في خدمة شركات المنطقة منذ ١٩٨٤

SERVING THE REGION'S BUSINESS SINCE 1984

TECHNICAL REVIEW MIDDLE EAST

النشرة التقنية - الشرق الأوسط

Vol 39/Issue Three 2023

Analysis

Growth of CCS in the MENA region

Power

How Al Masaood is scaling up power solutions

DIGITAL EVOLUTION

MENA CONSTRUCTION 4.0 FORUM SET TO EXPLORE THE FUTURE OF PROJECT DELIVERY

Inside

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EDITOR'S NOTE

AHEAD OF THE MENA Construction 4.0 Forum, (to be held from 24-25 May 2023 in Dubai), we bring you exclusive interviews of DAMAC Properties, Sobha Realty and Azizi Developments. The industry leaders participating in the event will deep-dive into construction delivery best-practices and disruptive technologies set to revolutionise Middle East construction. Refer pages 18-22.

The power section of the issue includes details on the solutions showcased by Al Masaood Power at Middle East Energy 2023 (pages 24-25).

Among others, we also feature the latest innovations in Compressors and take a look at UD Trucks' growth in the region.

Happy reading and hope to see you at the MENA Construction 4.0 Forum!

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

TECHNICAL REVIEW MIDDLE EAST
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Alain Charles Publishing

Briefly

Tadweer and OMV to tackle waste management solutions

THE ABU DHABI Waste Management Company (Tadweer) and oil and gas company OMV have partnered to explore joint opportunities in the areas of sustainable feedstocks for fuels and chemicals production. According to the companies, the MoU intends to create a cooperation between the two parties to take advantage of their respective resources and experience to find and create sustainable and innovative solutions that enable turning waste into an asset. Ali Al Dhaheri, chief executive officer of Tadweer said, "Tadweer is committed to finding new and innovative ways to turn waste into valuable resources, and we are pleased to partner with OMV in this endeavor."

"By combining our strengths and expertise, we believe that we can make a significant impact in the sustainability space and contribute to the development of a circular economy in the UAE," he added. The companies said in a statement that the MoU represents a significant step in their efforts to advance sustainability and address global environmental challenges. Together, they will assess the viability of fresh initiatives and projects that aid in the development of sustainable feedstocks, including the utilisation of trash as a feedstock for the creation of sustainable chemicals and fuels. This partnership will support the growth of a circular economy in the UAE, where trash is viewed as a resource rather than a problem.

The agreement between the two businesses demonstrates their shared commitment to increasing sustainability, lowering waste, and fostering a more sustainable future. Tadweer, part of Abu Dhabi Developmental Holding Company, is the sole custodian of waste management for the emirate and is committed to becoming a leader in extracting value from waste to contribute to national sustainability ambitions.

OMV is headquartered in Vienna and operates more than 1,800 filling stations in ten European countries. It has a joint venture with ADNOC in the UAE and Singapore called Borouge, which supplies products and services to customers across the globe.

ACWA Power to develop desalination project in Saudi Arabia

SAUDI DEVELOPER, INVESTOR, and operator of power generation, water desalination and green hydrogen plants worldwide, ACWA Power, signed a US$677mn water purchase agreement with the Saudi Water Partnership Company (SWPC) in April.

The two companies will develop a water desalination plant in the Rabigh area situated in the province of Makkah in Saudi Arabia. Reverse osmosis technology will be used to build the Rabigh 4 Independent Water Plant, which will have a daily capacity of up to 600,000 cu/m. Associated infrastructure and amenities, such as 1.20 million cu/m potable water tanks, will also be built in the region.

The SWPC, a government offtaker, will be the sole buyer of services for the project, which is located on the Red Sea coast in Saudi Arabia. With Rabigh 4 IWP, ACWA Power will double its desalination capacity in the Rabigh area, the Saudi company said.

Financial close for the project is expected during the third quarter of 2023. The reverse osmosis plant will service the Makkah and Madinah regions, which typically see a spike in demand during the Ramadan and the annual Hajj season. HE Abdulrahman Al-Fadli, Saudi Arabia's minister of environment, water and agriculture said, "These agreements will achieve the goals for water production projects in partnership with the private sector that supply industries, communities, and people across the Kingdom of Saudi Arabia. We expect that Rabigh 4 will directly serve pilgrims from around the world in the holy cities of Makkah and Madinah and serve households in the wider region."

"Rabigh 4 has been designed to use less electricity, lower operating costs, and support local content across both supply chain and employment. When this plant is operational in 2026, we will see the impact of reverse osmosis technology in action," Eng Khalid bin Zuwaid Al-Quraishi, chief executive officer of SWPC added.

Photo Credit : ACWA Power

The agreements were signed by Abdulrahman bin Abdulmohsen Al-Fadhli, Saudi minister of environment, water and agriculture with chairman of the SWPC, and Mohammad Abunayyan, chairman of ACWA Power in Riyadh.

"Our commitment to developing efficient and reliable projects that meet the practical water needs of the community has played a significant role in our contribution towards Saudi Arabia's clean water strategy, including supplying nearly a third of the nation's water needs. As we move forward, we remain dedicated to advancing our support with our upcoming facility, which will set a new standard in terms of capacity and sustainability," Mohammad Abunayyan, chairman of ACWA Power said.

ACWA Power operates 16 desalination plants in Saudi Arabia, UAE, Bahrain and Oman. Last year it added 2.4 million cm3/day of water desalination capacity via four desalination plants in Saudi Arabia, Bahrain and the UAE.

Jubail Island Investment Company and CGCH to develop project in Abu Dhabi

JUBAIL ISLAND INVESTMENT Company has awarded an US$89mn contract to Construction General Contracting House Ltd (CGCH) for its new 242-unit Jubail Terraces community in Abu Dhabi.

The contract award includes the development of apartments, in addition to 23 retail units on the ground floor in each of the buildings. The project was launched for sale in February 2023. Located in the Souk Al Jubail village on Jubail island, the development will be ready for handover in March 2025, JIIC said. The start of the handover of the land plots will begin in March and the handover of the villas and townhouses is anticipated to begin in December 2023. Mounir Haidar, managing partner of LEAD Development said, "Set to be completed in March 2025, the new low-rise and low-impact apartment blocks offer potential residents even more choice and flexibility in one of Jubail Island's premium and desirable communities."

Jubail Island, a project owned by JIIC and developed and managed by LEAD, will be home to an idyllic collection of six residential village estates located between Yas Island and Saadiyat Island.

Photo Credit : Jubail Island Investment Company

The official groundbreaking ceremony was held on the island.

HawkeyePedershaab Modular Box Culvert Forms

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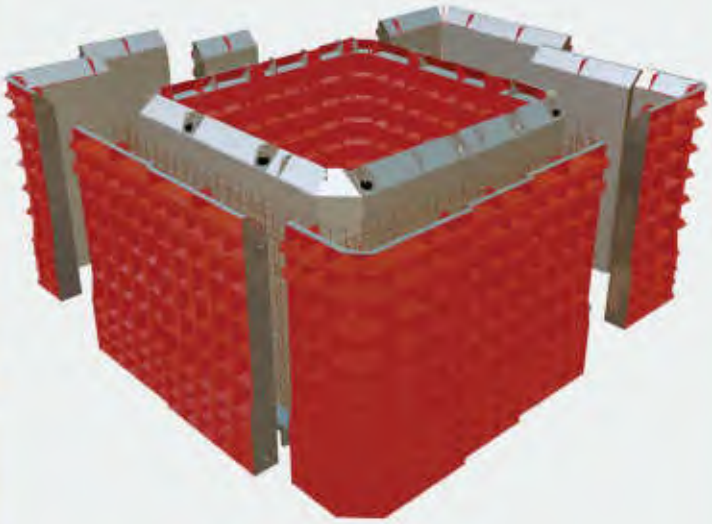

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Briefly

Honeywell to open regional manufacturing centre in SPARK

HONEYWELL IS SET to open an advanced regional manufacturing centre at the King Salman Energy Park (SPARK) – Saudi Arabia's new energy industrial zone.

The new facility will reflect the company's strategic growth objectives and its support for Aramco's In-Kingdom Total Value Add (IKTVA) programme to advance local capabilities in research, development and manufacturing of cutting-edge technology.

The facility will include engineering, manufacturing and assembly lines spanning Honeywell's industrial automation and control equipment, field instruments, rugged mobile computers, gas detection equipment, fire safety systems and building management systems hardware.

Abdullah Al-juffali, Honeywell president of Saudi Arabia and Bahrain, commented, "The ground-breaking of our new facility at SPARK represents a significant investment and an important milestone in Honeywell's long history of partnership with Saudi Arabia, which dates back to 1948. SPARK is the perfect location for us to continue our journey of investment, localisation and growth in the Kingdom in-line with its sustainability goals and broader Vision 2030 objectives."

SPARK's president and CEO, Said Al Qahtani, said, "We are delighted to welcome Honeywell to SPARK, in support of our localisation objectives and commitment to expanding Saudi Arabia's capabilities as a manufacturing and engineering powerhouse for the region's energy sector. Honeywell's investment in our ecosystem will contribute to local economic growth and help create more job opportunities for Saudi nationals in advanced technology sectors."

The facility will be developed in phases, with Phase One expected to be completed in 2024. SPARK is being developed into a 50 sq km industrial ecosystem designed to capture the full value from the energy value chain. It contributes to Vision 2030 by supporting the kingdom's efforts in building a strong economy through diversification and localisation of major sectors.

MEDCO selected to supply aerial lifts for Makkah and Madinah

GENIE AUTHORISED DEALER, MEDCO, has begun the delivery of 135 Genie boom and scissor lifts, purchased by Al Majal Al Arabi, for facility maintenance on mosques in Makkah and Madinah, Saudi Arabia.

