

November December 2019



MELCO Elevator S.A. (Pty) Ltd





Tel: 011 392 3330 Fax: 011 392 3335 P.O. Box 1328, Bramley, Johannesburg, 2018

Best Western Plus Westlands



Exterior building

With an unrivalled location in the heart of Nairobi's vibrant Westlands district, the brand new, purpose-built, Best Western Plus Westlands combines enhanced style and creative dining experiences with all the convenience, safety and comfort required for a restful stay.

Located directly behind the renowned Sarit Centre shopping mall and Expo Centre, the hotel sits just off the city's main highway, close to the Central Business District and KICC and only 20km from Jomo Kenyatta International Airport and Nairobi National Park.



Pent House Cam2



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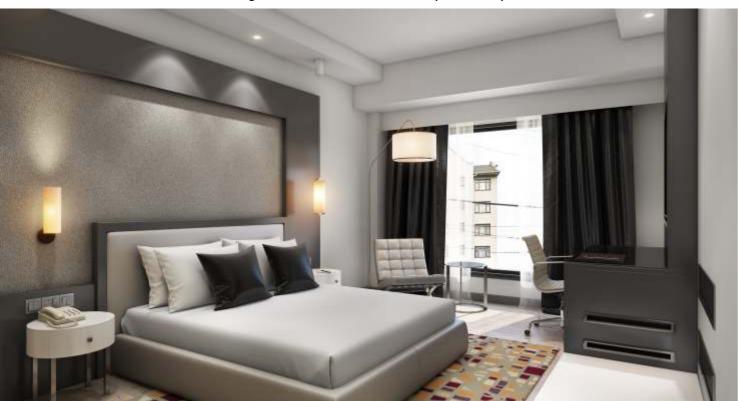


Pent House Cam1

Whether travelling for business or leisure, Best Western Plus Westlands provides thoughtful touches to enhance every stay. From relaxed business meetings over freshly brewed coffee at Craft, our all-day-dining restaurant, lobby bar and coffee shop, to more formal gatherings in one of the five meeting rooms on our dedicated

meetings floor, we have free high-speed Wi-Fi throughout for maximum productivity.

To restore energy levels, our gym is equipped with the latest cardio equipment, while our 101 well-appointed, air-conditioned guest rooms provide superlative relaxation, with 49-inch



Deluxe King Room



Executive King Room

television, 24-hour room service, bathrobe and slippers as standard.

For a landmark food and drink experience, set to the stunning backdrop of the Nairobi cityscape, look no further than Asiatic, our pan-Asian bar and lounge, set to become the city's most compelling new rooftop destination. Craft beers and urban cocktails meet a menu of spicy, enticing sharing plates and Asian soul

food, creating a lively rooftop haven from lunch until the early hours. (Opening December 2019)

The spectacular views also extend to many of our guest rooms, some with a terrace or balcony, including the luxurious Penthouse Suite with private outdoor hot tub.

Spacious Junior Suites feature a separate living room and kitchenette perfect for longer stays,

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Contributions

The editors welcome news items, press releases, articles and photographs relating to the Construction Industry.

These will be considered and, if accepted, published.

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Junior Suite

plus the option to connect directly to an additional guest room, ideal for families or groups.

With friendly, uncomplicated service, upgraded amenities and meaningful extras including free parking and an award-winning hotel loyalty

programme, Best Western Plus Westlands is the ideal base during your stay in East Africa's most cosmopolitan city.



Multipurpose Hall



Asiatic



Gym

Craft



Ground Floor Lobby



AMPCO proudly unveils the game-changing AMPCO Gen 2 plastic range

POWERMITE

ENGINEERING SOLUTIONS

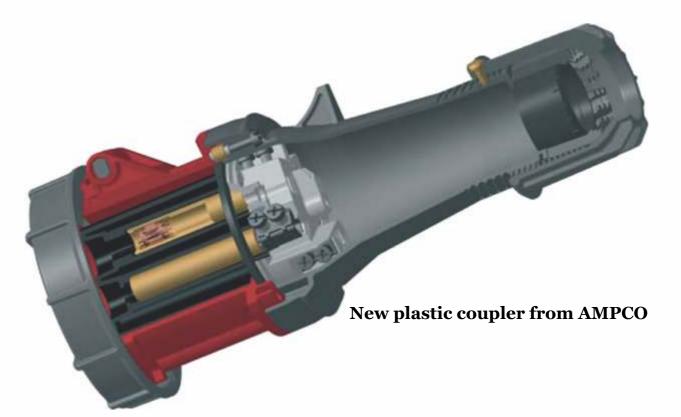


AMPCO Metal Plug CEE

AMPCO, specialist industrial plugs and sockets manufacturer and supplier for over 30 years, proudly unveiled the innovative AMPCO Gen 2 plastic plug and connector range to the commercial, mining and industrial sectors across the African continent during a press conference on 17 October 2019 at sister company, Powermite's head office in Roodepoort, Johannesburg.

"The motivation behind the introduction of this advanced plastic range stems from our mandate to further expand and add extra value to our current locally manufactured metal and plastic range," explains Powermite Director, Donovan Marks. "We are extremely proud to offer these





state-of-the-art innovations which are poised to set the benchmark in robustness, efficiency and performance. This new-kid-on-the-block exudes premium quality and is competitively priced to ultimately benefit customers by costeffectively maximising their productivity potential."

The compact and robust AMPCO Gen 2 plastic range is forged from Polyamide 6 and PC/ABS. According to Marks, these virgin grade plastic materials put the Gen 2 in a league of its own and provide a host of enhanced benefits: Impact resistance combined with high robustness; high thermal stability (selfextinguishing); great insulating qualities; high disruptive strength; UV resistance according to ISO 4892-2 as well as high abrasion and weather resistance. The plug and socket ranges are internationally standardised by the International Electrotechnical Commission, the world organisation for international standardisation of electrical equipment: IEC 60309-1 and IEC 60309-2 equivalent to the European Norms EN 60309 part 1 and EN 60309 part 2.

With a focus on extending product lifespan, the material also delivers excellent resistance to an array of chemicals and is free from cadmium and halogen. The IP44 & IP67 rated Gen 2



Powermite's rugged, tried and tested metal plugs and sockets from AMPCO

range is suited to arduous applications where portable electrical equipment is used such as electric motor driven and heating machinery, welding, emergency generator supplies, IT installations, quarrying, mining, water purification as well as portable site and stage lighting.

