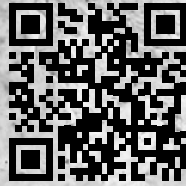


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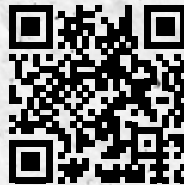


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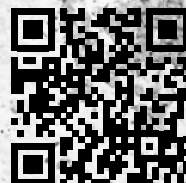
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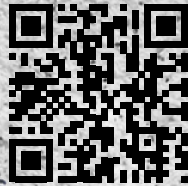
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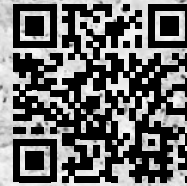
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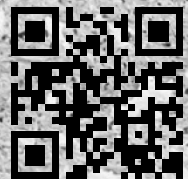
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IMMEDIATELY RELEVANT SOLUTIONS

Despite the disruptions caused by the Covid-19 pandemic, trade shows and exhibitions have continued to be an effective platform for launching new capital equipment products. This was evident at bauma 2022, which featured over 3,200 exhibitors from 60 countries and attracted more than 495,000 visitors from over 200 countries. One of the standout exhibitors at the show was Manitou Group, which unveiled many new products and signalled its intention to be at the forefront of the electrical revolution in the construction equipment industry. Manitou Group's seven-model electric line-up, which includes



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four new aerial work platforms and two telehandlers, forms part of the company's 2030 low carbon trajectory, which aims to reduce carbon emissions by 46% and CO₂ emissions of its machines by 34% for every hour of use. The new electric line-up offers customers reduced maintenance costs compared with internal combustion engine-powered versions.

The commitment to sustainable equipment revitalises more than just new requirements to have low carbon emissions, it allows the world to rebuild, post-pandemic, in responsible ways.

One of the ways this can be accomplished is by investing in remanufactured parts instead of buying new parts. This is a business Volvo Trucks South Africa is particularly interested in since remanufactured parts require fewer raw materials to manufacture, are available at a reduced price and come with all the warranties and guarantees of new parts. South Africa can lessen its carbon footprint if more fleet owners become aware of the laurels of remanufactured parts, which is why Volvo Trucks South Africa provided Capital Equipment News with the reasons these are available locally.

This year's **Capital Equipment News** market review also depicts regrowth and forward-thinking. As the digital transformation continues to accelerate, leading global original equipment manufacturers (OEMs) are increasing their acquisition and strategic investment activity in smaller technology companies to expand their offerings and fill gaps in their product lines. This trend, which has gained momentum in the past two years, allows large OEMs to position themselves as equipment and technology leaders and provide their customers with a one-stop-shop for all their needs.

Further to that, Covid-19 had one unex-

pected result for the training sector. As employees returned to work, training and retraining became vital.

Dekra Institute of Learning (IOL) has moved to larger premises in Centurion, Pretoria, partially to accommodate more learners in various training programmes. This allows the continuation of providing specialised training courses, including work at heights training. The new location is close to public transport and will allow for the expansion of the institute's training services, particularly in the construction, industrial and mining sectors.

Following the pandemic, safety is of the utmost importance, but when combined with working at heights, there's another element of risk. Specialised training is now even more critical, which is why up to 70% of IOL's work at heights training is practical, with a mix of theory and hands-on experience. The course covers knowledge and understanding of requirements for working at heights, the inspection, care and storage of fall arrest equipment, and safety, health and environmental principles for the safe construction and maintenance of working platforms and elevated walkways. With training in such niche spaces taken care of, it becomes easier to think that the world is returning to normal in crucial economic and specialised industries.

The year proved that key industries could come out of a pandemic mindful of the feature but geared toward solutions that have immediate relevance.

Locally construction, transport, and mining news provide reaffirmation that the year provided solutions rather than backtracking.

To all the clients and readers of Capital Equipment News have a safe and healthy 2023. 🌟



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With a capacity of 2,5 t and a height of 6 m, the 100% electric MT 625e is said to guarantee performance as good as the internal combustion version.



RECORD NEW LAUNCHES FOR MANITOU

In a record-breaking feat, Manitou Group showcased its largest number of new products at bauma 2022. The extensive line heralded a big shift to electric with seven new models, as well as four new medium-height telehandlers, a new range of high-capacity telehandlers and a reinforced presence on the compact market with a wide range of articulated loaders. Munesu Shoko attended the event and filed this report for *Capital Equipment News*.

Despite the recent Covid-19 influenced disruptions, trade shows and exhibitions have this year come into their own, reclaiming their crown as one of the best platforms to launch new capital equipment products. bauma 2022 once again lived up to its largest global construction equipment's billing with a total of about 3 200 exhibitors from 60 countries and more than 495 000 visitors from over 200 countries.

Among the standout exhibitors was Manitou Group, which not only unveiled a record number of new products, but also signalled its clear intent to be at the forefront of the electrical revolution with one of the largest lines of new electric machines launched at one go. This, says Michel Denis, president & CEO, forms part of the company's 2030 low carbon trajectory, which aims to reduce Manitou's direct and indirect carbon emissions by 46%, while reducing the CO₂ emissions of machines by

"The new electric MEWPs are testament to our transition to a low carbon trajectory. By 2040, 43% of our offering should be lower emission machines – either electric or hydrogen powered."

Michel Denis, president & CEO of
Manitou Group





In order to harmonise its mid-height telehandler range, Manitou has launched four new internal combustion models offering between 7 m and 13 m of lifting height for a lifting capacity of 3,5 t.

34% for every hour of use.

Seven-model electric range

A major talking point at the Manitou booth was the new seven-model electric line-up, comprising four new aerial work platforms, two rotating telehandlers and a fixed telehandler.

With four new electric mobile elevating work platforms (MEWPs) models, Manitou Group is accelerating the roll-out of its 'Oxygen' low emissions range. The 100% electric line comprises the 200 ATJe, 160 ATJe, 180 ATJe 160 ATJ+ e rough-terrain platforms.

With a working height of 20 m, the 200 ATJe rough-terrain platform is available with four-wheel steer for greater manoeuvrability. The machine is equipped with a basket that can now take 250 kg of load, 30 kg more than the two-wheel drive counterpart. Apart from zero emissions, another big benefit is reduced total cost of ownership (TCO). Customers can expect a 50% reduction in maintenance costs compared with the internal combustion engine-powered version.

With a working height of 16 m and 18 m respectively, the 160 ATJe and 180 ATJe see their capacity increased by 50 kg, with a basket that can take a total weight of 250 kg. The 160 ATJ+ e, the biggest platform in the range, comes with a 400 kg capacity.

With these new products, Arnaud Boyer, vice president of Marketing & Product Development, says Manitou is the first manufacturer to have a range of 100% electric rough-terrain platforms from 16 m to 20 m.

"The acceleration of our electric development allows us to now offer low-emission solutions across our platform ranges, as well as on our telehandlers. We will continue to extend this energy to other ranges in accordance with the objectives of

QUICK TAKE

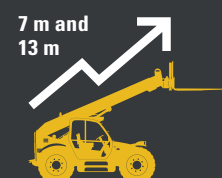
At bauma 2022, Manitou Group launched a record number of new products



A major talking point was the new seven-model electric line-up, comprising four new aerial work platforms, two rotating telehandlers and a fixed telehandler



In order to harmonise its mid-height telehandler range, Manitou launched four new internal combustion models offering between 7 m and 13 m of lifting height for a lifting capacity of 3,5 t



With 12 new models, Manitou Group has extended its range of articulated loaders, which now comprises 22 models, all available under the Gehl and Manitou brands



our corporate social responsibility (CSR) roadmap," says Boyer.

"The new electric MEWPs are testament to our transition to a low carbon trajectory. By 2040, 43% of our offering should be lower emission machines – either electric or hydrogen powered," adds Denis.

A new version of the 120 AETJ platform has also been added to the industrial range. Presented as a preview, this model has been entirely redesigned and is fitted with AC (asynchronous) motors providing comfort and flexibility of use.

A lot of work has been done on the accessibility of the components, such as the pivoting battery containers and tool-free access, for savings on machine maintenance. The new generation of industrial articulated platforms is equipped with the same diagnosis system as the rough-terrain range for rapid maintenance without the need for external tools.



A new version of the 120 AETJ platform has been added to the industrial range.

Another debutant in the formidable electric line up is the MT 625e telehandler. With a capacity of 2,5 t and a height of 6 m, the MT 625e is said to guarantee performance as good as the internal combustion version. Fitted with a 25 or 33 kWh lithium-ion battery, the model reduces maintenance by 56%, thus drastically reducing TCO for the user.

"Perfect for indoor or city centre use or for renovating historic buildings, the MT 625e benefits from the Safety Pack and the Harmony screen for safe and easy use," explains Laurent Bonnaure, executive vice president, Manitou Group.

In addition, Manitou has added a new range of electric rotating telehandlers, comprising two models and six versions. Part of the recently launched VISION+ range, the models consist of the MRT 2260e and MRT 2660e. With a loading capacity of 6 t for a lifting height of 22 m and 26 m respectively, the two models are said to enjoy the same performance level as the internal combustion models, even allowing simultaneous boom movements.

The 700 V/65 kWh lithium-ion battery ensures optimum use of the models, even in difficult climate conditions. In order to boost the range by an additional four hours, a second 700 V/65 kWh battery can be added. Users have a third option with a hybrid version of the models using a range extender. The configuration improves flexibility, in particular to make long journeys between two sites or to charge the battery on sites that do not always have electric charging points.

There are also several charging modes available on the two models, with an on-

board 11 kW charger for charging in 4 hours 30 minutes, and an on-board 22 kW charger that takes just 2 hours 15 minutes. An even quicker solution is available to users with another on-board charger that allows charging in under an hour.

Mid-height range

In order to harmonise its mid-height telehandler range, Manitou has launched four new internal combustion models offering between 7 m and 13 m of lifting height for a lifting capacity of 3,5 t, namely the MT 735, MT 935, MT 1135 and MT 1335.

The 11 m and 13 m models are available with two transmission versions, torque converter or hydrostatic, to meet the different needs of users. Two engines are also available for the same models, a 75 hp version or a 100 hp version. These telehandlers are thus equipped with the same dashboard as the rest of the range, with a Harmony screen, as well as the option to move its control buttons to near the armrest (double switch buttons).

The four models have a new cab for enhanced panoramic visibility, with a new windshield positioned even lower to better see the load when the boom is lowered and to make fitting of attachments easier. A new narrower, sturdier floating forks carriage has been designed to optimise visibility with the boom lowered. This carriage has been designed to be compatible with the 14-m and 18-m high models, again to harmonise the range. A new roof grille with sloping blades completes the range of innovations, thus improving visibility of the load regardless of its position.



Fitted with a more spacious cab, the models remain relatively compact with an overall width of 2,28 m, including the front stabilisers (for models MT 1135 and MT 1335), making them ideal for use in tight spaces. To ensure safe loading/unloading by truck, the four new telehandlers can be transported in a container without having to remove the wheels. A fork attachment system is also available.

"These models offer a high level of performance with the presence of the Autopower system (available on the hydrostatic transmission models) for adapting the engine speed automatically from the joystick during boom movements, without needing to use the accelerator pedal," explains Bonnaure.