The lifts will be used for cleaning and routine maintenance at the important sites. The order includes Genie S-60 J and S-80 J telescopic boom lifts, which will be used for external facade and general offside maintenance; GS E-Drive scissor lifts for indoor maintenance; and electric Z-60 DC articulating boom lifts for use in general facility management and cleaning tasks.

"MEDCO is proud to be the first supplier for Genie equipment to the two holy mosques in Makkah and Madinah," said Emad Mukhalalaty, general manager at MEDCO Saudi Arabia.

"This is one of the most prestigious and demanding projects that MEDCO has won in recent years, and we feel that serving the holy mosques is not only a duty and responsibility, but an honour that we value and shall provide for."

Genie's ability to meet technical specifications, safety prerequisites and delivery needs were major deciding factors in the decision to purchase Genie lifts from MEDCO.

"We believe winning this deal was a full understanding of customer needs and application derived from several site visits inspecting the toughest-to-reach points in The Haramain (the Holy Site)," said Mohammed Kamal, regional manager at MEDCO Riyadh.

"Our coordination with Genie regional sales also was instrumental; the equipment met Al Majal's specific technical requirements, and the equipment was able to be delivered within the required lead times to win this high-profile project. Genie's high-quality and innovative products make for optimal productivity at the safest heights, and MEDCO guarantee the highest machine availability and reliability around the clock."

Photo Credit : Genie

135 Genie boom and scissor lifts will be delivered for work across two historic mosques in Makkah and Madinah in Saudi Arabia.

Each piece of equipment has important features that make them the right lift for specific tasks at the heritage sites. The S-60 J and S-80 J telescopic boom lifts are lighter than comparable booms in their class, which makes them ideal for work on sensitive surfaces, while the Z-60 DC articulating boom lifts provide up-and-over access for accessing hard-to-reach areas.

Likewise, Genie GS E-Drive scissor lifts allow for the ability to work indoors and outdoors. They prove easy to manoeuvre and boost jobsite productivity due to their efficient nature and low-maintenance requirements. With 70% fewer hoses and fittings, the risk of hydraulic leaks is also reduced to near zero, which is particularly important while working on historic sites.

adhoc launches world's smallest smart waste sensor

ADHOC NETWORKS HAS launched the world's smallest smart waste sensor module, OSCAR, measuring 71x43x28 mm. The optics can measure up to four metres within a container with a cone angle of 27° to determined the fill level. The optical sensor in the device monitors the fill level in the waste container and sends that data for centralised processing to enable a schedule of waste collection to be created. As waste is only collected when the containers are full, CO2 emissions by the collection fleet can be reduced by up to 40%.

"Knowing the exact level in every container ensures that there are no wasted collections of part-filled containers and, even more importantly, no overflowing containers," said Ole Ostermann, adhoc network's CEO.

"Our approach is the perfect solution for monitoring the new generation of waste containers that are larger and discretely located at ground level."

Photo Credit : adhoc networks

OSCAR is used to determined the fill levels of containers to ensure and efficient waste collection schedule is carried out.

OSCAR replaces the company's first-generation sensor called PHIL which has seen more than 1,000 deployments since its launch in 2021.

AVEVA partners with Azule Energy to boost digital transformation

AVEVA, A GLOBAL leader in industrial software, driving innovation and sustainability, has partnered with Azule Energy, Angola's largest independent oil and gas operator, to drive digital excellence throughout the firm's operations.

The partnership agreement will enable Azule Energy – a 50/50 Joint Venture backed by bp and Eni – to reduce costs, improve safety and unlock new production opportunities using AVEVA's cloud, Software-as-a-Service (SaaS) and digital twin technologies. Moreover, the partnership will help cut the time spent searching for key asset information, improve maintenance planning, reduce offshore trips and visits, enhance team collaboration, and facilitate remote operations.

Photo Credit: AVEVA and Azule Energy

The Azule Energy and AVEVA teams.

Azule Energy boasts a strong pipeline of new projects that are scheduled to support the energy needs of Angola's growing economy and strengthen its role as a global liquified natural gas (LNG) exporter.

AVEVA will deploy its digital twin software to connect data from every layer of the technology stack for one contextualised, multi-visual experience. In the first phase, AVEVA will focus on existing operations, implementing AVEVA Asset Information Management, AVEVA Information Standards Manager, and Assai Cloud for Operations – for two existing floating production storage and offloading units (FPSOs) in Block 18 (Greater Plutonio Development) and Block 31 (PSVM).

AVEVA's digital twin technology is the only solution on the market that spans the entire asset lifecycle. The vendor-agnostic solution is scalable, integrated, and open. It unites engineering and enterprise data to create a true digital backbone that will bring industrial intelligence to Azule's entire team, delivered via the cloud.

Terex MP purchases MARCO Conveyors

TEREX MP, GLOBAL manufacturer of materials processing and lifting machinery, announced the purchase of MARCO, a manufacturer of bulk material handling conveyors, based in Mt. Vernon, Missouri. As part of the transaction, Terex MP will purchase a 100,000 sq ft factory and office space set on a 15-acre site with plans to expand the site's manufacturing capacity to support the growing demand for mobile conveying equipment in North America. The site offers a central and local distribution hub while also diversifying the company's manufacturing footprint and providing access to an additional labour pool.

Empower commences operation of cooling plant in Dubailand

EMIRATES CENTRAL COOLING Systems Corporation PJSC (Empower) announced the commencement of operations of its new district cooling plant in Dubailand, with a cooling capacity of 47,000 RT. The new plant will serve the Dubai Land Residence Complex (DLRC), one of the prominent residential destinations in the city that features many modern facilities including green parks, libraries, mosques, hotels, educational institutes, medical facilities, and shopping centres. The number of buildings connected to the new plant in Dubailand is set to reach more than 250, including mixed-use buildings.

Photo Credit: Empower

DLRC plant operation.

Last year, Empower awarded a construction and outfitting contract worth approximately US$52.5mn for the new plant in Dubailand, which is one of the next-generation, environmentally-friendly plants that leverages international standards and technologies.

During the inauguration of the new plant in the presence of Empower team, HE Ahmad bin Shafar, CEO of Empower, said, "We were keen to complete the plant with modern specifications and in a record time that did not exceed a year, thanks to the efforts of our teams to continue increasing the levels of quality and competitiveness in providing service to the customers, and their tireless work to increase the company's asset portfolio and implement the strategic plans aimed at expanding the scope of Empower's services in the emirate."

Bin Shafar stressed that Empower is keen to fulfil its core and firm commitment to enhance Dubai's economy and continue to provide high-quality and environmentally-friendly district cooling services with international specifications to support the emirate's leading role in sustainable developments, protecting the environment and natural resources, and reducing carbon emissions, in line with the directives of HH Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai.

Briefly

Cupix adds CupicWorks to Bentley's iTwin Programme

CUPIX, A GLOBAL spatial digital twin platform which provides visualisation and analytics for owners and builders across the entire built-world lifecycle, announced the addition of CupixWorks to Bentley Systems' powered by iTwin programme.

CupixWorks is a 3D digital twin platform which enables decision-making and collaboration through all stages of a building's life cycle. Project managers, general contractors, architects, and owners can remotely view, track, and manage on-site progress via 3D spatial contexts and life-like 3D navigation. By leveraging the Bentley iTwin Platform, CupixWorks can synchronise and visualise 3D, 360° capture data — along with BIM models plus customised data — and use georeferencing to place the capture in the site's physical location.

"We are excited to add CupixWorks to Bentley's powered by iTwin programme," said Simon Bae, CEO at Cupix. "The iTwin Platform's visualisation and synchronisation capabilities help CupixWorks to deliver life-like 3D navigation that feels like you're on site. This improves collaboration for stakeholders—wherever they are—based on what is actually happening at the site."

"We are very pleased to have Cupix add their CupixWorks solution to the powered by iTwin programme," said Adam Klatzkin, vice president, iTwin Platform at Bentley Systems. "In doing so, the company joins a growing ecosystem of developers building powerful digital twin solutions on the iTwin Platform. CupixWorks is a great example of how 3D reality capture data and BIM can be synchronised for virtual site navigation and progress tracking of complex construction projects."

The addition marks another step in Cupix's efforts to democratise 3D digital twin adoption across the built-world industry. Last year, Cupix announced the release of CupixWorks X 3D Digital Twin Platform, which is powered by the Gamma Engine 3rd generation AI engine. The platform launch included enhancements to spatial contexts, progress tracking and analytics, and image fidelity in 360° virtual walkthroughs.

Saudi Arabia's new AMANA factory gives modular construction a boost

LEADING REGIONAL DESIGN-BUILD contractor, AMANA, is consolidating its leadership in modular construction with a new factory in Rabigh, Saudi Arabia.

The factory is in response to the surging demand in the kingdom for offsite manufacturing technologies enabled by DuBox and is vital to successful project delivery for the kingdom's raft of ambitious hospitality and entertainment projects. DuBox moved 85% of construction from its Saudi megaproject sites such as Qiddiya and Red Sea Global's tourism destinations to its Rabigh factory.

AMANA has been at the forefront of disrupting the construction sector, making it faster, safer, greener, and smarter, by leveraging technology and modular methodologies. Established in 1993, the company has a three-decade long legacy in the region. It has rapidly expanded since then, founding its subsidiary DuBox in 2010 and DuPod in 2020. Today, both DuBox and DuPod have transformed construction in the region and KSA, with intelligent solutions and innovative technology.

Through AMANA Manufacture, DuBox has delivered 130,000 sq m of construction in KSA since 2012. AMANA Manufacture has also completed over 2,500 pods and designed over 50 units since 2020 through DuBox and DuPod.

Overall, modular construction reduces the need for manpower by up to 30%, and up to 85% of the construction can be completed off-site, in a factory. Modular buildings can also be constructed within up to 50-70% of the time of a conventional project of a comparable size, with 50% fewer carbon emissions, 50% lesser construction waste and up to 70% improved work safety environment.