The comprehensive AMPCO Gen 2 plastic range is offered in screw less quick connect and



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Powermite displays its IMST portable distribution box. Pegasus suspended multli way console. Junior cable reel.

standard screw terminal connecting and includes industrial plugs and sockets 16A -125A, connectors, plastic cable extension reels (XREEL®), heavy-duty engineering plastic site distribution boxes with socket outlets, heavyduty rubber distribution combination boxes, couplers, wall and flanged sockets 16A – 125A, switched interlocked sockets as well as the PRCD-S+ inline portable protection device.

Breaking the cable reel barrier, AMPCO's high impact resistance XREEL® is packed with superior-quality components and features an ergonomic handle, a thermal circuit breaker, a brake mechanism with central spindle, drum openings for water drainage, a stable crank and two parking positions for the plug.

The AMPCO Gen 2 heavy-duty engineering plastic & rubber site distribution boxes with socket outlets can be customised and are at home in gruelling working conditions such as petrochemical plants, dock yards and heavy engineering conditions.

The advanced PRCD-S+ (earth leakage) 30mA @ 230V is a portable inline mobile personal protection device to prevent electrical injury especially in construction sites. With operators regularly connecting electrical equipment, the

risk of accidents are high. Thanks to its ability to recognise measurement errors, under- and over-voltage, conductor interruptions and wiring errors from the source system, the PRCD-S+ will not switch on, safeguarding operators against incorrect electrical installations. This easy-to-use, handheld protection device features an LED signal unit which senses error situations, displays a permanent status indication,



Powermite exhibits AMPCO's plastic range of couplers (back), flanged sockets straight (middle) and 5 pin plug (right)



Donovan Marks, Director of Powermite, proudly displays composite plastic outlet boxes during the AMPCO product launch

Complementing the Gen 2 plastic range is AMPCO's market leading metal and existing plastic range. Complying with the highest European quality standards, the range consists of plugs, socket outlets and isolators, with and without earth leakage protection. The metal single phase socket outlets are perfectly suited to ports and harbours as well as for applications in high humidity areas.

Wrapping up, Marks says that they are extremely excited about the new Gen 2 plastic range. "We are confident that these advanced products will play a key role in customers achieving their productivity and profitability goals."

AMPCO, part of the prominent Hudaco group of companies, became a sister company of Powermite in the early 1970's. AMPCO produces products renowned for their quality, reliability and safety; the company's range of CEE products is manufactured to SANS 60309 Part 1 and Part 2 standards. AMPCO supports its extensive product range from branches located in Rustenburg, Witbank, Durban, Richards Bay and Cape Town, supported by a distributor network to deliver exceptional product and service solutions to the customer's doorstep.







PROFESSIONAL SOLUTIONS

DESIGN & SUPPLY | PREFABRICATION | INSTALLATIONS | MAINTENANCE















CBK PENSION FUND TOWER



Will this project serve to satisfy the need for office space in Nairobi? Higher than most people's expectation and fathoming of the pension scheme tower, it is meant to cater for the office need by providing 20 floors purely purposed for office space, that is, from 6th to 25th floor on the 27 floors building. Over the last decade, Nairobi has seen the growth of multiple office towers, especially in the emerging corporate district of Upper Hill, the pension scheme on the other hand is looking forward to take advantage of the few open office spaces in the area, with the government often looking to lease space for its workers. The building will be located at the Nairobi central business district commonly known as the CBD. In specific, the 27-floor building is being set up next to the offices of the President, Deputy President and the Police headquarters by the Central Bank of Kenya Pension Scheme. In addition, the building will have two basement levels with a total of 83 parking bays. The 1st to 4th floors will also be used for parking while the 5th floor will host a restaurant and an auditorium.



Architectural design of the CBK Pension fund tower

This is how the new Central Bank Pension Scheme House will look once it's complete. The 27-floors building will be a sight to behold and bring a whole new angle to Harambee Avenue as it is being built in its vicinity.

Despite being a high rising building, it is built with modern technology to ensure it will not become obsolete in the near future as well as

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remain fashionable and eye – catching to both the viewer and the occupant. In addition, the near completion building which matches the architectural design is in consideration with the up-to-date requirements of a high rising building which includes and not limited to precautions against earthquakes. This makes the building safe to consider for occupation. Upon completion, it will be a building which its occupants will be proud of as it will be classical in finishing, fittings and decorations in addition to how it will be portrayed from the outside.





The ground oblique view of the CBK pension tower

This will be its look once viewed on its side from the ground at an angle upward upon its completion.

The central bank of Kenya pension fund is aimed at managing both the defined benefits and defined contribution schemes of the Central Bank of Kenya employees. After offering

their services, the scheme seeks feedback from its clients, reviews the feedback provided to them and considers measures to further improve their service delivery. This has seen its enormous and rapid growth as customers end up being loyal to it. The scheme also respects customer confidentiality beyond the terms of their engagement.

The construction of the tower will aid the scheme in effective and efficient service delivery to its customers thus demonstrating technical and professional competence in its services delivery. The tower will also be fitted with modern communication systems which the scheme will use to reach its customers.



Aerial view of the tower while under construction in mid 2018

The construction of the tower was to commence in April 2017 with the main contractor being China Wu Yi Ltd. It was the expected to be completed by July 2021 however the 30th site meeting held on mid-2019 revealed that the project under construction is 20 weeks delayed. The project lead consultant is the April Consultants' which plays a role to be a link between the central bank of Kenya who is the client and the main contractor China Wu Yi Ltd. The main contractor was given a contract period of 140 weeks to bring the architectural design into actualization. The contract sum of the project was budgeted to be 3.049 billion however as of the time of the 30th meeting in mid-2019, the contract sum

was revised to be 3.29807 billion. Likewise, during the 30th meeting, it was noted that much of the construction work had quite a commendable advancement which included and not limited to: concrete frame work, mechanical, plumbing and drainage installation as well as Electrical installation. Other internal and external finishes such as plaster work, ceiling and paint work were still on the progress.

In relation to one of the CBK's principle objective which is to support the economic policy of the Government, including its objectives for growth, and employment, the completion of the project will greatly aid in the objective achievement among other great gains.

