R1371.75
- Prices will enjoy increased underlying support if market/negotiating power lead to higher domestic bids being accepted.
- South Africa is expected to crush 1.9 million tons of oilseeds on increased demand and expansion in crushing capacity.

Vegetables

The Easter holidays had most vegetable (tomatoes, onions, carrots, peppers) prices soaring high. The week ending 21 April, saw all the above mentioned vegetables take a downward price trend, because of larger volumes and little demand, post closure of the markets for the holidays.

- Most labourers are back from holidays, and pickings of peppers should resume, adding more price pressure.

Protection for the agrochemical sector

INCORRECTLY used agrochemicals can have serious consequences for the health of users, the public, and the environment. Key to protecting all stakeholders from unnecessary exposure and misuse is effective and clear agrochemical packaging and labelling.

Whether for a pesticide or a garden-care product, agrochemical labels are governed by stringent legal requirements for product labelling. "Because of their hazardous chemical compositions, this information ensures the product's safe handling, storage and usage," explains Jacques Loubser, Pyrotec PackMedia's National Sales Manager.

In addition to brand information required on the label, manufacturers also need to provide compulsory information that includes directions for use, storage and disposal instructions, the dangers of product handling, and first-aid instructions.

This poses a challenge for the industry as there's insufficient space on labels for the amount of information required. "Without compromising the quality of the label, the Fix-a-Form® informational booklet label, supplied by Pyrotec PackMedia, is a cost-effective solution for providing

extensive information within the space normally used by an adhesive label," Loubser explains.

Fix-a-Form® informational booklet labels are permanently secured to a chemical container for the entirety of its usable life. "This removes any chance of losing or accidentally discarding a separate leaflet, which could have fatal consequences. Having clear, detailed, information – including text, charts and diagrams – attached directly onto the container is the best way of protecting personnel and consumers," Loubser notes.

Additionally, to safeguard the integrity of the product in the supply chain, Fix-a-Form® informational booklet labels also ensure there is enough space for tracking and tracing data such as serialisation and over-coding components.

The informational booklet labels can also include special characteristics such as moisture resistance, high durability and the ability to withstand harsh chemicals, extreme temperatures and a variety of storage conditions. These are important attributes given the tough environment the containers often have to withstand in the agricultural industry.

Packaging and authenticity also play an important role in eliminating counterfeit ag-



rochemicals products. Options to achieve this include printing holograms and other techniques that are difficult to counterfeit directly onto the Fix-a-Form® informational booklet labels.

Another added benefit is cost cutting. These labels can be designed to include extensive information in multiple languages while eliminating the need for separate labels for each language. They streamline production and simplify the management of inventories and distribution channels.

"These considerations are all paramount to agrochemical product manufacturers when selecting a suitable on-pack label because they enhance the user experience and increase the chance of a repeat purchase. Fix-a-Form® informational booklet labels make it possible to include the necessary information required without compromising on the aesthetic appeal of the label or product packaging," Loubser concludes.

New Tankjet 78 sanitary tank cleaners

High-impact, self-cleaning design ideal for Clean in Place (CIP).

The new TankJet 78 tank cleaner provides more than 30 times the cleaning power of fixed spray balls and ten times the impact of most rotary spray balls to ensure fast, efficient and thorough cleaning of tanks up to 13.7m in dia. Providing 360° coverage of tank interiors, the unit is ideal for CIP in sanitary applications. It features a threadless, crevice-free and self-cleaning design in compliance with the 3-A Sanitary Standard 78-01.

Threadless design enables fast and easy maintenance in minutes – no tools required

The patent-pending TankJet 78 is the only

multi-axis rotating tank cleaner available that can be serviced without tools. It takes less than five minutes to disassemble, perform a few simple maintenance steps and reassemble the unit. And, since the unit is self-cleaning and self-draining, maintenance requirements are minimal.

Flexible operation and easy integration

Available with a single hub (two nozzle) or a dual hub (four nozzle) design. The TankJet 78D dual hub model can be mounted in any orientation. Flow rates range from 276 to 625l/min at operating pressures of 1.7 to 7bar. Existing CIP installations with spray balls can be easily retrofitted with

the TankJet 78 tank cleaner.

Tankjet 78 tank cleaner benefits

- High-impact 360° cleaning ensures tank cleanliness and results in shorter cleaning cycles and reduced use of water and chemicals
- Sanitary design – 3-A compliant
- Fast and easy maintenance without tools
- Easy retrofit for spray balls
- Choice of two or four nozzles and inlet connection size
- Ideal for cleaning food, dairy and beverage tanks, blenders, spray dry towers and pulp chests
- Can be steam sanitized

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How to sell your business



DECIDING to sell your business could well be the most important decision a business owner will make. While there is plenty of information available on starting a business venture there is little advice and guidance on when and how to exit a business.