Photo Credit: AMANA

Through AMANA Manufacture, DuBox has delivered 130,000 sq m of construction in Saudi Arabia, since 2012.

The Rabigh factory will enhance logistics, ensuring modules reach project sites in record time. It will also create opportunities to retain and develop Saudi talent. AMANA is deeply invested in reskilling and upskilling local talent so as to facilitate the shift from traditional construction to a digitalised manufacturing environment. Group AMANA has delivered a total of 50 projects between January and December 2022.

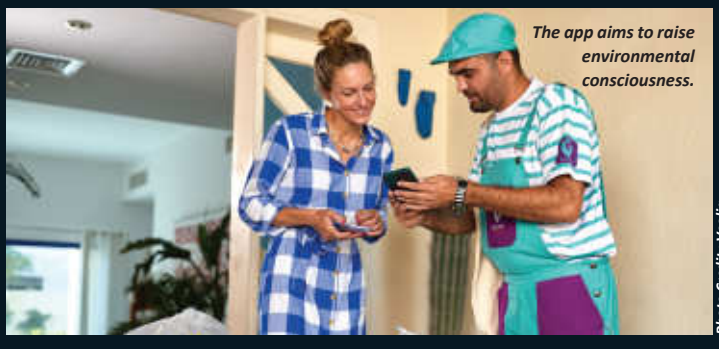
As projects across the region race to completion, modular construction has emerged as a viable solution for the post-pandemic environment.

Ian Williamson, group chief projects delivery officer, concluded, "We selected DuBox based on their innovation and proven track record in delivering pre-finished modular units to a very high standard of quality. These capabilities will allow us to provide the residents of our newly constructed town on the Red Sea coast with stand-out accommodation while maintaining our commitment to protecting the environment, even during the construction phase."

RECAPP 2.0 makes recycling more user-friendly

RECAPP, VEOLIA'S DIGITAL recycling solution for individuals and businesses, has released a new version of its mobile application offering a suite of features that benefits both individuals as well as the environment.

Aimed to raise environmental consciousness, the advanced version of the app is more ergonomic, giving users the ability to track and measure how their recycling efforts are positively impacting the environment. RECAPP 2.0 does so by providing users with an interactive and valuable perspective of how much waste they have recycled over time and comparing it with the amount of CO_2 reduced in the environment.



The app aims to raise environmental consciousness.

Photo Credit: Veolia

The new version has also introduced additional categories to its reward marketplace feature that offers redeemable points for recycled items. RECAPP 2.0, along with GoRECAPP.com was introduced in November 2022 to contribute to the UAE's broader vision for environmental sustainability, including the UAE Circular Economy Policy (2021-2031).

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Briefly

Shell Middle East to supply automative lubricants in Central and Southern Iraq

SHELL MARKETS MIDDLE East Limited (Shell) has signed an agreement with GB Auto Iraq, to be the official distributor of its Automotive Lubricants in Central and Southern Iraq.

As part of the agreement, Shell will supply GB Auto with the brand's top-quality lubricants products and solutions, catering to a diverse portfolio of automotive lubricants including Shell Helix, Shell Rimula, Shell Spirax, and Shell Gadus for end consumers.

Commenting on the announcement, Haytham Yehia, general manager of Shell Middle East & Central Asia, said, "Our collaboration with GB Auto started 15 years ago in Egypt. Our goal is to increase Shell Lubricant's market share to 25% in the coming years and serve our customers efficiently and effectively.

According to a report by Research and Markets, the lubricants market in Iraq is expected to grow at a compound annual growth rate (CAGR) of 2.73% by 2026.

"By leveraging GB Auto's strong distribution network across Iraq and its position as a trusted franchised workshop (FWS) dealer, we are confident that we will meet the increasing demand for high quality lubricants and enhance product accessibility for our growing customer-base," added Yehia.

ServeU to unveil 'ServeU AI TaskMaster' app powered by ChatGPT

Photo Credit : ServeU

Gary Reader, general manager of ServeU.

SERVEU, A LEADING facilities management (FM) solutions provider in the UAE and a subsidiary of Union Properties, is set to launch its groundbreaking app, ServeU AI TaskMaster, powered by ChatGPT.

This revolutionary AI-driven application, developed entirely by ServeU's in-house development team, seamlessly integrates innovative technologies with FM operations to set new industry benchmarks and provide exceptional services to clients. In addition, the app will offer multilingual support, catering to a diverse workforce with languages including Hindi, Urdu, Tamil, Malayalam, Bengali, Nepali, and Sinhalese.

ServeU recently invested in an in-house development team to drive innovation and maintain a competitive edge in the FM industry. The successful development and launch of the ServeU AI TaskMaster app is a testament to the team's expertise and the company's commitment to embracing latest technological innovations.

Gary Reader, general manager of ServeU, stated, "We are thrilled to be unveiling the ServeU AI TaskMaster, which embodies our dedication to providing exceptional, technology-driven solutions to our clients. Our in-house development team worked tirelessly to create a truly unique and transformative application by integrating ChatGPT and Microsoft Dynamics 365 Field Services. This milestone is another testament to our commitment to innovation, ensuring that our clients receive unparalleled services, further positioning us ahead of our competitors in the industry."

The ServeU AI TaskMaster will be an upgrade from the legacy ServeU Technician 2.0 software and makes use of cutting-edge AI algorithms to expedite and streamline FM operations including work order management, asset tracking, and predictive maintenance. With the provision of quicker, precise, and personalised services, this AI-driven approach will increase efficiency, lowers costs, and enhances client satisfaction.

Adhering to SFG20 standards, the ServeU AI TaskMaster app will enable technicians to access critical information and guidelines in their preferred language, a feature previously available only in English. This upgrade will significantly improve technicians' understanding of the standards and facilitates more effective maintenance and management of assets.

The ServeU AI TaskMaster app is set to be the latest milestone in ServeU's ongoing digital transformation journey. The company's investment in advanced technologies and its focus on delivering innovative solutions reiterates its commitment to adapting to the rapidly changing FM landscape and staying ahead of the curve.

With a long-standing history of embracing new technological innovations, ServeU has been committed to improving customer experiences and boosting operational efficiency. The company's previous initiatives, such as the B2B and B2C mobile applications and CAFM system upgrades, have all contributed to its reputation as a pioneer in the FM industry.

Acme launches new generation Radio Shuttle 'Namla'

AS PART OF its commitment to the UAE's Operation 300bn strategy, warehouse automation solutions provider Acme Intralog has launched a locally manufactured Radio Shuttle system – Namla.

Meaning 'ant' in Arabic, Namla is inspired by the natural intelligent system employed by nature's tiny creatures – ants– who diligently carry items from one place to another.

According to Navin Narayan, CEO of Acme Intralog, "Namla is 100% made in the UAE by Acme. It is the only robotic Radio Shuttle that is locally manufactured in the country, and I am proud of this pioneering initiative by our team. Our new generation Radio Shuttle can drastically improve pallet storage density for standard pallets of up to 1,500 kg. Customised options for specific needs and higher load requirements are available on request. Namla improves productivity as well as safety of operations in a high density distribution center."

The semi-automated system can be handled by forklift in a customised rack. Namla can be operated remotely with an industrial grade touch panel that allows for quick task management. The Li-ion battery is designed to last through a typical shift operation of a distribution center for a minimum of eight hours. The batteries are easily interchangeable for continuous operation.

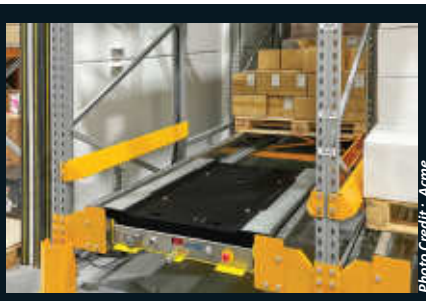


Photo Credit : Acme

A new generation Radio Shuttle – Namla – designed and made in the UAE.

ACCIONA to use corrugated steel to reduce emissions

SPANISH ENERGY COMPANY ACCIONA said it will reduce the carbon footprint of the Son Sant Joan airport by 40% through the use of recycled steel.

ACCIONA has adopted comprehensive targets for reducing direct and indirect emissions in its activities.

ACCIONA is responsible for the renovation and expansion of the airport located in Spain's Palma de Mallorca.

Approximately 7,000 tonnes of corrugated steel will be required, as it is one of the main materials needed for the plan. The CELSA Group is the main supplier for this material.

The first phase in ensuring the material's sustainability is the demolition and management of the ferrous waste from the old Palma airport terminal, which will be processed by the authorised manager at the facilities at the Ses Veles industrial park.

Upon receiving these metals, the CELSA Group will produce the corrugated steel using electric arc furnace technology, powered only by electricity from renewable sources.

ACCIONA will then use it in the construction of reinforced concrete structural elements in the refurbishment and expansion of the new terminal.

ACCIONA said this method achieves two sustainability objectives.

