

TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط

MIDDLE EAST

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Water

Digital twin for managing water networks

Construction

Why modular buildings matter

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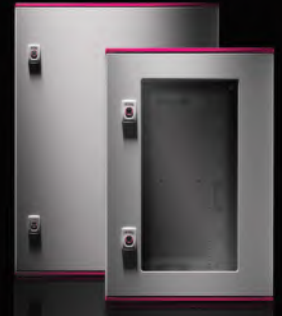
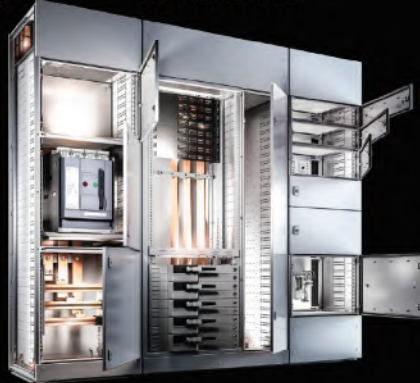
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EDITOR'S NOTE

STRENGTHENING THE MINING sector has been on Saudi Arabia's agenda for quite a long time, likewise the UAE, Bahrain and Oman. This issue puts the spotlight on mining activity and prospects for mining investment and mining-allied sectors (p14). While savings contribute to profit margins, all the features have a strong focus on ways of improving efficiencies in power, construction and water sectors. Read more about cost and energy savings in our reports on modular construction (p18), deep retrofit of buildings (p20) and collaborative construction (p24). Coming to water management, we speak to experts about how water utilities can adopt digital twin solutions (p36). Also, our power feature gives you an overview of digital grids progress (p29). Elsewhere, we bring you insightful reports on compressors, heavy equipment and forklifts.

*At **Technical Review** we always welcome readers' comments to trme@alaincharles.com*



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TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط

MIDDLE EAST

SEVING THE REGION'S BUSINESS SINCE 1984

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Serving the world of business

Briefly

Abu Dhabi to light up 140,000 streetlights with energy-efficient LEDs

THE DEPARTMENT OF Municipalities and Transport (DMT), through Abu Dhabi City Municipality (ADM), and the Abu Dhabi Investment Office (ADIO) today launched Phase 2 of 'Noor Abu Dhabi', the Public-Private Partnership (PPP) street lighting project to replace approximately 140,000 of the emirate's streetlights with energy-efficient LED technology.

The new PPP project is more than three times larger than Phase 1 and will result in significant electricity savings of almost 2,400 million kWh, a reduction of approximately 76% in power consumption equivalent to cost savings of AED 705mn, over the course of the 12-year concession agreement. 'Noor Abu Dhabi' is part of the Abu Dhabi government's increased prioritisation of PPP frameworks for procuring infrastructure projects across sectors including education, transport, and municipalities.

Phase 2 of 'Noor Abu Dhabi' follows the commercial close of the Phase 1 tender awarded to Tatweer Middle East and Africa LLC (Tatweer) for the replacement of approximately 43,000 of Abu Dhabi's streetlights with LEDs, the first PPP project of its kind in the UAE and the region.

Vestas wins 252 MW EPC order for Gulf of Suez 1 wind project

THE NEW AND Renewable Energy Authority (NREA) has placed a 252 MW order with Vestas for the Gulf of Suez 1 wind project in Gulf of Suez, Egypt.

Vestas has developed a solution that comprises the supply and installation of 70 V105-3.45 MW wind turbines in 3.6 MW Power Optimised Mode and a three-year Active Output Management 4000 (AOM 4000) service agreement.

The project's annual production is expected to reach 1027 GWh of clean energy and according to NREA save around 560,000 tonnes of CO₂ emissions annually.

It will be jointly financed by the European Investment Bank, KfW, Agence Française de Développement and the European Commission. The Gulf of Suez 1 wind project is planned to be fully operational in 2023.

Volvo Group, Daimler Truck AG sign agreement for new fuel-cell joint venture

THE VOLVO GROUP and Daimler Truck AG have signed a joint venture agreement for to develop, produce and commercialise fuel-cell systems for use in heavy-duty trucks as the primary focus, as well as other applications.

The aim of both partners is to make the new company a leading global manufacturer of fuel cells, and thus help the world take a major step towards climate-neutral and sustainable transportation by 2050.

The Volvo Group will acquire 50% of the partnership interests in Daimler Truck Fuel Cell GmbH & Co. KG on a cash and debt-free basis. Closing of the transaction is expected during the first half of 2021.

"For us at Daimler Truck AG and our intended partner, the Volvo Group, the hydrogen-based fuel cell is a key technology for enabling CO₂-neutral transportation in the future. We are both fully committed to the Paris Climate Agreement for decarbonising road transport and other areas, and to building a prosperous jointly held company that will deliver large volumes of fuel-cell systems," said Martin Daum, chairman of the board of management of Daimler Truck AG and member of the board of management of Daimler AG.

The joint venture will take advantage of the expertise and extensive experience from several decades of development work on fuel cells at Daimler.

"In the future, the world will be powered by a combination of battery-electric and fuel-cell



Photo Credit : Volvo and Daimler

Both the companies continue to be competitors in all other areas such as vehicle technology and fuel-cell integration in trucks.

electric vehicles, along with other renewable fuels to some extent. The formation of our fuel-cell joint venture is an important step in shaping a world we want to live in," said Martin Lundstedt, president and CEO of the Volvo Group.

In addition to trucks, there are also other areas of application for this type of fuel-cell system. The joint venture will develop a system with several power stages, including a twin system with 300 kW continuous power for heavy-duty long-haul trucks.

Based on the demanding conditions in heavy-duty truck applications, the joint venture's products are also ideally suited for other use cases such as stationary power generation.

The transaction is still subject to merger control review by relevant authorities.

Israel Shipyards chooses dual MAN 175D units

MAN Energy Solutions has won the contract to supply complete propulsion packages to two OPV-45 offshore patrol vessels currently under construction at Israel Shipyards in Haifa.

The contract covers two identical shipsets, each featuring 2 x MAN 16V175D-MM engines (2,960kW at 1900 rpm) and gearboxes, as well as ALPHA FPP propellers with struts and Alphasonic 3000 propulsion control systems.

Ben Andres, head of High-Speed Sales, MAN Energy Solutions, said, "The MAN 175D type is ideally suited to demanding naval applications and this is the latest in a series of orders we have won globally."

Israel Shipyards is constructing the new buildings for an undisclosed African navy. The vessels are designed for a wide range of missions, including protection against the increasing threat of piracy in the region.

The OPV-45 has an overall length of 45.7 m, a displacement of some 300 tonnes, while its



Graphical rendering of the OPV-45.

Photo Credit : Israel Shipyards

MAN 175D engines enable a sustained speed of above 24 knots and maximum range of over 3,500 nautical miles.

MAN Energy Solutions has developed the MAN 175D engine range to supplement and complete its product portfolio in the maritime sector. In three variants of 12, 16 and 20 cylinders, the engine is available with an output ranging from 1,500 to 4,400 kW and is optimised for propelling ferries, offshore supply vessels and tug boats. Other market areas are also served by additional, specialist model versions.

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GROWING TOGETHER

Briefly

Taqeef CEO appointed president of Eurovent Middle East

TARIQ AL GHUSSEIN, CEO of the cooling and energy solutions provider Taqeef, has been appointed as president of Eurovent Middle East.

Eurovent represents leading manufacturers of indoor climate (HVAC), process cooling, food cold chain, industrial ventilation, and building automation technologies, as well as sector associations and industry initiatives active in these fields.

Al Ghussein will oversee the leadership of the association to provide requirements of product quality and sustainability to HVAC manufacturers in the region.

"These are exciting times for our membership and our region, and Eurovent Middle East's work on energy efficiency, better IAQ, transparency and protocols has never been more relevant," commented Al Ghussein.

As Eurovent's previous vice president, Al Ghussein's active participation as a board member and vast experience in the Middle East's air conditioning sector has contributed to his appointment.

DEWA completes repayment of maturing bonds

DUBAI ELECTRICITY AND Water Authority (DEWA) announced the completion of the repayment of its last outstanding bond of US\$1.5bn. The Global Medium Term Note (GMTN) bond that was issued in 2010 matured and has been fully repaid, the government entity further confirmed.

"Reflecting the vision and directives of HH Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, DEWA's focus now is on using disruptive technologies, increasing the share of clean energy and promoting Dubai as a global hub for green economy," said HE Saeed Mohammed Al Tayer, MD & CEO of DEWA.

DEWA has been ramping up investment in generating, transmission and distribution of infrastructure assets, to provide reliable supplies of electricity and water to all customers.

Shining the spotlight on 3D printing

A 3D PRINTING exhibition organised by the Sharjah Research Technology & Innovation Park (SRTI Park) headquarters, will be held daily until 11 December 2020.

The '3D Emerging Technologies Exhibition', one of the largest exhibitions specialised in this technology in the Middle East, will provide a comprehensive picture of the 3D printing or additive manufacturing process. It involves printing following instructions from digital files, and joining together layer upon layer of material including metals, ceramics or plastics, until an object's desired shape, look and size is shaped.

Hussain Al Mahmoudi, CEO of SRTI Park, highlighted that the exhibition seeks to strengthen Sharjah's role as an investment incubator and global test centre for the advanced technology.

"The application of 3D printing technology is expected to change the production process in various sectors in the coming years and it has the potential to revolutionise the way we make almost anything," Al Mahmoudi said.

Industry leaders

According to the organisers, the exhibition features companies and international research centres including Proto21 Company, Generation 3D, 3D ME, Ultra Tech Company, 3D Hub, 3D Explorer, Createbot, Centrix, Twin Detective

Company, Acciona Corporation, Sixcua Company, Amensa Labs, Jumbo Company, Bid LLC, in addition to many specialised laboratories and experts.

The SRTI Park has also announced that the Sharjah Open Innovations Lab, will be running parallel to the 3D exhibition, featuring a series of webinars involving leaders of the 3D printing industry in the Middle East region.

The eight-week virtual workshop is open to the public, to learn the basics of 3D printing to be able to print their own ideas at the end of the exhibition.

"Although the idea of 3D printing and its practical use started several decades ago, this technology has recently begun to gain a wider spread, due to the rapid progress in complementary technologies, and so we have seen in recent years its impact on building bridges and multiple buildings. The UAE is in the ideal position to become a leading centre for 3D printing technology," Al Mahmoudi added.

Global participation

The SRTI Park has attracted several international companies specialising in constructing buildings with 3D printing techniques.

The first house with heritage architecture was built on the complex's land using 3D printing technology.

Alstom and Iraq sign deal for implementation of the Baghdad Elevated Train

A CONSORTIUM LED by Alstom and its partner Hyundai Engineering & Construction, signed a letter of intent with the Iraqi Ministry of Transport to define a framework for accelerating the implementation of the Baghdad Elevated Train (BET). The letter of intent was signed in Matignon, the office of the French Prime Minister, during the Iraqi Prime Minister Mustafa Al Kadhimi's official visit to Paris.

The BET is a 20km elevated metro in Baghdad with 14 stations, and includes the supply of rolling stock, electromechanical systems, tracks, as well as associated civil works. The light rail system would link Al-Khadumia, AlEtafia, Alsarafia bridge Al-Mustansiriya, Wazyria and AlShab over 16km, and AlEtafia AlMuthana airport to Al-Alawi over 4km.

"We are extremely delighted to sign the letter of intent and develop our cooperation with the Republic of Iraq. We believe that with this important project together with the Iraqi government we will implement our latest innovative technologies to improve the mobility environment in Baghdad and reduce the current traffic congestion," said Müslüm Yakisan, senior vice president for the Africa, Middle East and Central Asia region at Alstom.



The Baghdad Elevated Train is expected to boost the Iraqi economy by creating thousands of direct and indirect jobs.

Photo Credit: Scumrail/Adobe Stock

Abdul Latif Jameel Energy expands water sector portfolio

ABDUL LATIF JAMEEL Energy has reinforced its investment in the Middle East and Africa water sector with the acquisition of a major desalination services company in Egypt.

Almar Water Solutions, the company's water solutions unit and its partner HA Utilities BV have finalised a deal with the Ridgewood Group, taking ownership of assets with a total desalination capacity of 82,440 cu/m of drinking water per day, from 58 desalination plants located across Egypt.

"This acquisition is a significant addition to our growing portfolio of projects addressing the most pressing water challenges around the world. Egypt is one of our most important markets and this project will support the country's economic development and water security in the long term," Fady Jameel, deputy president and vice chairman of Abdul Latif Jameel Energy, remarked.

"With this new contract, Almar Water continues to expand rapidly beyond its portfolio of new, 'greenfield' projects under development with assets already in operation expanding and diversifying our services, with additional capacity of over 80,000 cu/m per day of drinking water," Carlos Cosín, CEO of Almar Water Solutions, said.

In recent years, Almar Water Solutions and



Photo Credit: Abdul Latif Jameel Energy

Acquisition follows joint venture with HA Utilities in Egypt, created to tackle country's urgent water security challenges.

Abdul Latif Jameel Energy have achieved the development of several projects that contribute towards sustainability of the water sector. These include desalination projects in Al Shuqaiq on the Red Sea coast of Saudi Arabia, Kenya's first large-scale desalination plant in Mombasa, the acquisition of Muharraq in Bahrain to operate a 100,000 cu/m per day wastewater treatment plant and a major industrial services contract with Mantos Cooper following its acquisition of Osmoflo SpA in Chile.

The majority of the desalination plants provide fresh drinking water to Egypt's tourism sector.

Briefly

Bee'ah commences operations in Saudi Arabia

BEE'AH, SUSTAINABLE SOLUTIONS provider in the Middle East, commenced operations in Saudi Arabia after securing a contract to service the holy city of Al-Madinah Al Munawwarrah, with a launch ceremony showcasing its fleet and equipment that will be deployed in Madinah.

The ceremony was attended by Eng Fahad Al-Buliheshi, mayor of Madinah Regional Municipality, and a number of government officials and media representatives in the region who were welcomed by Bee'ah's leadership team.

Contracted by Madinah Regional Municipality, Bee'ah will provide solid waste collection and transport services along with the disinfection and sanitisation of 40,685 waste bins. As the region's first fully integrated environmental management company, Bee'ah is deploying its end-to-end waste management solutions in the Kingdom based on the twin pillars of sustainability and digitalisation.

"Bee'ah's mandate has always been to raise a more sustainable quality of life for the communities that we serve, and this is backed by a commitment to excellence. Bee'ah stands ready to support Madinah Regional Municipality to drive a more sustainable quality of life for its citizens and residents. At our launch, we showcased the superior capabilities of our fleet and workforce to serve the kingdom of Saudi Arabia and the communities of Al-Madinah Al Munawwarrah, commemorating the start of our operations in this historic city," said Khaled Al Huraimel, group CEO of Bee'ah.

The partnership with Madinah Regional Municipality to work toward a sustainable future for the city comes as Bee'ah closes in on its zero-waste objective in Sharjah, UAE.

Having already achieved the Middle East's highest waste diversion rate of 76% in Sharjah, Bee'ah is also building the UAE's first waste-to-energy plant in a joint venture partnership with Masdar. Upon completion in 2021, the Emirate will reach 100% waste diversion from landfills, to become the first zero-waste-to-landfill city in the Middle East.

New VP for Schneider Electric's Secure Power division

SCHNEIDER ELECTRIC HAS appointed Mohammed Khader Faraj as vice-president of the company's Secure Power division in Saudi Arabia.

Schneider Electric's Secure Power division has supported the data centre industry for decades with a range of power and cooling products and is now providing new technologies.

"This division is a key part of our solutions, especially the data centres and business continuity. I am looking forward to working with the team, our partners, and customers, to drive the country's digital transformation and ensure that Saudi Arabia is leading the way when it comes to digitisation," said Faraj.

Masdar, Miral to develop solar project at Warner Bros World Abu Dhabi

MASDAR, A LEADING renewable energy company, has signed an agreement with Miral, Abu Dhabi's leading curator of experiences, to develop a rooftop solar photovoltaic (PV) project at Warner Bros. World, Abu Dhabi on Yas Island. It is scheduled to be operational in the final quarter of 2021.

Masdar will provide a full turnkey solution for the 7MW peak project, including the design, procurement, construction and operation and maintenance of the plant, said Mohamed Jameel Al Ramahi, chief executive officer of Masdar. "We are proud to be supporting Abu Dhabi's 2030 energy efficiency strategy to reduce overall electricity consumption by 22% and look forward to leveraging our energy services experience to support Miral's efforts of implementing energy efficient solutions across its destinations and attractions," he added.

"Sustainability is high on our agenda and with Warner Bros. World Abu Dhabi recognised as the world's largest indoor theme park, it is the ideal location for a project of this scale. This is a testament to our commitment of harnessing the most efficient, innovative and sustainable systems across our developments on Yas Island, further positioning it as a top global destination for entertainment, leisure and business," said Mohamed Abdalla Al Zaabi, chief executive officer of Miral.