So if you are considering selling your business how do you maximise the return on your 'sweat and tears' and financial investment over the years? "There are very important decisions a business owner must make and it is vital that a qualified and experienced professional be appointed to advise on the transaction" says George New of Horizon Capital Corporate Finance, a Cape Town based, 'boutique' Corporate Finance house, specialising in the sale and acquisition of medium sized enterprises. Selling a business can be a very complex and time-consuming proposition with many issues to address, and many 'pit-falls' to avoid! George touches on certain of these issues below:

- Timing the sale of your business in terms of your personal objectives is critical. Considerations are retirement, part-retirement, personal

asset diversification, a new venture, or merely a lifestyle change. From the business perspective one must also consider the stage of the business in its life cycle, industry activity, as well as its capital requirements for further growth.

- Value maximisation - Determination of the market value of a business - a business can be valued by price/earnings multiples, Net Asset Value and/or by means of a Discounted Cash Flow - which is most applicable to your business and will result in the best valuation?
- Compliance and deal structure - A business can be sold under different types of sale agreements each having very different tax, risk, legal and accounting implications.
- Business sellers must fully understand the deal structure and its implications, as well as any earnings warranties or other guarantees.
- The buyer should be a good strategic and cultural fit to

ensure synergies are maximised. In most cases the seller will stay on for a period of time and so needs to get along with the new owners in terms of goals, objectives, ethics and values.

George New adds "Horizon Capital Corporate Finance provides a full turnkey solution for the seller from the initial preparation of the business for sale to the facilitation of the purchase payment.

The service commences with Horizon Capital Corporate Finance attaining an understanding of your business as well as the owners personal objectives; it assists in preparing the business for sale, wholly or partially; undertakes a valuation of the business; prepares a comprehensive Information Memorandum; approaches potential buyers in a discreet and selective manner; identifies the optimal deal structure and negotiates a 'fair' price. Thereafter it oversees the preparation of the Sale Agreement and supporting documentation as well as facilitating the payment".

All discussions with potential buyers are governed by confidentiality agreements to protect the interests of the parties.

Horizon Capital Corporate Finance is actively looking for businesses for sale across all industry segments. It has corporate (listed and unlisted), medium enterprises and private investors looking for investment opportunities.

Exposing the myths about retirement funding

By Tandsizwe Mahluthshana, Executive of Marketing at PPS Investments



MILLIONS of South Africans face a future of working well past the retirement age in order to shore up their finances. Inadequate financial planning means many face running huge shortfalls on what they would actually need, in order to retire contentedly.

It is estimated that far less than 10% of South Africans will be able to retire comfortably and some may have to delay their retirement plans because of the recession.

Not giving enough consideration to planning for retirement means people may be forced to continue working for much longer than they had originally expected. Putting off a retirement savings plan, even for just a few years, can have a seriously detrimental effect on your final income at retirement.

1. Myth: My company pension scheme will be enough

Reality: Company pension schemes used to be seen as the only savings vehicle necessary for retirement.

Nowadays, however, most pension schemes

will only end up paying out a much smaller percentage of your final salary. A company pension is a solid savings vehicle. However, if you wish to maintain your lifestyle into retirement then you need to consider other assets too.

2. Myth: My expenses will drop after I retire

Reality: It is true that in retirement, certain expenses will decline or even stop altogether. You no longer need to drive to work every day or pay into a retirement fund and hopefully your bond will also be paid off.

Nonetheless, other expenses such as health care, however, are likely to cost you far more in this period than at any other time in your life. While you may have a medical aid, sometimes there are additional health care expenses that you will need to meet.

3. Myth: My house can help to finance my retirement

Reality: Using rental income from a second home to supplement your retirement can be a good idea. A common trap many people fall into, however, is to look at their own home as a savings vehicle. When you see your house appreciating from its original purchase price, it is easy to feel cash-rich and to assume that this extra equity will help to fund your retirement plans.

Equity released from your home can provide a lump sum, but you will still need somewhere to live afterwards and rent can quickly deplete savings. The other

option is to release equity by downsizing or moving to a cheaper area. However, while your younger self may be willing to do this, you may need to reflect on whether you'll feel the same upon reaching retirement.