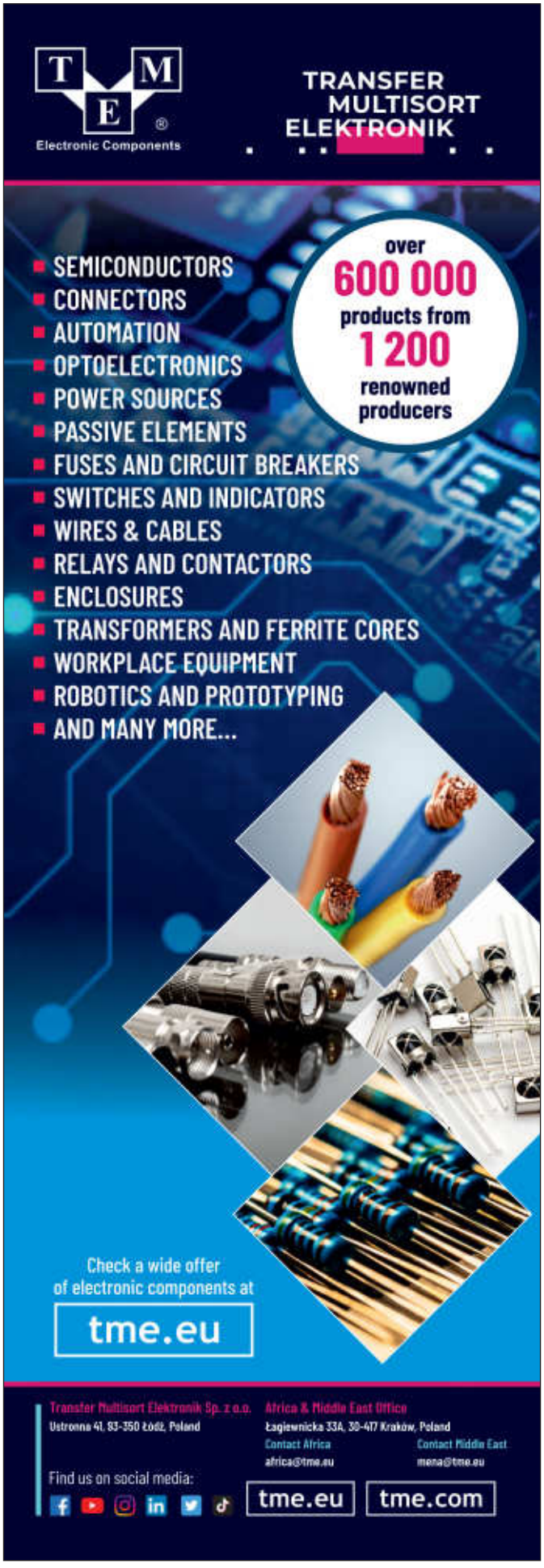
It adds to the circular economy by reusing the steel in the renovation process, apart from reducing carbon emissions by 40% in comparison with the average of steel mills with similar technology in Spain.

This also avoids the release of 1,900 tonnes of carbon emissions, which are normally emitted in similar projects, the company said.

Apart from using corrugated steel, ACCIONA is taking other initiatives to reduce emissions in construction works.

These include the use of electric machinery, local raw materials and renewable energy in other projects.

ACCIONA also adopted targets for reducing direct and indirect emissions in its activities. In 2021, its Scope 1 and 2 emissions were reduced by 19% and its Scope 3 emissions fell by 28% compared to benchmark 2017 levels.



"This MoU with ADNOC Drilling further reinforces Masdar's commitment to unlocking clean energy opportunities across a wide range of technologies. With Masdar recently adding geothermal energy to our growing clean energy portfolio, we are excited about the important role that geothermal can play in helping to drive forward the global energy transition, and we look forward to working with ADNOC Drilling to realise that potential."

Photo Credit : Masdar

MOHAMED JAMEEL AL RAMAHI
CEO
Masdar
(On the MoU between ADNOC Drilling and Masdar to explore collaboration to advance the energy transition in the UAE and globally)

"A vast majority of enterprises today do understand the need to address business continuity, disaster recovery, availability, and system consolidation requirements, however as data production increases exponentially, the value of enterprise storage will become more and more prominent and companies must adapt their systems to accommodate evolving demands. As such, they must work with a storage provider that offers both strong technology expertise and robust deployment and professional services capabilities, especially when considering the unrelenting pace that digital transformation continues unfolding."

ANTOINE HARB
Middle East team leader
Kingston Technology

"DP World's companies touch people's lives around the world every day. Sometimes it is tangible, and sometimes we are in the background making sure people and businesses get the goods they require. Our infrastructure opens untapped trade opportunities, grows economies and makes goods more affordable. Investing in developing economies helps trade go further, facilitates economic growth, attracts foreign investment and generates thousands of jobs – raising the quality of life for everyone."

SULTAN AHMED BIN SULAYEM
Group chairman and CEO
DP World

"Ras Al Khaimah Airport is pleased to sign this agreement with VPorts to set up a vertiport in our airport. RAK Airport is aiming to be a leading enabler of RAK's economic and tourism growth. This project will position RAK Airport as part of a development plan and key player in advanced air mobility in RAK. We will provide VPorts with our full support to ensure its success and prosperity."

RALF SCHUSTEREDER
CEO
Ras Al Khaimah Airport

"Excess heat is the world's largest untapped source of energy. Still, very few initiatives have pushed for more efficient use of the vast amounts of wasted energy in the form of excess heat even though we already have the solutions available today. We urgently need policy measures to accelerate the use of excess heat across sectors, both so that citizens and businesses can benefit from lower energy costs and to ensure we step up progress in the green transition."

KIM FAUSING
President and CEO
Danfoss

"Developing the first residential offering at Dubai Design District (d3) naturally aligns with our vision to design spaces in places for people to experience and love life, as we introduce, for the first time ever, the concept of creative living for a community. With Design Quarter at d3, we continue to fulfill our commitment to create and consistently deliver world-class residential real estate projects and master developments that strengthen Dubai's position as the global real estate investment destination of choice."

KHALID AL MALIK
CEO
Dubai Holding Real Estate

"Egypt has great potential for the cost-effective production of low-carbon hydrogen and its derivatives, and is at a geographic nexus. Our energy transition research shows that the region is set to become a key global supplier in the emerging global hydrogen market, and is expected to be the main exporter of pure hydrogen to Europe."

Photo Credit : DNV

HISHAM EL-GRAWANY
Vice president and area manager for North Africa
DNV

SULB commissions SMS group for modernisation

SULB COMPANY BSC, located in Bahrain has commissioned the SMS group to revamp its 130 ton electric arc furnace with an aim to increase safety, efficiency and productivity, which is expected to upgrade the quality of products.

The SMS Group will also modernise the four-strand continuous caster for the production of billets and beam blanks. The start of production is planned in 2024.

Photo Credit : SMS Group

SMS CONDOOR in operation at the Hidd Industrial area.

Located in the Hidd industrial area, the plant has a melt shop and a medium and heavy section rolling mill supplied by SMS.

An installation of a CONDOOR slag door will improve the furnace seal, apart from enhancing safety for the operating personnel. Moreover, the iron oxide content in the slag is significantly reduced.

The four-strand continuous caster is designed for the production of six section sizes. The modernisation goal is to increase casting speeds and productivity through additional cooling and strand support in the upper segments.

The modernisation scope includes the rebuild of segment 1 for bloom and beam blank sections, including a new spray cooling system, water deflectors, a new hydraulic system and an expanded steam extraction system.

"At SULB, we focus on environmental steel production and SMS's know-how and equipment have helped us and will continue to help us to constantly improve our quality requirements, increase our productivity and environmental sustainability," commented Ravi Singh, chief executive officer of SULB Company.

Injazat and Nexthink to enhance smart digital workplaces in the region

UAE-BASED TECHNOLOGY COMPANY Injazat has partnered with Nexthink, which is a leader in the Digital Employee Experience management software.

Injazat, which provides digital transformation solutions with a focus on smart cities, made the announcement in March. It will make use of Nexthink Infinity to help its IT teams enhance the digital employee experience.

Injazat will be able to resell, deliver capabilities including professional services along with embedding DEX into their managed services to their existing and prospect clients in the UAE and beyond through this collaboration.

The companies' clients will gain access to insights and tools needed to improve their digital experiences, optimise their IT operations, increase business agility and improve risk management.

This is the region's first automation and remediation platform, the companies said.

The Nexthink Infinity platform can identify employee experience issues before they become IT problems, with immediate red-flags about any incident.

This partnership is a significant step for Nexthink as they expand their footprint and partner with leading regional channel partners such as Injazat to reach a wider audience.

Usama Dahabiyeh, chief executive officer of Injazat said, "Embedding Nexthink into our managed services uniquely quantifies our customer employees' complete digital experience.

"Providing a 360°-degree score, Injazat can proactively see, manage, and improve our customer's workforce's digital experience with Nexthink.

EXECUTIVES' CALENDAR 2023

MAY 2023			
8-10	World Utilities Congress	ABU DHABI	www.worldutilitiescongress.com
24-25	MENA Construction 4.0 Forum	DUBAI	www.construction-forums.com
JUNE 2023			
19-21	The Big 5 Construct Egypt	CAIRO	www.thebig5constructegypt.com
19-21	Middle East Coatings Show	CAIRO	www.middleeastcoatingsshow.com

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

Enabling a secure and sustainable utilities future

THE WORLD UTILITIES Congress is set to take place in Abu Dhabi from 8-10 May. Strategically positioned between COP27 in Egypt and COP28 in the UAE, the event will convene global energy leaders, policymakers, innovators, and industry professionals from across the power and water utilities value chain to discuss the major trends and challenges shaping the industry, as utilities worldwide work to deliver secure, sustainable, and affordable energy.

With more than 150 regional and international exhibitors present in-person, the exhibition will showcase the latest solutions in power generation, transmission and distribution, nuclear energy, water management and desalination, providing ample opportunities to generate new business, cultivate business relationships and meet key suppliers. Regional and international senior executives and department heads from across the power and utilities value chain will convene to explore the latest technologies, research advancements, technical services and product solutions that are helping drive the future of the industry forward.

The Congress will feature a comprehensive Strategic Conference programme that brings together a diverse range of leaders, including energy ministers, policymakers, CEOs, and business executives from all corners of the world to share their insights and perspectives on the industry affairs today and come up with tangible outputs for the current challenges.