Photo Credit: Masdar

The project will be executed under Masdar's Energy Services department.

Briefly

Rising demand for EV charging solutions

ELECTRICAL SERVICES COMPANY Powertech Services notes an uptake in consumer sentiment in the UAE towards owning an electric vehicle, which is now perceived to be more affordable.

The added benefits of free charging until 31 December 2021, a waiver of fees for Salik tags and two years of free parking across Dubai, are also generating interest in EVs. Furthermore, the growing EV charging infrastructure across the UAE has raised consumer confidence. In the last year, Powertech has installed and commissioned EV charging infrastructure at various commercial and government establishments across the UAE.

The UAE electric vehicle market is projected to grow at a CAGR of 32.1% during 2019-25, according to a report by Research and Markets.

The incentives provided by the government authorities such as DEWA and Road Transport Authority aim to further boost the growth of the EV segment.

Energy cooperation agreement signed

ISRAELI STATE-OWNED COMPANY Europe-Asia Pipeline Company (EAPC) and MED-RED Land Bridge (MRLB), have signed an MOU to collaborate in storing and transferring oil and oil products through the EAPC pipeline network and storage tanks, from the UAE and other Eastern markets to the Western markets, and from the Mediterranean to the Far East. MRLB is a joint venture between Petromal, an integrated oil and gas company based in Abu Dhabi, and Israeli companies.

It follows the signing of the Abraham Accord between the UAE and Israel, which has opened up opportunities for co-operation.

The collaboration is significant news for the global energy market, since it offers oil producers and refiners the shortest most efficient and cost-effective route to transport oil and oil products from the Arabian Gulf to the consumption centres in the West, and provides access for consumers in the Far East to oil produced in the Mediterranean and Black Sea regions.

SirajPower partners with Choithrams for rooftop solar project

SIRAJPOWER, A LEADING UAE distributed solar energy provider, has signed a deal with grocery retailer and food distributor Choithrams, to help them shift from conventional power to 100% renewable energy. Choithrams' solar rooftop project includes three warehouses located at Al Quoz in Dubai with a 2.7 MWp system capacity that will generate 4.5 GWh of annual energy production. The solar rooftop installation will help displace more than 3,000 metric tonnes of carbon dioxide emissions (CO₂) per annum.

Laurent Longuet, CEO of SirajPower, said, "Despite the global challenging market situation which slowed the operation of projects, solar energy initiatives are still in place and in high demand. We have been able to accelerate our growth thanks to a clear and robust regulatory framework that supports the development of renewable energy and the distributed solar market.

"Today, we celebrate another significant partnership with Choithrams, a company with a remarkable heritage that further diversifies our strong market portfolio and expands our presence in the Fast-moving consumer goods/ Food & Beverage (FMCG/F&B) sector."

Rajiv Warriar, CEO of Choithrams said, "Sustainability has always been a key initiative for Choithrams and shifting to 100% renewable energy is a crucial step in our sustainable journey. As one of the leading food retailers and



Photo Credit : Michael Mazangarb/Flickr

The project will generate 4.5GWh of annual energy production.

distributors, we take great pride in supporting the adoption of renewable energy in conjunction with the leadership's UAE vision 2021 agenda."

According to Merzi Sodawaterwala, founder and chairman of World Sustainable Business Forum (WSBF), the project is the largest solar rooftop project in the F&B sector and also the largest in terms of capacity permissible as per the new DEWA regulation.

In the F&B sector, SirajPower also counts LIFCO, one of the largest and long-established consumer food distributors in the UAE, with 2 MWp solar rooftop commissioned producing 3.5 GWh of clean energy per year. To date, SirajPower operates across various industries, including construction, retail, logistics, industrial, real estate, telecom, and F&B/FMCG.

Tabreed raises US\$500mn through bond issuance

NATIONAL CENTRAL COOLING Company PJSC (Tabreed), the leading district cooling developer headquartered in the UAE, has successfully raised US\$500mn (AED 1.8bn) with a seven-year, 2.5% coupon bond issuance.

The issuance was oversubscribed almost five times at its initial size of US\$400mn, allowing Tabreed to tighten pricing to achieve a final coupon of 2.5% and to increase the size of the final bond to US\$500mn. The bond is rated Baa3 by Moody's and BBB by Fitch, in line with Tabreed's corporate ratings.

The bond was particularly well received by international investors, who accounted for



Photo Credit : Thomas Buntom/Flickr

Tabreed has delivered district cooling to some of the region's most iconic developments.

90% of the final geographical allocation. The bond will be listed on the London Stock Exchange, alongside Tabreed's existing 2025 Sukuk.

Bader Saeed Al Lamki, Tabreed chief executive officer, said, "The bond issuance, which was extremely well received by the market, is part of a long-term strategy and it enables us to further expand our operations with a focus on scalable growth. The global interest in Tabreed is a testament to its strong financial position, sound business model and leading position in the district cooling industry."

With 83 district cooling plants, Tabreed currently delivers more than 1.342 million refrigeration tonnes to key projects, including some of the region's most iconic developments.

Finland Pavilion at Dubai Expo 2020 nears completion

FINLAND AT EXPO 2020 Dubai has confirmed that 90% of the construction of its pavilion, Snow Cape, has been completed. Following the announcement of the postponement of Expo 2020 Dubai, the remaining construction activity, including the interior fit-out works, is scheduled to resume in April 2021.

Severi Keinälä, commissioner general of Finland at Expo 2020 Dubai, said, "Our decision to postpone the final construction elements of our pavilion was made to ensure the final aesthetic elements are as fresh as possible for the October 2021 opening. In particular, the exterior membrane of the pavilion will be added closer to the opening date, as this white surface is what will bring our Snow Cape to life. Once construction resumes next year, our touchless KONE elevators and sliding doors will be installed and preparations will begin on the exhibition space and interior design."

Snow Cape is located within Expo 2020 Dubai's Mobility District and the construction activities are being managed and executed by the Swiss pavilion construction specialist, Expomobilia. Several Finnish partner companies have been actively involved in the construction of the

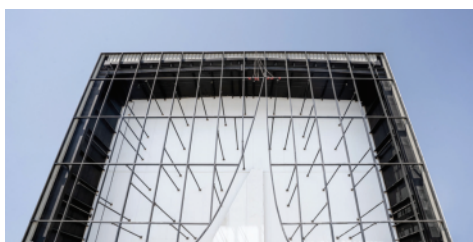


Photo Credit: Expo 2020

The Finland Pavilion entrance.

pavilion. Halton Group will provide an air ventilation system based on low-velocity air diffusers, while Granlund has produced a digital twin of the pavilion, which will be used to monitor the functions of the pavilion throughout the exhibition. Serviz is providing remote indoor air monitoring for not only the Finnish pavilion but for other national pavilions as well.

The main theme of Finland's participation in Expo 2020 Dubai is 'Sharing Future Happiness'. Visitors will be taken on an interactive journey to discover the origin of Finnish happiness, nature and technological innovations through Finland's key strengths, which include nature and sustainability, education and know-how, and functionality and wellbeing.

Yanmar sets up Middle East branch

INDUSTRIAL EQUIPMENT MANUFACTURER Yanmar has announced the establishment of its Middle East Branch, located near Dubai Airport. The office will be operated by Yanmar subsidiary and Asia regional headquarters, Yanmar Asia (Singapore) Co. Ltd., and will provide sales and service support to dealers in Yanmar's Middle East territory.

The Middle East Branch began operations in January 2019 in the Dubai Airport Free Zone providing support and training in Yanmar's marine pleasure and marine commercial engines business in the Middle East region. From October 2020, a new parts warehouse will enable the rapid supply of emergency parts and strengthen relationships with customers.

BESIX and Jan de Nul awarded expansion of Port of Fujairah contract

A CONSORTIUM OF Six Construct, BESIX's entity in the Middle East, and Jan de Nul Group has been awarded the works contract for the Dibba Bulk Handling Terminal Project at the Port of Fujairah (PoF), one of the world's key oil storage centres and the second-largest bunkering hub in the world.



Photo Credit: Adobe Stock

The expansion plans will increase bulk handling capacity.

The design-and-build contract consists of dredging the navigation channel and port basin, reclamation and shore protection, as well as constructing breakwaters, a 765m long quay wall, foundations for ship loader rails, port infrastructure and creating utilities and aids to navigation. The fishing harbour will be relocated in the process.

The expansion plans are part of PoF's strategy to increase the port's bulk handling capacity and operational efficiency, as well as improve the quality of its service.

Yasser Laroussi Ben Asker, operations manager Marine Works Middle East at Six Construct said, "Six Construct is honoured to partner with the Port of Fujairah, as part of our decades-long history in the emirate. BESIX's entity in the Middle East helped on several occasions to extend the port infrastructure. We share the same values in aspiring to create long-term partnerships to support the emirate's development goals, and we are investing in a long and prosperous relationship."

The contract is valued at AED 371mn (US\$101mn). Works will be carried out over 19 months.

Briefly

Madayn signs agreements to boost industrial development

OMAN'S PUBLIC ESTABLISHMENT for Industrial Estates, Madayn, has signed an agreement with Roadline Company to implement infrastructure complementary projects at Samail Industrial city, and another agreement with Amazon for environment and sustainability to provide a healthy environment in Madayn's industrial cities. Commenting on the agreement for infrastructure projects at Samail Industrial City, Eng. Dawood bin Salim Al Hadabi, director general of Samail Industrial City, stated that the agreement is a continuation of the efforts made by Madayn to provide infrastructure, support and necessary services to the industrial sector.

Madayn is currently implementing a number of important projects in Samail Industrial City, which include the facility building. Through such projects, Madayn aims to present a variety of facilities and incentives to encourage local, regional and foreign investments in its industrial cities.

ABB teams up with Forescout to strengthen cyber portfolio

ABB IS COLLABORATING with Forescout, a leading provider of cyber security solutions, to integrate Forescout's cyber technology within ABB's portfolio of industrial expertise and cyber security solutions. This will enhance operators' abilities to detect known and unknown control system threats.

Gino Hernandez, head of digital for ABB Energy Industries, said, "Cyber security is a real concern across industry, and there is significant value to be gained from better network monitoring. Breaches in network security can cost millions of dollars in repairs and fines, have potential impact from unplanned downtime, and affect a business's reputation. ABB's partnership with ForeScout will give customers a high level of network visibility and greater protection across their systems."

According to a recent report by the MIT Technology Review, up to 96% of local industrial control systems are vulnerable to cyber-attacks.

Briefly

Yellow Door Energy completes rooftop solar plant for Future Pipe Industries

YELLOW DOOR ENERGY, the UAE-based sustainable energy provider for businesses, has successfully commissioned a two megawatt-peak (MWp) solar plant for Future Pipe Industries (FPI).

Located in Dubai Industrial City, the solar plant is expected to generate 3,200MW hours of clean energy in its first year of operation, equivalent to reducing 1,300 tonnes of carbon emissions per year.

Completed in time to celebrate the Dubai Solar Show and WETEX, this massive solar plant covers the rooftops of four warehouses totalling 18,000 sq m and comprises of more than 6,000 solar panels. It will meet 40% of the factory's energy consumption needs and help FPI significantly reduce electricity costs.

Dirk Matthys, chief operating officer at Future Pipe Industries, said, "Sustainability is intrinsic to the way we do business at Future Pipe Industries. The solar project with Yellow Door Energy at our DIC facility enables us to reduce our energy costs and lower our carbon footprint, all without any upfront investment. We look forward to having this solar plant generate clean energy for us for many years to come."

Saud Abu Al-Shawareb, managing director at Dubai Industrial City, commented, "The completion of Future Pipe Industries' solar plant is a milestone for our community and a testament to the UAE's role as a global platform for innovative companies at the heart of the clean energy movement. We are proud of our business partner's commitment to sustainability which now means more than 14 megawatts of clean electricity is generated on site at Dubai Industrial City."

"We hope businesses in Dubai Industrial City will soon recover from the pandemic and consider solar projects to reduce electricity costs. As a Dubai-based solar developer, Yellow Door Energy is honoured to contribute to DEWA's Shams Dubai Program and the UAE Energy Strategy 2050," added Jeremy Crane, CEO and co-founder of Yellow Door Energy.

Alba's Spent Pot Lining treatment plant work 42% completed

THE SPENT POT Lining (SPL) treatment plant of Aluminium Bahrain BSC (Alba) has advanced by 42% and achieved more than 178,000 safe working-hours without loss time injury (LTI).

Officials from Aluminium Bahrain BSC (Alba), Supreme Council for Environment (SCE) and the Ministry of Industry, Commerce and Tourism (MOICT) paid an inspection visit to the construction site of Alba's Spent Pot Lining (SPL) treatment plant, the first of its kind in the GCC and the Middle East, on Tuesday 20 October 2020.

Built over 26,000 sq m with annual capacity of 35,000 tonnes of SPL, the Alba's SPL Treatment Plant commenced construction in 2019 and is expected to start up by Q2 2021.

This project is in line with Bahrain's National Waste Management Strategy led by His Highness Shaikh Abdulla bin Hamad Al Khalifa, personal representative of His Majesty King of Bahrain and President of the Supreme Council for Environment. The project aims to provide a value-creating and sustainable solution to treat SPL with ensuring zero-waste.

Alba's CEO Ali Al Baqali said, "The Spent Pot Lining Plant construction is in full swing and we are pleased with the progress we have achieved so far as that will bring us closer to realise our vision in setting the benchmark in terms of sustainability and waste management. I take the opportunity to thank MOICT for their continuous support in this journey and SCE for helping us to address one of the key environmental issues for our industry."

The CEO of SCE Dr Bin Dainah said, "SCE is proud to have such partnership with Alba, which has resulted into this key strategic project that underlines the Kingdom's efforts towards



Photo Credit : Alba

The Alba's SPL treatment plant commenced construction in 2019 and is expected to start up by Q2 2021.

achieving sustainable development goals."

Dr Bin Dainah commented, "Bahrain is about to become home to the first plant in the region to treat this type of waste. This reaffirms the kingdom's reputation as one of the leading countries to achieve balance between increased production and environment friendly processes, in addition to having the largest smelter in the world ex-China, which is a source of pride for the entire nation. Transforming 100% of the treated SPL to raw materials for other industries in Bahrain will enhance the success of this project, and we shall all collaborate towards achieving this goal."

Eman Ahmed Al Doseri, undersecretary of Commerce Affairs at the MOICT, noted, "The ministry is committed to supporting local companies in developing the industrial sector in Bahrain, which will in turn increase their contribution to the GDP. This is achieved through facilitating the development projects and adopting the most advanced technologies in order to enhance their productivity and set the example in terms of sustainable and environment friendly initiatives."

Ducab HV announces Dubai solar park project win

DUCAB HV, A subsidiary of Ducab Group, will supply and install high-voltage cable for phase five of the Mohammed bin Rashid Al Maktoum Solar Park, the world's largest single-site solar park based on the independent power producer model.

The solar park project is in line with Dubai Electricity and Water Authority's (DEWA) aim to position Dubai as a global hub for clean energy and green economy through several initiatives. Ducab is supporting DEWA on this project to achieve the Dubai Clean Energy Strategy 2050 which aims to provide 75% of Dubai's total power output from clean energy by 2050.

Renewable energy is a focus of governments throughout the Middle East as they seek to move away from hydrocarbon reliance and develop more diverse energy grids. Customised



Photo Credit : Government of Dubai

The project will be executed over three plots of 300MW each and is one of the most cost-effective solar parks in the world.

cabling is thus in high demand for projects that seek to harness the power of solar, wind, and nuclear energy.

ADQ, Aldar sign to develop government capital projects

AS PART OF the Abu Dhabi government's efforts to support the emirate's real estate sector and public-private partnership initiatives, the Abu Dhabi Executive Committee has directed the development of a public private partnership framework to implement capital projects in the emirate.

In this context, ADQ and Aldar have signed a MoU, under which Aldar will take over the development and management of government capital projects with a total value of approximately US\$8.17bn, the largest of which is the Riyadh City project and the Baniyas North project as well as other projects in Al Ain and Al Dhafra regions, which will together include more than 25,000 land and villas for UAE Nationals and associated infrastructure.

Additionally, Aldar will have management oversight of Musanada's projects to ensure consistency of existing government capital infrastructure projects. Musanada currently has a large pipeline of active projects ranging from education, healthcare, infrastructure, social services, and facilities management.



Photo Credit: Ahmad Ardity/Pixabay

The framework aims to benefit from the expertise of the private sector and support the real estate sector.

thyssenkrupp Elevator installs TWIN elevator systems at NBK head office

THYSSENKRUPP ELEVATOR HAS installed 10 TWIN elevator systems at National Bank of Kuwait's new head office.