As with all products launched by Manitou, all of the new models are connected as standard. The MT 1335 is available in an "HA" (hydrostatic access) version, meaning that it is compatible with a platform basket only with hydrostatic transmission. Like all the models in the range, these new models are fitted as standard with an automatic parking brake, an Easy Step (cut-out floor) to make getting in and out of the cab easier, and an orange seat belt to make it easy to see whether the driver is respecting the safety measures. The MT 1135 and MT 1335 models also come with a levelling corrector for even safer driving.

Ultra-light telehandler

Launched this year, the ultra-compact Manitou/Gehl compact telehandler meets the expectations of users who want an easy-to-handle machine that can be easily moved between sites. With a transportable



The new range of Gehl articulated loaders has been specifically designed for construction.



Launched this year, the ultra-compact Gehl compact telehandler meets the expectations of users who want an easy-to-handle machine that can be easily moved between sites.

weight of less than 3 t, the model can be loaded onto a trailer with a GVW of 3 500 kg.

At 1,49 m wide and 1,92 m high, its dimensions are said to be among the most compact on the market, making it easy to use in tight spaces, and particularly for entering buildings or manoeuvring on renovation sites.

The ULM/CGT is available in two versions, with a lifting capacity of 1,25 t and 1,5 t respectively, and a lifting height of 4,3 m. For increased safety, the visibility at maximum height has been optimised. "We worked with our design office to find an innovative solution that provides even more safety and comfort. We replaced the roof grille with a transparent, shock-resistant polycarbonate window, which complies perfectly with the requirements of the FOPS standard," explains product manager Camille Rouvrais.

The visibility improvements also apply to the operator's lateral view. The side view is in fact very clear because of the position of the hydraulic hoses inside the boom and the engine cover positioned low down to the right of the operator.

Wide range of loaders

With 12 new models, Manitou Group has extended its range of articulated loaders, which now comprises 22 models, all available under the Gehl and Manitou brands. The new loaders offer a load capacity ranging from 700 kg to 1,5 t for a lifting height of between 2,5 m for a short arm and 3,07 m for a long arm.

The complete range makes it possible to respond to wide-ranging demands, with the



Fitted with a more spacious cab, the MT 1135 remains relatively compact with an overall width of 2,28 m, including the front stabilisers, making it ideal for use in tight spaces.

largest of the articulated loaders providing a nominal load capacity of up to 3,3 t. The new models have been specifically designed for construction (AL 320/MLA 3-25 H-C and AL 420/MLA 4-50 H-C) for handling pallets of materials, on urban sites where compactness is a must.

The Manitou MLA 2-25 H and Gehl AL 230 models have a hydraulic motor on each wheel to make the machines even more manoeuvrable in any environment. To facilitate the movement of the loaders between different work sites, the models are transportable on a 3 500 kg GVW trailer.

Heavy range

The new MHT range has been designed to handle heavy and bulky loads, on all types of terrain, in complete safety. Its performance has been greatly improved with capacities

from 9 to 33 t, for a working height of up to 12 m. Ergonomics have been enhanced with a comfortable and easy-to-reach operator's station with wide, non-slip steps, a large door and the "Easy Step" floor cut-out that allows safe entry and exit to the cab.

The new Manitou JSM joystick now incorporates a capacitive system for automatic and precise detection of the operator's hand for safe working. Among the models presented at bauma was the new MHT-X 11250 mining version with a lifting height of 11 m for a maximum load of up to 25 t. The versatile model has been designed for safe handling of heavy, bulky loads, particularly for mining maintenance activities. The ergonomics have been improved with a comfortable, easy-access driver's cab with wide non-slip steps and a wide door. ☼

The Dekra IOL team on the steps of their new Centurion office



THE SIGNIFICANCE OF SPECIALISED TRAINING

Working at heights comes with job requirements that include training to take on work with high risk. Dekra Institute of Learning (IOL) has become a seminal training provider in various industries—but their work-at-heights training shows the importance of facilitating the best possible training solutions, writes *Adriaan Roets*.

For Dekra Institute of Learning (IOL), 2022 is ending on a high note. The institute moved into new, bigger premises in Centurion, Pretoria, at the start of November. Here they can continue presenting deft training solutions, including their specialised working at heights training courses.

Dekra consults and advises on occupational health and safety-related matters to companies in the construction, industrial and mining sectors, and post Covid-19, they have been busy as more businesses are welcoming back employees, which meant retraining for many clients.

"We are delighted at the growth we have seen over the past two years," says Christopher Mörsner, Head of Training and Consulting. He attributes the company's growth to several factors.

"I believe that, with more people returning to the workplace again as the ferocity of



"It is important to note that the training course is also SETA-accredited. Learning is especially effective when, firstly it is fun, and this training course enables anyone to learn about safely working at heights and, secondly, entertaining. It equips the individual to go into the field armed with the knowledge that has been previously instilled, safely yet effectively."

Christopher Mörsner, Head of the Training and Consulting



Dekra Industrial MD Johan Gerber congratulates Christopher Mörsner, Dekra IOL's Head of Training and Consulting, on their significant business growth and new premises.

the Covid pandemic abated, employers have been invested in 'doing the right thing' and ensuring that workplace safety matters are firmly on the company agenda. While it is the employer's legislated responsibility to ensure that their employees' safety and well-being at work are considered, many studies have proven that over the longer term, this also has a positive effect on productivity."

Rising to the challenge

That positive effect can be due to specialised training, such as giving employees the skills to work at heights. Not only is it a complex and stimulating job, but the skills can also be beneficial for individuals who can take on roles, allowing them to climb to new positions.

While health and safety training might seem like a tick box exercise employees can complete online, up to 70% of Dekra's work at heights training is practical. Having a mix of theory and practical experience gives learners the edge.

"We try to keep sessions between 7 and 8 hours a day. This generally includes group activities, and breakaway sessions, with approximately 30 per cent of the course being theoretical and 70 per cent practical. It should be noted that acquiring one credit is usually equivalent to receiving around 10 hours of training," he says.

The practical component in completing work at heights training includes a visual inspection of the harnesses and inspections of the serial numbers.

"We also carry out a test on actual scaffolding to allow our learners to experience a real-life working-at-heights scenario. This monitors the mindset of individual learners: including gauging their physical and mental resilience and tolerance levels at different heights," adds Mörsner.

This allows the trainers to monitor the tolerances of the different learners.

"When certain physical signs are present at a particular height, for example, this indicates that the person should be removed from the environment with immediate effect because they pose a threat to themselves and their colleagues. We, therefore, carry out practical and visual determinations to evaluate the individual at different heights."

Investing in knowledge

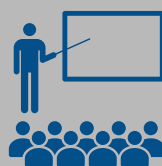
Learners who complete the work-at-heights course will be able to describe the requirements concerning working at heights. The competency includes knowledge and understanding of the requirements applicable to performing work in elevated positions, inspecting, caring for and storing fall arrest equipment effectively and the safety, health and environmental

QUICK TAKE

Working at height remains one of the biggest causes of fatalities and significant injuries across many sectors, including engineering, construction, mining and industrial environments



30% of the course is theoretical and 70 per cent practical



Practical components in completing work at heights training includes a visual inspection of the harnesses and inspections of the serial numbers



The VR training programme offers self-paced learning and can be accessed using virtual reality headsets and a laptop





Members of the Dekra Industrials team celebrating safety.

principles regarding the safe construction and maintenance of the working platform, ladders, scaffolds and walkways in elevated positions.

"The outcomes of the unit standard ISO 120362 /229998 must be met," explains Mörsner.

The location of the new premises, in the Success Academy business centre in Centurion, is strategically planned. As a result, employees taking on training will be able to access the facility easier due to its location close to public transport.

But that doesn't mean there isn't flexibility in learning.

"The training can be presented at Dekra IOL's offices in Centurion, although we prefer to do it at the client's premises. We can also offer a course that is completely online or uses a hybrid approach or mix of online and in-person training. One of the reasons we prefer to present the training at the employer's premises is because the employee tends to be more comfortable in the environment they know and are familiar with. At a psychological level, one can inadvertently add more mental and emotional stress if the course is presented in unfamiliar surroundings," says Mörsner.

While performing activities at height, it is essential to remember that there is always a risk of fall injuries – so certified and expert training is an integral part of an employer's responsibility in facilitating their employees' safety.

Therefore, this training is imperative locally and globally, as working at heights is required in many different industry sectors. In South Africa and Africa as a whole, this type of safety training is governed by legislation - and it is mandatory to not only have worked at heights but also other health and safety training within the workplace - to

ensure the required competencies are met competently for the relevant roles.

Safety first

"At Dekra IOL, we believe wholeheartedly in our efforts to facilitate safety and well-being at work for employees throughout South Africa and beyond."

For Mörsner, it is crucial to raise awareness around the well-being of employees and the preservation of life.

"Such a raised awareness creates a culture of care - and a willingness on the employer's part to reduce employees' exposure to potential hazards. Our courses follow an integrated safety awareness approach, and each adds value consecutively – ultimately creating a value chain of safety training and ensuring a safer working environment as a result," he adds.

Through dedicated testing and significant investment, the Dekra Learning Management platform is designed to accommodate multiple learners simultaneously. The analytics have been thoroughly tested to ensure that it has the capacity for many learners at any given time.

Making use of technology

In August, Dekra IOL announced that the working at heights training course on a virtual reality (VR) and augmented reality (AR) platform was live.

The PC-based, 3D e-learning is a first in South Africa. This innovative course was developed and designed in partnership with software company Virtutec.

"Working at height remains one of the biggest causes of fatalities and major injuries across many sectors, including engineering, construction, mining and industrial environments. 'Work at height'

means work in any place where, if there were no precautions, an employee could fall a distance liable to cause personal injury or even death," says Mörsner.

The Dekra IOL VR training course is interactive and informative. It offers the user the effect of being on a construction site.

"It is important to note that the training course is also SETA-accredited. Learning is especially effective when it is fun, and this training course enables anyone to learn about working at heights in a firstly safe way and, secondly, entertaining. It equips the individual to go into the field armed with the knowledge that has been previously instilled, safely yet effectively."

Mörsner notes that the training programme is applicable across multiple industries and is available on the Dekra learner management system for anyone who wants to complete work at heights training, whether for the first time or as a refresher course.

Mörsner adds: "While this functionality will be appreciated by our corporate clients, it facilitates the required learning for their employees. This is because many adults prefer to learn in an environment in which they feel comfortable. The VR training programme can facilitate this in two ways: firstly, by allowing them to learn in a physical environment they are familiar with - for example, their own day-to-day company work premises. Secondly, by customising the virtual learning surroundings, this becomes a virtual copy of a working at heights environment that learners know in real life."

The training programme operates according to self-paced learning. It can be accessed using virtual reality headsets and a laptop. 🌐

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GET TO KNOW REMANUFACTURED PARTS

Every business is unique, so remanufactured parts could be highly beneficial to keep a fleet on the road. Volvo Trucks offers the benefit of supporting remanufactured parts used in trucks. Still, buyers need to be equally versed on when something is worth replacing with brand new parts, or when a remanufactured part will provide the same solution, writes *Adriaan Roets*.