4. Myth: I can't afford to get proper financial advice

Reality: Some people make the mistake of thinking that financial advice is a costly affair and is therefore only the reserve of the wealthy. The financial services industry is a maze of products and information and determining the right one for you without any proper advice is a hard task.

For anyone who wishes to retire comfortably, it is important to undertake a financial needs analysis. This will help identify how much money you need to retire comfortably, whether you are on track with your retirement plans and, if not, how to achieve these.

5. Myth: I need to fund the children's tuition fees first

Reality: It is critical to save for your children's education, but not at the expense of your retirement funding. Avoiding saving for retirement in order to fund your children's tuition fees at university may be a noble cause but it's an absolute no-go unless your children support you in your old age.

The key is to start investing early for both, which will alleviate the pressure later. Down the line, if there is no savings for their education, they will still be able to access student

loans and grants if they have to, but there will be no such financial help for you when you retire. If money is tight, then encourage them to attend a local university and remain living at home, but don't stop saving for your own retirement.

6. Myth: I'm too young to think about retirement

Reality: Most young people make the mistake of thinking that retirement is so far in the future that they can put off thinking about saving for retirement until later in life. The reality, however, is that delaying your contributions even for just a few years can have a huge impact on your final retirement fund.

For example, a 25-year old man saving R1 000 a month, with an investment return of 12%, would have a retirement pot of R5.96-million at the age of 55. If this same man delayed his saving by just 5 years, his retirement pot at 55 would be worth half that amount at just R3.07-million.

7. Myth: I'm too old to start saving now

Reality: One common piece of advice about saving for retirement is to start as early as you can. However, if you've left it late and are only now beginning to think about what you will live on when you retire, don't stick your head in the sand. It is better to save late than to not save at all. Put away as much of your salary as you comfortably can - a few years seriously dedicated to saving can make a massive difference in your final pension pot.

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Should you be considering the sale of your business, or seeking acquisitions, please contact our Corporate Finance team on 021 425 8586 for a confidential chat.

George (gnew@horizoncapital.co.za Cell 083 452 5872) www.horizoncapital.co.za

Commendations from satisfied clients



POWER Construction's Building Division has recently completed a major project upgrade at Barloworld Transport's Depot in Kraaifontein.

Johnny Moore, head of Power's Building division, reports the successful completion was on time, on budget and of high quality.

"This project in Kraaifontein East involved partial demolition and alterations to the existing office block, construction of new warehouse, trucker's accommodation, wash bay, tank filling facilities and external works. The site works which covered more than 1 615m² and included 68 parking bays began in January 2016 and practical completion was achieved a year later.

"This is Barloworld Transport's new maintenance facility and incorporates all Barloworld Transport requirements - from maintenance, spray-painting, vehicle testing and a state of the art wash bay for their fleet of logistics vehicles.

"We encountered a number of challenges with complex structural details which accommodated amongst other things, a water recycling plant that allows Barloworld Transport to recycle 90% of the water used on the premises.

"We received commendation reviews from Barloworld Transport senior management on the quality of work executed on this new facility and great credit is due to our committed project team for upholding the Power tradition of superior construction and project management" he said.

R460m new offices under development at Century City

A new development of 16 300 square metres of premium grade offices, which will include new regional offices for Discovery, is to be built on a prime gateway site at Century City.

Being developed by the Rabie Property Group at a cost of R460-million, Sable Park will comprise two four storey buildings of 8 000m² and 8 300m² respectively, each with two levels of underground parking.

Designed in a contemporary modern vernacular by the award-winning dhk Architects, the buildings will front on to Sable Road providing high visibility and offering uninterrupted panoramic views of Table Mountain and Table Bay.

Discovery's Cape Town staff, who will be relocating from elsewhere at Century City due to the expiry of their existing lease, will be occupying the larger of the two buildings.

The second building, which is ideally suited for a large user looking

to make a strong corporate statement, is being designed to be flexible and if needs be, could be sub-divided to accommodate smaller users, says Rabie director, Colin Anderson.

David Pierre-Eugene, head of Group Facilities at Discovery, said: "With our existing leasing commitments coming up for renewal, we were on the look out for new premises whereby we could be consolidated into one building and have options for future growth.

"As part of our assessment for new premises, we surveyed other developments outside of Century City and found that from a location, convenience and amenities point of view, Century City was still the best location to meet our requirements."

Sable Park is situated in the all-green Bridgeways precinct which has become the new commercial and hospitality hub of Century City. The precinct is home to a number of other blue



chip companies including the new Absa regional offices, Chevron, Philip Morris, the Business Centre, Thomson Reuters, Mastercard, Deriveco, Northfund, Glad Africa and the Rabie Property Group amongst others.