TWIN is the only elevator system with two cabins that move independently in one single shaft, making the most efficient use of available space, using less energy, and quickening the pace of building tenants. The five-year contract includes maintenance support with access to a stand-by technician.

According to the company, each elevator has its own traction drive, controller, ropes, counterweight and governor, while also sharing the same guide rails and landing doors. The key to this system's safety is that the cabins always operate at a minimum safety distance. It is fully certified by the German TÜV inspectorate – the most stringent and rigorous safety standard an elevator can attain.

Apart from the 10 TWIN elevator systems, thyssenkrupp Elevator has also installed 12 conventional elevators, some of which can travel up to six metres per second, as well as one panoramic elevator and two escalators.



Photo Credit: thyssenkrupp Elevator

The project was built in line with LEED Gold requirements, one of the first with such high certification in Kuwait.

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11-13	Build4Asia	HONG KONG	www.build4asia.com
16-17	Seamless Middle East	DUBAI	www.terrapinn.com
17-18	Smart City Live	VIRTUAL	www.live.smartcityexpo.com
23-26	The Big 5 Digital Festival	VIRTUAL	www.thebig5digitalfestivalglobal.com

DECEMBER

1-2	Africa PPP	VIRTUAL	www.africapp.com
10	Renewable North Africa 2020	VIRTUAL	www.moroccorenwable.org
14-15	Gulf Traffic	VIRTUAL	www.gulftraffic.com
26-28	Trans Middle East	BAHRAIN	www.transportevents.com

FEBRUARY 2021

9-11	E-world energy & water	GERMANY	www.e-world-essen.com/en
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MARCH 2021

9-11	Intermodal Africa	SENEGAL	www.transportevents.com
10-11	Middle East Rail	DUBAI	www.terrapinn.com

Readers should verify dates and location with sponsoring organisations, as this information is sometimes subject to change.

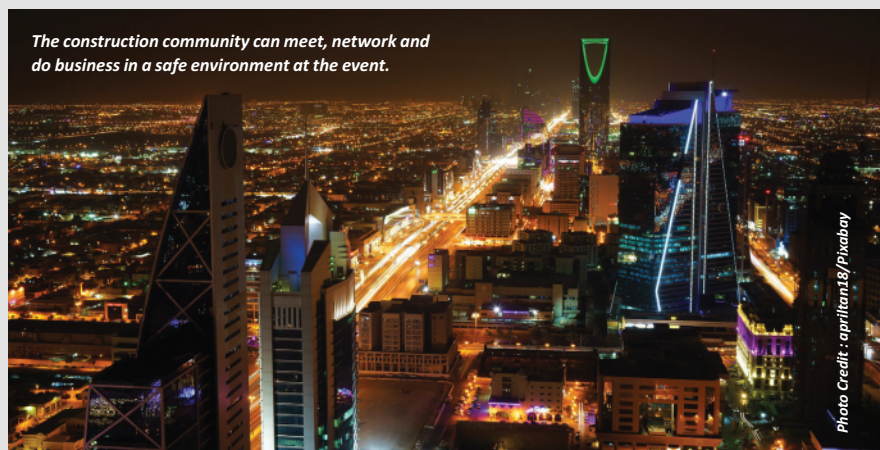
Big 5 Saudi 2021 to run for the first time in Riyadh

THE BIG 5 SAUDI will run for the first time in Riyadh from 24-27 May 2021 at the Riyadh International Convention & Exhibition Centre, driving vital business connections and Vision 2030 objectives and supporting recovery efforts following COVID-19.

Ben Greenish, senior vice-president at dmg events, organisers of the Big 5 Saudi, commented, "At a time when construction developments and the business landscape are rapidly changing, we look forward to providing a safe environment where the industry can connect, kick-start business, and drive growth. It is our hope that both the discussions and the partnerships made at the event are going to have a long-term impact on the future outlook of Saudi Arabia's US\$1.4 trillion projects market."

The Big 5 Saudi returns in 2021 with new co-located events and added features designed to represent and celebrate the construction sector in its entirety.

Alongside seven general construction product sectors, the event introduces FM EXPO Saudi; Saudi Clean Expo; HVAC R Expo



Saudi; Stone and Surface Saudi Arabia.

Furthermore, 'The Big 5 Saudi Impact Awards' launch at the 2021 edition will honour the people, organisations and projects driving transformation in Saudi Arabia's construction industry. Free and certified education sessions continue at the event, set to help professionals keep up with the latest industry trends and standards.

Osama F Al-Bunyan, chief operating officer, Zamil Industrial Investment Co, said, "The capital is the perfect meeting ground for discussing business and investment opportunities in the Kingdom. We look forward to welcoming the international building community here, and to work together to develop the sector in line with Vision 2030 objectives and standards."

ON THE WEB

A round up of the leading developments and innovations recently featured on *Technical Review Middle East's* online portal. To read more or to stay up to date with the latest industry news, visit www.technicalreview.me

EcoStyle telematics solution for MEA customers

MAN TRUCK & BUS has introduced an enterprise grade telematics solution for customers in the Middle East and Africa (MEA) region. The EcoStyle provides customers with major operational information, allowing them to monitor fuel consumption, driver performance, and much more.



Photo Credit : MAN Truck & Bus

The solution is set to enable the customers to save 5-15% in fuel costs.

Dashboards provide full visibility of the information that matters at a glance, or users can delve deeper through a rich suite of reports. www.technicalreviewmiddleeast.com/logistics/trucks

G20's stimulus packages

WÄRTSILÄ'S REPORT – ALIGNING Stimulus with Energy Transformation – has revealed potential for G20 energy stimulus to accelerate energy transition towards renewable energy systems and economic recovery. The report represents modelling of scenarios where the USA and the UK focus on their current stimulus packages for energy on measures that accelerate the energy transition, aligning economic recovery with decarbonisation.

Sushil Purohit, energy business president, Wärtsilä, said, "Across the G20 countries, the stimulus 'scales' are strongly weighted to support legacy inflexible power systems, despite the agenda for rapid decarbonisation that's underway worldwide."

www.technicalreviewmiddleeast.com/power-a-water/renewables

MEA power plant tenders up by 14%

THERE WERE 41 power plant tenders announced in the Middle East and Africa region in the Q3 2020, making a rise of 14% over the last 12-month average of 36, according to GlobalData's power industry tenders database. T&D Equipment stood at first place when compared with other power tender categories in the Middle East and Africa region in the Q3 2020 with 77 tenders and a 31% share, followed by T&D Project with 65 tenders and a 26.2% share and Generation Equipment with 47 tenders and a 19% share during the quarter.

In the Middle East and Africa, solar accounted for 30 tenders with a 63.8% share, followed by biopower with five tenders and a 10.6% share and thermal with four tenders and an 8.5% share. www.technicalreviewmiddleeast.com/power-a-water

New KOHLER generators for standby applications

THE NEW KOHLER generators provide optimised solution for standby applications, with all best-selling features packaged together.

The range is made up of six power from 900 kVA up to 1500 kVA available in open or soundproofed versions to minimise sound levels and protect the product from environmental damage.

www.technicalreviewmiddleeast.com/construction/machinery



Photo Credit : KOHLER

The new KOHLER range of generating sets is based on robust and proven technology.

Bobcat launches new vehicles and services

SOUTH KOREAN EQUIPMENT manufacturer Doosan Bobcat announced the launch of its new product line in a virtual event tagged Next is Now.

Gustavo Otero, president of Doosan Bobcat EMEA, said, "With Next is Now, We are advancing more powerful, more efficient and smarter equipment and technologies in an expansion that offers an enhanced and much wider choice of products to increase opportunities for our customers."

www.technicalreviewmiddleeast.com/construction/machinery

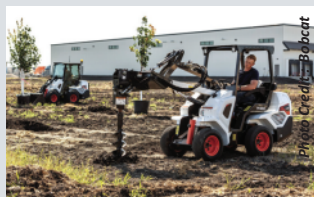


Photo Credit : Bobcat

The company is expanding its loader portfolio to provide customers with more choices.

Creating opportunities in maritime transport sector

DP WORLD, WAS a part of the virtual CEO Forum: Challenges and Future Opportunities for Ports and Shipping in the Gulf Cooperation Council, held on 6 October. The event united industry experts who shared insights on the hurdles faced due to the current COVID-19 crisis and elaborated on favourable opportunities in the region.

Shahab Al Jassmi, commercial director of ports and terminals, DP World, UAE Region, spoke about the roadblocks in business due to the global crisis and also revealed crucial strategies DP World, UAE Region employs to overcome these challenges. Since the onset of COVID-19, DP World, UAE Region focuses on facilitating an uninterrupted flow of medical supplies and essential goods. To ensure trade flow amid a deteriorating market, the company also introduced major digital initiatives with a focus on prudent cost management, better productivity, asset utilisation and automation. www.technicalreviewmiddleeast.com/logistics/shipping



Photo Credit: Mishalnik/Adobe Stock

Mining investment in the region is likely to accelerate, supported by rising mineral prices and government-driven efforts.

Gulf mining sector comes of age

Mining has become a key industry in the Gulf as part of overall efforts to diversify away from hydrocarbons — it spells good opportunities for investors, contractors and suppliers. Martin Clark reports.

Saudi Arabia's new mining law is expected to establish a new mining fund to support geological exploration programmes and surveying activities.

STRATEGIC EFFORTS TO wean the Gulf's major economies away from crude oil have been underway for some years. It has driven investment into related industries, such as downstream petrochemicals and gas, as well as spurred the advance of new areas like IT, finance and other services.

Yet other natural resources, beyond oil and gas, also hold strong potential. They include a major shift to renewable energy — the scope for solar power alone across the GCC is enormous — as well as the rapid growth of traditional mining activities.

Global investors are beginning to wake up to this mining and minerals potential — and that spells opportunity for flagship industry suppliers: Liebherr, Caterpillar, Volvo Penta and Komatsu.

The region's biggest economy, Saudi Arabia, has earmarked the mining sector as a major future contributor to jobs and growth going forward, and others including

the UAE, Oman and elsewhere in the Middle East, are following suit.

New Saudi law

Saudi Arabia's mining and metals processing sector has grown rapidly in recent years, and forms a critical part of the kingdom's Vision 2030 blueprint. According to the nation's investment agency, Invest Saudi, the sector now contributes around US\$17bn to the economy, employing a quarter of a million people.

New mining laws, approved in June 2020, suggest that the government wants to see a lot more. That will mean exploiting vast untapped reserves of bauxite, the main source of aluminium, as well as phosphate, gold, copper and uranium.

Saudi Arabia's energy ministry estimates that the kingdom's unused mineral resources are worth around five trillion riyals (US\$1.33tn).

Officials hope to triple the sector's

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contribution to overall economic output over the next decade and create a further 200,000 jobs.

The new law opens up access to financing for would-be investors and supports exploration and geological survey work, state news agency SPA reported, citing the country's industry and mining minister, Bandar Alkhorayef.

"This will help attract local and foreign investors and eventually raise mining sector participation in gross domestic product (GDP)," he was quoted as saying.

Ma'aden expands

The legislation follows earlier changes to the Saudi mining landscape, including the setting up a state-owned, joint-stock company for the provision of mining services.

Mining giant Ma'aden — 65% owned by the kingdom's Public Investment Fund — is presently the kingdom's sole miner, producing gold and copper and, more recently, moving into the production of aluminium and phosphates.

One of its subsidiaries, Ma'aden Wa'ad Al Shamal Phosphate Company (MWSPC), recently completed a US\$2.3bn refinancing, which reflects its strong standing among the international finance community given the dire economic climate of 2020.

Indeed, Mosaed Al Ohali, Ma'aden's chief executive, is highly ambitious, and hopes to steer his company to become one of the planet's top mining firms.

The Ma'aden group already exports its products to more than 20 countries worldwide. "The mining sector is the 'Third Pillar' of Saudi industry and is considered one of the most important sectors for achieving the goals of the Vision 2030,

The UAE is also alert to opportunities in mining and minerals, drawing on expertise from major firms already established in its sprawling oil and gas industry.



The new mining law focuses on sector sustainability.

alongside the petroleum and petrochemicals sectors," he said, "as it strongly supports economic growth and job creation in remote areas."

Investment potential

Riyadh has wasted no time in recent years in moving its vision forward. In August 2019, the Ministry of Industry and Mineral Resources was established as an independent government body to help advance mining activities.

The bulk of the kingdom's minerals wealth is located to the west of the capital, but there are efforts to make the impacts felt across the land. MWSPC is an example of what can be achieved in a relatively short space of time.

It consists of a phosphate mine, beneficiation, phosphoric acid, sulphuric acid, power and downstream plants located in Umm Wu'al, and an ammonia plant and others in Ras Al Khair.

The company is the centerpiece of the new Wa'ad Al Shamal industrial city, seen as a gateway to the mineral riches of the north.

Khalid Al-Mudaifer, vice-minister for Mining Affairs at the Ministry, speaking in a recent Invest Saudi newsletter bulletin, said the door is open for investment.

"We are developing several high-grade investment opportunities in iron and steel, aluminium and base metals like copper and zinc," he said.

In terms of exploration, the ministry has earmarked over 40,000 sq km with 54 occurrences across a variety of minerals such as gold, silver, copper, silica, rare earth elements, zinc, manganese and iron ore. "In

addition, we have streamlined the licensing process, making these areas available for in-depth exploration and development," he said.

Across the Gulf

Other Gulf economies are following suit, nurturing investment along all aspects of the mining and minerals chain, from exploration through to mighty industrial-scale projects.

Aluminium Bahrain (Alba) — the world's largest aluminium smelter outside of China — has long been the pride of Bahrain's industrial sector, for instance.

Despite the many challenges of 2020, the company remains on track to meet its lofty new annual production target of 1.54 mt.

It marks the first year of this heightened capacity, following the launch of Alba's Line 6 expansion project at the end of 2019.

The UAE is also alert to opportunities in mining and minerals, drawing on expertise from major firms already established in its sprawling oil and gas industry.

That includes engineering experts Mubadala, which is keen to support the creation of new industrial champions in areas such as aluminium, including bauxite and alumina, gold, copper and zinc.

Another of the largest aluminium companies in the world is Emirates Global Aluminium (EGA), which is jointly owned by Mubadala with the Investment Corporation of Dubai. It operates smelters in Abu Dhabi and Dubai, an alumina refinery in Abu Dhabi, and a bauxite mine and associated export facilities in the Republic of Guinea in western Africa.

Photo Credit : Invest Saudi

The list of minerals mined in the UAE ranges from copper and gypsum mines to the extraction of metals — including gold — and precious stones.

Oman opportunity

In Oman, the GCC's second largest country after Saudi Arabia, there is also renewed emphasis on exploration activities, with the government similarly labelling it a priority sector.

The country has reserves of copper, gold, silver, chromite, lead, nickel, manganese and zinc. It too has a new mining code, which came into effect in 2019, designed to whip up interest by offering more incentives, transparency and certainty to investors.

The Public Authority for Mining (PAM) has likewise announced a number of new mining projects and initiatives with an investment value of over US\$2bn, encouraging bids from overseas partners.

As in its successful oil and gas sector, Oman has been able to draw in investment from junior explorers, such as Australia's Force Commodities. It has an interest in two copper blocks (Blocks 4 and 5), which it acquired in September from a London-listed explorer, Savannah Resources.

The acquisition of these projects — that contain part of one of the best-preserved copper-rich Ophiolite belts in the world — forms part of a growth strategy to build a multi-commodity exploration and development group, the company said when announcing the acquisition. Part of the appeal, as elsewhere in the region, is the country's stable business environment, a key investment driver.

Simon Pooley, Force's chief executive, said that despite the region's rich history of copper production, there has been relatively limited modern-day exploration in Oman.

"We believe that with the application of systematic exploration and further commercial transactions, the opportunity exists in Oman to become a significant mid-tier copper producer," he concluded. ■

Saudi Arabia begins regional geological survey programme

IN A VIRTUAL signing ceremony launched from Riyadh, Saudi Arabia, headed by Bandar Al-Khorayef, minister of industry and mineral resources and chairman of the board directors of the Saudi Geological Survey (SGS), one contract and three contract awarding documents were signed, as a part of the ambitious regional geological survey programme (RGP).

The signing was between SGS and Sander Geophysics Arabia, Xcalibur Airborne Geophysics Company, China Geological Survey, and a consortium of the United Kingdom's International Geoscience Services and the Geological Survey of Finland.

During this phase of the RGP, it will focus on surveying and mapping some 600,000 sq km of the mineral-rich Arabian Shield area in western Saudi Arabia, over the next six years, in a bid to better understand the existence and distribution of mineral resources in that area and provide a valuable database of geological knowledge to future mining investors and operators.