“Using remanufactured parts also saves energy, reduces landfill waste, and it means that dangerous residuals inside worn components are taken care of.”

Eric Parry, sustainable solutions manager at Volvo Trucks South Africa

Karin Kingsley, Volvo Trucks South Africa’s GM for Parts and Service gets straight to the point; South Africa is ripe for a remanufactured parts market.

“There has been a small shift in buying remanufactured parts from SA customers, and the trend is driven by our team’s efforts to make them aware of the benefits. At this point, however, it seems to be more due to affordability than sustainability.”

Transport operators must consider many fixed and variable factors that impact their cost of operation and, subsequently, their business’s bottom line. These include



fuel costs, financing, labour, insurance, maintenance and repair.

The lower cost of remanufactured parts is the reason that they are becoming increasingly popular. But the laurels of sustainability shouldn't be underestimated.

"Remanufactured parts reduce the energy used to make new products. One of the benefits of remanufactured parts is energy conservation, as these parts are meant to reduce carbon emissions compared to newer units," adds Kingsley.

The price point and reduced carbon emissions are sitting favourably with Volvo clients, and Kingsley mentions that dealers are becoming well-versed in selling remanufactured parts as an option.

"This is achieved through the dedicated material and eLearning that we make available to our staff," Kingsley says.

Sustainable solutions

Remanufactured parts might be a suitable investment if you are facing the breakdown of a critical component.

The first would be cost, but quality also ranks high. For Volvo Trucks, remanufactured parts meet OEM standards for performance and always come with a warranty.

"The warranty on remanufactured parts is the same as for any Volvo Trucks part. Two years if fitted in a Volvo workshop and one year when purchased over the counter," adds Kingsley.

Remanufactured parts also have a much lower impact on the environment since they require less raw materials, energy, and water in the production process. It is one of the significant reasons remanufactured parts are allowed prominence, as environmental concerns are increasing daily.

A newly produced part is made using 100% new raw material, whereas a remanufactured part only uses 15% raw materials since most of the material comes from the core (the faulty part).

"Using remanufactured parts also saves energy, reduces landfill waste, and it means that dangerous residuals inside worn components are taken care of," says Eric Parry, sustainable solutions manager at Volvo Trucks South Africa.

"The process of remanufacturing, which is labour intensive, can also be seen as sustainable from a societal perspective as it creates demand for high-skilled jobs," he adds.

In addition to quality and lower cost, remanufactured parts can also be a quick fix compared to repair, thanks to their growing popularity and availability. In fact, choosing a remanufactured part

QUICK TAKE

Remanufactured parts use around 15% raw materials, while new parts require 100% of raw materials in the manufacturing process.



Volvo Trucks wants to grow the remanufactured parts business by 10%.



Some remanufactured parts can be 50% less expensive than new parts.



It is usually a good idea to replace heavier components with remanufactured parts as these tend to be more expensive.





could put you back on the road just as quickly as purchasing a new product.

Why buy remanufactured parts?

"Buying a new part could be your first instinct when something breaks down; after all you want something that works, has a warranty, and is guaranteed to fit your truck. A new part will come with the latest technology, have the longest life expectancy and work efficiently. But it

will also mean a higher price tag, and you will have to evaluate how this will impact your operating costs and total cost of ownership of your truck," says Parry.

When you repair a part, the malfunctioning or worn component gets replaced while the rest stays the same.

While repairing can save you money, it's good to be aware that repairing also almost always comes with certain downtime, as the truck will have to be in

the workshop.

When a vital component breaks down, the question that inevitably arises is how you should replace it. Repair, buy new or go for a remanufactured part?

To make the right decision for your business, it's vital to consider all your options.

Understanding remanufacturing

Before considering whether remanufactured parts are the right option for your business, it's essential to distinguish remanufacturing from rebuilding a piece of equipment.

Remanufacturing is a standardised industrial process in which worn-out parts are returned to a condition that is as good as new in technical specifications and performance.

It is usually a good idea to replace heavier components with remanufactured parts as these tend to be more expensive. Engine, chassis parts, transmission brakes and steering, are just a few such components. Regarding electronics, starter motors, control units, and alternators can be replaced using remanufactured parts.

"When we remanufacture parts at Volvo Trucks, this process includes dismantling, cleaning, re-machining, assembling and testing the equipment. The process is much like the original manufacturing process, except that some of the components have had a previous life," says Olga Naert, remanufacturing business development manager at Volvo Trucks.

A growing business

"We are looking at growing the remanufactured business 10% year on year," says Kingsley.

It makes sense. Remanufacturing can be a great option if you are cost sensitive and want a high-quality product. The cost of a remanufactured part can be up to 50% less expensive than a new one, depending on the required type.

These parts also have the seal of approval from the Volvo Trucks Central warehouse in Ghent, Belgium.

"Parts are not remanufactured in South Africa. The core is returned to Sweden, where it is tested to establish if it can be used, and if it is, it is remanufactured to the same spec as a new part. These parts are then sent to the Volvo Trucks Central warehouse, where they are sold as any other Volvo part," Kingsley explains.

"At the end of the day, whatever purchase strategy you decide on will depend on the specific needs of your business," says Parry. 🌱

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One of the biggest deals of 2021 was Hyundai Heavy Industries Holdings' acquisition of Doosan Infracore. Doosan will be working diligently to commercialise Concept-X and develop innovative products such as electric excavators, battery packs, hybrid fuel cells and other next-generation products.



FILLING THE GAPS

As digital transformation continues apace, leading global original equipment manufacturers (OEMs) are hunting for deals at their fastest pace in years, racking up acquisitions and strategic investments in smaller technology firms to fill gaps and expand their offering. The acquisition trend, which has taken centre stage in the past two years, enables large OEMs to position themselves as equipment and technology leaders and one-stop shops for all their customers' needs. By *Munesu Shoko*.

To fortify their stables and grow their offerings, large OEMs across the capital equipment sector are seizing opportunities to buy smaller technology companies.

According to Bain & Company's Machinery M&A: Reshaping Portfolios and Hunting Growth report, mergers and acquisitions (M&A) in the industrial machinery and equipment manufacturing sector continue to rise as companies pursue transformative scale, scope and capability deals in a low-growth environment.

After trending down since 2017, M&A deals in the sector jumped to decade highs during the pandemic,

as several companies reshaped their portfolios in the face of evolving industry dynamics. The average deal size shot up to US\$179-million on average in 2020 and US\$161-million in 2021. Last year's US\$63-billion global deal value was the sector's second-highest annual total of the past decade, behind only 2020's US\$72-billion, according to Bain & Company.

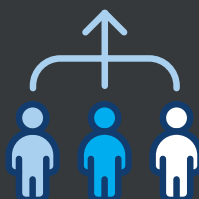
Market fundamentals such as digitalisation and electromobility are seemingly driving the need for machinery companies to maintain a robust and evergreen portfolio strategy. The past two years have been particularly deal centric, with big corporations such as Epiroc, Sandvik and Caterpillar,



Caterpillar Inc. completed the purchase of Tangent Energy Solutions in May 2022.

QUICK TAKE

Large OEMs across the capital equipment sector are racking up acquisitions and strategic investments in smaller technology firms to fill gaps and expand their offerings



After trending down since 2017, M&A deals in the machinery sector jumped to decade highs during the Covid-19 pandemic, as many companies reshape their portfolios in the face of evolving industry dynamics



With a number of deals completed in 2022, and a few more in the pipeline, Epiroc has shown its sharp focus on several industry verticals to pave the way to a bright and competitive future



In recent years, Sandvik has embarked on an acquisition spree to consolidate its position as a leader in the mining space



amongst others, leading the acquisition spree. These leading OEMs are on a drive to acquire critical new capabilities around software, the Internet of Things (IoT), artificial intelligence, electrification and connectivity.

Epiroc's acquisition spree

With a number of deals completed in 2022, and a few more in the pipeline, Epiroc has once again shown its sharp focus on several industry verticals to pave the way to a bright and competitive future.

On December 1, 2022, the company completed the acquisition Remote Control Technologies, an Australian company that provides automation and remote-control solutions for mining customers around the world. President and CEO Helena Hedblom says the acquisition positions Epiroc as a leader in automation solutions, not only for surface and underground rock drilling, but also for underground loading and haulage.

With customers in more than 70 countries, Remote Control Technologies provides automation and remote-control solutions applicable for either a single machine or an entire mixed fleet of machines, regardless of manufacturer or type of equipment. It also provides



The acquisition of Kwatani, which was the first since the Sandvik Rock Processing Solutions business area was established at the beginning of 2021, helps expand Sandvik's equipment range and complements the existing aftermarket product and services portfolio.

data and information systems, fleet and machine management systems, as well as machine protection systems.

Hot on the heels of the Remote Control Technologies deal is the recent announcement of the acquisition of Mernok Elektronik, a South African company that provides advanced collision avoidance systems for the mining industry. The acquisition, which is expected to close in the first quarter of 2023, allows Epiroc to cement its position as a world-leading provider of automation and safety solutions for mining operations.

Headquartered in Pretoria, Mernok Elektronik is a specialist designer and manufacturer of proximity detection technologies and collision avoidance systems of the highest level (EMESRT Level 9) applicable for either a single machine or an entire mixed fleet of machines, regardless of manufacturer or type of equipment.

"Collision avoidance is critical for the mining industry to strengthen safety and productivity, and Mernok's advanced solutions complement Epiroc's existing equipment and automation offering well," says Hedblom. "Together we will provide complete collision avoidance solutions to the highest industry standards to support our customers on their journey towards the safest and most optimal operations. We look forward to welcoming the dynamic Mernok team to Epiroc."

The Mernok deal follows the recent

agreement to purchase yet another South African company, AARD Mining. The company designs, manufactures, services and supports a wide range of mining equipment, specialising in low-profile underground machines for mines with low mining heights. Its product line-up also includes drill rigs, bolters, loaders and scalars.

"AARD has reputable and reliable products that complement our underground product portfolio well," says Hedblom. "This acquisition will further strengthen our growth ambitions in Africa and beyond."

In a move to reinforce its digital offering, Epiroc completed the acquisition of a majority stake (53%) of Radlink, an Australian company that provides mines with wireless connectivity solutions. Headquartered in Perth, Australia, Radlink designs, delivers and integrates wireless data and voice communication networks and supporting infrastructure to surface and underground mines throughout Australia.

"Robust wireless networks are vital to support mining automation, including autonomous and teleremote solutions, which in turn strengthens safety and productivity," says Hedblom.

In October this year, Epiroc completed the acquisition of Geoscan Pty Ltd, an Australian provider of digital geological imaging solutions to mining companies. With a presence in Australia, Latin

America, North America, Europe and Africa, Geoscan's main offerings are Corescan and Coreshed.

Corescan is a leader in hyperspectral scanning, core photography and 3D laser profiling of drill core, rock chips and other geological samples with the associated processing and interpretation. Corescan offers an automated solution that increases both the speed and reliability of imaging, processing and data delivery. Providing a rapid and reliable mineralogical profile of each drill core, it improves mining companies' decision making across exploration, resource modelling and ore processing. Coreshed complements this by providing an advanced digital core storage, visualisation, management and data integration solution for drill core and other geological samples.