Also located in the precinct is the mixed-use Century City Square which comprises the Century City Conference Centre and Hotel, 15 000m² of offices, 51 apartments and five restaurants, pubs and

coffee shops surrounding a public square and served by 1330 parking bays in a super basement and a structured parking garage.

Century City Square development was recently awarded a 4-Star Green Star - Custom Mixed Use Design rating by the Green Building Council of South Africa, the first development in the Western Cape to achieve this.

Five other office buildings in the precinct have also received

Green Star ratings.

Anderson said Sable Park was also being designed as a green development and it was their intention to register it with the GBCSA, aiming for a 4-Star Green Star rating in both the Design v1 and As Built v1 categories.

The Bridgeways precinct also boasts a Virgin Active gym and is in easy walking distance of convenience retailing, spas, three other hotels and the Canal Walk Shopping Centre.



www.sablepark.cc



CENTURY CITY OFFICES TO LET | AVAILABLE JUNE 2018

Looking for premises that are green, efficient, convenient AND prestigious? Look no further than Sable Park, Rabie's latest corporate masterpiece in Century City, which incorporates new regional offices for Discovery. Outstanding contemporary design by dhk architects celebrates a high-visibility site on Sable Road with uninterrupted Table Mountain views. Move to a precinct that's buzzing with energy, hospitality and a plethora of retail and lifestyle amenities your staff will love.

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- Part of bustling new Century City Square precinct
- Hotels, conference centre, Virgin Active, restaurants and coffee shops
- Close to public transport, MyCiTi busses and Century City train station
- Within easy walking distance of Canal Walk Shopping Centre
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SABLEPARK

Two crane giants join forces

FOLLOWING Konecranes' acquisition of Terex MHPS – which in effect, is Demag Cranes, Hoists, Material Handling and Ports Solutions – the two global crane brands will share their considerable combined knowledge and technology, becoming a substantial force in the lifting business in sub-Saharan Africa.

The acquisition improves Konecranes' position as a focused global leader in the industrial lifting and port solutions market. Konecranes stands to achieve substantial growth opportunities in the service business, already a stronghold of the company in Southern Africa. Konecranes has a long history of conducting routine service inspections, repairs, and refurbishment of Demag cranes.

In South Africa, the merger also extends to the Wolff Cranes brand, acquired by Demag in the late 1980s. In terms of the port-material segment, this includes handling technology, with a broad range of



Crane giants join forces l to r John MacDonald, John Haarhoff and Knut Stewen.

manual and semi-automated solutions under the Gottwald and Noell brands.

Knut Stewen, Konecranes' Managing Director, Southern African Countries, and Vice President, Head of Region, Africa, said: "We are extremely proud to combine forces with Demag. We want to provide a home for Demag and Port Solutions, from which these businesses can grow and become stronger as part of our joint organisation. The

acquisition makes it possible for us to realise a long list of synergies between our two companies. We will be a single technology company, ready to create the next generation of lifting."

This sentiment was echoed by John Haarhoff, Managing Director of Demag MHPS: "We strongly believe that, in the long term, sharing combined technology will allow the two businesses to develop solutions that will further improve

the productivity and safety of the Demag, Wolff and Konecranes brands. Together we will aim to excel at providing the services our customers require."

In a first joint effort, the Demag/Konecranes team signed a three-year service and maintenance contract for Arcelor Mittal's Saldanha Steel Mill, which will require a supervisor and four technical teams on-site.

Miikka Kinnunen, Vice President, Investor Relations, explained: "Konecranes is well-prepared to deliver expected synergies, based on the extensive integration planning work carried out jointly with Demag over recent months. Of the total of EUR140 million per annum synergies targeted within three years, EUR35 million is expected to be implemented within 12 months from 1 January 2017, from which date the MHPS Acquisition is deemed effective from a financial point of view. Overall, synergies will come from procurement, operations, and SG&A. One-time im-

plementation expenses are expected to amount to EUR130 million, with EUR60 million worth of anticipated capex. In addition, dynamic synergies related to new opportunities in global service operations are expected to lead to significant earnings growth."

Kinnunen added that the consideration for the Demag business was US\$595 million and EUR200 million in cash, and 19.6 million new Class B shares. Pursuant to the Stock and Asset Purchase Agreement (SAPA) dated 16 May 2016, the final cash consideration is subject to post-closing adjustments for cash, debt, working capital, and the closing of the sale of the STAHL CraneSystems business. The final number of Class B shares may be subject to certain adjustments, in accordance with the SAPA. Based on 2015 financials, Konecranes and Demag had aggregated sales of about EUR3.5 billion, an adjusted EBITDA of EUR267 million, and a total workforce of about 19 000.