The SGS has also affirmed that the main goal of launching the RGP initiative is to build on the efforts exerted in these geophysical and geochemical surveys, and in developing geophysical maps to produce detailed digital geological maps of the Arabian Shield area, that accurately reflect the types, locations, and quantities of mineral resources in the area, according to state news agency SPA.

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Benefits of modular buildings

Most of the construction projects experience some degree of budget overrun. In the era of COVID-19, contractors are aiming at cost cutting in each phase of a project. Whatever the nature of construction projects, modular office buildings can be effective to run operations while offering cost-savings.



Photo Credit: Studio Dagdagaz/Adobe Stock

Modular construction is a process in which a building is constructed off-site.

CONSTRUCTION PROJECTS, ESPECIALLY those that are large-scale, can take a long time to complete. They can also be similar in nature as to how they operate; whether they are in road construction, residential development, or commercial buildings.

One similarity among these large-scale construction projects is that they often require temporary space for their operations. Modular buildings can be used for a variety of uses, however, their temporary capabilities are what makes them unique in comparison to typical structures. For large-scale construction projects, general contractors will often seek out temporary office space, also known as “swing space,” for their on-site operations.

There are several benefits of choosing a modular office building for your construction project.

Security and storage

General contractors and other employees need a place to secure their belongings. Modular buildings offer storage space as well as locker rooms to keep documents, tools, technology, clothes and other

important materials safe. Not only does it offer a secure place for tangible goods, but for security of information and confidential discussions as well.

Flexibility and configuration

Construction sites can vary in their size and location. Because of this, it is important to have an office building that is flexible with its delivery and configuration. With temporary modular buildings, they are made to be durable and easy to configure. Not only are temporary buildings easy to set up, but they are just as simple to remove from the job site once they are no longer needed.

Multiple uses

Temporary modular buildings do not just provide office space, but a variety of other uses as well. General contractors will typically choose these buildings for break areas, kitchens, locker rooms, restrooms, showers, and more.

Quality

They may be temporary in nature, but modular offices are made of high-quality

materials. Modular office buildings offer a dry, safe, and comfortable environment for construction employees. When you choose a modular building for your job site, you can feel confident in knowing you have a high-quality, durable product.

Your client’s needs

Not only are temporary buildings useful for project management, but they are also useful to the client. Often times, the client needs temporary office space or classrooms, so that they can continue their operations during construction. Temporary modular buildings offer an affordable, fast, and easy-to-source solution that you can provide to your client.

COVID-19 safety

Although it is a new factor to consider, social distancing is necessary in order to mitigate the spread of COVID-19. By adding additional workspace, you can offer your employees a safe way to maintain social distancing by spreading out and staying healthy. ■

Source: Vanguard Modular Building Systems

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Focusing on deep retrofit

Decarbonising the building sector is a top priority for the UAE. A study explores solutions, approaches and incentives to retrofitting buildings that go beyond renovation programmes.

THE EMIRATES GREEN Building Council (EmiratesGBC), an independent forum aimed at conserving the environment by strengthening and promoting green building practices, has unveiled the results of its study 'Advancing Deep Retrofits in the UAE' at the virtual EmiratesGBC webinar.

According to the study, a majority (84%) of the respondents, including consultants, suppliers, manufacturers and ESCO experts, agree that more than 50% energy savings are possible in the UAE through deep retrofit.

The study was conducted to understand the current UAE retrofit market awareness and capabilities, as well as the challenges and opportunities related to deep building retrofit projects. It aims to support the industry and government to explore solutions, approaches and incentives to retrofitting buildings that go beyond current renovation programmes to achieve greater energy and financial savings. It showcases the viewpoints of stakeholders in the UAE retrofit market to support the development of national and emirate level roadmaps to deep retrofits and decarbonisation of the existing building stock.

Ali Al Jassim, chairman of the EmiratesGBC, said, "The EmiratesGBC 'Advancing Deep Retrofits in the UAE' study



Ali Al Jassim, chairman of EmiratesGBC.

highlights the current situation of the UAE's retrofit market. We believe that achieving deep retrofits can be executed by implementing energy efficiency measures before the addition of on-site renewable energy generation. We are committed to supporting the UAE's goals for a greener future, with the nation being among the first to announce its commitment to the 'Zero Carbon Buildings for All' initiative, a multi-partner global initiative led by the World Resources Institute and endorsed by the UN Secretary General. Deep retrofit plays a major role making this commitment a reality."

Need of new approaches

In key findings, the EmiratesGBC deep retrofits study observes there is no common standard used for reporting energy savings

in the market, with some retrofit projects including renewable energy generation as part of the reported energy savings. This also prompts respondents to call for building retrofits to be made mandatory by the government. From the developers' perspective, 45% believe the retrofit market can be further accelerated by mandating energy and water performance certificates for existing buildings. If retrofits are mandated, 64% of the developers would prefer an annual reduction target (in kilowatt-hour) between 11% to 20%. Highlighting the opportunity to execute deep retrofit in the UAE effortlessly, 70% of building industry stakeholders say technology for deep retrofit is already available in the market, while 60% observed there is a greater need for technical knowledge and experience for deep retrofits to be delivered successfully in the UAE.

The challenges highlighted by the respondents include lack of landlord interest and financial incentives, low tariff rates, high capital investments, and lack of government initiatives. The majority of the respondents highlighted the need for benefits such as linking building performance to rental costs, dynamic tariff rates to promote higher building efficiency, green loans or lower interest rates, tax-rebates and grants for energy efficiency-related projects. ■

The report, Advancing Deep Retrofits in the UAE, was developed with the support of Danfoss, Majid Al Futtaim and Saint-Gobain. Full report is available at www.emiratesgbc.org

Majority (70%) of building industry stakeholders say technology for deep retrofit is already available in the market.

Promoting sustainable practices

IN ORDER TO create impact about the benefits of deep retrofit, EmiratesGBC had earlier introduced a first-of-its-kind Building Retrofit Training programme in the region. Carefully crafted to address region-specific requirements outlining actionable steps to help stakeholders achieve sustainable building practices, EmiratesGBC has also partnered with the entities such as the Dubai Supreme Council of Energy and Masdar for the programme.

Volvo Trucks celebrates 10 years in the construction industry

VOLVO TRUCKS HAS started sales of its toughest ever construction truck – the new Volvo FMX. This is the third version of the Volvo FMX and it features an entirely new cab, higher payloads and innovative safety features. With increased front axle loads of up to 20 tonnes and a 38-tonne bogie, it is built for the most demanding assignments even on very rough terrain. The new Volvo FMX is designed for future electric drivelines and certified for the use of HVO, a fossil-free alternative to diesel.

In 2010, Volvo Trucks introduced the first Volvo FMX – a truck specifically developed for the demanding construction industry. Since then, it has built a reputation as one of the toughest construction trucks on the market, as a result of the introduction of many innovative features. The new Volvo FMX is built on an entirely new cab platform, based on Volvo’s ten years of experience of delivering robust construction trucks.

“The new Volvo FMX is designed to deliver a superior combination of agility and durability. Apart from the sturdy design, the new cab with upright A-pillars provides more space and improved visibility. It’s also easier to get in and out,” explained Helena Alsiö, vice-president for the FM and FMX product line at Volvo Trucks.

Traction control with ease

With the new Volvo FMX it’s easy to go from inter-axle differential lock to full differential lock and back. Simply by turning the new traction control knob, the driver can tell the truck to automatically



Photo Credit: Volvo Trucks

The new Volvo FMX comes with a new cab that offers increased space of up to 1000 litres.

synchronise the speed of the wheels before engaging full differential lock. The driver gets clear, instant feedback on the instrument display and can monitor the differential locks in real time.

Changing the direction of the truck on the go

At speeds below 15km per hour, it’s possible to change the direction of travel of the truck on the go. After shifting the I-Shift gear selector from drive to reverse, the driver can brake the truck using the accelerator. How fast the truck changes direction is determined by how hard the accelerator is pressed.

“The option of changing direction on the go is very useful, especially in combination with Volvo Dynamic Steering, when manoeuvring at low speeds in tight places,” explained Helena Alsiö.

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Capitalising on the evolving demand for lifting solutions

As construction activity picks up throughout the Gulf, leading crane rental companies and suppliers are looking to expand their fleets to cater to the region's evolving needs.

LOOKING TO BENEFIT from an upturn in business as market conditions improve, is Dubai-based Johnson Arabia, which operates throughout the region with its own fleet of approximately 250 mobile cranes. The company recently introduced a fleet of 10 GROVE RT550E cranes to support projects in the oil and gas sector as well as other industries. Managing director Martin Kirby commented, "Its compact design, higher lifting capabilities and maneuverability in tight spaces makes it a versatile crane for the UAE market for oil and gas projects and urban development where space is limited."

Executive manager for Dubai, Mohammad Fareed, said that the Grove RT550E is the choice of many industries in Dubai and the Northern Emirates. "The all-wheel drive and steering modes give it the ability to navigate on uneven ground, steep gradients, muddy terrain and other obstacles, which makes it the preferred choice for quarry and hydro plant projects. He added, "The one-cab operation makes it easier and faster when relocating on sites, and the 39 metre main boom is an added value when a higher reach is required."

The Grove RT550E can lift up to 45 tonnes of load, measures only 11.7m long, is 2.53m wide with a six metre footprint, and weighs less than 29 tonnes.

The addition of the Grove cranes follows the addition to the company's fleet earlier in the year of mini Maeda spider cranes. "Our recent purchase of these new Grove units, coupled with our spider cranes, gives us an edge over our competitors. We are their one-stop solution providers for projects that need heavy lifts and have space/weight constraints," said Mark Bederson, who manages the company's Abu Dhabi office.

The company adds that its top cranes in terms of demand are the 50-130 tonne cranes, such as the GROVE, in the oilfields or



Photo Credit : Johnson Arabia

Johnson Arabia has introduced a fleet of 10 new GROVE RT550E cranes.

infrastructure projects, followed by crawler cranes for new developments, then its luffers.

Dubai-based Access Hire Middle East has also added the Maeda mini-crane to its rental fleet, offering a complete range of Maeda products including mini cranes, mini

"Its compact design, higher lifting capabilities and maneuverability in tight spaces makes it a versatile crane for the UAE market."

knuckles and crawler cranes. With the ability to operate safely in confined spaces while providing the capacity of a full sized machine, the Maeda mini crane range is suitable to lift materials for a wide range of applications, from construction to natural resource development, with a lift capacity ranging from 0.995t to a massive 6t, and offering advanced level control systems.

Meanwhile, Kanoo Cranes, subsidiary of UAE-based Kanoo Group, has over the past year agreed partnerships with Sweden-based Kranlyft Group, distributor of Maeda Mini Cranes, Netherlands-based Spierings Mobile Cranes and Spain-based Alba, to distribute their products throughout the GCC. The company notes the growing demand for compact and versatile lifting equipment, in particular for the Dubai EXPO 2020, as well as the shift to rental rather than purchase in the current uncertain environment. According to a report by Plant Machinery Vehicles, Ahmad Wraikat,

regional manager, Kanoo Cranes, said that in the near future all of Kanoo Cranes' brands could work side by side on a construction site in the UAE.

"We're bidding for a large project that could use all our products; for example, Jaso tower cranes with SMIE anti-collision systems for exterior work, Maeda spider cranes for interior work, Alba hoists and platforms, and Spierings for areas where there are restrictions on installing and operating tower cranes."

Abu Dhabi-based tower crane specialist and Potain dealer NFT comments that, while the pandemic has caused uncertainty and a re-evaluation of priorities, priority construction and infrastructure projects are

going ahead. In Kuwait, for example, NFT had been awarded to supply and installation of 26 Potain tower cranes for the construction of the new International Airport. Despite the pandemic, the project is progressing "beautifully", the company says. "The government has taken steps to expedite the implementation of works despite the COVID-19 outbreak and the strict lockdown imposed throughout the Gulf state."

Embracing new technologies

Given the cost pressures as a result of the pandemic, it is not surprising that companies are looking to technology for operational efficiencies and cost savings. NFT comments, "If the COVID-19 pandemic has done anything, it's to accelerate the need for businesses to embrace digital transformation. In crisis mode, it is vital to be as proactive as possible. IoT and telematics solutions alleviate the pain in searching for reactive answers through prevention and protection while optimising processes and controlling costs."

The company has introduced a RFID fleet

management system to track its large fleet of tower cranes. All tower cranes, construction hoists and their respective parts and accessories are tagged and then linked to an asset tracking and management software. This in turn is then integrated with NFT's software solution for Inventory Management and Asset Evaluation.

A customised cloud-based system has been developed to match NFT's process of fleet tracking, storing, loading, inspecting, assembling, mobilising and re-stocking. For example, to avoid loading tower crane parts on trucks or containers without any missing piece, an automated gate barrier at the workshop only opens when the reader scans all parts on board and signals that it is good to go.

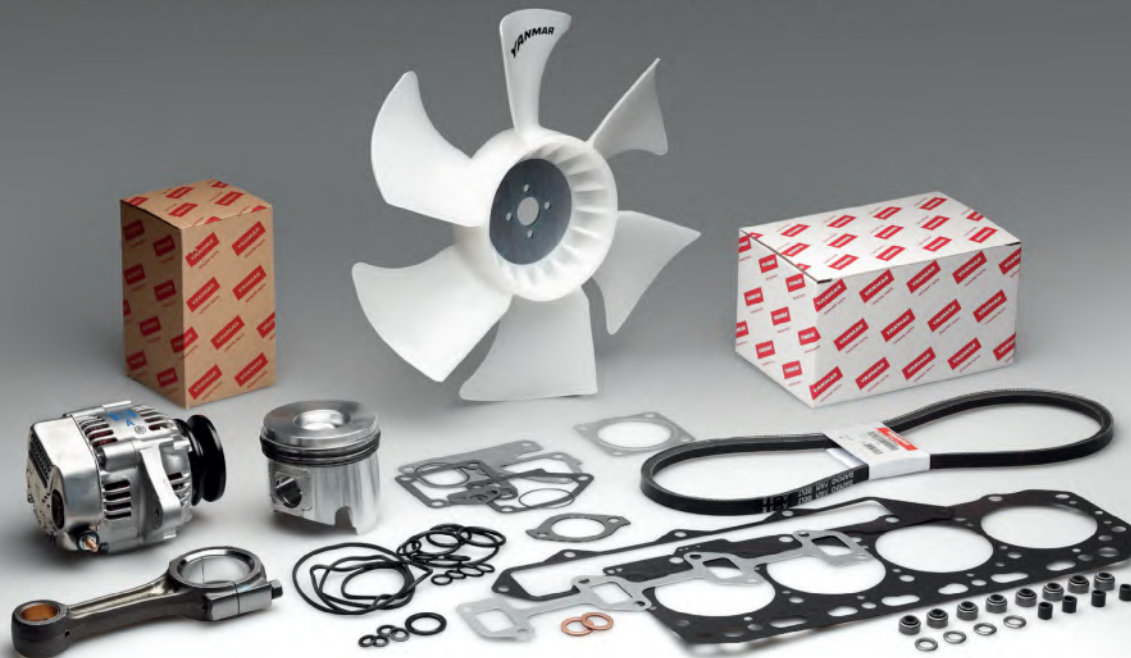
"Having the world's leading fleet of tower cranes spread across 300,000 sq m calls for an automated way of tracking our assets," said plant manager Amer Sneij, while Nagham Al Zahlawi, deputy general manager added, "The objective is to minimise human error and wastage while optimising inventory managing, strategic planning and real-time decision making." ■

"In crisis mode, it is vital to be as proactive as possible."



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Collaborative construction in the 'new normal'

Collaboration is at the heart of the construction and infrastructure industries. Yet in the time of the coronavirus, its very significance has unfortunately been threatened. How can the industries collaborate in times of social distancing?

Haki shares insights with Technical Review Middle East on how the construction and infrastructure sectors can collaborate during and after the pandemic.

HUMAN INTERACTION FORMS the very basis of work onsite and is key to collaborative working, in a physical sense. Although many employees can work collectively on a project through computer applications, the two-metre social distancing enforcement since the pandemic outbreak will prove to make it difficult for workers onsite, particularly those working with more traditional methods of scaffolding. The most basic method of scaffolding, the most common component, is a 5ft tube. How can two workers maintain a safe two-metre distance when passing fittings to each other? But maybe system scaffold is a potential solution.

What is system scaffold?

System scaffold, which is prefabricated, will definitely come into its own as a potential solution that can ensure projects go ahead while complying with social distancing measures. Unlike traditional methods, system scaffolding uses far less components and requires no mechanical fixings. The benefit here is two-fold. Firstly, it reduces manual operation and lengthy hammer action at height, and secondly, it lowers the number of workers required to complete the job at hand. To put it simply, system scaffolding needs fewer workers in less time.