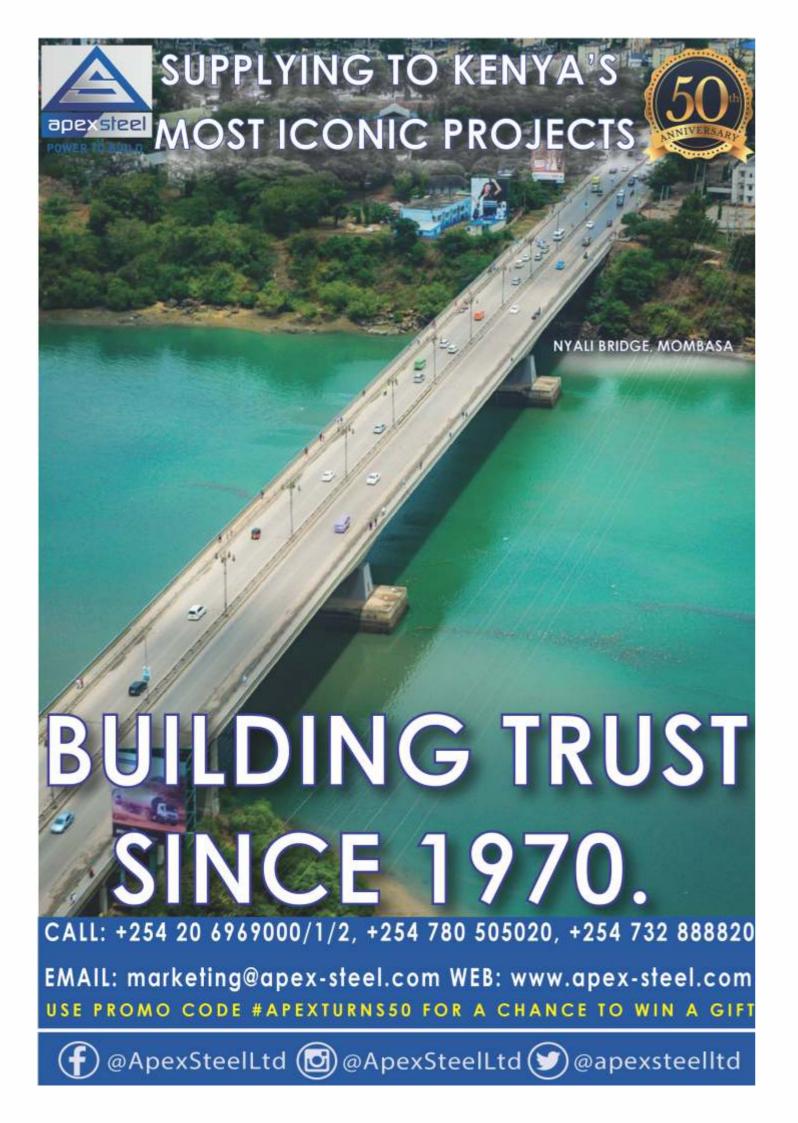


Ground oblique view of the tower under construction by the end of 2018.

Upon completion, the tower will be among the high rising buildings - skyscraper - in Nairobi thus adding to the beautiful scenery of the city. The CBK pension fund tower will enjoy a number of merits for its strategic location in the CBD which include and not limited to security privileges. This is due to the fact that the tower is located near the Vigilance House, the headquarters of the police in Kenya, Office of the President and the Deputy President.

CHINA WU YI CO. LTD:IS THE MAIN CONTRACTOR.
APEX STEEL LTD:IS A SUPPLIER TO THIS PROJECT.

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CMC'S PSV SHOWROOM, LUSAKA RD NAIROBI



CMC (Cooper Motor Corporation) Motors Group Limited is a company that deals with both vehicle importation as well as car assembling not to mention full services to its customers. In its capacity of vehicle importation and assembly, it is the fifth largest company in Kenya with its headquarters located between Lusaka road and Bunyala road Nairobi city. The company was founded in 1912 by Clement Hirtzel under the name Nairobi Motor Garage and later changed to Cooper Motor Corporation Private Limited to reflect its new ownership after it was bought by Mr. Allen and Mr. Cooper. Prior to 1974, the company solely indulged itself in vehicle importation, however, in the named year the company started assembling of vehicles beginning with Volkswagen Golf followed by other brands where assembly of Ford Escort, Telstar and Laser was started in 1981 after CMC acquired the ford franchise.



Ford logo. It's a mark of quality to many and pride to its enthusiasts.

Following a reaffirmation of its franchise agreement with Ford Motor Company in early

2015, CMC Motors enjoys full franchisee support thus ensuring dedicated recourses and manpower to bring the latest smart technologies and generation of products to the market. This is in line with its commitment to providing exceptional customer experience throughout their network by supplying an outstanding range of automotive cars and products with superior levels of sales and after sales support. CMC Motors offers a wide range of automotive solutions to businesses and private individuals in Kenya, including:

- Vehicle sales and extensive after-sales services.
- Commercial and industrial vehicles sales and after-sales services.
- Construction equipment and heavy machinery.
- Extensive range of agricultural vehicle and equipment, stretching from ploughs through to irrigation equipment.
- Custom-designed and made truck bodies, trailers and other equipment.

Being a leading player in motor industry in Kenya and East Africa at large, CMC Motors exclusively distributes Ford, Mazda, and Suzuki vehicles. It also distributes UD, Eicher and MAN range of trucks (medium and heavy commercial) and buses. CMC Motors Group Limited has seven branches countrywide and six Divisions at Head Quarters in Nairobi. In addition, got two sister companies in both Uganda and Tanzania.



As part of its modernization, the company is constructing a new world class ford facility with a showroom and assembly yard with international standards such that it will assume the outlook, operations and management as in other countries even beyond the continent. This will give customers stepping into it a world class touch and a feeling similar to other customers in other parts of the world due to its similar setup. This new Ford facility will be built in the company's headquarters in Nairobi as the most modern vehicle showroom in sub Saharan Africa thus enriching the company's footprints in East Africa. The facility will encompass training, spare parts and after sale centre to enhance customer experience in access of sales, services and spares.



Ford Everest

Both of these ford brand vehicles will be suitable for both the highway as well as the off road conditions. They will simply cater for the Kenyan market and setup.

In the near future, 2020 to be specific, CMC Company will reignite local assembly of Ford brand vehicles fitted with eco friendly engines, Ford ranger and Ford Everest models to be specific, for the true off – road enthusiasts. This will be done at the Kenya Vehicle manufacturer's plant in Thika.

The showroom is currently on its final touches aiming its full operation to kick off in December 2019. The Ford showroom is build with a state of art design costing 300 million Kenya shillings. Throughout its construction, the showroom has offered many job opportunities to Kenyan citizens raising their living standards and earning government revenue. Upon its opening, the showroom will also offer job opportunity for all levels of labor inclusive of skilled and unskilled labor, sales agents and guards just to mention but a few.