Challenging conditions overcome at De Aar Wind Farm

CORNELIS Grotius, general manager Johnson Renew, says that the contract to supply cranes and support services for installation of 67 wind turbines started in May 2016 and was completed in eight months.

Being constructed by EPC Longyuan Engineering South Africa, the Longyuan Mulilo De Aar Maanhaarberg Wind Energy Facility project is a 96.5MW wind energy facility. Longyuan Engineering South Africa is a subsidiary of China Longyuan. The wind turbine generators were supplied from China by Guodian United Power Corporation.

Grotius says the wind turbine components were offloaded using a 250t mobile crane and the heavy lift programme began with the pre-installation of the bottom tower sections using a combination of a 550t and a 100t crane. The main installation lifting is done with a 1 200t hydraulic crawler crane used in combination with a 100t crane.

"As a subsidiary of Johnson Crane Hire,

Johnson Renew has ready access to the depth of its parent company's crane fleet which allows it to supply these different crane combinations," Grotius says. "This allows us to customise lifting packages for individual projects."

Significantly, the LTR 11200 is the fleet's newest crawler crane and was selected to undertake the main installation lifts due to its narrow track crawler undercarriage and 100m long hydraulic boom. This configuration results in improved site productivity as it can move and set up relatively rapidly between installation pads, able to traverse narrow access roads.

This site posed particular challenges due to a number of very steep hills.

"Upfront planning enables our heavy lift team to select the most appropriate crane configuration for the task and by understanding the potential of machines in our crane fleet we are able to optimise the lifting solution with an impeccable safety record."

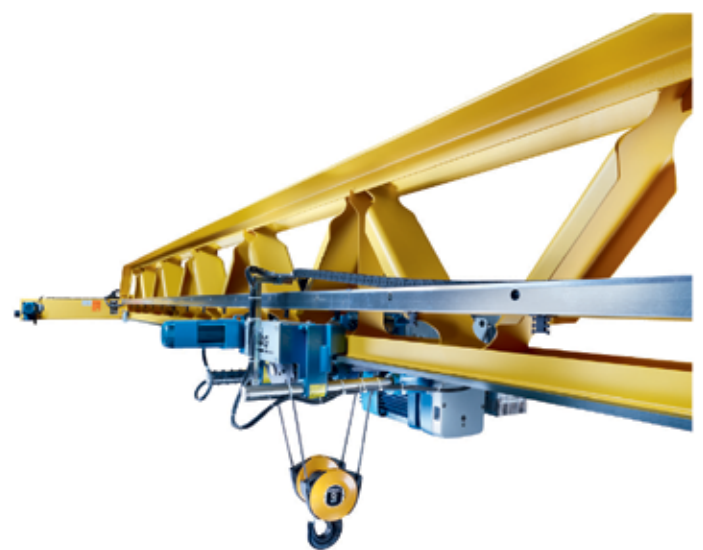
The Demag V-type girder – less is more.

Thanks to the high quality of manufacture, efficient, light-weight design and reduced oscillation characteristics, the crane and components are exposed to reduced loads. The lower wear makes a noticeable difference in terms of cost efficiency. Whereas a comparable box-section girder will manage some 200,000 changes of load, a Demag V-type crane will easily manage more than 500,000 changes of load, delivering more than double the service life.

500,000

Reduced loads.
Longer service life.

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DEMAG

OPINION

Potatoes on Mars are the least of it

Continued from back page

The second attempt took the winning four and planted them in the sterile soil. The final winner was christened, Unique.

Just how unique the humans are who go to Mars will be interesting. They will probably go via a base to be constructed on the moon. This will at least allow them to have second thoughts as they look down on our blue planet

And well they might think again. Not only will the second leg from Moon to Mars be a one way trip, once

they get to the Red Planet, they will not be allowed to breed. Sex will be OK but not conception because no one knows the effects of zero gravity and the occasional cosmic ray will have on human embryos.

The uncomfortable truth is that the humans who get to Mars will not be colonisers, but guinea pigs to be studied to see if people can survive there – and it is a very big “if”.

Of course there will be benefits for the rest of us. The prime goal of this multi-million

dollar mission* is understanding more about the origins of the solar system, about human life and the universe.

And like the Moon landings the technological spin-off will be considerable.

But there some ethical issues that go beyond breeding a new potato.