The NASC has published guidance on how to work on socially-distanced construction sites. It pinpoints that where it is not possible to socially distance, workers should face away from each other, minimise the frequency they are together and reduce the number of employees involved in any given task. By lowering the number of staff and the time taken to fit scaffold, risk is significantly reduced. Two workers can collaborate and keep their time working together to a minimum.

Furthermore, temporary access solutions

including stair towers can manage the amount of foot traffic entering and exiting a space, and can facilitate the flow of one-way traffic – a prerequisite to maintaining social distancing in the time of coronavirus. With stair towers, therefore, it is easier to keep the two-metre distance and control who can be onsite at a given time. Temporary crossings, using solutions such as the HAKI Bridge System, are an option to be utilised to control foot traffic and mediate the flow of people on a site, or in public spaces integrated with the Public Access Stair.

BIM and collaboration

Prior to the pandemic, digital was certainly helping the industry collaborate across projects. Yet, since the coronavirus there has been an increase in workers using technology daily. Building Information Modelling, BIM, is giving a project's entire supply chain improved visibility when it comes to planning, designing and managing built assets.

From enabling architects to design-out risk, to providing contractors with the capability to digitise construction sites, the intelligent 3D model is optimising work processes and collaboration, which is essential when many of us cannot work together physically.

BIM is bringing the construction industry

Unlike traditional methods, system scaffolding uses far less components and requires no mechanical fixings.

into the modern age by improving safety in which buildings are made and maintained.

Although technology within the scaffold sector is still in its infancy its prospects are invaluable, with 4D BIM, in particular, more focussed on collaborative working.

Mattias Kuduk VDC and innovation manager at HAKI, says, "For the temporary works industry, BIM is enabling internal and external design engineers to produce complex 3D scaffolding blueprints for simple structures. Unlike 2D CAD drawings, 3D modelling produces detailed designs in far less time and with more reliability. Designers can reap these benefits with the HAKI Design Tool and HAKI BIM; two solutions in which the former enables designers to configure scaffolding designs on a cloud-based platform – Inventor iLogic and Configurator 360 from Autodesk – and the advances this configuration onto Revit for greater customisation and capability, particularly when it comes to interacting with the components within the 3D model. As BIM progresses, the industry will see the wider adoption of 4D, 5D and 6D iterations."

Augmented reality

On construction projects, virtual or augmented reality gives a clear visualisation of how a project will function in real-life. A project's 3D BIM model is loaded onto the AR software, to give full visibility of the components. Users can interact and walk through the 'project world' to review the work before construction.

HAKI has developed a version of such software named HAKI Playground, which allows users to walk around the project directly on-screen. This can be used on any device including a PC, tablet, smartphone, Xbox and PlayStation. ■

Source: HAKI

PASCHAL formwork makes concrete (props) of any shape

FORMWORK EXPERT PASCHAL has supplied a prefabricated plant with high-quality, easy-to-handle special column forms with 30 different cross-sections.

For special fields of application such as formwork for columns, pillars and shafts, PASCHAL says it works in close co-ordination with its customers to achieve tailored formwork solutions for unusual geometries and high frequencies of reuse.

This was the experience of Hungarian precast concrete elements manufacturer PREbeton Zrt. in Erdőtelek, a subsidiary of Market Építő Zrt., which decided to award PASCHAL the contract to deliver column forms. In total, PASCHAL produced 68 column forms with 30 different cross-sections, in heights of 150 cm and 450 cm. As a special highlight, the formwork panels were delivered in the company colour, RAL 6018 yellow-green.

The product range is due to be expanded with standing heavy-duty props with oval, square and circular column cross-sections suitable for exposed concrete.

Varying geometries

For precast concrete elements, time and cost-savings are key, as are short production times, high quality and precision. In order to meet these specifications, the formwork used to produce the precast element is extremely important with regard to dimensional accuracy and the concrete surface.



Photo Credit : PASCHAL

Whether oval, square or circular column forms, PASCHAL offers tailor-made formwork solutions.

PASCHAL special formwork impresses in quality and handling

PASCHAL's building-specific formwork and its formwork for precast elements are designed according to customer requirements, perfected with the client, and finally produced to very high quality standards in PASCHAL's own manufacturing department. All the precast elements, of every shape and size, must be able to be formed and, due to the large number of pieces to be produced, the formwork used must guarantee a long life and quick formworking times.



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Optimising energy consumption a fundamental objective of a smart city.

Photo Credit: Alexey Stoyan/Adobe Stock

Energy efficiency in public buildings

Luis Carlos Barroso, Acciona ME general manager for service solutions, discusses the corrective measures to improve energy efficiency in the building sector.

The aim is to reduce the energy consumption of a given asset and then share the associated savings between the client and the sustainability expert company.

CITIES HAVE BECOME one of the most populated places in the world. Their growth changes every year with the increase and arrivals of new inhabitants and it is estimated that this growth will go on increasing over the next few years. According to the latest United Nations report (UN), 68% of the population will live in cities in 2050 and the building sector has enormous potential to mitigate the impact of climate change in both developed and developing countries.

This scenario means that the main cities have the challenge of becoming 'Smart Cities' or intelligent cities. By making the most out of the energy resources and taking advantage of the Information and Communication Technology (ICT) data, it is possible to create better infrastructure and city asset management, which promotes a more balanced urban planning.

Optimising energy consumption

Smart Cities create great business opportunities for both the public and the private sectors. One of them involves the optimisation of the energy resources through energy efficiency technologies. Energy efficiency is the series of actions that allows optimisation of the relationship between the quantity of energy consumed and the final products and services obtained: making more from less. The aim is to reduce the energy consumption of a given asset and then share the associated savings between the client and the sustainability expert company. In this way, both parties have a tangible – and quite fast – profit along with a reduction of the carbon footprint for decades to come. For some years now, there has been a growing interest in improving energy efficiency on the part of companies and public administrations.

The opportunity to make use of these

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technologies in the UAE are significant since buildings in the UAE require heavy cooling systems to cope with the extreme seasonal heat and other energy-hungry equipment. The implementation of energy efficiency procedures in those buildings along with the UAE commitment to renewable energies are paving the way to drastically decrease the impact to the environment.

It is important to create awareness on energy efficiency practices and to initiate more retrofitting of existing inefficient buildings and projects to reduce the overall energy consumption.

The residential sector is responsible for the consumption of almost 47% of the GCC's total energy, against a global average of 25%. Considering that there are 25,000+ ongoing construction projects in the GCC right now, it is extremely important to join forces, address current challenges and harness the immense opportunities that lie ahead. Systems, hardware and equipment must be updated and appropriately maintained to reach a balance between energy and water savings. Should we not take corrective measures to improve energy efficiency in the building sector, energy demand is expected to rise every year.

Saving resources

One of the key drivers to attain more intelligent buildings and system integration is through the energy savings that can be achieved. Evaluation of occupancy patterns, application of daylight, Heating, Ventilation, and Air-Conditioning (HVAC) and lighting sensors in appropriate locations are only a few examples.

A report published in October 2016 by the International Renewable Energy Agency (IRENA) noted that cities account for 65% of global energy used and 70% of manmade

The residential sector is responsible for the consumption of almost 47% of the GCC's total energy, against a global average of 25%.



Luis Carlos Barroso, Acciona ME general manager for service solutions.

carbon emissions. This makes optimising energy consumption a fundamental objective of a smart city.

Therefore, efficiency is one of the principles that should govern the work undertaken by all public authorities. Achieving the desired effect by using the least possible resources is an obligation that applies to every area of our public administrations. In recent years, this

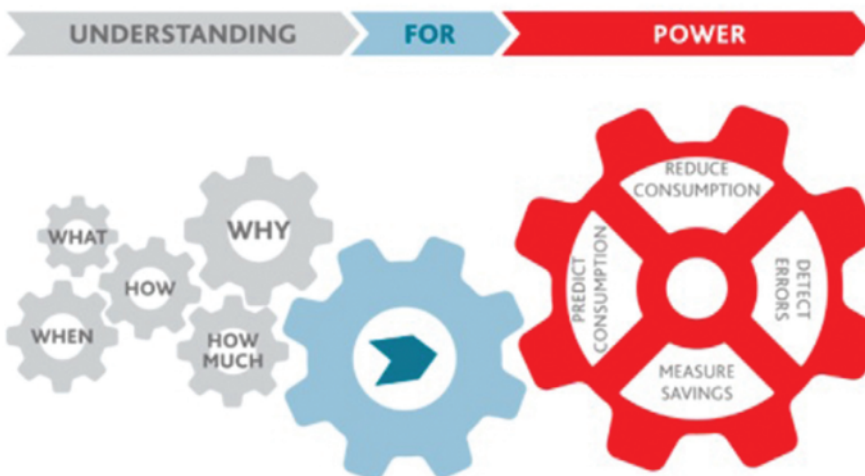
approach has become increasingly relevant to the way they use energy resources.

Environmental awareness and the growing public concern about the effects of climate change mean that energy efficiency has become not merely our responsibility but also an opportunity, a way to encourage a greater commitment to sustainability throughout society. By consuming energy sensibly and efficiently, public authorities are taking on an educational role and leading by example.

Modern technologies for analysing millions of readings

The essential first steps towards saving energy involve understanding how that energy is used, how much energy is consumed, and when it is used and to do what. For this reason, it is essential to do an energy audit to perform on the group of buildings that we want to be more efficient in order to diagnose their energy consumption. Each one of the buildings will then be monitored to produce real-time data on the consumption by all the installations and systems: lighting, heating, air conditioning, etc.

Our technical team design and implement the energy monitoring facilities, which enables the registration of consumption at all manner of facilities and systems (lighting, heating, air conditioning and thermal insulation, etc.), integrating different control solutions. Then we perform a remote real-time follow up of consumption at the facilities and of the operating processes of its customers. This enables a correct analysis of the variations detected with respect to the reference indicators, generating alarms and examining measures and alternatives in transmission and operation, thereby enabling energy consumption and economic expenses to be reduced. The information obtained through the Building Control Centre on the status and energy performance of the facilities enables the technical team to design savings measures and solutions based on customer needs, offering permanent advisory services adjusted to variability in the operation or in the use of energy consumers. ■



New tools are set to help enhance the efficacy, resilience and security of distribution grids.

Digital grids: The future of electricity

AI, data analytics and IoT have huge potential to alleviate major grid complexity challenges in the near future. Deblina Roy reports.

According to the 2019 Global Energy Perspective from McKinsey, electricity consumption doubles until 2050.

THE MAGIC OF power shifts lies in the transmission and distribution of clean energy to the customers. Restructuring of power grids to be able to accommodate the power shifts is a major piece of the energy puzzle. Power grids are seen as the true enabler that controls, analyses and transmits clean energy to people and industries. How the grid evolves will determine how economical the transformation to these cleaner energy resources will be and, therefore, how quickly they are adopted.

Power and Utilities Perspective, a report by Deloitte, has examined the energy and utilities industry's ability to embrace disruption. For power and utilities companies, the pace of technology change brings a non-stop stream of questions, challenges and opportunities.

As power companies, equipment manufacturers, service providers and end-users seek to position their businesses for

the future, the industry will need to resolve issues such as ancient grid infrastructure and the need to adapt; penetration of renewable energies; ensuring sustainable energy for all; the different cost of fuels and generation mix infrastructure; pressures to reduce power prices etc.

Deloitte's report highlighted that new tools can help enhance the efficacy, resilience and security of distribution grids while deriving new insights from smart meters. New technology brings new talent challenges, but it can also enhance training and certification across every role. As distributed generation and storage technologies gain traction, the grid is moving from unidirectional distribution toward multi-directional networking with millions of buyers and sellers. Pilot technologies include Blockchain for secure financials, IoT to monitor the grid and artificial intelligence (AI) and data science to predict supply and demand.

Global energy transformation

The International Renewable Energy Agency's (IRENA) comprehensive roadmap to global energy transformation examines technology pathways and policy implications to ensure a sustainable energy future.

Francesco La Camera, director-general, IRENA, said, "The global energy transformation is happening, driven by the dual imperatives of limiting climate change and fostering sustainable growth. An unprecedented decline in renewable energy costs, new opportunities in energy efficiency, digitalisation, smart technologies and electrification solutions are some of the key enablers behind this trend."

According to the roadmap, the level of additional investments needed to set the world on a more climate-friendly path above current plans and policies is US\$15tn by 2050.

Overall, total investment in the energy system would need to reach US\$110tn by 2050, or around 2% of the average annual gross domestic product (GDP) over the period. The roadmap stresses that systemic innovation is crucial as a major enabler for the energy transition. Countries need to devote more attention to enabling smarter energy systems through digitalisation, through the coupling of sectors via greater electrification, and by embracing decentralisation trends.

This innovation also needs to be expanded beyond technology and into markets and regulations, as well as new operational practices in the power sector and business models.

AI will be crucial to efficiently and effectively plan, develop, operate and maintain the grids of the future.

Digitalisation is the key to manage grid complexity

The Siemens Energy MEA Energy Week conference (from 19-21 October 2020) held a special session on Digitalisation: The key to managing grid complexity and renewable integration. The session started with a keynote address from Dr Afif Saif Al Yafei, CEO of Abu Dhabi Transmission and Despatch Company (TRANSCO) who spoke about how grid operators and countries can take the full advantage of digital technologies. He said, "Technology is the key enabler and driver that has a profound impact in the advancements of the energy sector. Innovation and rapid spread of technology are at the core of many new avenues and it is imperative for us to adopt it quickly. As the energy transition accelerates, new technologies are maturing and enabling the digital grid."

TRANSCO is collaborating with various universities to support the research and development in the UAE that enable renewable energy integration. Innovation, be it in digitalisation, battery technologies, storage or EV connection, will affect the way power grids are developed. AI, data analytics and internet of things (IoT) have the potential to alleviate some of the challenges of grid complexity by using an

increased amount of data.

"AI will be crucial to efficiently and effectively plan, develop, operate and maintain the grids of the future. From the perspective of the energy transition, using information-related technologies will enable grid complexity to be managed more efficiently. From an asset management perspective, the use of more online monitoring and methods of data interpretation will enable a better understanding of asset health to ensure maintenance, refurbishment, replacement or interventions and optimise the total cost of ownership, while maintaining the security of supply to the customers."

"Internet of Energy is here but it relies on Internet of Things. That's why Siemens Energy has started connecting power transmission projects to optimise use cases for customers," said Beatrix Natter, executive vice-president transmission, Siemens Energy, during the conference. "This was the first step to move with the connection of substations. The company is also working now on the digitalisation of substations. The real-time data can be used to analyse and optimise the performance, providing the grid operators with actionable insights."

Continuous advancements are going on in the power and electricity sectors. Al Masood Power Division, the official distributor of MTU, a Rolls-Royce Power Solutions Company in the UAE and Bahrain, recently highlighted smart microgrid solutions during their participation at the first ever 3D Virtual edition of the Water, Energy, Technology and Environment Exhibition (WETEX), held from 26-28 October. The utilisation of microgrid technologies is part of the UAE Energy Strategy 2050, which is the country's first unified energy strategy that is based on supply and demand, and aimed at increasing the contribution of clean energy in the total energy mix.

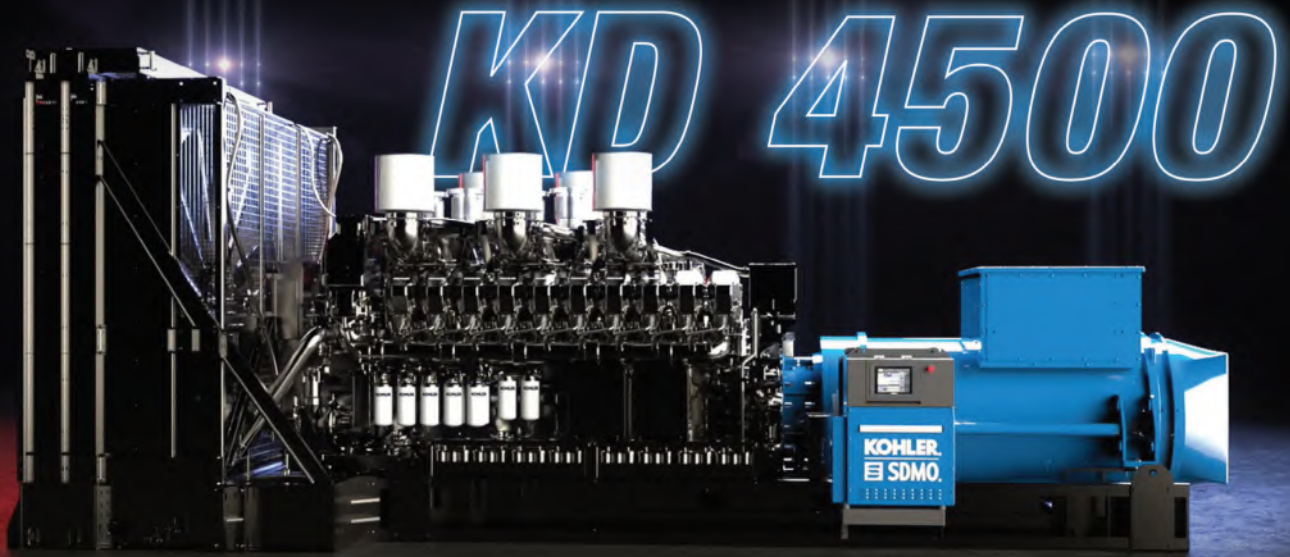
Rasso Bartenschlager, general manager, Al Masood Power, said, "Under this smart new energy system, power production will become more digitised and decentralised – creating a one stop shop solution for power that matters." ■

Al Masood Power introduces smart and microgrid solutions during the first ever virtual edition of WETEX.