From the big questions, such as the role of the utilities sector in the global energy transition, to practical challenges around water and energy security and hydrogen distribution, the Strategic Conference programme will be the forum for the industry to come together and address the issues and opportunities that matter. The role of ESG and sustainable finance will also be discussed. The conference will focus on five major themes – digital innovation; talent development and workforce of the future; decarbonisation, energy transition and COP28; raising capital and project finance; and supply and demand dynamics.

Global expert leaders confirmed to speak include HE Suhail Bin Mohamed Al Mazrouei, Minister of Energy and Infrastructure United Arab Emirates; HE Awaidha Murshed Al Marar, chairman Abu Dhabi

The World Utilities Congress is set to feature more than 150 regoinal and international exhibitors.

Photo Credit: dmg events

Department of Energy United Arab Emirates; Jasim Husain Thabet, group CEO & managing director TAQA; Luc Rémont chairman & CEO EDF; Renaud Capris, CEO Enova; Khalid Al Qubaisi, CEO Abu Dhabi Energy Service; Mohammed Berki Al-Zuabi, CEO Marafiq; Robin Mills, CEO Qamar Energy; Laurent Longuet, CEO SirajPower; and René Matthies, CFO & executive director corporate operations Emirates Water and Electricity Company.

The Industrial Onsite Power Forum will enable participants to connect with industry experts and power generators, including commercial and industrial facilities, district energy, private enterprise, and utility-scale electricity providers. The agenda will also explore real-life applications, project planning, and the business and financial aspects of distributed/on-site power generation.

Meanwhile, the dedicated Nuclear Energy Forum will run alongside the exhibition, focusing on the role of nuclear energy in achieving net-zero, new and emerging technologies in the nuclear industry, challenges and opportunities and the future of the nuclear energy industry, and more.

For further information see the website at www.worldutilitiescongress.com

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*

Digital delivery for a safe, durable and reliable future

TRANSPORTATION AGENCIES AROUND the world face numerous challenges in how to best plan, design, construct, and operate safe, resilient, and sustainable infrastructure, says Meg Davis, industry marketing director for roads and bridges, Bentley Systems.

Photo Credit : Bentley Systems

Meg Davis, industry marketing director for roads and bridges, Bentley Systems.

Aging infrastructure, growing populations and increased traffic and congestion all put pressure on owners and contractors of roads, bridges, and associated structures to identify and utilise cost-effective and efficient ways to do their jobs.

https://www.technicalreviewmiddleeast.com/business-a-management/

African generator set market holding firm

WHILE THE AFRICAN continent is rife with initiatives and national policies to stimulate electrification rates, an energy barrier remains in place for the majority of the population and many businesses, driving a favourable outlook for the generator set market.

Since the turn of the millennium, according to data from the World Bank, sub-Saharan Africa had recorded a steady increase in electrification rates which rose from 25.6% in 2000 to a high of 47% in 2019. Before the pandemic, according to the IEA, the number of people each year gaining access to electricity almost tripled.

https://www.technicalreviewmiddleeast.com/power-a-water/

Oman Cables Industry honours female graduates of the SHE STEMS Initiative

OMAN CABLES INDUSTRY (OCI), the leading Omani company in the cables and systems industry - which is part of Prysmian Group – has celebrated the first student graduation of the SHE STEMS initiative in Al-Fahm Stage, Sultan Qaboos University, Oman.

The SHE STEMS (Science, Technology, Engineering and Mathematics) programme, launched in September 2022 with an initial intake of 20 Omani women, welcomed female Omani nationals aged 18-28 , registered as job seekers with the Ministry of Labour and have a General Education Diploma.

https://www.technicalreviewmiddleeast.com/events/

AVEVA and Petrofac partner to accelerate digital initiatives for the energy industry

AVEVA, A GLOBAL leader in industrial software driving innovation and sustainability, has signed a memorandum of understanding (MoU) with Petrofac, a leading provider of services to the global energy industry. The agreement includes cooperating on digital transformation of the end-to-end supply chain systems process.

Photo Credit : AVEVA

AVEVA and Petrofac sign MoU.

https://www.technicalreviewmiddleeast.com/manufacturing/

The growth of CCS in the MENA region

Mohammad Abu Zahra, head of MENA at the Global CCS Institute, provides insights on how carbon capture and storage (CCS) can play a significant role in climate change mitigation and decarbonisation.

CCS facilities, Middle East

Facility	Country	Status	Operational date	Industry	Capture capacity (Mtpa CO_2)	Storage code
Abu Dhabi CCS **(Phase 1: Emirates Steel Industries)**	UAE	Operational	2016	Iron & steel production	0.8	EOR
Qatar LNG CCS	Qatar	Operational	2019	Natural gas processing	2.2	Dedicated geological storage
Uthmaniyah CO2 - EOR Demonstration	Saudi Arabia	Operational	2015	Natural gas processing	0.8	EOR
North Field East Project CCS	Qatar	In construction	2025	Natural gas processing	1	Under evaluation
Abu Dhabi CCS **(Phase 2: Natural gas processing plant)**	UAE	Advanced development	2025	Natural gas processing	2.3	EOR
Ghasha Concession fields	UAE	Advanced development	2025	Natural gas processing	Under evaluation	Dedicated geological storage

Source: Global CCS Institute

CARBON CAPTURE AND storage captures CO_2 emissions at the source and from the atmosphere, making it a critical tool for addressing the climate crisis. The IPCC and IEA, among others, have outlined a critical role for CCS in achieving net zero emissions by mid-century.

The momentum for CCS is building globally, with 61 new facilities added to the project pipeline in 2022 according to the Global CCS Institute, bringing the current total to 30 CCS projects in operation, 11 under construction and 153 in development. In 2022, the total capacity of CS projects in development was 244 million tonnes per annum of CO_2.

Discussing the role of CCS in mitigating climate change and decarbonising the fossil fuel sector, Mohammad Abu Zahra explains, "We still rely heavily on fossil fuels for power generation and the hard-to-abate industries, with fossil fuels still accounting for 78% of power generation. Hopefully, that will change as more renewable and nuclear and other technologies are deployed in the future, but we are expecting in the coming years to continue to be relying on fossil fuels if not for power, for the hard-to-abate industries such as steel, cement petrochemicals etc.

Image Credit : Global CCS Institute

Mohammad Abu Zahra, head of MENA, Global CCS Institute.

"Not only can CCS make a major contribution in decarbonising the power sector, but more importantly, it can contribute to cutting emissions for the hard-to-abate industries such as steel and cement, for example, where CO_2 emissions arise not only from the power generation or heat requirement but from the production process itself. So this justifies the use of CCS as a technology to decarbonise the fossil fuel sector."

There is no single solution for decarbonisation, he stresses. "We have a whole portfolio of technologies and solutions for reducing emissions - renewables, energy efficiency, alternative materials, nuclear, CCS, hydrogen - we need all of these. The contribution of each of these technologies will vary by industry and geographical location."

Criticism often levelled at carbon capture is it can be seen as prolonging the use of fossil fuels. How does it tie in with a world moving towards renewables and net zero? "The question is, when will fossil fuels be eliminated?" Abu Zahra responds. "If it happens relatively soon, maybe we won't

need fossil fuel-based CCS. But even if we manage to move into renewable energy and electrification rapidly and eliminate fossil fuel power plants, there is still the question of CO_2 emissions from industrial production processes. Finding alternative materials will take time. We need to work on different policies and codes for steel in buildings, which will become a major element of long-term deployment of CCS. So while CCS will fill in the gap until we replace conventional power with renewables, it is still definitely a necessity in the long term for industrial decarbonisation. Furthermore, we will still need CCS or carbon removal to achieve net zero from the emissions we already have in the atmosphere. That leads into the question of direct air capture technology to get us to negative emissions."

Moving on to the current state of play and potential for CCS in the Middle East, Abu Zahra explains that CCS started a few years ago in the region and has resulted in three large-scale projects in the UAE linked to the steel industry, in Saudi Arabia connected to natural gas, and in Qatar related to LNG. "These three projects account for around 3.7 million tonnes of CO_2 being captured a year, which is around 8-10% of the current global CO_2 captured capacity," he notes.

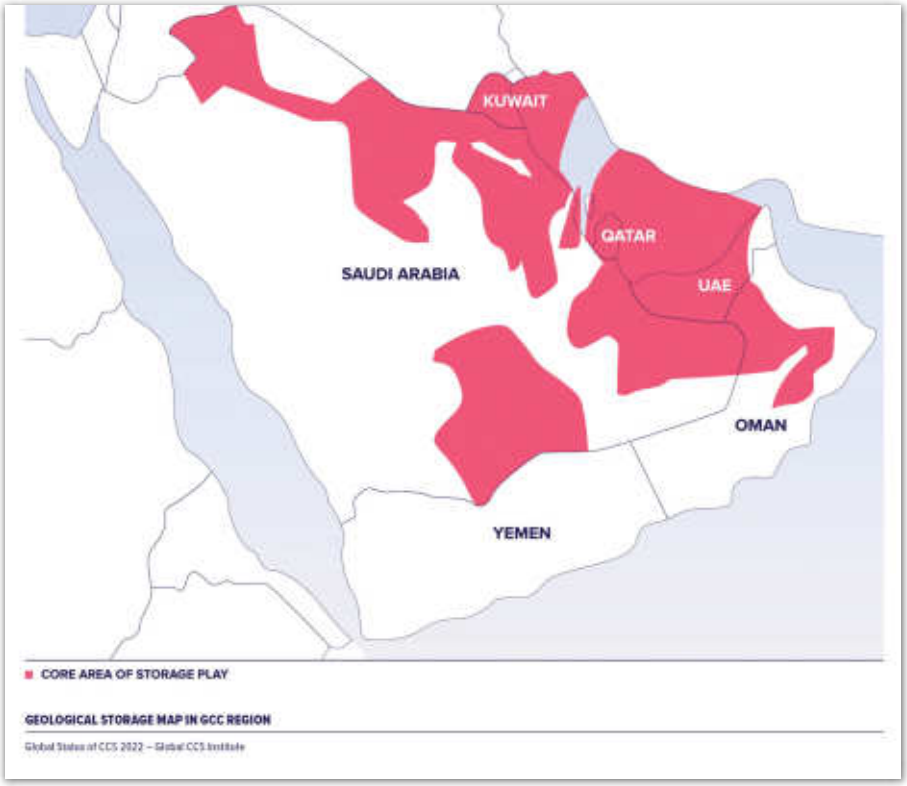


Image Credit : Global CCS Institute

Drivers in the Middle East

The prevalence of the oil and gas industries in the region is a major factor for projects in the Middle East. "The deployment of CCS often relies on repurposing infrastructure once used by the oil and gas industry. The region is an oil and gas hub, so it has the potential to become a leader in CCS." Moreover, the region has extensive experience in CO_2 injection and storage. The 2050 and 2060 net zero targets and emissions reduction commitments announced by many countries in the region are another factor, Abu Zahra comments, adding that a number of countries, such as Saudi Arabia, the UAE, Bahrain, Egypt, Iraq, and Iran have explicitly included CCS in their nationally determined contribution (NDC) registry maintained by the United Nations Framework Convention on Climate Change (UNFCCC).