CMC motors Group limited is owned by CMC holdings limited and was acquired by the Al-Futtain Group in 2014. The company also prides in having the largest distribution network in East Africa for sales, parts and service.

Symbion Kenya Ltd are the architects of this project while the main contractor is China and Young Tai.



Ford Ranger Raptor



Atterbury launches its new co-working concept, Attspace



Atterbury is making its first foray into shared workspaces with its new Attspace co-working concept, which debuted at the La Gratitude Manor House on Stellenbosch's historic oaklined Dorp Street.

"Attspace is Atterbury's first venture into the exciting world of co-working. We are experimenting with the concept at our Stellenbosch property and, based on its success, intend to expand our unique vision for shared offices into other areas of South Africa," says Jackie Raubenheimer, leasing manager of Attspace.

The collaborative workspace of Attspace is unlike any other in South Africa. Its very first shared office space is in the La Gratitude Manor House, a national monument built in 1798 and the second-oldest building in South Africa's second-oldest town.

Attspace at La Gratitude combines modern business with old-world charm in a dramatic yet relaxed setting. The entire space is designed to be creative, productive, enjoyable and facilitate networking between like-minded business people.

Starting with the comfort of designer and antique furniture, the Attspace experience is rich with all the amenities required for everyday business. It offers high-speed uncapped fibre Internet, personal lockers, network printing, boardrooms, lounge, fully equipped kitchenette with free coffee, daily

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cleaning, shower facilities and two relaxing patios.

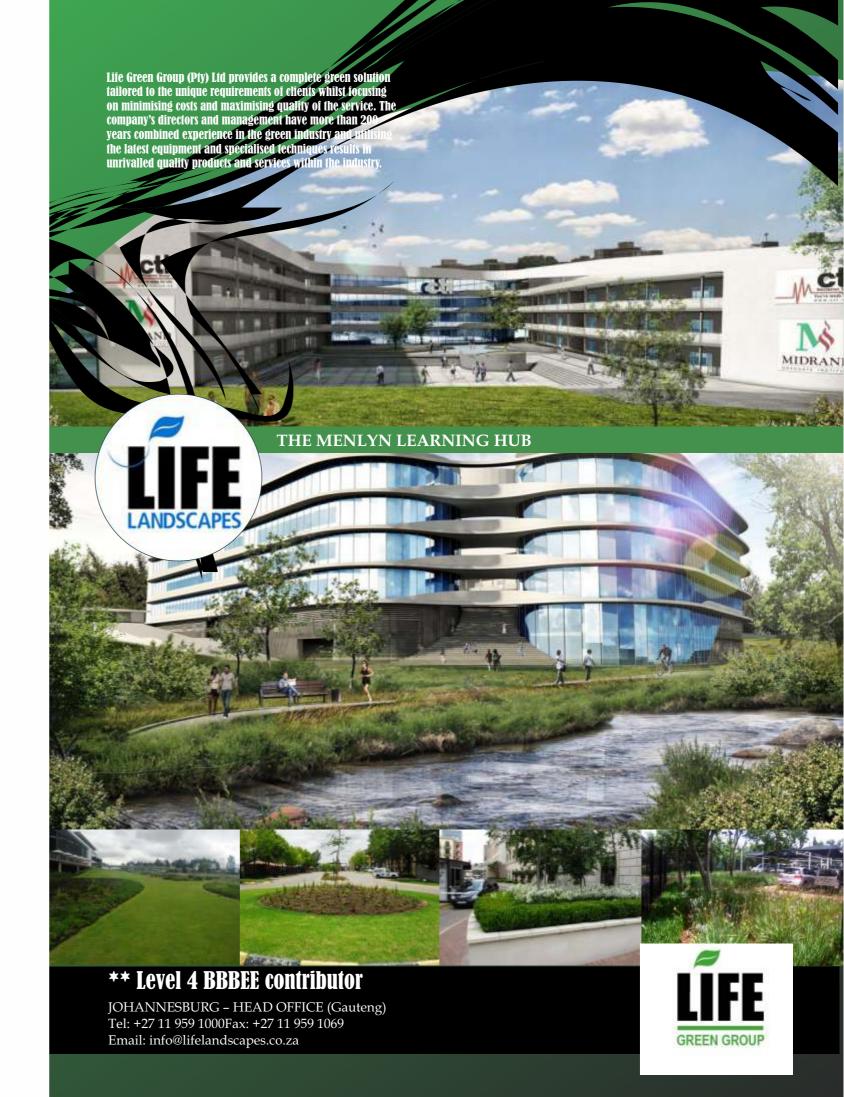
Security is a given, including biometrics and a security application which also enables 24/7 access for working any time of the day or night. The shared offices enjoy the convenience of La Gratitude's Italian restaurant, Asta La Pasta, and are a short stroll from the area's vibrant restaurant and retail offerings.

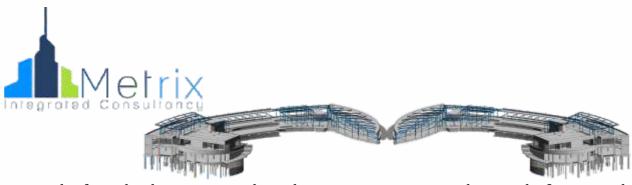
Naturally, the Attspace 15-seater open-plan shared workspace is a prestigious business address suited to a diverse variety of users, from entrepreneurs and start-ups to freelancers and small business owners. Personalised packages are available to users' requirements to get them started right away.

This year, Atterbury is celebrating 25 years of developing prime office, industrial, retail, mixed-use and residential property across South Africa, the rest of the African continent and, most recently, in Europe. It has earned a track record of investing in community, culture, art and heritage around its properties.

Atterbury renovated La Gratitude with meticulous care and gently repurposed it into a 1,000sqm of office space and a 200sqm restaurant. The building responds to a real commercial need in the area. La Gratitude's growing business community already includes Bowmans Law, RLB Pentad Quantity Surveyors, IKIV (One thousand and one Voices), Pallidus Capital, Atterbury Trust, IPNLF (International Pole and Line Foundation), Epiuse Labs, Real World Business Solutions and Neo Architects. Atterbury occupies the building's first floor.