Photo Credit: Al Masood Power

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Finding innovative ways to increase compressed air efficiency can amount to big savings in the long run.

Tips to increase compressor installation efficiency

Sanjeev Sharma, regional general manager at Atlas Copco Services Middle East, offers some advice on increasing compressor installation efficiency.

COMPRESSED AIR ACCOUNTS for a significant part of total energy costs for industrial manufacturers – typically around 12% and maybe as high as 40% in some facilities. This means that finding innovative ways (no matter how small) to increase compressed air efficiency can amount to big savings in the long run. Items like leak elimination, air audits, reduced pressure bands, and reducing unloaded running hours are some of the most popular ways to decrease energy usage – but there are many other actions that you can take to reduce your costs and make sure your compressor system is running as efficiently as possible.

1. Ensure your compressed air equipment is sized correctly

Choosing the wrong size air compressor for your facility can lead to production issues and increased costs due to wasted energy. When choosing the right type of

compressor, consider these questions:

- What is the application?
- How much air flow does my facility/workshop use?
- What is the minimum pressure needed within the facility?
- Do I need clean, dry air?
- How many hours per year does my compressor operate?
- How many shifts do I run per day?
- Is there fluctuation in flow demand between shifts?
- Are there any plans for future expansion?

Once you have the answers to the above, make sure that you select your compressor based not only on initial cost, but on the lowest total lifecycle costs.

2. Consider new compressor technologies

Air compressors are long-term investments that will play a significant role in your business for years to come. The average

factory changes air compressors every seven to 10 years, meaning that the initial capital expenditure is only a fraction of how much your compressor will cost you in total. 70% or more of your air compressor's lifecycle cost will come down to its energy usage.

Switching or updating your compressed air installation to the latest technology can reduce energy consumption by up to a quarter. If you have an old or inefficient compressor, the cost to replace it with a new compressor is often less than the current running costs. A modern air compressor with the latest controllers and energy efficient motors will contribute to your bottom line from day one.

You can also think about upgrading certain aspects of your compressor. Reach out to your compressed air provider to discuss the possibility of replacing major components of your compressor with new, more efficient components. For example, upgrading your compressor with the latest

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In the oil and gas industry, there is a multitude of volatile and corrosive compounds. A typical tank battery consists of several tanks filled with liquids and gases that may be contaminated with explosive and corrosive hydrocarbons. If the gas concentration is between the LEL and UEL, an explosion could occur causing millions of dollars in losses as well as expensive environmental fines and risk to human lives. In addition, corrosion in steel tanks can be a real problem which results in significantly increased operating costs.

Our safety solution is BAUER's Tanksafe™ Nitrogen Blanketing Systems. BAUER Tanksafe™ creates a nitrogen blanket layer inerting the headspace of tanks, to prevent the risk of explosion and significantly reduce tank corrosion. BAUER Tanksafe™ has been specifically designed using BAUER's rugged and time-proven on-demand NGM™ nitrogen generation system combined with BAUER's Tanksafe™ smart tank battery configuration. For over 70 years BAUER has created high-pressure solutions for various industrial applications.

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type of electronic controller will allow you to take advantage of the most advanced compressor control management, reduced unloaded running and higher efficiency.

3. Make sure you have the right compressor type

Many applications in the food and beverage, electronics, oil & gas, automotive, textile, and pharmaceutical industries require oil-free air to guarantee product integrity and quality (often specified as Class 0). Oil-free compressed air technology will help to avoid expensive filter replacements, cut the cost of oil condensate treatment and reduce energy loss from pressure drop in filters.

If you have a very large-scale application, you can also consider a centrifugal compressor, given that these offer energy efficiency in process air or in bulk air applications presenting a flat load; they're also ideal for providing a baseline flow in mixed installations with VSD screw compressors.

4. Consider VSD (Variable Speed Drive)

Most production processes require different levels of demand in different periods, which may mean that the compressor is running off-load or idle (not producing any

Regular servicing, using OEM genuine parts, is more critical in the Middle East region.

compressed air) for long periods of time. Substantial savings can be made if a fixed speed compressor can be replaced by a variable speed drive unit as it only produces compressed air as and when required. This also minimises offload running of the compressor, which is known to waste energy. A VSD compressor saves an average 35% energy and a VSD+ unit can save as much as 50% compared to a fixed speed unit, even at full load.

5. Don't forget the impact of regular maintenance

The best way to take care of your compressed air availability is by taking the best care of your compressed air equipment. This means investing in regular preventative maintenance, which will sustain the efficiency that you have gained by purchasing a new compressor or improve

the performance of an older unit. Whether you prefer to purchase spare parts only and perform maintenance in-house, sign up to a planned maintenance programme at pre-determined intervals from the manufacturer or approved distributor, or choose a total responsibility package that covers breakdowns and leaves no room for surprises. The main thing to remember is that reduced compressor performance is inevitable as the machine gets older. Regular servicing, using OEM genuine parts, is more critical in the Middle East region where the climate is humid and dusty, and will improve your equipment uptime and energy efficiency; the opposite could lead to more downtime, increased energy consumption and potentially a costly breakdown.

6. Lastly, gather some data!

Data monitoring such as SMARTLINK data box gives you remote insight into your air system. It enables you to detect problems, identify potential improvements and even follow up on actual savings. ■

To learn more about the ways to save energy, download Atlas Copco's guide: <https://www.atlascopco.com/en-ae/compressors/offers/eleven-ways-to-make-your-compressor-installation-energy-efficient>

Bauer Kompressoren introduces B-VirusFree breathing air protection

BAUER KOMPRESSOREN HAS developed B-VirusFree, a solution that eliminates viruses at the air intake stage. The system is designed to protect firefighters, divers, pressure chamber operators and medical personnel from these hazards whenever they require respiratory equipment for their daily operations.

The B-DETECTION PLUS online gas measurement system already provides accurate measurements of the commonest hazardous substances associated with breathing air, such as CO, CO₂, moisture and oil, and eliminates them using BAUER filter systems. However, a new threat now lurks in the form of viruses like SARS-CoV-2, as well as bacteria and moulds. These new dangers are particularly insidious because they are invisible and highly communicable – and cannot be measured by sensors. Inhaled in ambient air, they can pass through any commercially available standard air purification system. Even the high temperatures and pressure levels of the compression process have little effect on them because of their short exposure to the process.

The new B-VirusFree protective filter system reliably neutralises – depending on the charging rate of the compressor – up to 99.9% of the corona viruses, bacteria and special moulds, removing them from the intake air.

The chemical- and ozone-free technology of the patent-pending B-VirusFree System uses a special UV light source to destroy pathogens in the intake air flow before they can reach the compressor.

The 254-nm UV wavelength is absorbed by the pathogens' DNA, where the photons destroy the bonds between the DNA strands of the viruses, bacteria and mould spores and effectively prevent



The B-VirusFree protective filter system eliminates viruses at the air intake stage.

Photo Credit: Bauer Kompressoren

them from reproducing.

B-VirusFree can be ordered alongside any new BAUER system and is also easy to retrofit. The filter system is designed for flexible mounting to a wall, and has a compact footprint for extra ease of handling and convenience.

The filter does not require replaceable filter cartridges. The UVC light source has an extremely long service life of around 2,000 hours and is simple to replace. The control unit reliably displays the filter functions and includes visual and acoustic warning signals for the event of a malfunction, e.g. in a power cut.

A standard 220/230V power outlet is all that is needed for operation. A version for regions with 110V power supply is also available.

5G and fibre: Present and future

Juan Manuel Pérez Cortijo, EMEA marketing director, Corning Optical Communications, says the more revolutionary aspects of 5G capability will need higher frequency bands and since these signals are more fragile, it will need many more antennae than existing macrocell sites can support, and these will all be driven by fibre.

CORNING SCIENTISTS DR. Robert Maurer, Dr. Donald Keck, and Dr. Peter Schultz were brought together more than 50 years ago to develop a highly pure optical glass that could effectively transmit light signals over long distances – a feat that had never been achieved. The very best bulk optical glasses of the day had attenuations of around 1,000 dB/km. This meant the scientists had to see an improvement in transparency of 1,098 in order to reach the 20 dB/km goal. The task seemed impossible, but their successful technological breakthrough forever changed the world.

An early breakthrough

This year, Corning Incorporated celebrates the 50th anniversary of the company's world-changing invention of low-loss optical fibre, and since then, has delivered more than a billion fibre kilometres and operates several optical fibre plants globally. The breakthrough material, each strand thinner than a human hair, made possible today's ever-faster telecommunications networks that link neighbourhoods, connect cities, and bridge continents.

The term 5G has entered into the mainstream vocabulary, but we should remember that 5G would not be possible without fibre. 5G means faster speeds but also enables wider coverage, higher levels of network reliability and lower latency and the ability to connect billions of devices, most of which won't be mobile handsets. It is only when all these attributes are combined that we can truly realise the full promise of Internet of Things (IoT) and the futuristic world of applications.

Unlocking full potential

It is important to make clear that the commercial launches of 5G to date are really the first stages of the wider



Juan Manuel Pérez Cortijo, EMEA marketing director, Corning Optical Communications.

Photo Credit: Corning

deployment. The more revolutionary aspects of 5G capability will need higher frequency bands and since these signals are more fragile, it will need many more antennae than existing macrocell sites can support, and these will all be driven by fibre.

One way to increase coverage/bandwidth capacity for a mobile network is to “densify” it by adding more sectors, meaning

It is important to make clear that the commercial launches of 5G to date are really the first stages of the wider deployment.

deploying more cells. This way, the number of subscribers connecting to a given cell and therefore sharing the available bandwidth is reduced, so that more bandwidth can be allocated to each subscriber per cell.

In countries where the density of cells prior 5G deployment is good, mobile operators will only have to add the new 5G radios to the existing sites. 5G technology will also operate at higher frequencies in the millimeter-wave band, as there is plenty of spectrum available allowing wider channel bandwidth, highest peak rates and a lot smaller form-factor antennas.

But a key factor is that every new wireless site needs both data and power, and provision of this connectivity is probably the biggest cost element in network densification. It is therefore inevitable that mobile operators will avoid this investment until the nature of the services provided over the 5G network demands it.

The best is yet to come

It is impossible to predict how the capability of 5G technology will benefit us all in the future. The early 5G deployments are only scratching the surface of the full capability of 5G. There is significant investment being made now in large scale fibre-to-the-home (FTTH) deployments throughout MENA and there is enormous potential to make that investment go further by realising the potential of FTTH / 5G Network Convergence. It is a critical time in the lifecycle of fibre deployment, and correct decisions today will reward us long into the future. ■

This year, Corning celebrates the 50th anniversary of the invention of low-loss optical fibre — an innovation that has transformed the way we connect and that lies at the cornerstone of the communications revolution.

Digital twin for smart water networks

Gregg Herrin, vice-president, water infrastructure at Bentley Systems and Frank Braunschweig, director of product management, water infrastructure at Bentley Systems, tell Abhishek Paul why – and how – water utilities need to invest in digital twin solutions.

HARNESSING DIGITAL TECHNOLOGIES remains vital for all industries to stay relevant, keep up with the times and improve efficiencies during the pandemic. The water sector is no different. Capitalising on digitalisation is more crucial for the Middle East and North Africa (MENA) region where 12 of the world's most water-stressed countries are located.

As an essential service, water utilities are facing a multitude of challenges such as water scarcity and loss, financing for capital improvements, increasing electricity costs and ageing infrastructure.

Precisely, to address these problems and provide reliable, resilient, and affordable water systems, utilities need adoption of digital twin solutions, according to Gregg Herrin, vice-president, water infrastructure at Bentley Systems.

Put simply, a digital twin is a digital representation of a physical asset, process or system, which allows understanding and modelling its performance. A digital twin for water enables utilities to visualise infrastructure assets across the entire asset lifecycle, track change, and perform analysis to optimise asset performance.

“One of the key things about a digital twin, in general, is their ability to help utilities make better decisions. And those could be decisions related to design, construction, pump specifications, operations and maintenance,” says Herrin, who leads the team responsible for Bentley's hydraulics and hydrology applications.

“If you make a mistake with a decision in the digital world, it does not cost you anything. But if you make a mistake with a decision in the real world, it can literally cost you lives,” says Herrin.

For nearly four decades, Bentley Systems has been designing and developing tools



Photo Credit: Bentley Systems

Transform system data into improved decisions and optimised infrastructure assets with digital twin technology.

intended for engineers to carry out engineering project works of utilities. Typically those works included master planning projects, capital planning projects, design projects and so on, he mentions.

Talking about the Bentley Systems portfolio, Herrin points out, products such as WaterGEMS for the water distribution network, SewerGEMS for sanitary and

sewer combined collection systems, StormCAD, CivilStorm and PondPack for doing stormwater management and pond design are really oriented towards traditional engineering tools for engineers.

To make water networks efficient and smarter, Bentley has developed a digital twin solution OpenFlows WaterSight. “What digital twinning does is that it takes engineering capabilities and connects them with information technologies like GIS, customer building data and operation technologies like SCADA systems. It brings them together in a way that the whole utility can now benefit from. And that's what OpenFlows WaterSight solution is about,” he adds.

Explaining more about what WaterSight can do and who uses it, Frank Braunschweig, director of product management, water infrastructure at Bentley Systems, says, “Our new water sight product is new digital twin solution for water operations. It helps water utilities and engineering departments to perform their daily operations and long-term planning. It brings together information from different sources and integrates into a



Photo Credit: Bentley Systems

Frank Braunschweig, director of product management, water infrastructure, Bentley Systems.



Photo Credit : Bentley Systems

Gregg Herrin, vice-president, water infrastructure, Bentley Systems.

single digital twin platform. Instead of having information silos in different departments, utilities can centralise this information in our solution."

Moreover, utilities can virtually test and simulate response measures for emergencies, such as fires, pipe breaks, pump outages, or other time-critical events. By monitoring SCADA sensors, the solution can detect system anomalies way before and protect against potential natural, accidental or purposeful contamination.

It also provides additional insights of the present, past, and forecasted performance for every asset within the system, says Braunschweig, who leads the product team responsible for Bentley's OpenFlows product line. Access to cloud-based insights from various enterprise sources can deliver a utility-wide view into the detection of a critical system and individual asset performance information, enabling more efficient operations and maintenance planning decisions, according to him.

Adding more to that, Herrin says, "Because it's real-time and because it covers more than just engineering, that value even goes up to the level of a general manager or other executives in water utilities. Particularly, for a place like the Middle East, things like non-revenue water are very important."

Water utilities in the region spend all their effort and energy, removing salt from the water and pumping into the system, but later realise water lost due to leaks or theft, he points out.

"By using digital twinning, utilities can get a better sense of current non-revenue water, and it can be tracked over time. So when utilities find and fix whatever leaks or other problems, they can see if their water loss strategies are working or not. Certainly, this is important in the Middle East as in any other geography to make sure that there's no spilling of water, even a drop," says Herrin.

On the front of managing energy consumption, model pumps accurately using hydraulic modelling, including complex pump combinations and variable speed pumps, can help understand the impact that different operational strategies have on energy use, notes Braunschweig.

Each utility is different from others in terms of possessing talents

"One of the key things about a digital twin, in general, is their ability to help utilities make better decisions. And those could be decisions related to design, construction, pump specifications, operations and maintenance."

within their teams and the services they offer. So how do utilities integrate a digital twin into their system? Herrin says, "We see that different utilities have different capabilities to implement digital twin by themselves or needing help. That's where a digital integrator comes into play. Digital Water Works, a Bentley company, is a digital integrator that helps utilities implement digital twin for their water infrastructure." ■

The water infrastructure experts spoke to Technical Review Middle East during Bentley's Year in Infrastructure 2020 Conference (virtual).