Technology evolution

"We talk about CCS technologies as a chain," says Abu Zahra. "As far as the capture technologies are concerned, many technologies are readily available and have been tested for a long time on a large-scale, so the capture technology is mature and is commercial. What we need is to duplicate more of these plants. The challenge with capture technology is to make it less energy intensive, and less costly. There are some alternative technologies being demonstrated, looking at alternative materials, and more efficient processes and power cycles. These technologies will bring a reduction in the capture cost.

"As for the transportation of CO_2, by pipelines or ships, CO_2 has been transported by pipelines in the US and other parts of the world for a long time. We need to look at regulating cross-border transportation, particularly if we want to make it easier for those interested in collaborating on CCS projects to do so. The storage of CO_2 still needs more de-risking to build more trust and define long-term availabilities, and long-term monitoring technologies will be required to build trust and confidence. That said, CCS has been around for 50 years and has been proven to reduce a significant amount of industrial emissions. What is needed now, is clear policy and regulatory support to ensure that CCS can play its needed role in the low carbon transition. The Middle East has exceptional potential to be a leader in the up and coming market, given the ambition exhibited so far."

Clearly it is an exciting time for CCS development, and for the Global CCS Institute, established and mandated to accelerate the large-scale deployment of CCS. Elaborating on its role, Abu Zahra says, "The Global CCS Institute is a member-based international think tank. We serve more than 185 members globally, ranging from governments, international organisations and major companies from the oil and gas, power and industrial sectors, to small companies and start-ups, services and technology suppliers.

"For our members and the community we provide services relating to the whole supply chain of CCS, from technology assessment, economic assessment, advice, developing policies and regulatory frameworks. We are an accredited observer with the UNFCCC, participating in the COP conferences and climate change negotiations and discussions. We submit our input with other NGOs on the global stocktakes and how decarbonisation needs to move forward, and part of that decarbonisation is CCS.

"So we are building a community globally, we advocate for CCS and other decarbonisation options and provide the necessary support for government and industry in defining the challenges and how to resolve them.

"The level of discussions around CCS and hydrogen at events such as ADIPEC and Abu Dhabi Sustainability Week, and upcoming events, shows the great momentum in the region for these two industries," he concludes. "We're looking to see more CCS deployment in the coming years." ■

Highlighting technologies revolutionising the industry

The MENA Construction 4.0 Forum will be held from 24-25 May 2023 in Dubai, bringing together more than 150 delegates.

THE MENA CONSTRUCTION 4.0 Forum will highlight the urgency to digitalise project delivery to improve efficiencies and meet global sustainability goals. Construction projects worth US$223bn are being developed in the Middle East with developers facing increasing pressure to adopt greener measures while optimising productivity. Through a blend of panel sessions, presentations, workshops and meeting opportunities, the Forum will highlight business-critical issues crucial for the future of construction delivery in the region and bring together leading developers, contractors and consultants.

The speaker lineup includes industry experts, policy makers and solution vendors including a keynote address from Ali Hussain Sajwani, managing director – operations & technology, DAMAC; Eng Abdulrahman Oman Ali Alkholy, senior principal engineer, Ministry of Energy & Infrastructure; Mohammad Aldawood, associate director – Building Information Technology, Red Sea Global; Dr P R Jagannathan, senior general manager – sustainability, Sobha Realty; Mohamed Ahmed Elattar, director – planning & cost control, Dubai Holding Real Estate; Mateusz Lukasiewicz, digital projects manager, KEO International Consultants; and many more. The conference agenda covers five exclusive sessions:

The event will highlight the opportunities presented by the digital revolution.

Photo Credit: Adobe Stock

- **Industrial Revolution 4.0:** Evaluating the transition to Industrial Revolution 4.0 characterised by technologies such as digital twins, metaverse, VR, AI, and more.
- **Evolution in the Digital World of Construction:** Analysing the evolution towards smart cities, smart buildings, etc.
- **Effective and Efficient Project Delivery:** Improving collaboration to optimise project delivery.
- **Selecting Optimal Technology for AEC projects:** Learning from experts on choosing and applying potential digital technologies more effectively.
- **Sustainable Construction Technologies:** Effective waste management, intelligent mobility, storm water management, energy-efficient construction materials and processes, and renewable energy.

Vinay T, head of sales at Alain Charles Publishing, the event organiser, commented, "We put in more than 100 hours of research considering the current scale of disruption and innovation in the industry and concluded that it has become essential to bring together industry professionals to learn, share best practices, and discuss the future of construction and technology in the region.

"Our agenda is developed to highlight new technologies and trends that are revolutionising the industry, and we are thrilled to assist this exchange of ideas so that the AEC industry can benefit from the opportunities presented by the digital revolution." ■

> "Our agenda is developed to highlight new technologies and trends that are revolutionising the industry, and we are thrilled to assist this exchange of ideas so that the AEC industry can benefit from the opportunities presented by the digital revolution."
>
> **Vinay T, head of sales, Alain Charles Publishing**

Cementing sustainable growth in construction

Ahead of the MENA Construction 4.0 Forum, Sobha Realty managing director, Francis Alfred speaks to Fyna Ashwath on how the real estate industry can adopt sustainable practices.

Technical Review Middle East (TRME): What changes would you suggest to address the challenges of decarbonisation in real estate?

Francis Alfred (FA): Decarbonisation is best achieved when initiated right at the conceptual phase of the project. A deep exploration of design choices is a compelling need to reduce the net energy demand of the proposed asset. Currently, there is a lack of focus on reducing the embodied carbon in the design, which needs to change. Sustainable materials should be considered in the design and procurement process as well.

The decarbonisation journey does not end with mere design and construction activities but moves very actively into the operation phases too. The operational phase sustainability is the main missing link between aspirations and performance, which is often shrouded by the industry's obsession and enthusiasm over notional certifications.

TRME: How can new technologies, materials and design processes help to make buildings more efficient and sustainable as well as help improve circularity in construction?

FA: Digital technologies such as BMS, IOT, and AI, which if deployed in the right way, can drive sustainability and optimise the consumption of resources. Building Information Modelling (BIM) should go beyond 3D visualisation and collaboration to important domains of energy efficiency analysis, workflows, and resources reduction.

I am strongly of the opinion that several functionalities of currently available technologies have been left unexplored either due to paucity of time or lack of knowledge or lack of interest or all of them. Our design processes and methodologies should focus beyond energy and water efficiency into constructability, ease of installation/repair and waste minimisation that play a major role in achieving circularity. With these approaches, the construction industry can significantly reduce the amount of virgin materials needed and waste generated. We should be on the constant lookout for game-changing materials and technologies. While high efficiency solar PVs, super insulation materials and others have gained good traction, there are several others such as big data, digital twins and cloud systems that are at the cusp and it is a matter of time before they get infused into the industry.

TRME: How do you see the role of construction technologies in driving sustainability evolving in future?

FA: Cement is the subject of active research covering not only process efficiency, reduction in clinker content and the associated process emissions but alternative materials to reformulate the cement chemistry itself. It is appropriate to reiterate that global climate action will be ineffective without addressing this core component of built environment. Green concrete is another forerunner of what is unfolding in this so called hard-to-abate sector. Renewable energy, advanced insulation materials with exceptional qualities, cool roofs, smart glasses, better façade technologies, water efficiency technologies, smart appliances, smart FM, and several others stand testimony to this, and these are being integrated into construction in various scales.

TRME: Please shed some light on the emerging technologies that Sobha Realty is using?

FA: All of Sobha's design activities are carried out using BIM 360. It further uses PlanGrid, a paperless system for monitoring and supervision, that lets the stakeholders benefit from real-time access to project plans, issues, and much more.

Photo Credit : Sobha Realty

Francis Alfred, managing director of Sobha Realty.

Sobha construction practices include use of electric automatic climbing system as compared to conventional hydraulic automatic climbing system and formwork vibrators to get a better compaction of concrete. It further utilises advanced anti-collision system on tower cranes to avoid safety gaps. From the point of sustainability, it has been utilising AAC blocks, PODs, MEP modular corridor packages, battery operated tools etc.

As a pilot project it has also explored the possibility of drones to monitor progress and use of 3D videos to assess the quality of constructed items.

We are delighted to be a part of the MENA Construction 4.0 Forum, as it brings together numerous stakeholders to discuss the necessity of digitalisation in the real estate sector to expedite project delivery and improve efficiencies, while meeting global sustainability goals. MENA Construction Forum will be an ideal platform for us to connect with other industry experts to discuss practices that have the potential to maximise efficiency, foster best sustainable practices and develop high-quality homes that buyers are seeking. ■

Leveraging digital technologies help build efficient construction processes.