In our role of spearheading projects in the civiland structural engineering, the company has a principle partner named Khalid Omar A. who has over 30 years experience in this engineering field. Mahamed Khalid the managing partner has over 6 years in structural and earthquake engineering. It is with his ability and vast experience together with knowledge, skills and expertise of his management team that the company has been able to deliver successful

projects. We put our clients at the first row and respond to their needs on time and in a flexible manner.

With more than 20 years of experience in the field since our establishment in 1995, we have continually built on our strengths to become the leading engineering consultancy firm proving a track of record in wide variety of projects.



Garden City Business Park, Phase 1
Along Thika super highway, Ruaraka.
Approx. Value of Construction Works involved [Ksh]: 2 Billion
January 2015 - July 2019

Garden City Business Park, Phase 1 is one of the recent mega commercial projects undertaken by our company.

The Pinnacle – Upperhill Nairobi – is a clear indication of the wide variety of projects that we involve ourselves in. The sky scraper will be amongst the tallest buildings in the country adding to the beauty of the Nairobi city. Metrix integrated consultancy are the local consultants of the pinnacle project, with Meinhardt an international firm based in Dubai as the lead consultants.

We are driven by our zeal to achieve the highest degree of client satisfaction by generating innovative solutions in a cost effective and timely manner as well as in accordance with the set of international standards and the local regulations.

Despite being client oriented, the company helps its personnel achieve their individual goals so as to achieve satisfaction both for the company and individual personnel members.

The consultancy specializes in all aspects of structural and building engineering from conceptual analysis, through feasibility studies to design and construction supervision. The scope of projects undertaken includes and not limited to: factories, greenhouses, clinics, apartment buildings, packing halls, offices, hospitals, cold stores and housing constructed of reinforced concrete, structural steel work, timber and a variety of other building materials. In summary, the company undertakes structural investigations so as to give the client a professional opinion whilst categorizing structural problems and give appropriate recommendations. We also undertake condition assessment, engineering design and plan preparation as well as inspection of structural building materials, ongoing projects and completed projects.



Upperhill, Nairobi

Approx. Value of Construction Works involved [Ksh]: 20 Billion

January 2014 - Ongoing

The Pinnacle

The Pinnacle, Upperhill Nairobi (Commercial project)



The Mihrab

Kilimani, Nairobi

Approx. Value of Construction Works involved [Ksh] 1.5 Billion

February 2014 - December 2017

The Mirhab in Kilimani, Nairobi. An outstanding design in the face of the country.



Delta Chambers

Westlands, Nairobi

Approx. Value of Construction Works involved [Ksh] 1.3 Billion

January 2018 - ongoing

The Delta chambers is an ongoing commercial project that will add to the scenic beauty of Nairobi and its vicinity as it is designed with authenticity and built with originality and uniqueness.

We undertake a wide scope of services to ensure we do not limit our clients but rather help our clients from surveying to final construction. This is due to the fact that civil engineering services is a vast domain covering planning, designing and construction of infrastructure such as residential and commercial buildings, transportation

infrastructure including internal roads, bridges, water distribution systems such as dams, canals, sanitation; environmental infrastructure like landscaping, city planning, parks and industrial infrastructure.

Some of the recent completed and ongoing residential projects include:

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Britam Serviced Apartment

Nyangumi Road, Kilimani, Nairobi

Approx. Value of Construction Works involved [Ksh]: 1.5 Billion

September 2016 - January 2019

This apartment offers luxurious yet affordable residential homes



Riverbank Apartments

Two Rivers, Nairobi

Approx. Value of Construction Works involved (Ksh): 2 Billion

2018 - Ongoing

Upon completion, it will ease housing congestion in it vicinity



Elite Homes

Muthithi Road, Westlands Nairobi

Approx. Value of Construction Works involved [Ksh] 1.4 Billion

January 2018 - 2019

Lucrative yet up-to-date design home adding to scenic beauty of the environment in which it is built in Metrix Integrated Consultancy is not a standalone Island.

We therefore have taken pride in working with:
Best western plus westlands hotel project
Tatu City - Dunhill Consulting
Delta Properties - Chingwell Holdings
Garden City Kaysalt - Garden Mills East Africa
Signature Developers - Rockworld
Development Ltd
Trident Estates - First Community Bank
Britam - Amber Properties Ltd

Twiga Chemicals - Kenya Coach Industries
Spa Group - Tilisi Housing Development
Gems Schools - Bishops Properties Ltd
Bidco - Buffalo Development
Swissport - Brookhouse Schools

Riyn Group - Chatur Properties White Lotus - Alpha Grain Millers Raf University - Vaal Real Estates

Swiss Chancery - Fedha Management Ltd

Tamarind Properties Ltd

Some of the recent completed and ongoing institution projects include:



Coast International University

Malindi, Kenya

Approx. Value of Construction Works involved [Ksh] 800 Million

Ongoing



Brookhouse Schools

Kiambu, Kenya

Approx. Value of Construction Works involved [Ksh] 2 Billion

2016 - 2018



Gems Cambridge International Kenya

Runda Gardens, Kenya

Approx. Value of Construction Works involved [Ksh] 1 Billion

2018 - Ongoing

With tremendous growth of economy, there is a need to implement a cost effective yet efficient civil engineering and construction engineering practices in order to meet the mounting needs while meeting budget and time constraints.

We as well do site engineering, stromwater design, site analysis and feasibility assessment sewage disposal systems and wastewater treatment plants.

Some of the recent completed shopping malls projects include:



Buffalo Mall

Naivasha, Kenya

Approx. Value of Construction Works involved [Ksh] 2 Billion

2013 - 2015

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NEXTGEN Mall

Mombasa Road, Nairobi

Approx. Value of Construction Works involved (Ksh) 3 Billion

2012 - 2017

Some of the recent completed and ongoing hotel projects include:







Kanha International Hotel

Parklands, Nairobi

Approx. Value of Construction Works involved (Ksh): 700 Million

2013 - 2017

To know much about us, visit our website below or reach our team of professionals through; Marmanet House, Mkenia Road

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Crushing the efficiency barrier - thyssenkrupp **Eccentric Roll Crusher**

thyssenkrupp has, for over two hundred years, provided state-of-the-art products and services to meet the eclectic needs of mining and industry. With customers increasingly demanding optimal crushing performance from their equipment, thyssenkrupp's Minerals Processing division, a specialist in comminution, designed, developed and manufactured the compact and robust Eccentric Roll Crusher (ERC) which is taking crushing efficiency to the next level.