Last year, Epiroc also finalised a deal to acquire MineRP, a software company specialising in increasing productivity for mines through integrated planning, execution and analytics. MineRP has offices in South Africa, Canada, Australia and Chile. The company provides a leading software platform solution that integrates all technical mining data and other information such as machine data and ERP systems.

"The MineRP acquisition fits well into Epiroc's focus on supporting mining companies on their digitalisation journey. The combination of MineRP's platform



In October this year, Epiroc completed the acquisition of Geoscan Pty Ltd, an Australian provider of digital geological imaging solutions to mining companies.

capabilities with Epiroc's digital solutions, partners and global presence has the potential to transform the way that mines operate," says Hedblom. "MineRP is a high-quality software provider with significant experience of connecting mines from pit to port, and together we will continue to make mining customers' operations even more smart, safe and seamless."

Sandvik acquisitions

In recent years, Sandvik has embarked on an acquisition spree to consolidate its position as a leader in the mining space. The conclusion of the acquisition of Kwatani, a leading South African-based supplier of screens and feeders for the mining industry last year is one of the company's recent major deals. Kwatani's product offering includes screens, feeders, fine separators, drives and services.

The acquisition of Kwatani, which was the first since the Sandvik Rock Processing Solutions business area was established at the beginning of 2021, helps expand Sandvik's equipment range and complement the existing aftermarket product and services portfolio. Kwatani's strong offering in large multi slope screens for the mining industry will add to Sandvik's existing portfolio while also strengthening the Group's position in Africa.

"Kwatani's offering of large vibrating screens and feeders for the mining

industry is in line with our strategy to strengthen our capabilities in comminution and is a good complement to Sandvik's strong competence and experience within stationary crushing and screening. This will further accelerate our growth within rock processing," says Anders Svensson, President of Sandvik Rock Processing Solutions.

In November this year, Sandvik went on to sign an agreement to acquire Polymathian Industrial Mathematics, an Australian-based provider of advanced mine optimisation software and services. Polymathian will be reported in Digital Mining Technologies, a division within business area Sandvik Mining and Rock Solutions (SMR).

Polymathian's product offering includes mining operations optimisation and simulation software for areas such as extraction process, material flow, energy, fuel consumption and maintenance efficiency, and it counts several of the world's largest mining companies as customers.

"With the acquisition of Polymathian we continue to broaden our offering to enhance productivity in our mining customers' value chain. Polymathian's automated decision-making and process optimisation, together with Deswik's software tools for planning and managing production, represent a unique combination in the market," says Stefan Widing, President and CEO of Sandvik.

Polymathian's solutions for automated decision-making and process optimisation complement the offering of Deswik, a leading mine planning software company which Sandvik acquired in April 2022.

"Deswik's second to none software suite, combined with Sandvik's digital and automation offering creates a clear world leader in digital solutions for the mining industry. Combining Deswik's skills in mine planning and scheduling with our equipment and automation expertise will open new opportunities for optimizing our customers' mining value chain," says Henrik Ager, President of Sandvik Mining and Rock Solutions.

Ahead of the hydrogen revolution in the machinery sector, Sandvik completed the acquisition of the German-based company Gerling GmbH in February this year. Gerling is a precision tube engineering company serving multiple industries, including the fast-developing hydrogen market. The offering includes innovative engineering solutions, such as high-pressure control technology in hydrogen refuelling stations.

Cat's acquisition

To further reinforce its electric power solutions, Caterpillar Inc. completed the purchase of Tangent Energy Solutions in May 2022. The energy-as-a-service (EaaS) company provides customers with turnkey solutions for reducing energy costs, increasing energy efficiency, reducing



Epiroc recently agreed to purchase AARD Mining. The company designs, manufactures, services and supports a wide range of mining equipment, specialising in low-profile underground machines for mines with low mining heights.

emissions, monetising electric grid support, and providing resiliency for customer operations.

The acquisition of Tangent Energy also positions Caterpillar to work directly with utilities and energy providers to supply distributed energy resources (DERs) that rapidly grow capacity, increase the utilisation of renewable sources of energy on the grid, alleviate transmission and distribution constraints, offer generation balancing and anticipate demand.

Headquartered in Kennett Square, Penn, Tangent Energy provides proprietary Distributed Energy Resource Management System (DERMS) software solutions that monitor patterns from the grid and client facilities,

analyse opportunities in energy markets, and then dispatch resources to maximise return and monetise results without disrupting normal business operations.

"Tangent Energy has developed an impressive suite of intelligent energy solutions that leverages advanced analytics to provide value to customers," says Jason Kaiser, vice president of Caterpillar Electric Power. "Tangent's EaaS offerings serve as perfect complements to Caterpillar's broad portfolio of electric power products, enabling us to better serve customers for reliable, efficient, sustainable, and connected power solutions that support business operations while generating new revenue streams."

Tangent Energy's proprietary software solution is a proven DERMS platform that monitors, manages and monetises on-site energy assets, including natural gas and renewable power generation, storage and microgrids. Managing over 6 000 MW at nearly 6 500 customer sites, Tangent Energy has proven to be especially beneficial to customers with high peak energy demands such as large commercial and industrial customers, data centres, mining operations and energy utilities.

Tangent Energy Solutions will continue to offer services under the Tangent Energy brand and operate under Caterpillar's Electric Power Division.

"Caterpillar is at the forefront of the industry in delivering robust and efficient power solutions supported by advanced digital offerings," says Dean Musser, president and CEO of Tangent Energy Solutions. "Customers select Cat power solutions for the long-term return on investment, and we look forward to working together to help deliver additional value through the compelling combination of our cutting-edge technologies with the customer relationships established by Caterpillar and the Cat dealer network."

Big deal

One of the biggest deals of 2021 was Hyundai Heavy Industries Holdings' (HHIH) acquisition of Doosan Infracore, which will become a subsidiary of the newly created Hyundai Genuine (HG) group alongside Hyundai Construction Equipment (HCE) as two independent construction equipment companies under HHIH.

HG will function as the intermediary company of HG construction equipment businesses and will be leading both DI and HCE to maximise the company's efforts and focus on the construction equipment industry. Together the two brands will combine as a global top player, putting HHIH much closer to achieving the goal of becoming a global top five player.

The plan is to manage overlapping investments and invest heavily in areas such as future technologies and innovation. Doosan Infracore will be working diligently to commercialise Concept-X and develop innovative products such as electric excavators, battery packs, hybrid fuel cells and other next-generation products. Concept-X is said to be the world's first unmanned automated and integrated control solution for construction, quarrying and mining sites. By focusing on each company's areas of strength, HG will be able to advance the development of these types of products to gain a competitive edge in the global market. 🌐

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IS SOUTH AFRICA READY FOR THE FUTURE OF MOBILITY?

By Mpho Dipela, Chairman and shareholder of Legacy Motor Group

The global drive to reduce emissions coupled with meteoric advancements in technology have radically accelerated the electrification of transport globally.

According to the International Energy Agency, for example, just 120,000 electric vehicles (EVs) were sold worldwide in 2012, compared to the new record of 6.6 million sales achieved in 2021 - with electric cars representing nearly one in ten of all car sales globally. This year, statistics indicate that electric car sales could reach new highs yet again, with two million sold in the first quarter of the year alone - a 75% increase from the same period in 2021.

In fact, successes in the development of new battery-powered electric vehicles and plug-in hybrid electric vehicles have even seen European policymakers declare that the region will be implementing a ban on the sales of petrol and diesel cars by 2035.

As South Africans, this announcement is particularly significant given that the Europe Union represents nearly two-thirds of the local sector's export market and accounted for R105 billion in sales in 2021. The high cost of remaining fixated on internal combustion engines would therefore be disastrous for both the automotive industry and for the country, given the importance of the industry as a key economic driver and job creator.

This underscored the need for an urgent shift in our own automotive manufacturing production away from internal combustion to battery-powered engines. But as the world switches to EVs, the question inevitably arises: is South Africa ready to embrace the future of mobility?

Three roadblocks on the journey to electrification

The first barrier inhibiting uptake is Eskom's infamous power constraints, which have resulted in hundreds of days of national loadshedding in 2022.

But a strained power grid and frequent load shedding are not only an inconvenience

to individual EV users. The greater risk as a nation is that increased adoption of EVs will only add to demands on our energy infrastructure and increase the risk of grid overload.

To overcome these obstacles, we first need to get the basics right in terms of securing reliable energy supply and decarbonising the grid - issues that we have been trying to solve for nearly 15 years. This said, evolutions in battery technology mean faster charging times with longer ranges, substantially reducing EVs overall energy demands.

The next major barrier is rolling out the necessary public charging infrastructure. Few South Africans would be able to afford the cost of installing a home-charging station, which is also usually only possible for those with garages or assigned parking spots on their properties.

As a result, many people would be reliant on public charging facilities, which are not yet widespread and are still unevenly distributed.

To solve the problem, innovators around the world are introducing new solutions such as wireless charging technology that is able to recharge EVs while they are moving using special charging strips placed on electric road systems. These roads in turn are powered by national grids or solar fencing.

Finally, there is the barrier of prohibitively high upfront purchasing costs, preventing the majority of households and businesses from making the switch to EVs - especially against a backdrop of soaring inflation and rising interest rates which are increasing the costs of borrowing.

While EVs offer the benefit of lower maintenance and running costs, the cost of acquiring an EV is currently more expensive than their petrol or diesel equivalents. For fleet owners involved in high-mileage services such as taxi operators and delivery companies, this is particularly concerning given potential constraints on their service capacity.

Again, evolutions in battery technology are gradually reducing EVs expense while increasing their range, but uptake may be



Mpho Dipela, Chairman and shareholder of Legacy Motor Group.

slow without the addition of other financial incentives or subsidies.

This said, the growth of Mobility-as-a-Service (MaaS) models among younger generations, particularly in Europe, is disrupting the automotive sector through reducing the need for car ownership, enabling people to effectively rent vehicles on demand via a mobile application. However, like ride-sharing applications like Uber or Bolt, this will likely only represent a viable solution in urban rather than rural areas, which risks aggravating the country's geographic inequality.

Ultimately, ready or not, the future of mobility is arriving, complete with its own set of unique challenges and opportunities. So, as we look ahead to 2023 and beyond, government and the private sector will need to work closely to rise to these challenges, or risk inflicting irrevocable harm on our economy and society. 🌱

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These forklifts are robust and have fewer electronic components, and keeping it simple is better for the South African market given what we all pay for electronic parts.



TAKING A BIG PICTURE APPROACH TO FORKLIFT COSTS

Across industries, South Africa is grappling with increasingly difficult economic conditions as the cost of doing business soars. According to Masslift Africa, a long-term view and “bigger picture” perspective is best when managing – and mitigating – material handling costs to ease pressure on the bottom line.

Material handling and warehousing activities that drive key economic sectors such as retail are costing companies more and more. The three main factors driving cost include increasing fuel prices, interest rate hikes and a global rise in cost due to lack of supply over the past two years.

These factors have all had a knock-on effect on the cost of material handling equipment. Costs from factory to shipping and the supply crisis in electronics manufacturing have resulted in higher prices to purchase new forklifts. For example, freight costs alone have doubled since 2020 and in most cases, manufacturers have no choice but to pass this cost on to the customer.