Photo Credit : Adobe Stock

Leveraging digital technologies

Mohamed Ragheb, chief development officer, Azzizi Develpoments speaks to Technical Review Middle East on innovations shaping the future of construction.

Technical Review Middle East (TRME): How can leveraging digital technologies help build an efficient construction process?

Mohamed Ragheb (MR): Digital tools, such as project management software, collaboration platforms, and mobile applications, can facilitate communication among project stakeholders, allowing them to share information, track progress, and coordinate activities more effectively. This can help to reduce errors, delays, and rework, resulting in a more efficient construction process.

Building on information modelling (BIM) software and other digital design tools can help create more accurate and detailed building plans, resulting in identifying and mitigating potential issues early on in the construction process. This can reduce the need for costly rework and change orders later in the project.

> "Drones, 3D printing, and prefabrication can help streamline construction processes and reduce labour costs."

Drones, 3D printing, and prefabrication can help streamline construction processes and reduce labour costs.

Virtual reality (VR) and augmented reality (AR) can be used to train workers and simulate dangerous scenarios, and wearable technology such as smart helmets and safety vests can also help monitor workers' health and safety, reducing the risk of accidents and injuries.

TRME: How can new technologies, materials and design processes help to make buildings more energy efficient and sustainable?

MR: New technologies, such as energy-modeling software and 3D printing, can help architects and engineers design more efficient buildings. Additionally, the choice of building materials can have a considerable impact on a building's energy efficiency and sustainability. Materials with high insulation properties, such as aerogel, can help reduce heating and cooling loads. Sustainable options, such as engineered wood, bamboo, and rammed earth, can also be utilised to create more environmentally friendly buildings.

Incorporating renewable energy systems can help reduce a building's reliance on non-renewable energy sources. Building automation systems can also be used to optimise a building's energy usage by automatically adjusting settings based on occupancy, weather, and other factors.

Dubai is at the forefront of sustainable building design, incorporating various innovative technologies, materials, and design processes into its projects.

TRME: What progress has the Middle East made in smart cities and smart buildings, and how do you see them developing in the future?

MR: The use of smart technology is expected to improve the efficiency of city services, reduce energy consumption, and enhance the overall quality of life for residents. The Qatar Science and Technology Park is a prime example of how advanced technologies can optimise energy efficiency, enhance building security, and improve occupant comfort. By embracing the latest technologies and utilising smart solutions, the Middle East is well-positioned to create more sustainable and efficient cities for its residents with initiatives such as the Smart Dubai initiative and the Emirates Energy Star programme leading the way in adopting smart technologies.

TRME: What is the importance of collaboration between stakeholders for efficient project delivery, and how can this be achieved?

MR: Collaboration between stakeholders is critical in efficient project delivery in the construction industry. To achieve successful collaboration, stakeholders must establish clear objectives and expectations from the outset, including timelines, budgets, and quality standards.

Photo Credit : Azizi Developments

Mohamed Ragheb, chief development officer, Azizi Developments.

Effective communication is another essential aspect of collaboration. This may involve establishing regular meetings, using technology-enabled communication tools, and encouraging open and transparent communication channels.

Collaboration can also be improved by creating a collaborative culture that values teamwork, trust, and respect. This may involve recognizing and rewarding cooperation, creating shared values and goals, and promoting a sense of ownership and accountability among stakeholders.

Finally, measuring and evaluating collaboration is essential to ensuring its success. This may involve using metrics such as stakeholder satisfaction, project completion time, and project cost to assess collaboration's effectiveness and identify improvement areas.

TRME: How do you see the use of digital technologies in construction evolving in the future?

MR: The use of digital technologies such as Building Information Modelling (BIM) has already drastically transformed the industry in recent years, and is expected to continue to evolve and grow in the future.

The use of digital technologies such as the Internet of Things (IoT) is expected to play a significant role in the development of smart buildings, with sensors and other IoT-enabled devices providing real-time data on a building's energy consumption, occupancy, and other key metrics. Artificial intelligence and machine learning (ML) are also expected to play an increasing role in the construction industry, with AI-powered robots used for tasks such as bricklaying and ML used for predictive maintenance. ■

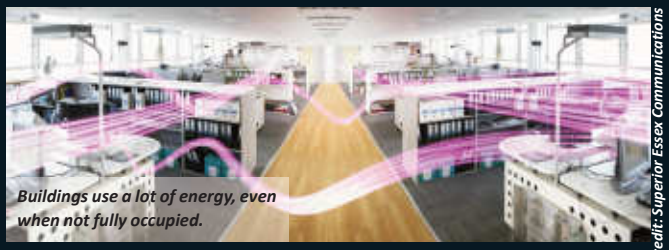
Power-over-Ethernet: the sustainable answer to bandwidth and power demands

THE CONNECTED WORLD consumed 79 zettabytes of data in 2021 and is expected to use 180 zettabytes by 2025, according to Statista.com. This bandwidth demand drives an exponential increase in electricity usage.

Even when buildings are not fully occupied, they use a lot of energy. "The answer to these bandwidth and power demands is extra-low voltage (ELV) communications networks connected by Power-over-Ethernet cables," describes Paul Weintraub, head of international business for Superior Essex Communications. "With PoE, you have the power to not only operate your ICT devices but also your entire digital ecosystem, Weintraub explains."

PoE systems work through the flow of energy supplied from a power-sourcing endpoint, via category 5e, 6, and 6A cables, and into a powered device. These cables power other building systems like lighting, surveillance and security, climate control, and other operations.

"Using PoE as an electrification solution, one central command centre can manage all these systems, establish controls, and optimise operational efficiencies in addition to bi-directional data," explains Weintraub.



Buildings use a lot of energy, even when not fully occupied.

Photo Credit: Superior Essex Communications

Superior Essex Communications is a leader in PoE cabling technologies, including its industry-leading PowerWise® for Extended Distance and best-in-class 10Gain® Category 6 families. These PoE cables are designed to enable sustainable, intelligent buildings and equipped with sustainability attributes. These cables create the backbone for advanced communications networks of the future.

Superior Essex Communications is particpating at the MENA Construction 4.0 Forum, to be held in Dubai from 24-25 May 2023.

Connecting the future with new technologies

Ali Sajwani, managing director of operations and technology, DAMAC, keynote speaker for MENA Construction 4.0 Forum, provides insights on the company's digital technologies and the future of the industry.

Photo Credit : DAMAC

Ali Sajwani, managing director of operations and technology, DAMAC.

Technical Review Middle East (TRME): How can digital technologies be used in the construction process to improve operational efficiencies, collaboration and employee safety?

Ali Sajwani (AS): Precision building, waste reduction, quicker project completions and leveraging safety and security for man and machine are some of the major advantages of digital technologies in the construction process.

As a real estate development company, we are constantly striving to offer our customers the best services, including a quick turnaround time on their investments. With the adaption of these new technologies in the construction stage of the project, we can ease the pain points and prepare a handover with little to zero delays.

TRME: How does DAMAC play a role in the adaption of new technologies?

AS: Over the past few years, we have been on an accelerated digitisation transition process. We are upgrading all our systems, introducing applications and leveraging customer service to a new level, unseen anywhere else in the region before. Sitting afar, across the seas, our customers now have the opportunity to view their investment in a 360-degree view and make an informed decision through the tangible experience we are offering for their unto viewing.

Since the outbreak of Covid-19, we observed that due to travel restrictions, we were seeing far fewer customers wanting a physical meeting and touring of a property. Things are different now, and it will continue to be so going forward where customers and service providers can both benefit from the many advantages of new technologies.

We are exploring the many advantages of ChatGPT as well as artificial intelligence to further enhance customer experience and decision-making.

TRME: What is your idea of the smart city of the future?

AS: Dubai. A city like Dubai where new technologies are adapted instantly, and where man and machine work in tandem towards a future that is progressive and livable. A smart city is also when many of the menial tasks that included hours of manual attention can be automated for a quick, efficient and user-friendly completion.

Cities that use smart technology within their buildings, road networks and their overall infrastructure are what I feel makes a city of the future. Most importantly, it is the vision of its leadership, who not only encourage the immersion and implementation of new technologies, but to also constantly train its citizens, in particular its youth, towards becoming a future-ready tech-savvy community.

TRME: How important is it for all stakeholders to work together to achieve the connected city, and how can this be achieved?

AS: The way of the world today and tomorrow is through digitisation. Advanced technologies that accentuate digitisation helps build strong, connected cities. In order for this to happen, stakeholders such as businesses and policy makers must work together, hand in hand to create and execute the blueprint of a well-connected city.

A key factor in achieving this vision is by empowering the youth and offering ample opportunities and training facilities to run such a connected city.

TRME: In recent times, DAMAC has been driving its growth towards becoming a luxury real estate provider with a series of new launches that include branded residences. How have your tech drives been able to support this vision?

AS: We are at one of our most exciting times at DAMAC. We are expanding in geography, market, and product line – all enhanced using the power of digitalisation and advanced technologies. One of our exciting exercises is building an enriched portfolio of luxury beachfront and resort living products in collaborations with iconic global luxury brands such as Cavalli, de GRISOGONO, Fendi, Versace, and Zuhair Murad. An example of this, is the plans we have committed towards upcoming projects, where we are currently developing a luxury resort in collaboration with Mandarin Oriental in the Maldives. The resort will not only have the best in terms of amenities and facilities, but we have also been mindful on accommodating several sustainability features. We aim to work on this category by offering our clientele amenities that are equipped to a modern, contemporary lifestyle using the enhanced power of digital technology. I am confident that the inclusion of new technologies in this manner is going to be a game changer for the real estate and property sectors. ■

Rokbak launches improved Haul Track system

THE COMPANY HIGHLIGHTED how the system would help customers manage their operating costs by keeping an eye on everything from fuel consumption to problems that if neglected could lead to unplanned downtime.