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Project Databank

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Project Focus

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Project Summary

Name of Client	Etihad Rail
Estimated Budget (\$ US)	895,000,000
Facility type & sector	Railway & Infrastructure construction
Status	Construction
Location	Abu Dhabi
Project start & end date	Q3-2012 & Q4-2025
Last updated	08-10-2020
Main contractor	L&T Larsen & Toubro CSCEC - China State Construction Engineering Corporation SK Engineering & Construction Power China
Contract value (\$US)	889,100,000
Award date	Q1-2019

Background

The stage 2 of package A will cover the track works of 139km which will connect Ruwais with Ghufeifat on the UAE Border with Saudi Arabia.

Project Scope

Initially, Phase 2 involves rail route From Ruwais to Ghufeifat connecting to the Saudi Arabian border & from Tarif to Dubai & Al Ain connecting to the Sultanate of Oman border. As per the latest update, the Oman link has been removed from the scope of work.

This particular part of the phase 2 project will cover construction of the line between Ruwais and Ghufeifat, extending for 137km.

The project's scope of work will include:

- Design
- Civil works
- Track works

The scope also involved supply 38 turnouts and 495,000 sleeper sets of the rail fastening system W 30 HH for the 139 km long line.

Project Finance

Etihad Rail is the project owner. Etihad Rail was established in June 2009 under Federal Law no. 2, with a mandate to manage the development, construction and operation of the UAE's national freight and passenger railway network.

Project Status

Date	Status
Oct 2020	The soil preparation process is currently being carried out with 65% completion rate for the cutting works through sand and rocky hills. Nearly 55% of filling sand at the formation levels with the tracks are completed.
Sep 2020	Construction on the utility corridors is underway and will carry works on the electricity, steam, water and sewer pipes.
Jun 2020	Construction is currently taking place for the underpass culvert, culvert steel casting and access roads. Earthworks and track laying equipment are also taking place.
Mar 2020	Vossloh has won a contract to supply rail fasteners and turnouts. Vossloh will supply 38 turnouts and 495,000 sleeper sets of the rail fastening system W 30 HH for the 139 km long additional stretch by the end of October 2020.
Mar 2020	Construction has just commenced for Package A. Progress Rail Locomotive Inc is also providing 38 Electro-Motive Diesel (EMD) locomotives.

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Project Databank

Compiled by Data Media Systems

MAJOR CONSTRUCTION AND INFRASTRUCTURE PROJECTS, UAE

Project Name	City	Facility	Budget	EPC Award Date	Status	Project Start	Project End
Emaar Properties- Dubai Creek Harbour - Overview	Dubai	Mixed-Use Development	8333000000	2016-Q1	Construction	2006-Q1	2021-Q1
Nshama Development - Town Square Development - UNA Apartments	Dubai	Mixed-Use Development	850000000	2018-Q2	Commissioning	2017-Q4	2020-Q4
Emaar Properties - Downtown Dubai - Forte Towers	Dubai	Residential Development	3120000000	2017-Q4	Construction	2017-Q1	2021-Q4
DWTC - EXPO 2020 Site - Overview	Dubai	Mixed-Use Development	30000000000	2017-Q1	Construction	2013-Q4	2021-Q1
Ethihad Rail - Trans - Emirates Rail Network - Phase 2 - Overview	Abu Dhabi	Railway	110000000000	2019-Q1	Construction	2018-Q1	2025-Q4
Ethihad Rail - Trans - Emirates Rail Network - Phase 2 - Package A	Abu Dhabi	Railway	8950000000	2019-Q1	Construction	2012-Q3	2025-Q4
ICD - One Za'beel	Dubai	Mixed-Use Development	9650000000	2017-Q2	Construction	2008-Q1	2021-Q4
Emaar - Dubai Creek Harbour - The Cove	Dubai	Residential Development	1300000000	2018-Q4	Construction	2016-Q3	2021-Q1
Nakheel - Nad Al Sheba Mall	Dubai	Malls/Retail Outlets	2250000000	2018-Q2	Construction	2016-Q3	2021-Q2
Miral - Yas Island SeaWorld Theme Park	Abu Dhabi	Theatre/ Entertainment/ Leisure Facilities	10000000000	2019-Q1	Construction	2016-Q4	2022-Q1
Arada - Sharjah Aljada Residential City	Sharjah	Mixed-Use Development	6500000000	2018-Q3	Construction	2017-Q3	2025-Q1
The First Group - Dubai Marina Ciel Tower	Dubai Marina	Hotels	6000000000	2020-Q1	Construction	2016-Q1	2023-Q1
Eagle Hills - Sharjah Indigo Beach Residence	Sharjah	Residential Development	1000000000	2019-Q1	Commissioning	2019-Q1	2020-Q4
Eagle Hills - Sharjah Cyan Beach Residence	Sharjah	Residential Development	1000000000	2018-Q4	Construction	2018-Q3	2020-Q4
Eagle Hills - Sharjah Sapphire Beach Residence	Sharjah	Residential Development	800000000	2018-Q4	Construction	2018-Q2	2020-Q4
Meraas Development - Bluewaters Island - Ain Dubai (Dubai Eye)	Dubai	Theatre/ Entertainment/ Leisure Facilities	2650000000	2014-Q1	Construction	2013-Q1	2020-Q4
MOPA - Sheikh Khalifa Central Hospital	Fujairah	Medical/ Health Facilities/Spa	2450000000	2017-Q4	Commissioning	2017-Q3	2021-Q1
National Media Council - EXPO 2020 Site - UAE Pavilion	Dubai	Convention and Exhibition Centres	1000000000	2017-Q3	Construction	2015-Q3	2020-Q4
Modon Properties - Abu Dhabi Al Riyadh City - Overview	Abu Dhabi	Residential Development	18000000000	2019-Q3	Construction	2017-Q4	2022-Q3
Modon Properties - Abu Dhabi Al Riyadh City South - Phase 3 & 4 Infrastructure	Abu Dhabi	Roads	5300000000	2020-Q3	Construction	2020-Q1	2022-Q3
Emaar Properties - Dubai Creek Harbour - Creek Horizon	Dubai	Residential Development	1330000000	2018-Q2	Construction	2016-Q3	2020-Q4
SEHA & Musanada - Al Ain Hospital	Al Ain	Medical/ Health Facilities/Spa	13200000000	2013-Q4	Construction	2009-Q1	2021-Q1
Bloom Properties - Bloom Heights	Dubai	Mixed-Use Development	5000000000	2017-Q4	Construction	2016-Q1	2021-Q1

More power to Backhoe Loaders

The all-new backhoe loaders tick all the right boxes, making them suitable for more and more demanding applications. Upgraded with the latest fuel efficient features, these machines offer better performance and more productivity at a lower total cost of ownership.

JCB updates 55KW 3CX

JCB, THE WORLD'S leading backhoe loader manufacturer, has launched a new 55kW 3CX backhoe loader with EU Stage V compliant engine. The machine delivers improved operator comfort and ease of use, increased productivity and performance,



The 55kW Stage V 3CX introduces a range of advanced automation features.

combined with reduced total cost of ownership.

The 55kW 3CX is powered by JCB's latest EU Stage V compliant 3.0-litre diesel engine, replacing the previous generation 4.4-litre. The compact engine delivers 55kW of power and 440Nm of torque, an increase of 10% over the previous model.

The 55kW Stage V 3CX introduces a range of advanced automation features, designed to reduce operator fatigue and to boost productivity. This includes auto stop, which automatically detects when the machine is no longer in use and shuts down the engine.

Features include:

- Revised Command Plus Cab
- Enhanced safety including integrated LED beacons and step lighting
- Efficiency boost – a 3.0-litre Stage V engine delivers 10% torque increase and 7% fuel saving
- Increased productivity with auto-levelling, auto seat select and auto-2WD

Bobcat's new generation R-Series B730

BOBCAT HAS LAUNCHED the new generation R-Series B730 backhoe loader, replacing the company's first generation B700, B730 and B750 models, for sale in the Middle East and Africa (MEA). Available in a choice of different configurations for diverse applications, the new R-Series B730 backhoe loader is suitable for use in construction, utility, rental, roadworks, demolition, excavation, waste, recycling, landscaping, agriculture and many other industries.



The new R-Series B730 backhoe loader.

408 Nm, delivering more than enough muscle for the most demanding applications.

The new generation B730 offers premium performance with powerful breakout forces and strong lift capacities. With best-in-class reach and wide working areas at both the front and rear, the B730 reduces the need for repositioning for applications such as digging, trenching, breaking and material handling.

Intuitive controls and smooth operation

Bobcat's new R-Series are all designed around the operator, setting new standards in operator comfort. The new roomy six-pillar cab in the B730 is typical of the R-Series design and provides operators with a flexible choice of control configurations.

Hyva adds 60tm Family to the EDGE line cranes

HYVA HAS ADDED a 60tm family to its EDGE Line to further strengthen its position in truck-mounted cranes – an extensive range which now spans from 1 to 165tm. These heavy cranes are compact and light and have greater lifting capacity. The rewards are higher payloads and faster operation.

The Hyva 60tm family of heavy cranes comprises four models, each with two jib options – the J1206 light jib for lifting horizontally, and, the J2006 heavy jib for lifting vertically:

HC601e – Standard lifting control system

HC661e – Proportional lifting control system and lifting capacity 10% greater than HC601e

VR60MNG Marine Crane – Surface treatment for marine applications

VR62MNG Marine Crane – Surface treatment for marine applications and lifting control system

Innovations which improve operator efficiency and safety, while increasing productivity include:

Auto levelling system – automatically keeps the truck frame in a horizontal position, enabling best crane performance.

Operator auto detection – automatically activates the operator's closest stabiliser, avoiding the need for operator contact.

Front stabiliser control – allows possible load in the front area, avoiding stress and overload of the truck frame.

Compact installation kit – guides the hoses through a different route, allowing a more compact installation of the crane on truck.

Dynamic load diagram – provides advance verification of crane lifting capacity based on truck stability.

Magic touch – allows automatic folding and unfolding to transport and working positions.

Standard features include: double linkage, negative angle, up to eight extensions, endless slewing, multifunction radio remote control and auxiliary manual control valve on column side.

Hyva's new EDGE Line cranes offer a first-class lifting experience and the best available warranty in the industry – three years general warranty and five years on structural parts.

The EDGE Line is produced in a new dedicated crane assembly line in Paviglio, Italy.

AMCS technologies unveils anti-collision system for tower and mobile cranes

AFTER SEVERAL MONTHS of development and testing in real conditions, AMCS technologies has unveiled its anti-collision solution between tower cranes and mobile cranes available for sale, in France and internationally.

Indeed, the anti-collision management of the AMCS technologies solution does not lie in the simple temporary neutralisation of areas on the site prohibiting tower crane, to work within a defined perimeter where the mobile crane could potentially be located.

The new functionality of the DCS 61-S automatically detects the movements of the



Photo Credit : AMCS

For this new innovation in the anti-collision sector, AMCS technologies won the Technical Innovation of the 2020 Tower Crane Trophies awarded at JDL in September.



Photo Credit : AMCS

DCS 61-S

mobile machine and integrates the control of tower cranes.

The DCS 61-S placed on tower and mobile cranes communicate their information via a radio network and constantly know the position of each of the machines, thanks to geolocation antennas.

The DCS 61-S keeps its two other essential functions for maintaining productivity and site safety.

Zoning: the system gives the

user the possibility to quickly create prohibited overflight areas in 3D directly on the screen by associating geometric shapes with perimeters and static obstacles.

Data logger: the DCS 61-S continuously records and saves data related to events, movements and all crane parameters in order to view them directly on the system screen in the cabin and / or download them to a USB key.

Jekko expands its range with 5-tonne mini crane SPX650

JEKKO HAS WELCOMED the latest addition to its range, SPX650, the five tonne mini crane with a maximum reachable height of 23.5m (with jib) which embodies many innovations and promises to become a flagship model of the Treviso-based company. Thanks to the experience gained over the last two years with SPX532 and SPX1280, Jekko could concentrate on one machine the features and the advanced technical solutions already successfully applied in the two best-selling models.

SPX650 features cutting edge stabilisation and hydraulic systems, new hydraulic jib and runner jib (with plug and play attachment), a lithium battery power supply and a handy radio remote control. Additionally, the crane features other important functionalities such as the possibility of working either with hook or winch, the extendable tracks, the availability of pick

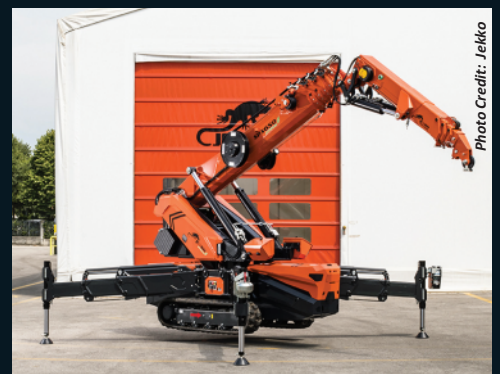


Photo Credit: Jekko

SPX650 features X-patterns outriggers with double extension (by cylinder and chains) to reduce the minimum stability area.

and carry mode and the telemetry system J-Connect. And all this without neglecting the design and quality materials, with a close attention to detail.

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Hyster 3.5T Fortens with raised cab.

Photo Credit: Hyster

Four lift truck trends to watch

As materials handling requirements, technologies and economic conditions evolve across the Middle East, certain trends are driving lift truck choices across the region.

Affordable solutions

“To meet growing market demand for affordably priced solutions that get the job done, the Hyster UT series was launched in 2020, including IC and electric lift trucks, plus warehouse equipment,” says James Newman, area business director, Middle East and Africa for Hyster. “These new options give businesses more ways to select the right truck for their budget and their needs.”

When matched with the right application and operating volume, businesses will find the Hyster UT series trucks straight-forward, durable, reliable, and uncomplicated to maintain. They are particularly well suited to lower intensity applications and complement the existing range of Hyster FT and XT lift trucks.

Zero emissions forklifts

“Many businesses want to switch from IC trucks to electric forklifts,” says James. “Although IC trucks are still right for many, others need to meet emissions legislation, or may want to minimise contaminants in their operation.”

A range of Hyster electric lift truck options, such as the highly manoeuvrable and energy efficient Hyster JXN and JXNT series are available, for lifts up to 5.5 tonnes. Affordable three- and four-wheel electric lift trucks are also available from the Hyster UT series and the company offers a complete range of electric trucks for the warehouse, from pallet and stacker trucks to reach trucks and VNA.

Advanced lift truck technology

As businesses seek technologically advanced solutions, lithium-ion batteries are an option for many types of Hyster equipment. Hyster also recently launched the J7.0-9.0 XNL series to provide a zero emissions lift truck, powered by a lithium ion battery for lifts up to 9 tonnes and there are many ongoing developments for the larger lift trucks and Hyster container handlers.

“We also see demand for Hyster robotic lift trucks as applications seek affordable automation to drive efficiency for repetitive handling tasks,” says James. “These trucks make it possible to automate activities such

as moving pallets or towing trailers and can offer a good return in the right applications.”

Industry-specific solutions

“Our aim is to provide solutions across the full spectrum of market needs, so we have a range of specialist options for particular requirements,” says James. “A great example is our raised cab option, popular for beverage industry customers.”

The raised cabin provides an extra 350mm or 450mm height to the driver on Hyster electric lift trucks, or an additional 500mm on Fortens IC forklifts. With more visibility over a full load, which may be up to 1.8m high, operators can comfortably drive forwards over greater distances, reducing driver fatigue and supporting productivity.

“With the support of our network of local dealers across the region, we cater to all of these lift truck trends and much more, meeting the needs of applications from the UAE and Saudi Arabia, to Qatar and Oman.” ■

For more information, contact your Hyster dealer or visit www.hyster.com

SPX Cooling unveils Marley MH Element Fluid Cooler

SPX COOLING TECHNOLOGIES, Inc., a full-line, full-service industry leader in the design and manufacture of evaporative cooling towers and air-cooled heat exchangers, has introduced Marley MH Element Fluid Cooler, an induced-draft, crossflow closed-circuit cooling tower suitable for HVAC, industrial and process cooling applications. Due to its hybrid operation and high-efficiency components, the Marley MH Element Fluid Cooler can deliver more thermal capacity with a smaller footprint and lower fan power.

Compared to fluid coolers using traditional HDG coils, the MH Element Fluid Cooler provides 15% more thermal capacity, is 20% lighter weight per footprint, requires 35% less fluid volume and uses 35% less fan power. Its high-performance copper coils offer seven times more thermal conductivity and can be drained, extending service life with its superior corrosion resistance.

Metso introduces next-gen Courier on-stream analyser for direct measurement of gold concentration

METSO OUTOTEC HAS launched its next-generation Courier 6G SL on-stream analyser for direct measurement of gold, platinum and other valuable metal concentrations from ore feed, concentrate, and tailings streams. The new analyser enables accurate real-time elemental analysis measurement, which is critical for establishing efficient process control to improve process stability and maximise recovery.