Compounding what is happening on a global scale, local market conditions have also increased the running costs for forklifts. Technicians call out, labour fees, and the



“The overall product design also affects maintenance. These forklifts are robust and have fewer electronic components and we have found that keeping it simple is better for the South African market given what we all pay for electronic parts. This together with the fuel efficiency makes it the perfect forklift for Africa.”

Marco Caverni, CEO of Masslift Africa



As proof of its robust and reliable operation, Caverni disclosed that Masslift had less than 30 warranty claims on the first 1000 Mitsubishi Ninja Forklifts sold.

The best way to save on material handling costs now is to start looking at the bigger picture and the long-term. We need to say 'ok, how much is this forklift going to cost me in total over the next 5 years?

QUICK TAKE

Make sure that your business is structured to look at the full picture over the course of the forklift's lifespan



Running costs depend on what forklift you are buying and who you are buying it from



Start looking at your 2025 costs and figure out what you can do today to manage what lies ahead



The Rand's rate of exchange has also affected the cost of spare parts





Driven by its sustainability, this lithium-ion powered truck's popularity is growing for several other benefits that include its premium quality and ease of use.



100s of brand new Mitsubishi forklifts (already sold) and ready to go to their new owners.

cost of spare parts have all increased because of the global factors mentioned but locally, the rise in fuel prices have also made forklifts more expensive to run. The Rand's rate of exchange has also affected the cost of spare parts. This all points to higher maintenance costs.

These factors make it more important than ever for South African businesses that rely on material handling as a key part of their operations to be operationally resilient says Marco Caverni, Masslift Africa's CEO. Caverni states that all these costs can be managed – and to some extent mitigated – but that this will require a long-term view and a look at the full picture.

How to save costs

"The best way to save on material handling costs now is to start looking at the bigger picture and the long-term. We need to say 'OK, how much is this forklift going to cost me in total over the next five years?' Especially if you're going to take a conservative approach and assume that

market conditions are only going to get worse. Start looking at your 2025 costs and figure out what you can do today to manage what lies ahead," Caverni advises.

So, what can companies change or implement to manage rising material handling costs? "Start by making sure that your business is structured to look at the full picture over the course of the forklift's lifespan. The Procurement teams (who purchase forklifts on a finite capital budget) and the Operations teams (who run the forklifts within a pre-determined maintenance budget) don't align when they should be speaking to each other," explains Caverni.

Running costs depend on what forklift you are buying and who you are buying it from. If these two departments can better align on making decisions when buying material handling equipment, the business benefits. It's not tough to imagine the impact of considering long-term cost factors such as the forklift's energy consumption, maintenance requirements, and warranty

at the purchasing stage.

A lot of these features differ from supplier to supplier, therefore who you buy from will play a huge part in that big picture. "Quality, to a degree, has been equalised in the market, so there's no such thing as a 'bad forklift' anymore. Therefore, we are urging customers to consider a different perspective and turn their focus to the aftersales services made available to them by their preferred supplier and the long-term value that both the supplier and the OEM can provide."

Why it costs so much

To illustrate this point, Caverni lists the numerous ways in which Masslift Africa curbs costs for their clients – starting with their value proposition. "Simply put, we are selling an internal combustion product that meets the industry's best quality standards at a price point that is 10 to 25% cheaper on average than our main competitors."

Beyond the upfront cost, the real value in Masslift's offering is how they lower running costs over time for their customers. This is thanks to the incredible fuel efficiency of the Mitsubishi Forklift as the fuel savings come in at approx. 0,5 to 1,3 litres per hour which translates to approx. R1500 saved per forklift per month (based on the R25 per litre fuel price).

Know your forklift

In terms of maintenance, these forklifts require servicing at 500 hours instead of the 250 hours required by other manufacturers. This halves the downtime required to service the forklift and increases the customers uptime. This is backed by Masslift's world leading powertrain warranty of 8 years / 12 000 hours.

"The overall product design also affects maintenance. These forklifts are robust and have fewer electronic components and we have found that keeping it simple is better for the South African market given what we all pay for electronic parts. This together with the fuel efficiency makes it the perfect forklift for Africa," says Caverni. As proof of its robust and reliable operation, Caverni disclosed that Masslift had less than 30 warranty claims on the first 1000 Mitsubishi Ninja Forklifts sold.

"Let's not forget that we also offer a 50% buyback after 5 years or 5000 hours, whichever occurs first. This technically halves the total cost of ownership," he adds. "We've piled on the long-term value and proven, with our business and pricing model, that we're here to support our customers and to weather any storm with them." 🌀



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ONLINE TRAINING CAN BE A VIABLE SOLUTION FOR UPSKILLING YOUR WORKFORCE WITHOUT IMPACTING OPERATIONS

By Daniel Orelowitz, Managing Director at Training Force

Workforce training, while essential for upskilling, can cause operational downtime which affects the company's bottom line. However, this is easily countered with the introduction of on-demand online training. This allows workers to attend training sessions without impacting their work schedules. Such training can significantly reduce the operational downtime that stems from face-to-face training sessions, which are usually scheduled during working hours. Online training allows it to accommodate both the operational demands of specific projects and the need to facilitate skills development.

Conflicting concerns

With conventional training programmes, the number one concern for businesses is operational downtime. While the need to upskill employees is undeniable, avoiding operational downtime is more pressing. Training programmes are constantly postponed or delayed, hoping that training can happen during a quieter period when the timing is better. Realistically, the timing is going to take much work, so businesses need to figure out how to fit training into operations and how to work operations around training. Here, online training is the solution.

Weighing costs and benefits

With conventional face-to-face training, employees usually have to apply for study leave in advance. Extra hands become necessary, whether another employee is stepping in to cover that individual's shifts or bringing in casual labour. Some plans need to be made and costs that need to be considered in addition to expenses incurred with paying for the training course. While few businesses can afford the negative impact of downtime or the cost of extra hands, the positive impact of investing in employees through

training and upskilling initiatives cannot be overlooked. With training, employees become better at their jobs - more capable and more productive. They're either able to do their job quicker or they're able to take on more work, which makes the training worthwhile.

How can online training make a difference?

The effect of operational downtime can be minimised by making online training available to employees. Lessons and course material are available on-demand to trainees so that they can access and consume them at their convenience. They can either come into work a little earlier or complete the training during their lunch breaks, during quiet periods in the day or after hours, as their schedule permits. If they need to use company resources to do so, this is possible. Not only does online training facilitate convenience, but it also allows trainees to learn at their own pace. Learners can consume the material at their own pace. They can revisit or replay the audio or video if anything is unclear or reach out to a training facilitator for assistance. This means that the individual can ensure they fully understand the required material before moving onto the assessment.

From an operational scheduling perspective, if there needs to be face-to-face training, companies and employees will need to reach a compromise. The company can give workers a Friday off for training, and, in return, workers can give a Saturday for the same purpose. Expecting employees to attend Saturday-only training is impractical. There needs to be a level of sacrifice for everyone to reap the benefits of training.

Commitment is key

In addition to a level of sacrifice being necessary on both sides, employers and employees must be committed to the training to see it through. It's essential



Daniel Orelowitz, Managing Director at Training Force.

to bear the benefits and remember that the end will justify the means. In addition to productivity improvements that come with enhanced skills, employees that participate meaningfully in training opportunities will have a sense of accomplishment that comes with having achieved a new qualification or acquired a new skill set. This contributes to employee retention, a positive outcome for employers that is realised along with increased productivity. Ultimately, the form and format chosen for training will depend on each company's unique requirements. The right training partner will be able to facilitate the necessary mix of online or face-to-face training, feedback and assessment - whatever it takes to get the training completed in a way that minimises operational downtime while maximising the opportunities for valuable skills development. 🌟

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KEEP THE WHEELS TURNING

FUCHS Lubricants South Africa is showcasing its premium quality products for commercial vehicle fleets. And it is OEM approvals that clinch the deal when selecting lubricants for fleet maintenance.



As one of the leading independent lubricants manufacturers in the country, FUCHS Lubricants South Africa is showcasing its premium quality products for commercial vehicle fleets.

“What differentiates us in the market is our product quality and OEM approvals,” says Lesley Barnard, Automotive Aftermarket.

“Because we are a multinational business following strict processes and procedures wherever we operate, our customers have peace of mind that our products are manufactured

by the highest standards of the lubricants industry. There are no shortcuts taken,” adds Barnard.

Recognising different fleets

Another key differentiator for FUCHS is its service offering. “We focus on working closely with our customers and listening to them. We have the product available when they need it and ensure that all their requirements are met. We supply everything from a bakery with maybe two delivery trucks to commercial fleets with several thousand vehicles, all the way to the OEMs themselves.”

Although lubricants constitute a small portion of the total running cost of a fleet, the benefits of standardising on premium products are considerable. “The payback from using a good lubricant is significant over the long term,” notes Barnard. This extends to the potential of engine failures and increased fuel consumption due to using inferior products.



“Having a reliable fleet is not only an imperative for the owner, but for the economy as well”

Lesley Barnard, Automotive Aftermarket
FUCHS South Africa



TITAN CARGO MC SAE 10W-40 is a semi-synthetic engine oil ideal for extended drainage intervals.



TITAN TRUCK PLUS SAE 15W-40 is a high-performance mineral engine oil to push maintenance intervals out.

“Just in terms of fuel consumption alone, by choosing the right lubricant fleet owners can save a significant amount of money over the lifespan of their vehicles by carefully considering the products they use.” Another impact is increased downtime due to trucks standing idle due to maintenance issues. “This is a significant cost that fleet owners must consider. If their vehicles are not running, they lose money. So that is quite important.”

Maintenance is key

Looking beyond lubricants themselves, Barnard says any good maintenance regime must consider fuel quality and the types of filters used. In the case of vehicle fleets based on multiple OEMs, FUCHS can customise a lubricant plan for the entire fleet. “We can also look at your workshop setup to see if you need any support in dispensing equipment, for example.”

FUCHS even offers training ranging from the basics of lubricants to the different products available. It also works closely with its customers in terms of oil analysis to extract the longest life from the lubricants and the fleet itself. “We are happy to assist with oil analysis programs and interpreting the results,” adds Barnard.

In South Africa, FUCHS has three main products for commercial vehicle fleet owners. TITAN TRUCK PLUS SAE 15W-40 is a high-performance mineral engine oil that allows customers to push their maintenance intervals out a little. TITAN CARGO MC SAE 10W-40 is a semi-synthetic engine oil ideal for extended drainage intervals. Lastly, TITAN CARGO MAXX 10W-40 is a premium product best used with high-quality fuel of 10 ppm or lower for maximum benefit.