Should we send people to another planet? Some say we have screwed up large parts of the one we have. Should we force ourselves on another?

Then there is the

questionable morality of sending people on a one-way trip, even if they are volunteers. There is also something distasteful and not a little slippery ethically in sizing up volunteers like assessing cattle: for example, candidates must be 18 years old or more, not too tall and not too short, healthy, emotionally stable, and easy to get on with. But it might not even come to that. Robots may turn out to be cheaper and easier to get there and even back via super-fast data transmission tech-

nology that is already being developed.

Sending humans to the Moon made sense when computers were in their infancy, and not a patch on the human brain, but why risk humans now when artificial intelligence has made such great strides?

Maybe humans will not go to Mars. In which case, the potato called “Unique” may soon appear on supermarket shelves near you.

**Landing the first four people on Mars may cost at least USD 6 billion.*

State capture vs radical economic transformation

By Gerhard Papenfus, Chief Executive of the National Employers' Association of South Africa (NEASA). He wrote this in his personal capacity.



SO this is what it's all about.

It's all about who owes what and how much of it as well as the colour of the owner – and a deep rooted grievance which still has to be settled. 1994 gave us temporary reprieve – but the Rainbow experiment has come to an end – and we're all to be blamed for it. In 2007 the so-called 'second phase' of the National Democratic Revolution was adopted in Polokwane. It was advanced in 2012 in Mangaung. Business did not take any of that seriously – they thought (perhaps hoped) that things would remain the same. It didn't.

In recent years the propaganda against 'white monopoly capital' increased. Then came the most recent slogan: 'radical economic transformation'. It's all in line with official ANC policy as articulated in the National Democratic Revolution. It means only one thing: take from whites and give it to already privileged and politically connected 'previously disadvantaged' individuals, although, off course, it is sold in a manner that creates the impression that everybody, except whites, will benefit.

When President Zuma eventually dismissed Finance Minister Pravin Gordhan, there

were voices all round that he had overstepped the boundaries and that the end of his presidency was in sight. It clearly wasn't. The President knows his party all too well; he knew all along that they will always put personal interests above the national interest – career politicians desperately queuing at the trough. There are off course exceptions, remarkable individuals swimming against the current.

He also knows that for those he relies upon to stay in power, the national interest is of less importance than seeing whites being dispossessed and eliminated from economic life. President Zuma has emerged stronger from the Pravin Gordhan debacle – he made his most daring move, until now, and came out on top, at least within the ANC – and at least for now.

Those already at the trough and those pushing and elbowing to benefit, was initially a bit offended by the President not involving them more directly in implementing his unique form of radical economic transformation – besieging Treasury (one remaining obstacle to complete his drive to capture South Africa) with almost unlimited access to our resources to enrich himself and his allies. Somehow the dissidents in the ANC are no longer offended; they now fully understand his blatantly crooked motives. How this metamorphosis transpired, only they will know. They have humbly apologised for offending the President, undertook to never do it again and declared themselves ready to move on – silently overseeing rapid state capture and the

demise of South Africa.

They, and the millions educated in the art of entitlement, will now continue with the much bigger project of their version of radical economic transformation. This is not a type of transformation which will take South Africa forward – bringing about change that will lead to improved service delivery all round, improved education and skills, work ethics and productivity and consequently increased levels of employment – the type of transformation that will lead to economic growth, the type of radical transformation that all sober-thinking South Africans would support.

In contrast, the ANC's type of radical economic transformation will lead us down the path of accelerated decline, towards the equal society they strive for, not equal in relative prosperity, but in the 'equal sharing of misery'. This is simply so because the different races and ethnical groups within South Africa, which are meant to complement each other, are pretending that we don't need each other – my race included.

This radical economic transformation-venture is designed to redistribute wealth through various means, but aimed at taking away from a few in order to give to many, in a manner that will eventually benefit only a very few, but which will steadily eliminate a race group that makes a very substantial economic contribution – but this is the motive after all.

Their version of economic transformation will not create anything new, it will simply take from some and give to many, but unlike the case with the five loaves

of bread and two fish, the loot will not multiply. It will be a never ending process (which the National Democratic Revolution calls a 'seamless transformation'), always aimed at the obvious and easy targets, going down the race and eventually the ethical hierarchy. With a population that is steadily losing the ability to care for themselves, coupled with envy and hatred, the thirst for redistribution cannot be quenched. As resources become scarcer, even the initial perpetrators will become the victims.