The Courier 6G SL on-stream analyser builds on the Outotec Courier 6X SL analyser with a more powerful X-ray tube and measurement channels optimised for direct on-line measurement of gold and other elements from calcium to uranium. This makes it particularly suitable for applications where gold is recovered with other metals such as silver or copper.

The system can measure up to 24 individual process streams – each with an individually adjustable measurement time – to ensure optimal measurement accuracy and sampling frequency in even the most complex polymetallic flotation circuits.

The new next-generation on-stream analyser combines Wavelength Dispersive X-ray Fluorescence (WDXRF) and Energy Dispersive X-ray Fluorescence (EDXRF) technologies with a high-power X-ray tube for unparalleled measurement performance. It features an automatic internal reference measurement for guaranteed stability under changing environmental conditions.



Photo Credit : Metso Outotec

It focuses on improving recovery and minimising precious metal losses.

Eaton enhances the 93E UPS range

POWER MANAGEMENT COMPANY Eaton has rolled out the second-generation of its Eaton 93E uninterruptible power supplies (UPS).

The Eaton 93E UPS offers high availability, energy efficiency and a compact footprint for advanced power protection in a variety of applications for small and medium-sized data centres, healthcare, industrial and other mission-critical facilities at a lower total cost of ownership. The range is now extended up to 500 kVA,



Photo Credit : Eaton

Advanced battery management (ABM) enables intelligent charging to preserve and prolong battery service life.

with an internal maintenance bypass switch options for 100 to 500 kVA units. The range is offered with built-in factory fitted back feed protection

systems compliant to the safety requirements of IEC 62040-1. Eaton 93E UPSs are designed to be practical and simple to use, while providing the level of performance and the features required to protect mission-critical applications. The second generation of Eaton 93E UPS features a three-level topology design. They are among the most energy-efficient UPSs in their class, with up to 96.1% efficiency in double conversion mode and up to 99.3% in high-efficiency mode.



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Hitches & Glitches introduces green FM packages

DUBAI-BASED SMART AND green maintenance specialist Hitches & Glitches (H&G), part of the Farnek Group, has launched a specialised sustainable cleaning, maintenance and repair package, especially for the UAE's mosques. The package also includes support to enable mosques to achieve sustainability, health & safety goals, according to GBAC Star accreditation and Green Globe certification requirements.

As a part of H&G's package, experienced teams can carry out HVAC filtration and duct disinfection as well as install UV lighting devices inside the ducts to reduce and sterilise any dust particles and other harmful airborne viruses.

"Pathogens, which may be viruses, bacteria, or fungi, can spread through breathing, talking, coughing, sneezing, raising of dust, spraying of liquids, toilet flushing or any activities which generate aerosol particles or droplets," said Kelvin Vargheese, director, Hitches & Glitches.

To further support mosques, Farnek, H&G's sister company, recently achieved GBAC STAR accreditation for its HQ in Dubai, from the Global Biorisk Advisory Council (GBAC), a division of ISSA, the global cleaning industry trade association.

Brady launches BradyGrip Print-on Hook Material

BRADY HAS LAUNCHED the BradyGrip Print-on Hook Material, a one-of-a-kind solution that allows cable identification to be easily printed and placed on bundles.

According to the company, the solution is printable, grippable, repositionable and offers fast, reliable cable identification. The BradyGrip Print-on Hook Material is made possible by a partnership between Brady and VELCRO Brand.

A grippy backing makes it easy to reposition or remove, so there is no need for costly rework, it added.

Improves efficiency: maximises uptime with faster, printable identification for cable bundles.

Easy on, easy off: apply, reposition and remove with exclusive, print-and-place material.

Safe: offers a non-damaging alternative to nylon cable ties.

Ultra-adaptable: customise labels to fit big or small jobs by printing on different-width material.

Cat's D9 Dozer lowers ownership and operator costs

THE CAT D9 Dozer replaces the D9T model and offers customisable configurations to meet application needs around the world. Built on a legacy of longevity and proven reliability in the field, the new Cat D9 lowers overall costs per unit of material moved by up to 3%. Efficiencies gained through a new torque converter with stator clutch reduce fuel consumption by as much as 5%, and the new dozer reduces maintenance and repair costs by as much as 4%.

The new dozer features the proven Cat C18 engine, which has a range of exhaust aftertreatment solutions available, including configurations to meet US EPA Tier 4 Final/EU Stage V regulations and configurations equivalent to US EPA Tier 2 and Tier 3.

The D9 also features differential steering for a tight turning radius and the ability to maintain ground speed while turning – to keep productivity high. The suspended undercarriage delivers more track contact with the ground for less slippage and greater productivity.

The versatile D9 can be equipped with any of a wide range of blades and attachments, enabling it to work efficiently in a variety of applications, including production dozing, site maintenance, fleet support and ripping. Companies engaged in heavy construction, quarry and aggregates, landfill, bulk materials handling and forestry applications have found the D9 Dozer an



Photo Credit : Cat

Cat D9 Dozer pushing dirt.

indispensable tool for delivering the lowest owning and operating costs while maintaining high productivity.

Featuring a frame that absorbs and withstands high-impact shock loads encountered in severe applications, the new D9 offers design improvements that reduce maintenance and repair costs. The newly integrated AutoLube system results in fewer grease points to limit daily maintenance procedures.

Easily monitor temperatures with new Brady's RFID Labels

BRADY CORPORATION OFFERS new RFID Temperature Labels that enable wireless temperature reading and monitoring for a wide range of devices, equipment, machines, racks, cables, and structures.

The flexible, temperature-sensing smart labels can be applied to almost any surface to support informed, proactive decision making.

The new RFID Temperature Labels are a low-cost solution for temperature monitoring.

Applications include environmental monitoring, material and equipment monitoring, cold chain monitoring, data centre monitoring, maintenance and safety data collection, and greenhouse monitoring. The thin and flexible, RFID enabled smart labels do not need energy or maintenance.

They are energised wirelessly in the event of a temperature reading with a UHF compliant RFID reader. Temperature readings can be automated and are picked up by scanners on an ISO 18000-63/64 and ETSI compliant bandwidth.

Identification specialist Brady has made



Photo Credit: Brady

Brady supplies a complete solution to enable reading and monitoring temperatures from a wide range of surfaces.

temperature sensing RFID technology available in its wide range of researched industrial grade label materials.

These labels are tested to stay attached and remain legible in heat, cold, dirt, indoor or outdoor and to resist chemicals, cleaning agents, grease, oil and fuels. Equipable with a variety of adhesives, they can stay attached to smooth, rough, or powdered surfaces, and to flat or curved surfaces.

Ghaddar supplies 33 John Deere-powered generator sets

WHEN THE HIGH-PROFILE Winter at Tantora Festival in Saudi Arabia put out a call for a power supplier, power expert Ghaddar Machinery from Lebanon was ready, willing, and able to meet the challenge.

In a record time of three weeks, the company manufactured, delivered, and installed a 19.7 mVA power solution for this annual three-month event at the old town of Al-Ula, Medina, in northwestern Saudi Arabia.

The right solutions, in the right place

The Tantora project included 33 generators with John Deere engines providing a total capacity of 7.0 mVA, powering the colourful mix of concerts, sporting events, art installations, light shows and restaurants.

John Deere is one of the world's leading suppliers of diesel and gas generator sets and solar power. With facilities in Rabigh, Saudi Arabia, Ghaddar was in the perfect position to meet the special needs of the event.

Reliability and power, in the toughest conditions

Ghaddar makes ready-to-run yet highly customisable power solutions ranging between 4 and 4,000 kVA, for demanding and remote applications. Since 2019, its portfolio has included 30 to 320 kVA generator sets powered with John Deere engines, as well as complete John Deere-powered power packs for OEMs.

Mohamad Afif Ghaddar, marketing and business development



Photo Credit: John Deere

The Tantora project included 33 generators with John Deere engines providing a total capacity of 7.0 mVA.

manager, sees a lot of potential, and need, for John Deere engines in the Middle East. "We choose John Deere because of its extensive, global experience in generator set applications. By adding John Deere engines to our range, we can now meet any power capacity requirement, no matter how demanding the project or operating conditions. The engines' reliability, simple design and ease of maintenance make them perfectly suited to the hot and dusty environments and for remote applications. And, their impressive load response allows customers to use a smaller and cost-effective package to power their needs."

Siemens new 80 GHz compact radar transmitters for level measurement offers easy configuration

SIEMENS PRESENTS TWO new additions to the Sitrans LR100 series of 80 GHz radar transmitters. These high-frequency, compact transmitters can deliver robust, reliable measurements even in the most challenging environments. Both deliver fast and easy setup.

Sitran LR140 features 4-20 mA simplicity and is configured via Bluetooth wireless

technology and the Sitrans mobile IQ App.

Sitran LR150 offers a four-button user interface on an optional HMI for configuration or monitoring. Configuration is also available via Bluetooth wireless technology and the Sitrans mobile IQ App or remotely with 4-20 mA/HART using Simatic PDM.

The easy-to-use quick start wizard will

have the transmitter operational in minutes. Custom microchip technology can deliver fast response and extremely high sensitivity to detect even the weakest of signals.

Reliable readings mean reduced operator exposure to hazardous situations: no need to climb tanks, lean out over sumps, or crawl into confined spaces to maintain instruments. Zero blanking distance allows measurement right up to the sensor, thereby avoiding costly overfilling. And two-millimeter accuracy enhances operational safety through precise measurement through the full range of the application. All this robust performance is wrapped in a submersible housing constructed of corrosion-resistant materials.

Integrating critical level readings or process control data into operations can unlock new opportunities to react to safety concerns, analyse processes and identify areas for improvement. Users can monitor level measurements or diagnostic and maintenance information from the comfort of the control room or connect to Siemens MindSphere, the cloud-based, open IoT operating system or any other IoT solution of the user's choice.



Photo Credit: Siemens

High-frequency radar ensures reliable readings in challenging environments.



المدن الناجحة هي التي لديها خطط شاملة للتنقل الحضري

إنشاء أنظمة نقل دولية ووسائل نقل متعددة الوسائط - وخاصة القطارات فائقة السرعة. كمدن ناشئة، سيسمح لها تخطيط التنقل الحضري بجذب المواطنين كما يريدون، مع وضع أنفسهم كذلك وسط المجتمع العالمي».

ووفقاً للمؤشر، لا تزال المدن الأوروبية مهيمنة مع تربع كل من أمستردام ولندن وهلسنكي وبرلين وباريس على القمة. وتعتمد هذه المدن في الغالب على النقل الجماعي، ويسهل المشي فيها، وتعطي الأولوية للتنقل النظيف بالإضافة إلى السلامة. كما أنها تعمل عن كثب مع المؤسسات الأكاديمية المحلية وترتبط بصورة جيدة على الصعيدين الإقليمي والدولي بشبكات النقل الجوي والسكك الحديدية المختلفة.



أنشو فاتس

التي تشكلها ثورة التنقل العالمي. وأضاف أنشو فاتس قائلاً: «في الإمارات العربية المتحدة، هناك حاجة إلى مزيد من الاهتمام نحو

سائق، يتخذ النظام مبدأ النقل متعدد الوسائط مبدأ إرشادياً له.

صعود حركة النقل الجوي في المناطق الحضرية

سلط المؤشر الضوء على جهود مدينة دبي للبقاء كواحدة من المدن الرائدة في التنقل الحضري. فقد اكتسبت زخماً مع زيادة الاهتمام الموجه نحو إنشاء مدن يسهل الوصول إليها، بالإضافة إلى المرونة والتواصلية. إذ تشمل بعض الخطوات التي اتخذتها المدينة، وفقاً للمؤشر، استثمارات كبيرة في التنقل الجوي في المناطق الحضرية، مثل اختبار سيارات الأجرة والطائرات بدون طيار. فسياسهم هو صناعة النقل الجوي في تطوير حلول صناعية صديقة للبيئة وسيوفر لدي مزيجا فريدا من أنظمة النقل متعدد الوسائط.

كما تشمل نقاط القوة الأخرى جهود مدينة دبي المتزايدة لتوفير المعلومات في الوقت المناسب حول شبكة النقل متعدد الوسائط. كما تحافظ المدينة على تطبيق متكامل كركيزة أساسية لبرنامج المدينة الذكية.

شبكات طرق آمنة ومأمونة

وفي الوقت نفسه، تمت الإشادة بجهود مدينة أبو ظبي عن نظام الطرق الخاص بها. حيث توفر طرق أبو ظبي، وفقاً للمؤشر، بعضاً من أفضل شبكات الطرق في الإمارات العربية المتحدة من حيث الجودة والاتصال الجيد والقدرة على دعم الطلب الحالي بحركة مرور قليلة. كما تشتهر أبو ظبي - أيضاً - بشبكته الواسعة من الكاميرات والتطبيق الصارم لقوانين المرور. حيث تقوم المدينة بتنفيذ استراتيجية إدارة السرعة، تبني مبدأ السلامة ورفاهية المواطنين، للحد من حوادث المرور على الطرق في الإمارة.

وقد أطلق مؤشر التنقل الحضري في حدث افتراضي بعنوان «مستقبل التنقل الحضري»، والذي تضمن مناقشات بين رواد عالمين في الصناعة والتكنولوجيا والأوساط الأكاديمية والمالية والمنظمات غير الحكومية حول طرق مواجهة التحديات المعقدة

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تسبب فيروس كورونا في تعطيل خطط سابقة

دبي والرياض تتصدران الشرق الأوسط في التنقل الحضري

صُنفت دبي وأبو ظبي والرياض ضمن أفضل 50 مدينة على مؤشر الجاهزية للتنقل الحضري لعام 2020: الفصل التالي من النظم البيئية للتنقل، وكانت هذه المدن من بين المدن الأعلى تصنيفاً في منطقة الشرق الأوسط، وفقاً لبحث جديد أجراه منتدى أوليفر وإيمان. ويسلط المؤشر - الذي أعده منتدى أوليفر وإيمان ومعهد دراسات النقل في جامعة كاليفورنيا في بيركلي - الضوء على كيفية تعديل البلاد لاستراتيجيات التنقل الحضري التي أصبحت ضرورية للتخفيف من الآثار الاقتصادية والاجتماعية للجائحة العالمية كوفيد 19- والتكيف معه.

مدينة الرياض في تطوره، حيث تعمل الدولة على الانتهاء من تشييد البنية التحتية الجديدة للنقل الجماعي. مع ستة خطوط مترو و85 محطة تمتد عبر مسافة 176 كم، وستكون أطول شبكة نقل بدون سائق في العالم. كما سيضم النظام أيضاً 80 مساراً للحافلات تغطي مسافة 1900 كم و3000 محطة وموقف. فباستخدام الحافلات والمترو بدون

حين ظهرت أبو ظبي على المؤشر للمرة الأولى». جرى تحليل المؤشر عبر 43 مقياساً، شملت التنظيم والبنية التحتية والتأثير الاجتماعي والقدرة على تكييف التقنيات المستقبلية، ويسلط التحليل الضوء على بعض نقاط القوة والتحديات الرئيسية لاستراتيجيات التنقل الحضري في المنطقة. على سبيل المثال، يشار نظام النقل الجماعي في

تعليقاً على المؤشر، قال أنشو فانس، الشريك الرئيسي وقائد القطاع العام العالمي وممارسات السياسات في أوليفر وإيمان: «هناك دليل على أن هذه المدن تعالج مشكلات التنقل الحرجة التي ظهرت على السطح خلال الأشهر القليلة الماضية. وقد سمح هذا التقدم لكل من دبي والرياض بالحفاظ على موقعيهما كمدن رائدة في التنقل الحضري، في

المحتويات

القسم العربي

تحليلات

دبي والرياض تصدران الشرق الأوسط في التنقل الحضري



التشييد والبناء

تقنية المعلومات

النقل واللوجيستك

سفرات الاعمال

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التطورات

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Middle East

One success leads to another

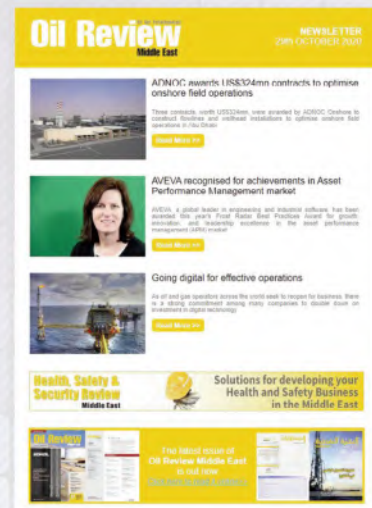
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SERVING THE REGION'S BUSINESS SINCE 1984 في خدمة شركات المنطقة منذ ١٩٨٤

الشرق الأوسط

دبي والرياض تتصدران الشرق الأوسط في التنقل الحضري

تتبنى الإمارات منهاجا شاملا للتنقل الحضري حتى تواجه التحديات المتزايدة، فيما تناضل ضد جائحة كورونا وما خلفته من آثار