Looking to the future, Barnard says there is a definite opportunity for expansion and growth in this market segment. “Due to our extensive product range, we approach this sector confidently, knowing we have a product for every application. If you consider the transport infrastructure in our country, rail has diminished, so the freight burden is placed on the road network and commercial vehicle fleets. Having a reliable fleet is not only an imperative for the owner, but for the economy as well,” he concludes. 🌐

QUICK TAKE

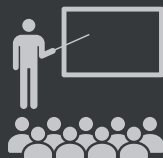
A key differentiator for FUCHS is its service offering and readily available products



Lubricants constitute a small portion of the total running cost of a fleet, the benefits of standardising on premium products are considerable



FUCHS offers training ranging from the basics of lubricants to the different products available. It also works closely with its customers regarding oil analysis to extract the most life from the lubricants and the fleet itself



Customised lubricants for an entire fleet are also available



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The world's largest mining event is returning to Cape Town in February 2023 and its speaker line-up boasts business, government, policymakers and investors from across the mining industry.

In February, attendees will hear from global leaders in the Mining Indaba network including Anglo American Chief Executive, Duncan Wanblad; Rio Tinto's Chief Executive, Minerals, Sinead Kaufman; CEO of Exxaro Resources, Dr. Nombasa Tsengwa; Minerals Council South Africa CEO, Roger Baxter; Gécamines SA Chairman Alphonse Kaputo Kalubi, and CEO of ICMM, Rohit Dhawan, as well as many other top executives deeply involved in Africa's mining industry.

Addressing the 2023 theme of "Unlocking the future of African mining", next year's

speakers will consider the challenges and opportunities facing the continent's mining industry as it seeks ways to bolster its economic power amid the global rush to secure supply for the transition to greener energies.

Security of supply and the availability of power is a pressure point for the South African economy and Mining Indaba is pleased to announce that André de Ruyter, CEO of South Africa's state power utility Eskom, has been confirmed that he will address the event for the first time.

Since joining Eskom in 2020, De Ruyter has had to contend with significant obstacles, chief among them the power generation capacity. As the country's coal-fired power stations age and are slowly decommissioned, the utility has had to juggle

growing demand with generation capacity. De Ruyter, who told COP27 that it is cheaper to move to green energy than build more coal fired plants, is working with the South African Department of Forestry and Fisheries and Environmental Affairs to plan for the utility's energy transition.

Also at Mining Indaba 2023 will be Former chairman of the Mining Indaba advisory board, Mpho Makwana, who will be joined by World Bank lead mining specialist Boubacar Bocoum and Newmont Corporation SVP – Africa Dave Thornton on a keynote panel to debate whether the issue of security of supply is a threat of opportunity in African metals and minerals supercyclic context.

Investing in African Mining Indaba 2023 takes place in Cape Town from 6-9 February 2023. 🌐

New Cat bolt-together buckets for underground loaders

Offering the same strength and durability as standard buckets, Cat bolt-together buckets for Cat load haul dump (LHD) loaders reduce the time and costs associated with transportation, assembly, and rework procedures for underground mining. The new bolt-together bucket does not require skilled maintenance operators for underground welding, resulting in a reduced safety risk. The design allows for efficient underground assembly, where the loader is working, to cut replacement time and lead to lower machine downtime and higher productivity.

Optimised for moving abrasive underground materials, the new bucket design includes improved material thickness for increased strength and a rigid bucket assembly to aid in easier edge installation and removal. High-grade, 400 BHN materials used for bucket assembly components and high-grade wear protection ground engagement tools (GET) on the removable shroud assembly deliver a long bucket service life for better cost saving and productivity. With



proper GET selection and management, the Cat bolt-together bucket is designed to last through the first machine overhaul period to reduce replacement downtime.

Modular in design for quick installation and removal, the numerous Cat GET available for the new bolt-together buckets include three edge options – bolt-

on half arrow (BOHA), modular weld-on and Durilock – shroud segments, and rock guard to deliver reduced downtime and accelerated repair.

They are built in the same factory and go through the same stringent quality control process as Cat equipment and are supported by the global Cat dealer network. 🌐

Versatile new Epiroc E10 and E20 drill rigs

The new Boomer E10 and E20 from Epiroc offer flexibility thanks to their small footprint and multi-purpose BUT 45-booms.

The drill rigs are equipped with automation features that increase operator safety and productivity and come with an optional battery-electric driveline for reduced environmental impact and healthier underground conditions.

One of the major selling points is that the new equipment is suitable for mining and construction.

"This is yet another automation breakthrough for face drilling where Epiroc leads the way to safer and more productive mining and construction operations", says Sami

Niiranen, President at Epiroc's Underground division.

With features like teleremote drilling, auto level and setup assist, Boomer E10 and E20 strengthen productivity and safety for operators. The optional teleremote drilling feature lets the operator work at a safe distance from the face and enables drilling during shift changes.

Both drill rigs provide operators with setup assistance. Thanks to the carrier being equipped with an advanced scanner measuring the distance to the walls and face, positioning the rig perfectly in the mine or tunnel becomes an easy task for the operator.

"In combination with digital drill plans, setup assist eliminates time-consuming re-



positioning. It also ensures both productivity and great quality", says Camilla Spångberg.

In the comfortable and safe cabin, operators can enjoy low sound levels (<65 dbA), less vibration, and a new panel interface for tramming. In addition, excellent visibility and multi-functional joysticks ensure that operators always keep their eyes on tasks. 🌟

TOMRA sensor sorting to reach sustainability goals



The pursuit of the United Nations' Sustainable Development Goals (SDG) and the move away from fossil fuels is also driving a significant increase in the demand for the metals and minerals required by low-carbon technologies – from Rare Earth Elements for wind turbines and quartz for solar panels to lithium for battery electric vehicles and copper for renewable energy systems.

The current production rates of lithium will soon be insufficient to meet this demand. In fact, according to Benchmark Mineral Intelligence, it will require 78 mines by 2035 (the calculation includes projected volumes of recycled lithium) – this is around six times more production than today. It is essential that mining and processing this element is as sustainable as possible.

Sensor-based sorting technology can significantly contribute to reducing the environmental footprint of lithium mining

and processing in different ways. On the one hand, it can selectively reject waste and low-grade ore upstream of processing. This means that less material is processed, resulting in significantly lower energy, water and chemical usage. A complementary environmental advantage of this technology is the reduction of wet tailings.

On the other hand, sensor-based sorting technology effectively addresses the challenge of basalt contamination, typical of lithium mines. Due to its high density – similar to that of spodumene – this high-iron, barren material is also concentrated by Dense Media Separation, contaminating the final product. With sensor-based ore sorting technology, it is possible to sort out the basalt and as a consequence, to unlock value from existing stockpiles of contaminated materials, achieving a high-purity product.

This was the case at the Galaxy Resources Mt Cattlin mine in Western Australia,

which had been stockpiling basalt-contaminated material since 2016, while it searched for an effective solution. In 2021 it installed a TOMRA PRO Secondary Laser sorter, and in 9 to 12 months it processed the best part of the 1.2 million tons of stockpiled material, consistently achieving high purity with less than 4% basalt. As Matthew Bateman, Principal Metallurgist at Galaxy Resources said, "with the TOMRA sorter, we are using far more contaminated ore than we would previously have processed".

TOMRA Mining is already actively contributing to green mining with its sensor-based sorting technologies, enabling mines to maximize the efficiency of their operations, minimize the use of energy and other inputs, and reduce waste as much as possible. Today there are around 190 TOMRA sorters in operation across the world, delivering a reduction in CO₂ emissions of 168,945 metric tonnes per year. 🌟

A decade of collaboration at Gold Fields South Deep Gold Mine Doornpoort

In 2009 Golder Africa (now WSP in Africa) and Metago (now SLR Consulting) were appointed by Gold Fields to complete the design of the Doornpoort Tailings Storage Facility (TSF), a 400Ha TSF with a 14Ha, one million cubic meters HDPE lined Return Water Dam (RWD).

The design of the TSF included earthfill starter walls, a concrete encased penstock decant outfall pipeline that included six temporary penstock intakes and one permanent penstock. The TSG had underdrainage systems with a drainage collection system downstream of the TSF wall, catchment paddocks with associated decant structures, a silt trap, three pump stations, three motor control centres, 12 km of overhead powerline, two provincial road crossings and featured 35 km of steel HDPE lined pipelines. In March 2021, WSP and SLR assisted South Deep Gold Mine with the Phase 2 tender process and the technical and commercial adjudication. Construction commenced in June 2021 – and the project reached practical completion at the end of August 2022.

As WSP and SLR were involved with the design and construction of Doornpoort TSF Phase 1 and the same owners' team members were again available for Phase 2, this benefitted the project tremendously as many of the lessons learned during the construction of Phase 1 as well as any issues identified over the 10-years of



operation were used to update the design for Phase 2. The two companies applied years of design experience from other similar projects to provide state-of-the-art features, especially on the drains and penstocks systems.

Globally, WSP and SLR are well known for providing tailings dam solutions in mining

and other industries. What makes this project unique is how two professional firms – and under different circumstances may compete in the tailing industry - worked so closely together to produce a fit-for-purpose design and provide support to the client for the construction of the TSF for two different Phases of the project, over 10-years apart. 🔄

Sustainable mining needs sustainable practices

According to Rudie Opperman, Manager for Engineering and Training, Middle East & Africa at Axis Communications the recent conversation around sustainable mining has been centred on two things: the impact of mining activity on surrounding communities and the environment, and the sourcing of resources essential for clean energy networks and systems.

In early 2021, the Minerals Council South Africa published a report highlighting how the country's mining industry was increasing its use of technological innovation to transform the sector. Investments in 4IR-enabled digital technologies are helping mining companies become more globally competitive – as well as improve the health and safety of their operations.

South Africa has some of the deepest mines in the world – and a historically poor safety record. And, while mining fatalities in South Africa have reached record lows over the past decade, there was an 18% increase

in 2020 in accidents related to falling rocks and transportation. Mining companies can use smart surveillance solutions in a variety of ways to ensure the safety of employees.

Cameras equipped with deep learning-based analytics, for example, can monitor a variety of hazards and create proactive warnings. These cameras can detect when personnel are not wearing protective equipment or ensure areas of a mine don't become dangerously overcrowded. They could also be used to monitor dust clouds, which can pose a significant health risk to the work environment and surrounding communities.

Surveillance technologies can improve the operational efficiency and physical security of mining operations and help mines monitor and mitigate risks to employees, the community, and the environment. These technologies represent an opportunity for a real transformation of South Africa's mining sector: companies that are pivoting towards more sustainable practices must leverage

new technologies to their advantage.

As South Africa's mining sector gradually transitions from fossil-fuel dependency and with a renewed focus on social and environmental concerns, mining companies cannot afford to continue with outdated practices and limited technological innovation. The future of our economy – and our planet as a whole – depends on it.



Rudie Opperman, Manager for Engineering and Training, Middle East & Africa at Axis Communications.

Growth for battery commodities in the mining sector

The battery commodities market is experiencing a golden age of growth and development, spurred by rapidly accelerating advancements and the demand for cutting-edge battery technology for sustainable power.

Battery demand is estimated to grow by 1,615 GWh or 384.5% over the next eight years, according to statistics aggregator Statista. This upsurge in demand for lithium-ion and other batteries can be attributed to the evolution of the transportation industry as electric vehicles become more commonplace.

"Unlike more established commodity markets such as gold and platinum, however, the battery market is still relatively immature, creating a golden opportunity for Africa's mining sector to meet the growing gap in the market," notes industry expert Johann de Bruin, founder and CEO of Erudite.