The inspiration behind the creation of this ground-breaking ERC which is unique to thyssenkrupp stems from the growing need to look at an improved, faster and more costeffective way to crush bulk materials and precious metals such as platinum, copper, kimberlite and iron ore. This got the thyssenkrupp German design team on their feet and after two years of intensive development, the completely new hard rock ERC was born. Ideally suited to process a wide selection of commodities above and below ground, this versatile machine delivers highly efficient crushing capabilities to underground mines, mobile and semi-mobile crushing plants in open-pit mining as well as mineral processing plants.

"With Minerals Processing boasting one of the largest global crushing and grinding technology portfolios which can be customised to customers' plant process needs, we are extremely proud to now bring to the market this truly one-of-a-kind Eccentric Roll Crusher," states Wilfred Barkhuizen. GM Minerals Processing, Energy and Power at thyssenkrupp Industrial Solutions Sub-Saharan Africa. "With a distinctive design that sets it poles apart from conventional crushers, the ERC without any doubt sets the efficiency benchmark and presents the next step in the crusher revolution."

Packed with cutting-edge features, the ERC is forged from fewer, superior-quality components which enable quicker and easier assembly and installation. Thanks to the machine's optimal balance, loads and vibrations are limited. All these exclusive features contribute to a much simpler structure as well as an enhanced ability to process materials more efficiently.

The machine's integrated screen further elevates efficiency as fine material does not pass through the crushing chamber but instead is discharged directly. This new approach ensures a host of benefits such as diminished power consumption, reduced risk of material compaction and machine overload as well as lessened wear on the crushing elements.

Another wear reduction feature is the smartly integrated automatic gap adjustment. The adjustable swing jaw, which forms part the crushing chamber, allows the gap to be precisely adapted to suit a specific product. The adjustment range of up to 200 mm for the largest model is more than adequate for gap adjustment to offset wear on the crushing elements. The gap adjustment also features an overload protection function in order to protect the crusher against overload damage.

Barkhuizen explains, "In the event that the acceptable load has been exceeded by noncrushable foreign bodies for example, the valve opens and the gap is enlarged, protecting the crusher against overload damage." This function includes a unique hydraulic cylinder that controls the load in the crushing chamber as well as the pressure.

In harsh operational environments it is crucial to safeguard the crusher's body to prevent



costly damage. Understanding this vital need, thyssenkrupp has built the ERC to be impact resistant. When large chunks of material are fed into the crushing chamber, instead of falling onto the mounted working element, the material hits the machine's exceptionally resistant and rugged hood. Barkhuizen notes that, compared to conventional crushers, this is another key advantage presented by the ERC.

thyssenkrupp is committed to ensuring that customers receive world-class products and service excellence hence the global engineering specialist ensures that all its products undergo intensive testing. The ERC was certainly no exception and completely surpassed the designers' efficiency expectations in over six months of rigorous testing. Tested in the crushing of andesite, a material akin to copper and iron ores with strengths of up to 200 MPa, the ERC blew operators away with its impressive delivery of almost two times the expected throughput. Going forward, thyssenkrupp will be testing a diverse range of applications in order to determine just how efficient the ERC is and how different projects can benefit from them. Thanks to a combination of innate compactness and higher crushing efficiency (with a throughput potential of up to 8,000 metric tons per hour), much lower unit costs are anticipated.

Ending on an optimistic note, Barkhuizen says that with the first ERC already in operation, thyssenkrupp is confident that customers will benefit from enhanced productivity at the lowest total cost of ownership. "As we see a growing interest in the machine locally, we are motivated to continue looking at new ways of improving our product and service portfolio to the ultimate benefit of our valued customers."

Civic Data Services

The Industrial Solutions business area at thyssenkrupp is a leading partner for the engineering, construction and service of industrial plants and systems. Based on more than 200 years of experience we supply tailored, turnkey plants and components for customers in the chemical, fertilizer, cement, mining and steel industries. As a system partner to the automotive, aerospace and naval sectors we develop highly specialized solutions to meet the individual requirements of our customers. More than 21,000 employees at over 100 locations form a global network with a technology portfolio that guarantees maximum productivity and cost-efficiency.

For more information visit: www.thyssenkrupp-industrial-solutions.com $\mbox{\sc Contact:}$

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Epiroc helps graduates shine at the GradStar Awards 2019



FLTR_Naledi Mokoena, Jaye-Dee Engelbrecht, Ariel Chetty, Kovashni Govender from Epiroc attend the GradStar Awards 2019

Having earned the reputation as a global powerhouse in the mining, infrastructure and natural resources industries, Epiroc remains more passionate than ever before to empower South Africa's youth. For a second consecutive year, the pioneering company proudly cosponsored the prominent ABSA GradStar Awards 2019.

"At Epiroc we pride ourselves on being a preferred employer and that means that one of our core focuses lies in promoting and nurturing exceptional young talent," states Kovashni Govender, from Epiroc's Learning and Development department. "Our theme for this year's GradStar Awards was 'an inspiring place to grow' as not only perfectly describes what Epiroc is to our employees but also illustrates

our commitment to motivating the youth."

Designed to replicate the recruitment process utilised by top employers to identify future employees, the GradStar programme attracts sponsorships from several renowned companies operating across various market sectors. Reaching out to varsity career centres across the country, the programme receives thousands of entries from university students from different locations and fields of study. From these entries, the best 100 students are selected based on their leadership qualities and readiness for the workplace. These best-fit participants are selected during a four-stage judging process that is made up of behavioural testing and personal interviewing which includes psychometric testing and video interviews.

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Kovashni Govender from Epiroc's Learning & Development department presented an interactive session at the GradStar Awards 2019 workshop.

The GradStar Awards two day workshop took place on 19 and 20 September 2019 at the Indaba Hotel in Johannesburg. Day one saw Epiroc host a one-of-a-kind 'when the why is clear, the how is easy' workshop at which the top 100 students competed to gain a place in the top ten. Presented by Govender, one of the interactive sessions was centred on 'how would you introduce yourself and your skill set in 30 seconds to a prospective new boss'. This had the participants excitedly using worksheets to create an elevator pitch. "The reason behind our workshop was to equip these young individuals with an understanding of who they are as a 'personal brand' and how to present the best of themselves in an interview or when networking," explains Govender.

Later on that evening at the coveted GradStar Awards gala dinner, the top ten selected based on the skills that they displayed during the workshop, were announced. In addition to receiving a trophy, certificate and gifts

generously sponsored by Epiroc, these deserving students also earned the bragging rights as GradStar alumni. Naledi Mokoena from Epiroc's Human Resources department presented two of the top ten awards for the evening.