The current dispensation is not sustainable – very few will deny that. However, radical economic transformation will only exacerbate an already dire situation. To erode the ability of a particular minority to play a part in the building of a better South Africa, because of historic events, will inevitably cripple South Africa.

The danger of President Zuma's access to the South African purse is immense; the danger of race orientated radical economic transformation is even larger. State capture combined with a radical erosion of the tax base is a quick recipe for disaster. This, however, is exactly what the revolutionaries aim for.

In light of this, are we hopeless? Not in the least. There is abundant grace; and consequently abundant hope. Rightminded South Africans will not only take note of what 'they' do, but respond appropriately and with courage. We will also focus more on doing what is right. Instead of withdrawing we will continue to occupy our space; now only with more determination.

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- Shows, Exhibitions and Conferences 2017
- Tooling Industrial Hand Tools, Equipment
- Waste Management and Recycling

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Women's Lib at last

IT was late on an afternoon and, as I do on the odd occasion, I was contemplating the magic of the brew master and the folly of our political masters while quietly minding my own business at the neighbourhood pub and grill. There, much had changed over the years, but so slowly that nobody noticed.

The circle of learned gentlemen were still sharing their insights on the affairs of the world, hardly noticing that the grim pool players had been replaced by laughing neighbours having fun. Partaking, of course, in the odd drink, some becoming, in the process, as odd as their drinks.

On this day, though, everything was about to change at a rate of knots never known before. The reason, as so often with revolutions of the local status quo, was Luke the Dude, barging in as if the place was his personal braai room.

"What do you lot have to say for yourselves," he demanded – and as everybody stared at him in disturbed silence, he concluded, "see, I thought so. Nothing. Well, everything is going to change. From now on brains will combine with beauty to rule this state. And what a state you are in!"

"The same, Luke?" interrupted The Governor in an attempt to get a word in sideways and to sell a beer. Which is, after all, what he needs to do to keep the establishment open.

"Ha," responded Luke the Dude, "and pray tell me, what is today's price for a pint? Gone up again since yesterday," has it? Luke had a point, although, as usual, he stretched it. Since South African Breweries sold out to the Americans, prices have been all over the place, here and there, up but never down.

And those nice beer reps who came around to buy the pub a round and tell insulting jokes about their competitors, they have also been given the boot. You remember them, I am sure, they were particularly visible when there was a beer war going such as the one bravely attempted by Louis Luyt, at the time still South Africa's fertilizer king. Then the Breweries rep would drop in, go hail fellow well met and howzit, ring the bell for a round and tell jokes like, "If Louis Luyt puts shit in bags, guess what he puts in bottles!"

We would all laugh, slap him on the back in the hope of another round and repeat the joke to all our mates until it went viral even before the invasion of computers and social media. Thus was Louis Luyt joked out of the beer market.

But Luke the Dude had that glint in his eye, indicating that his threat to uplift the standards of the local pub and grill was no laughing matter. Unable to stand the tension any longer, Colin the Golfer insisted, "What are you on about, Boy? And why don't you pretend to have some civility and introduce us to the lovely lady you seem to have accompanying you?"

"Ah ha!" exclaimed the Dude while collecting his well-headed pint from The Governor. "At least someone is awake today, although I must say I am surprised that it should turn out to be Colin the Golfer."

"Now now, Lucas," admonished The Prof.

"Please do introduce us to your intriguing companion."

To cut a long story short, Luke the Dude finally introduced us to Irene. She was as well educated and better informed not to mention smarter than any of our regular group of locals and, he insisted, she was of royal blood.

Which royal family was not specified by Luke the Dude "for security reasons", as he confided, which, to her credit, caused the royal Irene to ring into laughter. The local revolution Luke had in mind, now turned out to be nothing more than his firm intention to turn Irene into the first full-time member of our erudite circle.

Furthermore, he proclaimed, "seeing that you lot insist on calling me 'The Dude' and use equally unsuitable monikers for yourselves, she shall be known as Queen Irene."

And so it came to pass that Queen Irene became an appreciated and loyal member of our learned group of convivial persons. Gentlemen we no longer were.

After the many words of welcome were spoken – the gentlemen members were their normal charming selves – Bob the Book asked Queen Irene to tell us about herself.

"No no," smiled Queen Irene coyly, "I don't like talking about myself. That is best left to my good old friend Luke. But I will tell you a story, if you will be so kind as to indulge me, and then you can decide whether it has told you what you want to know, or not."

The honourable members of the commentary mulled this over and agreed unanimously that they would, indeed, indulge the lady.

So she continued: "It is a story some of you may have heard and some not. Be that as it may, in the era of Donald Trump, Jacob Zuma and their various children and cadres, it deserves another telling.