As an all-inclusive engineering, procure-

ment, and construction management (EPCM) provider, Erudite has helped to pave the way for the African battery commodity mining sector since its inception, having assembled and trained a team of skilled engineering experts to solve many of the industry's most pressing issues.

Erudite is providing EPCM services to the Molo Graphite Project in southern Madagascar, nickel operations in South Africa, graphite in Tanzania, cobalt in Zambia, and copper in Namibia, among other commodities on the African continent.

De Bruin and his team have developed a comprehensive understanding of the various complexities of the battery commodities market. They now leverage this knowledge to help their small and mid-tier mining clients fully utilise their opportunities through sustainable mineral beneficiation and appropriate engineering and project management solutions that apply to these

unique projects.

"A key challenge for mining companies is to balance supply and demand forces in a burgeoning market which is still stabilising. Right now, that means increasing the production of key commodities such as lithium, manganese, cobalt, nickel, and graphite in a meaningful way to meet current demand while setting up projects to respond appropriately as the market matures," he says.

"However, mining projects are capital intensive, slow to mature, and require extensive experience and expertise. Countries looking to benefit from this opportunity must harness and develop the necessary skills and knowledge particular to this complex industry."

"We are now working towards a more renewable energy-centric world in which we need, more than anything, to protect our planet from carbon emissions. This means that the pressure is on for the battery commodities mining industry." ☀

CAS is revolutionising surface mine safety

The rapid evolution of Collision Avoidance Systems (CAS) for surface mines has embraced technologies like satellite positioning systems, radar and smart vision. Leading CAS specialist Booyco Electronics also points to the value of sensors and tracking technology. By capturing and processing more data in real time, these systems have growing potential to make surface mining even safer.

Putting safe distance between people and the range of mobile equipment on surface mines – from off-road dump trucks to excavators and loaders – Collision Avoidance Systems (CAS) have become integral to mining safety.

Underpinning the success of CAS has been years of intensive research and development, says Booyco Electronics CEO Anton Lourens. This work has actively embraced various new and existing technologies, further raising the reliability and functionality of CAS.

"Pioneering companies like Booyco Electronics – in this game for over 16 years – have taken advantage of developments in satellite positioning systems, for instance," says Lourens. "This has enabled us to achieve greater performance in collision algorithms."

"We have become interested in smart vision systems that allow intelligent perception of people, vehicles, objects and other risks," he says. "Wearable technology also allows us to enhance context and to readily distribute safety information. New tech-



nologies have even allowed us to embrace cutting edge fatigue detection solutions."

He explains that Industry 4.0 has brought levels of digitalisation and automation that could not be envisaged until recently. In response, Booyco Electronics has invested vigorously in software-based solutions, paving the way for increased flexibility to customise solutions for specific needs.

"This has meant that our equipment can be improved and customised through its software elements rather than its hardware," he says. "Functionality can therefore be adapted more easily, and can be applied remotely through a wireless connection instead of requiring in-person attention on site."

Rapid developments in sensor and tracking technology were also delivering exciting

opportunities to advance CAS capabilities. Integration is really the key to success in these endeavours, he argues.

"We have progressed considerably down the path of combining the power of sensors with information technology," says Lourens. "This allows us to capture extensive data about the respective locations of personnel and machinery through PDS."

Digitalisation gives Booyco Electronics the ability to upload and analyse this data in real time, so that it can inform on-mine decisions and enhance safety strategies. More than this, CAS can now contribute to emerging automated mine ecosystems. As autonomous mining is gradually rolled out in the sector, CAS can be relied upon to support this process with the necessary safety levels. ☀

COBOD 3D Printers show construction possibilities

Enterprise Park in Redding, California, recently witnessed the erection of the first 3D-printed house made with natural concrete. The house is in an area ravaged by wildfires – but the concrete solution is more resilient to these fires.

The concrete was made using the D.fab concrete solution developed by COBOD and CEMEX, one of the world's largest concrete manufacturers. With its 1,200 SF, the house was funded by the City of Redding to help bring new technology to the area and help solve the California housing crisis. The house was made by Emergent3D, a local 3D printing contractor, using a BOD2 3D construction printer from the market leader COBOD.

COBOD is now a world leader in 3Dprinting technologies in the built environment, with over 50 printers offering 3D construction printing solutions.

COBOD's mission is to build more innovative through multifunctional construction robots based on 3Dprinting technology and a vision to automate at least 50% of construction processes on building sites.

The company believes that this will lead to better, faster, cheaper and more sustainable construction.

COBOD's 3D printers made Europe's first building in 2017. Subsequently, the printers



made the first 2- and 3-story facilities in Europe, North America and India. The first 3D printed villa in Dubai and buildings in Africa have been done by COBOD 3D construction printers.

The new houses in Redding could be the largest 3D printing housing project yet.

Matthew Gile, founder and chief visionary of Emergent3D said: "Our Wildfire Restoration House in Redding opens new opportunities for fire-resilient affordable housing in Northern California. Compared to stick build, 3D concrete printing technology offers more durable homes and allows for greater design possibilities and more energy and material-efficient projects".

Don Ajamian, the CEO of Emergent3D, said: "Emergent3D's ability to employ concrete printing technology allows us

to get away from building things that are only straight, square, and plumb - the rules by which I have built for my entire career. When you add to this that the cost of the concrete for making the resilient and durable walls was only USD 4,687 and that it only took 30 hours of printing to make it, 3D concrete printing offers the solutions that Northern California has been looking for."

Emergent3D is already busy 3D printing their next house in Redding, a copy of the first house in Enterprise Park. As the first design and the house is already permitted by the relatively strict California Building Code, using the same design again enables Emergent3D to move ahead faster. Emergent3D is planning on printing the same design for seven houses, including in the Californian town of Paradise. 🌱

Rosebank's latest green star rated building

After beginning construction this July, Concor is on track to deliver another office block in the Oxford Parks precinct in Rosebank, Johannesburg.

The building is also environmentally responsible thanks to readymix with a low CO₂ footprint from AfriSam.

The modern 5 Parks Boulevard building is one of Intraprop's latest projects.

"Like our previous Oxford Parks projects, this building is designed to achieve a high Green Star rating by the Green Buildings Council South Africa (GBCSA)," says Martin Muller, contract manager at Concor.

The office block will comprise four basement levels and five office levels, offering about 7,300 m² of gross leasable area (GLA). The design includes a triple-volume atrium in the reception area to make the most of natural light and reduce energy usage. This feature extends from the ground floor through to the second floor. Further utilising the natural light is a double-volume area on the third and fourth floors.

"The structure is based on conventional reinforced concrete slabs from the basements to the roof, with a lift core



to accommodate three lifts down to the lowest basement," says Muller. "As the bulk concrete supplier, AfriSam is providing between 150 m³ and 250 m³ of readymix concrete for each slab."

As a Green Star rated building, the concrete mix designs are required to reduce the overall CO₂ footprint of the structure. This has been achieved by using more fly ash in the mixes, thereby reducing cement levels by 30%. He notes that the quality and consistency of AfriSam's mixes have allowed Concor to reduce the cycle time of each slab pour from the normal 11 days to nine or 10 days.

"On a fast track projects like this one, this enables us to speed up our cycle times

as we can de-stress the slab and recycle formwork to the next level more quickly," he says.

"This will help us to top out the structure before the builders have their Christmas break this December."

Quality assurance on the concrete is done both by AfriSam and Concor. After every concrete slab pour, concrete cubes are cast – then are crushed to test their strength after seven days, 14 days and 28 days. While 25 MPa strength concrete is used for the slabs, higher strengths from 35 MPa to 60 MPa are used for the columns and verticals.

Limited occupation of the building will start February 2023. 🌱

Safer construction sites are emerging again

After years of increasing intimidation and violence on large and small construction sites around South Africa, stakeholders are starting to work together to roll back this scourge.

These hopeful signs are important to the future of the country's economy, as government prepares to invest in long-awaited public infrastructure. According to Lindie Fourie, operations manager at the Bargaining Council for the Civil Engineering Industry (BCCEI), it is encouraging to see growing collaboration among public sector organisations, business groups and other key participants.

"This year has seen the BCCEI develop and implement an Action Plan to serve its members, who are employers and employees in civil engineering," says Fourie. "This plan is focused on making

our work sites safe and productive again, after years of facing brazen intimidation, violence and theft."

She highlights that civil engineering contractors prioritise the safety of their staff, and their contractual obligations to clients. With the rise of construction mafias and general crime in the country, many work sites have been forced to meet criminal demands or face life-threatening consequences.

"The situation in many areas is so serious that workers and employers are even too scared to report the criminals to the police – for fear of reprisal," she explains. "The police in turn say they can't act without a docket. With our new communication channels, we are exploring ways that incidents can be reported without jeopardising people's safety."

She argues that trade unions and employer bodies are at the heart of the BCCEI, and these groups work together to protect lives and jobs. This is the basis for growing South Africa's economy so that standards of living can improve.

"This is why the BCCEI cannot ignore the devastating impact of criminality on construction sites, as this is destroying jobs and preventing growth," she says.

The BCCEI's Action Plan dovetails with other national initiatives to rescue the economy from construction mafias and other criminal activity; central to these efforts is the Department of Public Works and Infrastructure's Anti-Corruption Forum. The BCCEI's work has opened the door to collaboration with policing authorities, local government and other business bodies who are fighting crime. 🌟

Volvo EC550E crawler excavator debuts in South Africa

Ideal for mining, quarrying and large infrastructure projects, the new 55-t class machine delivers up to 35% more productivity and a 22% improvement in fuel efficiency.

"Babcock, the authorised Volvo CE dealer in southern Africa, has brought in its first unit, which has already been delivered to a customer," says Lance Mannix, GM Sales and Equipment at Babcock's Equipment division.

According to Mannix, the new model slots between the existing Volvo EC480D and the EC750D. While the EC480D model is aimed at customers looking for an efficient and reliable 50-t class excavator, the EC550E offers 35% greater production than the EC480D in typical dig and dump applications, meaning it is closer to the EC750D and so challenges the 60-65 t excavator class.

"The EC550E can fill a Volvo A35G or A40G articulated hauler with four to six buckets, which is considered a well-balanced match in the industry. It also means that Babcock now offers two perfect match excavators for A35G or A40G haulers in southern Africa – the EC750D and the EC550E," says Mannix.

Traditionally, an excavator's production is directly linked to its operating weight. With the EC550E, Volvo CE broke the norm by introducing the Independent Metering Valve Technology (IMVT) hydraulic setup, in conjunction with a new engine trim on the D13 engine block and electrohydraulic command for the joysticks. As a result, the machine punches well above its weight, offering production more in line with bigger class



machines in the 60 - 65 t range, despite the decals stating 55 t.

During the design of the machine, Volvo CE was able to accommodate a larger bucket (2,4 - 4,2 m³ capacity) by increasing the size and weight of the undercarriage, which gives greater stability. By load distribution surface/footprint of the undercarriage, the

EC550E has almost an identical size to some competitor 70-t machines.