The following day, 20 October, the Epiroc Human Resources and Communication departments were out in full force as they jointly hosted a stand at the GradStar Awards exhibition. Joining Govender and Mokoena at the Epiroc exhibit was Jaye-Dee Engelbrecht and Ariel Chetty from Human Resources and Communications respectively who engaged with the students by sharing a few of their career developments and accomplishments at Epiroc over the years.

"The exhibition presented us with the ideal platform to display Epiroc's strengths to some of the country's greatest and most highly employable university students as well as to gain insight on what they are looking for from a potential place of work," shares Govender.

Drawing to a close, Govender says that the GradStar Awards gives Epiroc the opportunity to meet graduates in an out-of-the-office environment and gain a deeper understanding of the mind-set of today's youth. "Epiroc strives to continue in assisting the youth to kick-start their careers through our various graduate initiatives and by supporting well-deserving programmes such as GradStar. We wish all the GradStar Awards 2019 participants the very best for their future careers."



Particpants used worksheets to create an elevator pitch during Epiroc's interactive session at the GradStar Awards 2019 workshop.



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Minding the gaps to protect industrial PLCs from cyber threats

Times have changed dramatically since the first programmable logic controllers (PLCs) found their way onto factory floors to control and automate manufacturing and industrial processes. One of the biggest changes is the advent of the Internet that changed available communication technologies from Profibus, a protocol gateway that directly connects PLCs to the machinery they control, to Profinet, an Ethernet-based industrial communication system that provides faster real-time communication and can interconnect network devices to the Internet.

PLCs, designed to control machinery and specific processes, were never built with cybersecurity threats in mind and protecting PLCs against these threats requires healthy isolation from the World Wide Web.

With the change in how industrial machines communicate within a network came new risks. Systems that were isolated in the past are now visible on the Internet. This can be compared to public transport where people are not operating in isolation anymore, but relying on public exposure to travel.

Operational Technology (OT) networks have always been designed and configured in a flat and unsegmented configuration where all the OT devices are all connected on the same network. When OT networks run unsegmented alongside Information Technology (IT) networks, which also uses Ethernet connections, disparate systems like Payroll systems and PLC systems can be accessed from the same network. If an IT network is infected with malware, the manufacturing operation's OT network is exposed to the same malware. OT networks should, therefore, be isolated from IT networks in the fundamental planning of an organisation's Operational Technology infrastructure.

This is where air-gapping comes in. Air-gapping is part of the actual set-up of a network where a secure network is physically separated from an unsecured one. Clear separation between critical and non-critical systems can limit the impact of a breach and makes it possible to apply appropriate security controls. For example, non-critical systems can have access to view information on critical systems, but not necessarily make changes.

"Air-gapping within OT networks, where you isolate your PLC environment from the rest of your systems, is the modern way of doing it. When done effectively, air-gapping makes it possible to allow interplay between systems, but there are healthy boundaries to keep your PLC environment safe from the types of cyber threats that afflict IT.

"For instance, industrial control systems, including those that many PLCs integrate with, use Microsoft Windows, which opens up the same risks to the PLC system as those affecting PCs. Yet traditional software security tools are not effective enough in protecting PLCs."

"The Stuxnet case study was a wakeup call for the industry and made role players in the industry realise there are risks of additional threats when exposing production processes to the Internet and that small changes can have a big impact."

"Other malware is designed specifically to target PLCs. The malicious Stuxnet worm, for example, was designed to target industrial PLCs, ultimately modifying the codes and giving unexpected commands to the control system with far-reaching consequences. It can cost money, downtime, reputational damage, and even lives."

1"In a water plant, if a PLC goes haywire because of being compromised, water quality







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can be impacted and as a result, affect thousands of lives. In Iran, the Stuxnet virus made a small modification to a PLC environment and forced a complete shutdown of this uranium enrichment plant."

2"By implementing an effective PLC security strategy, which includes air-gapping in the correct areas, identity and access management, and asset discovery, you can mitigate these risks and avoid setbacks and costly downtime." says Charl Ueckermann, CEO at AVeS Cyber Security."

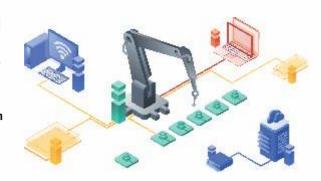
He explains; "In the old days, companies had proprietary protocols in terms of how they ran productions. Those were well-networked protocols, and they were isolated from IT-based cyber environments. To create efficiencies, do better Just-In-Time manufacturing, eliminate waste, reduce working capital and provide instant information, it became necessary to get PLCs connected via Ethernet, which means there is a high level of connectivity between cyber systems and PLCs nowadays."

"The problem lies in the way in which communication channels have been opened up between OT networks, IT networks and the Internet. There is a lack of proper segregation, adequate VLANs aren't created, and often a firewall or two is slapped into the mix. This means that there are rivers of information rushing together and they really should run separately so that one cannot infect the other.

"Complete isolation is not the solution. That would be like having all the doors to a shopping centre locked, stopping everyone from entering, including customers. Instead, you want to control access, allowing customers in and unwanted 'guests' out." "Similarly, you want to be able to inspect and control the nature of traffic going in to and out of OT environments, as well as between different PLCs so that the business still benefits from connectivity between them without exposing systems to unwanted risk." "When it comes to identity and access control, you should define exactly who is allowed into the environment, what timeframes they are permitted access, and what they can work on while they are there. This is most certainly one of the highest-ranking priorities in the PLC security plan."

The first step, however, should be a cybersecurity vulnerability assessment. Modern manufacturers need to understand where all their PLC data resides and how people connect to that data. In a manufacturing environment, there will typically be different PLCs in different parts of the organisation, factory or mine, and these are interlinked. It is essential to know how they are exposed to other computers that have connectivity to the Internet as these create open gateways for industrial cyber threats. This includes all Internet-connected devices, even smartphones that employees might be plugging into their computers to charge during their day at work.

Once companies have a comprehensive understanding of the environment and how the different network areas are connected, it becomes necessary to call on technology to assist with controlling access to the environment's systems, which includes physical and digital assets, as well as put processes in place to protect data. Ongoing monitoring solutions are also needed to maintain visibility of the data flowing between and in and out of the various environments. Not all threats and attacks occur from the outside, which is why Ueckermann stresses that in addition to effective policies, procedures, and technologies, companies need to put their employees through security awareness and training. "People need to be critically aware of their associated responsibilities in protecting the organisation against malware or cybercrime for that matter. In a typical manufacturing environment, employees are required to go through proper health and safety induction. Likewise, they should be required to undergo a cybersecurity induction because when it comes to PLCs that can behave erratically and dangerously if they are compromised, lives are at stake."