"Once upon a time, the president called on the official weather sangoma and inquired as to the weather forecast for the next few hours. The chief director of weather management, as was his official title, assured the president that there was no chance of rain for at least four days. So the president sent a runner around his fire-proof kraal to gather his five wives and 25 children from their palaces and other places of amusement. Having accomplished that, they all went fishing.

"On their way they met a currently advantaged voter who was rich enough to be riding a donkey. Upon seeing the president, the rich voter said, 'Your Gigglyness, you should return to the palace! In just a short time I expect buckets of rain to fall in this area.'

"The president was polite and considerate, being a politician with his eye on the next election, and replied, 'Thanks for your concern, but don't worry. It's not going to rain today. I hold the official meteorologist in high regard. He is a highly educated and experienced professional. And besides, the people pay him a very high salary. He gave me a very different forecast and I trust him.'

"So the president continued on his way with his family and agterryers. However, a short time later a torrential storm fell from the sky. The president and his five wives and their 25 children were totally soaked and their entourage had trouble hiding their laughter on seeing them in such a shameful condition.

"Furious, the president returned to the kraal and gave the order to fire the chief director of weather management. Then he summoned the voter and offered him the prestigious and high paying job of presidential weather forecaster.

"The voter said, 'Yoooooh Your Wetness, I do not know anything about forecasting. I obtained the information about rain today from my donkey. If I see my donkey's ears drooping, it means with certainty that it will rain very soon.' So the president hired the donkey instead.

"And so the practice began of hiring dumb asses to work in the government and occupy its highest and most influential positions."

The slower among our number took a few moments to comprehend the meaning of this revelation, but The Prof started clapping immediately. "Brava! Brava!" he

OPINION

ON THE CONTRARY



Pieter Schoombie

called. And that sealed it; we knew that Queen Irene was a worthy member of our humble circle of experts. Particularly regarding the affairs of the world.

"And the voter was rich no more; he lost his donkey," contributed Big Ben, to no effect.

"The day is good," exulted Jean-Jay. "For too long did I have to endure the company of men. From now on I shall join these tête-à-têtes with a song in my heart. Viva La Marseillaise!"

"And as we are celebrating women," enthused Bob the Book, "How about a toast to Helen Zille! Has anybody read her piece in the Sunday Times on white-scapegoating, decolonisation and legally codified racism?"

"Cheers!" we agreed in unison. And The Prof expressed our feelings: "Fearless and honest. The only real man in South African politics is a woman."

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Potatoes on Mars are the least of it

SOME of the dwindling numbers of readers of the *Cape Times* may have noticed a photograph, recently placed incongruously on the readers' letters page, of a potato plant growing in a glass box.

It was no ordinary potato plant but one grown in a simulated Martian atmosphere heavy in carbon dioxide with a temperature variation ranging from high heat to extreme cold.

Nor was the picture an April Fool joke. It was real potato. A Peruvian team of scientists from the aptly-named Potato Institute in Lima have now proved that it may be possible to grow a potato on Mars. "Who cares?" some might say. And, "Why Peru?"

Well it turns out that there are a fair number of scientists, and considerable sums of money, that demonstrate a great deal of care about Mars in general, and that a US presidential promise made publicly by Bush Senior has not been forgotten.

In July 1989, the first president Bush declared that the US would put four people on Mars by 2024. Despite nothing being promised to getting them back to Earth, more than 200 000 people have volunteered to be selected for eight years of intensive training. The first four on a one-way ticket to Mars will be followed by four more every two years.

It says much for the human condition that so many want to get off this planet for good.

THE OTHER SIDE OF THE COIN



Keith Bryer

Some would say it has something to do with the end of the millennium which seems to provoke crazy thoughts in the Western (previously Christian) world. Last time around there were bands of zealots flogging themselves in public so they would be worthy of the Second Coming.

Madness apart, the colonisation of Mars looks set to happen sometime in this century. Growing a potato plant in Mars-Like conditions is but a symptom of the preparations.

The now famous Peruvian potato plant in its glass box was carefully selected from among the 7 000 types of wild potato that grow in and around Peru, some of them at extremely high altitudes in conditions almost as extreme as those on Mars.

The first attempt at growing a potato in extreme conditions worked, but it cheated a little because the soil used contained some organic matter.

The second try used sterile gravel with liquid nutrients added, and still the plant grew even when the gravel had a high salt content similar to that found on Mars.

The Peruv potato scientists planted 65 varieties for the first try. Four sprouted.

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