The 2 071 Nm (320 kW) engine, with rated power @1 600 rpm, is also well in line with certain competitor 70-t machines. This, coupled with the large displacement pumps (832 litres per minute), results in faster cycle times. 🌟

Cooperation between heavy vehicles and motorists is key to safety

FAW South Africa believes that road safety relies on cooperation between motorists and trucks and that patience goes a long way. Safety is inherent to the design of FAW Trucks, with each model having a checklist of safety features.

Visibility, for one, is key to safe driving, and FAW has optimised visibility for drivers through narrow A-pillars with large windows and windscreens. Rear view mirrors incorporate multi-angle, multi mirrors, allowing drivers to see alongside trucks and behind them. Exterior touches include large, powerful headlights and cab top daytime running lights, all contributing to seeing and being seen in low-light conditions.

"FAW Trucks are designed with safety in mind; however, the increased traffic loads on major routes mean that heavy-duty vehicle operators and regular motorists must drive with extra caution during this period to avoid unnecessary accidents and fatalities," says Yongjun Li, CEO of FAW Trucks South Africa.

Truck safety is, however, reliant on motorists also being alert and responsible on the road, and FAW shared these tips to ensure cooperation between the heavy vehicle sector and motorists, not just for



the festive season but year-round.

FAW Trucks appeals to motorists to be patient and treat heavy commercial vehicles concerning ensure that everyone arrives safely where they need to be.

Motorists need to remember that they share the road with vehicles that outclass them in weight by thousands of kilograms. Heavy vehicles require a much longer distance to come to a stop and will very often leave adequate room between themselves and the vehicle in front of them to come to a stop safely. Motorists must avoid seeing that as a gap they can fill with their car.

The blind spot behind a truck is also

significant, and the general rule of thumb is that if you can't see the truck's side mirrors, the truck driver can't see you.

Motorists should remember that commercial vehicles have different speed limits according to their weight, which can be 100 km/h or 80 km/h, so while it might seem like they are driving slowly, they are simply adhering to the law.

"Motorists need to realise that they are going on holiday on the roads that heavy-duty operators rely on to earn their salary, a little bit of patience and respect will ensure that everyone gets to their destination safely," concludes Li. 🌟

Driving aftermarket trade at Automechanika Johannesburg

South Africa's leading international trade fair for the automotive aftermarket industry targeting trade visitors from the sub-Saharan region, Automechanika Johannesburg, was a major success in 2022.

Next year's event will be even bigger.

During the 2022 show, 191 exhibitors delighted 5488 visitors from 13 countries. Automechanika Johannesburg has solidified its place in the market as the leading and most prominent automotive aftermarket trade fair on the African continent.

The 2023 edition of the event is set to take place from 5 - 7 September 2023 at Johannesburg Expo Centre, Nasrec.

Organised by Messe Frankfurt South Africa, a subsidiary of Messe Frankfurt Exhibition GmbH, the show has an extensive reach and offers major opportunities for buyers and sellers.

It's a place to generate sales leads and interact face-to-face with buyers.

The show is a premiere space to launch products and solutions, and exhibitions provide the perfect platform to launch your products to potential buyers.

The show capitalises on strong media



connections, and as a result, many exhibitors form part of the pre-show marketing campaigns. That leads to the show being uniquely catered to the sub-Saharan market – to engage with the industry and boost sales.

The Automechanika academy is another reason to visit, where a range of industry hosted conferences, workshops and competitions take place alongside the event.

The South African automotive aftermarket

sector continues to exhibit strong growth and is forecasted to grow annually at 5.5% until 2023. With new entrants in the industry, a rise in online retail and the right-to-repair policy changes, in 2023, Automechanika Johannesburg is set to unlock greater opportunities with skills development workshops, an array of new product launches, local and international exhibiting companies showcasing the latest product innovations and technologies. 🌟

Sprinter Inkanyezi offers improved taxi safety

The taxi industry is the lifeblood of commuting in South Africa, and Mercedes-Benz Vans announced a new partnership with participating dealers and Mercedes-Benz Financial Services to create a no-deposit taxi finance plan for operators to purchase a Sprinter *Inkanyezi*.

With the deal, Mercedes-Benz Vans offers operators and commuters leading safety features.

The Sprinter *Inkanyezi* represents decades of safety innovation and research, ensuring that it is one of the safest vehicles on the market.

The *Inkanyezi* has explicitly been designed for the South African taxi industry. The rear-wheel drive *Inkanyezi* delivers power while being shy on fuel consumption. This combination can directly impact the taxi industry's profitability thanks to reduced fuel consumption.

The van is noted for its durability and dependability to reduce downtime. On top of that it also offers comfort and spaciousness for drivers and passengers. The inside of the *Inkanyezi* offers convenient grab handles for commuters and a driver's-side parcel.

The partnership allows operators to purchase a Sprinter *Inkanyezi* without a deposit, instead, there's a fixed monthly instalment on each van purchased.

Marinus Venter, the head of Product and Marketing for Mercedes-Benz Vans SA says, "At Mercedes-Benz Vans, we believe in entrepreneurial excellence. Therefore, we aim to champion our South African entrepreneurs within the taxi industry through this customised financing option."

Venter explains the purpose behind the tailor-made taxi finance plan, saying, "Access to start-up capital, such as a deposit



for a vehicle, is often one of the greatest hindrances to starting a business. With this zero-deposit initiative, we hope to encourage new entrepreneurs to hit the road whilst helping those already in the industry to expand and improve their operations and customer experience." 🌟

Gauteng and KZN next in line for Scania's battery-electric vehicles

Following Shoprite's acquisition of Scania Euro 5 vehicles fuelled by battery-electric power, the launch in South Africa of Scania's battery-electric vehicles (BEV) holds the potential to reinvigorate the transport industry.

Not only do they provide the solution to the damage fossil fuels are inflicting on the environment, but they also present a substantial opportunity for transport operators to benefit from less volatile energy costs and increased efficiencies.

"Electrification marks a new era for the transport industry," explains Mark Templeton, Sustainability Manager, Scania Southern Africa. "Scania has passed several milestones on our electrification roadmap and we are confident we can offer our customers a credible alternative to ICE vehicles."

Scania is leading the charge to electrification in partnership with South African retailer Shoprite. This follows Shoprite's recent acquisition of many Scania Euro 5 vehicles delivering industry-leading fuel efficiencies. Shoprite will become the first retailer to pilot a heavy-duty electric truck with the pilot scheduled to launch in Cape Town at the end of November 2022.

This will be followed by further introducing BEVs to customers in Gauteng and KwaZulu-Natal. Based on classic Scania cornerstones such as modularity, sustainability and total operating economy, the Scania Battery Electric Vehicle is 100% electric and requires no fossil fuels. It also



emits zero carbon dioxide. The refrigerated truck can hold around 16 pallets, has nine batteries and has solar panels fitted to its roof. The vehicle's battery packs to power a fully electric cooling system. With a range of approximately 350-kilometres, the vehicle will be used for local deliveries and re-charged using renewable energy generated by Shoprite's existing solar installations.

For customers who require charging infrastructure, Scania has selected a local BEV charging company with already established technical expertise, a thorough understanding of local legislation and an in-depth knowledge of South Africa's electricity grid to ensure best-practice charging infrastructure. Shoprite will lease this charging solution at the outset. "As the market evolves, Scania Southern Africa plans to offer an integrated charging

solution built around the national energy mix," adds Templeton. Scania's Cape Town dealership has already incorporated electrification services into its product portfolio and will become a certified VCB service site to service battery electric vehicles by the end of November 2022.

"To drive the shift to sustainable transport solutions, we are working with like-minded customers who have the same ambition and commitment as we do to create a world of mobility that is better for business, society and the environment. We look forward to partnering with Shoprite on this journey that promises to be the beginning of South Africa's journey to electrified transport. We anticipate more and more customers joining the shift as they too embark on their journey to electrification and its substantial benefits," says Templeton. 🌟

THREE EMERGING DIGITAL TRENDS ARE TRANSFORMING THE WORLD OF CONSTRUCTION

By Roelof van den Berg, Chief Executive Officer of Gap Infrastructure Corporation (GIC)

Construction development in South Africa is moving away from the traditional graph paper and pencil towards the digital. Most companies have already adopted laptops, mobile tablets, electronic measuring tools, and drones to simplify many onsite tasks that have historically been time-consuming and often imprecise.

But as the world at large grows more digitised and digitalised every year, the question is, what will the future of construction and infrastructure development look like based on today's rapidly advancing technology?

Building Information Modelling

Although Building Information Modelling (BIM) has been around for some time, only a few larger construction and infrastructure development companies have recently begun using this technology to its full potential.

BIMs are intuitive three-dimensional modelling computer programs allowing all project members, from executive management to architects and engineers, to design and manage projects quickly, easily, and efficiently. This enables us to instantly share pertinent project information from anywhere or manage the entire project throughout its lifecycle in one location.

Continued advancement in cloud technology, coupled with BIMs, will also keep simplifying how project stakeholders' access and interact with real-time process information, enhancing transparency between provider and client.

BIM systems are used mainly in construction and infrastructure projects for coordination or clash detection, visualisation, project planning, estimation, creation of virtual mock-ups, and prefabrication, among others.

GIC has gone beyond the essential BIM to employ a 5D BIM system that adds time and cost-related data to 3D BIM models, providing more value to contractors and clients. With 5D modelling, the total project cost is easily determined by multiplying each component used by its price without

requiring significant additional manual input from the contractor and saving time.

Van den Berg notes that the use of BIM systems will see a sharp rise over the next few years by not only large companies but will also be used more frequently by small to medium businesses.

This is mainly as technology advances, accessibility is improved, and BIM systems become a necessary tool in an increasingly competitive market.

Enhanced surveyance technology

Projects are regularly delayed, and unexpected costs accrue during the groundworks phase as construction crews happen upon random underground geological features.

To detect subsurface obstructions before commencing operations, cutting-edge enhanced surveyance technology such as light detection and ranging (LiDAR) scanning is used to create accurate 3D area models.

Using subsurface surveyance systems such as ground-penetrating radar (GPR), LiDAR can map above and underground features.

Geologic mapping technology is rapidly advancing, providing us with clearer and more accurate images than ever to prevent surprises when we first begin digging on sites. Combined with drones and intelligent 3D modelling programmes, this can prevent unnecessary delays and thousands of rands going to waste.

Virtual and augmented reality

Once thought to be little more than a fad among tech enthusiasts, virtual reality (VR) and augmented reality (AR) technology have advanced to the point that they are beginning to add immense value to the construction industry.

VR, which requires peripherals such as VR headsets or glasses, creates a traversable digital environment, such as a worksite or finished building, around the user. AR does not require a headset and can be used on any smartphone or tablet device, rendering environments or objects on-screen, layered



Roelof van den Berg, CEO of Gap Infrastructure Corporation (GIC).

over images of the natural world using the device's camera.

While not yet in everyday use, AR technology makes it possible to digitally design a building, load it onto your phone as an AR programme, point it at the physical location where you want to build, and display it to your team or client.

Likewise, VR can be beneficial for training workers to use complicated machinery or, by coupling the technology with advanced simulation programmes, preparing employees to react correctly in dangerous situations.

Ultimately, integrating advanced technology into the construction and infrastructure industry is unavoidable, but through continuous innovation, the value that digital technology can create for developers and clients is boundless. 🌐



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