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Winners of the 2019 MTN Business App of the Year Awards revealed



MTN SA CEO Godfrey Motsa

The eighth edition of the MTN Business App of the Year Awards concluded with the muchanticipated announcement of the overall and category winners in South Africa's most prestigious app development competition. The winners were announced at a gala event held in Johannesburg last night.

The overall winner for 2019 is Naked Insurance. The app uses cutting-edge artificial intelligence and chat-bots to give consumers insurance cover at the touch of a smart-screen in under three minutes. The app is almost fully automated to manage clients' policies, keeping costs lower while driving greater efficiency.

Users have constant control over when and how much cover they have, and all claims and processing are done via the app. Naked Insurance charges a fixed fee of 20% of premiums for costs and some profit. The remaining 80% of annual profit after claims, is given to local communities.





MTN App of the Year 2019 Naked Insurance

"We at MTN Business were very impressed to see the calibre of entries in this year's competition. It's truly rewarding to see how this premier app development platform continues to grow from strength to strength. Ultimately, this is at the heart of everything that we do - it's about creating platforms that enable innovators and entrepreneurs. Our congratulationsgo out to Naked Insurance for taking the top spot this year. They join a club of elite previous winners whose apps have gone on to become household names," says Wanda Matandela, Chief Enterprise Officer of MTN Business.

Winners in the various categories are:
The Accenture Best Enterprise Solution Award for a local business app that is specifically targeted at solving business challenges was presented to Digger, an app that uses data science to make it quick and easy to connect the right people to the right job. The app employs intelligent screening software that shortlists and matches candidates for each

position. It also makes employment opportunities more accessible and visible for job seekers, while helping businesses quickly find the right talent they need.

The IDEMIA Most Innovative Solution Award For a unique, groundbreaking and disruptive app, that is first to market, was conferred to SI Realities. It uses augmented reality to teach science to students that don't have real-life science labs. The opp was created by self-taught developer, Mbangiso Mabaso, and allows users to perform experiments in a virtual science lab that only exists on a smart device.

The Sentech Best Health Solution Award for the app that best supports health and wellness was presented to Vula Mobile, a free app that connects primary healthcare workers in rural or under-resourced areas directly with medical specialists in urban centres. Using this opp, rural doctors can consult with experts in 23 specialities from around the country, and 45

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types of healthcare professionals are now signed up.

Vula Mobile brings better healthcare to patients wherever they are. The Pioneer Best Agricultural Solution Award For solving growing agricultural challenges, and providing capacity building in Africa, was given to Hydra Farm Awareness. This is an opp that farmers can use to manage and monitor all aspects of their operations including livestock tracking, water use and equipment issues, down to how much feed and fertiliser they use. The solution also enables farmers to track assets, optimise operations and farm more efficiently.

The Fundi Best Educational Solution Award, For an app that solves the education challenges in Africa, was presented to Matric Live - South Africa's leading educational opp, built by a student For students. The opp is full of educational and study information for Grade 12 students. The platform supports and augments over 16 subjects in the school curriculum and is especially useful For students at poorly resourced schools. There are essay questions, study guides, literature notes, science summaries, past exam papers, and motivational quotes to inspire students.

The Coca-Cola Best South African Solution Award For developers who have created an app with an exclusively South African flavour and purpose went to Franc. This app provides stokvels with mobile access to highperforming, low-cost investments, and gives them the flexibility to withdraw their money at any time. Within minutes, users can invest in two proven money market and exchangetraded funds. This can be done without the services of brokers, paperwork and hidden Fees. Franc makes investing smart, simple and accessible, enabling anyone with a smartphone to start saving for the future.

The MiBlackBox Best Consumer Solution Award for the consumer centric opp that makes the everyday lives of ordinary people easier and more convenient was presented to Over - a fun and easy-to-use 'text over photos' app that gives you all the



MTN Business Chief Enterprise Officer Wanda Matandela

tools you need to inspire your own creativity with design. You simply upload your own photo or picture, and get creative with titles, layers and other pictures (even your own branding). It has built-in fonts, graphics and design templates, and lets you collaborate with instant feedback and updating on projects.

The Best Women in STEM Solution Award For the best app developed by women in the fields of science, technology, engineering and mathematics went to LocTransi. This app allows parents and caregivers to monitor and keep track of their children's school transportation in real-time. The free app keeps parents informed via SMS of delays or problems along the route, and the driver can alert parents about emergencies immediately. Schools can track when learners enter or leave the premises. It also has an integrated communications functionality that allows shared communication between all caregivers.

The Best Financial Solution Award, for a locally developed application that is focused specifically on the financial services sector was awarded to Naked Insurance (who also took the top spot overall).

The Launchlab Best Incubated Solution Award For an app that is created and built by an individual or team, and that is still in







need of further nurturing and mentoring to reach its full potential, was given to LocTransi, who also won in the Best Women in STEM category.

The PlayStation Best Gaming Solution Award for mobile, PC and console platforms or the use of gamification went to Loot Defence. This is a tapper-style game that challenges players to fight and collect treasure in over 100 different environments.

The one-thumb gameplay builds frenzy as players fight off goblins, pirates and other creatures in a world of floating castles. Players can level-up to compete g lobally, and there are over 1000 year-items so that users can create a wide range of hero enhancements.

The ITWeb Best Breakthrough Developer Award for a new and upcoming developer that is not yet established was presented to MoWash. Created by Kevin Dladla, this solution was designed to bring car washes to clients. Using MoWash, customers can order a wash via the opp, listing their location. Dladla, or one of his selected suppliers, will arrive and clean the customer's car at their convenience. The MoWashers also inspect customer's cars for problems like Flat tyres, oil leaks and broken lights, and sends a report. In addition, it reminds customers when it's time to renew their car licence disc. MoWash enables home delivery of a service that always used to be drivethrough - a timesaving, convenient solution.

"Our congratulations also go out to all the category winners. They presented such wellthought- out solutions that are uniquely customised to address some of the daily challenges we face. We believe that reaching this stage in the competition marks a new chapter in the journey of these innovators. We wish them all well as they continue to blaze a trail in the opp development industry," concludes Matandela.

For more information on this year's competition and the winners please visit: https://www.appoftheyear.co.za/