The system, which offers a range of cutting-edge features like higher levels of machine protection against operator misuse and unexpected downtime.

Rokbak presented the improved system as part of its four product focus areas – innovation, sustainability, connected services and efficiencies – at the conference.

"Accompanied by a new website that provides an easily customisable dashboard to simplify and speed up how they view and retrieve operating information from afar, it offers a much more accurate and cost-effective insight into a whole host of factors that have the capacity to make or break their bottom line," said Charlie Urquhart, Rokbak's product manager.

Charlie Urquhart, Rokbak product manager.

Photo Credit : Rokback

Location, location, location

Utilising GPS technology to transmit detailed real-time machine location and tracking information in the form of easy-to-read, full-colour PDF reports to the customer's mobile device or PC, Haul Track removes the complexity of keeping tabs on even the largest hauler fleets.

Haul Track allows owners of mixed fleets to manage their telematics data in one place, which is presented in a standard format. This means the output from Haul Track can be easily integrated with customers' own systems.

The system also allows managers to see how much fuel is consumed per payload, and how to optimise it, apart from highlighting key metrics such as suboptimal travel speed, dump counts and load cycles.

With the power to pinpoint any one of their machines anywhere in the world, owners can not only quickly isolate a specific hauler's data but even see exactly where it's been working and track all accumulative loads.

By taking a deep dive into a variety of software parameters – such as travel speed, fuel consumption, temperatures and pressures – at any time, owners can also quickly pull up historical data to look for patterns and identify operator training needs.

Weight and see

For instance, with Haul Track connecting to the Rokbak OBW system, any habitual underloading or overloading can be easily identified.

Aside from curtailing misuse, the Haul Track and OBW combination offers huge potential to monitor production management and costs for higher product efficiency.

"Now it's easy to work out how many tonnes you've moved each day," said Urquhart. "Likewise, once you have visibility of the unit and its operations, long idle times and underloading can be monitored and mitigated."

MAX STREICHER launches industrial vacuum crawler

GERMAN CONSTRUCTION COMPANY MAX STREICHER GmbH & Co has developed the vacuum crawler VC70. Efficiency, occupational safety, environmental protection and ergonomics are core key issues on construction sites, and the VC70 can make the removal of a wide variety of soil materials more efficient and less damaging to people and the environment.

On the one hand, the vacuum crawler is applicable for various purposes, to uncover interred line conduits quickly and uncomplicatedly in the case of existing infrastructure, tree roots and plants without impairing or damaging them.

On the other hand, the VC70 vacuum crawler is also used for efficient cleaning of industrial plants and sewage systems. In addition to vacuuming cohesive soils such as earth, sand, gravel and stones, mud and water can also be suctioned off.

With its compact size and its flexible manoeuverability, the vacuum crawler can easily pass through narrow access points. It can also be driven on pavements and eliminates the need for road closures.It can be transported on a conventional 3.5 t trailer due to its low transportation weight, is operated via a radio remote control, and its compressor can be optimally integrated into the vacuum crawler.

Industrial vacuum crawler VC70.

Photo Credit : MAX STREICHER GmbH & Co.

It also contains an integrated tilt sensor among other things. An early warning of steep sloped terrains is relayed to the operator by visual and acoustic warning signals.

MAX STREICHER GmbH & Co specialises in pipelines and plants, mechanical, electrical, civil and structural engineering, apart from providing raw and construction material.

At MEE 2023, Al Masaood displayed new energy solutions from its global partner, Volvo Penta.

Photo Credit: Al Masaood Power

Scaling up power solutions

At Middle East Energy 2023, Rasso Bartenschlager, general manager of Al Masaood Power Division, was in conversation with Fyna Ashwath on the company's latest solutions for the power industry.

Technical Review Middle East (TRME): What are the latest solutions that Al Masaood showcased at MEE this year?

Rasso Bartenschlager (RB): It is part of our long-term commitment with Middle East Energy to introduce the industry's pioneering innovations.

At this year's edition, Al Masaood showcased new energy solutions from its long-standing global partner, Volvo Penta, particularly the Battery Energy Storage System (BESS). These are energy and power optimised to meet operational and business requirements and can be scaled from a single unit to as many units as required for the OEM's BESS applications, up to hundreds of mega-watt hours (MWh).

Volvo Penta has additionally expanded its genset range and launched its most powerful engine to date, the D17, which delivers a power-to-weight ratio from the same footprint as the D16 – providing customers with an excellent alternative to other engines in its class. Also on show were Volvo Penta's latest addition to their industrial genset product line, the 200 kVA D8 Stage II engine. Combined with low noise levels, this 8-litre power generation engine strengthens the company's range of industrial genset engines, offering up to 8% reduction in fuel consumption per kWh, compared to the D7 model it replaces. The D8 is available in four power nodes – 200, 253, 303 and 326 kVA at 1,500 rpm (50 Hz) at prime power, to meet different application configurations.

The Middle East is at the centre of the global energy transition with a huge influx of investment for renewables. We, as a leading power solutions provider, understand our role in facilitating the transition to clean and renewable energy sources, with GCC countries switching to green and sustainable economies.

Al Masaood strives to spearhead the future of solar panel solutions in the GCC. Energy storage is another major area of focus for the company. The group also supports the enhancements on hybrid and battery systems to ensure power supply stability, lower carbon emissions and increase operating efficiencies.

It is our company initiative to have substitute solutions in addition to the existing business. For instance, solar panels combined with batteries. Additionally, we are working on green solutions for EV charging, marine solutions to charge electric boats or substitute these power electric

boats. We have modular versions now which can be for industrial use as well as hybrid solutions which are becoming more important now, especially for crisis or disaster management. So there are various possibilities to move away from fossil fuels.

> We are committed to promoting sustainable solutions and delivering optimum performance with lower emissions.

TRME: What are the latest developments in the EV charging solutions that Al Masaood offers?

RB: For EV charging, we offer a complete solution, with a focus on the energy used by the charger. Al Masaood introduced the SHAMS+ (SHAMSPLUS), a full-fledged solar-powered charging solution for electric vehicles and hybrid marine vessel, the first such innovative solution to be fully manufactured in the UAE.

With an extensive network of universal charging stations that can cater to all battery needs of the automotive and maritime sectors, we aim to offer our services even in remote, hard-to-reach or hard-to-connect areas. We have solutions in which you can either substitute your grid connection with certain electricity available, and then add on to it. What is important is to have a fully fledged solution that can be actually used if there is no connection to the grid or there is limited electricity.

We offer solutions to book and control charging sessions remotely and get accurate energy-usage insights to help optimise performance and reduce cost.

TRME: Please shed some light on Al Masood Power's efforts for improved sustainability.

RB: Our focus is on relentless efforts to address the demands of the industry and our commitment to sustainability.

We are committed to promoting sustainable solutions and delivering optimum performance with lower emissions. Global efforts to reduce carbon emissions have been in full swing over recent years and the Al Masaood group continues to implement strategies aligning with the changes that come with this development. Further, solutions such as hydrogen and solar panels are a big part of Al Masaood's initiatives. We need to find solutions that are feasible, affordable for the people and are good for the environment.

By working with our partners, Al Masaood will leverage new growth potential and continually provide our customers with high-quality solutions and technologies. ■

Juniper Research forecasts huge growth in smart metering

A NEW STUDY from sustainable technology experts, Juniper Research, has found that hardware, connectivity and service revenue from smart meter deployments will exceed US$60bn in 2027– up from US$41bn in 2023. A smart meter records energy usage and leverages onboard connectivity to upload this data to energy suppliers.

The 44% growth reflects how smart meters are becoming critical to increasing the efficiency of energy grids via analytics which is proving imperative in lowering costs to customers during the energy price crises.

By 2027, the research forecasts that Italy will have the highest household rate of smart meters globally, at almost 100%. Italy introduced a mandatory smart meter installation policy in 2006, fronting itself as a market leader. The other countries set to follow suit are the UK (98.7%), Saudi Arabia (98.4%), Hong Kong (98.4%), and the UAE (97.4%).

The research recommends utility companies turn their focus on educating consumers on the associated benefits of smart metering, as often the benefits are made unclear. Utility companies should focus on the potential for saving energy, with evidence-based use cases to accelerate a broad adoption globally.

With more than 1.8 billion global smart meter connections forecasted to be in use by 2027, the scope of reach represents an important opportunity for cellular networks and low-power IoT connectivity. Low data usage from smart meters lends itself naturally to low-power IoT, but as cellular networks are the only networks capable of providing universal access in some markets, they still play a vital role.

Report co-author, Nick Maynard, said, "While smart meters have come a long way in deployment terms, they are only as good as the connectivity they leverage. Utility companies must aim to aggregate the best networks for their locations, or they will fail to obtain the benefits smart meters can really provide."

Photo Credit : Adobe Stock

Smart meter deployment will increase by US$19bn by 2027, according to the study carried out by Juniper Research.

Key features of the report include a detailed assessment of market dynamics, including insight into how the growth is evolving and the benefits that come with it; a future outlook and regional analysis of the key regions deploying smart technology grids; benchmark industry forecasts; strategic recommendations; and the Juniper Research competitor leaderboard, highlighting the key player capabilities across 18 smart grid vendors. The report delivers critical and actionable insights on the state of digitalisation, key smart grid vendors driving the evolution of the market and their future prospects.

View the smart grid market research: https://www.juniperresearch.com/researchstore/healthcare-government/smart-grid-research-report

The power to meet sustainability goals

Caterpillar has proven its worth by providing a power solution for a remote, off-grid agricultural facility.

WREGULARLY HIGH MORE than 40°C in the summer ITH ALMOST NO temperatures of rainfall and months, growing outdoor crops in the UAE can prove exceedingly difficult.

This was the challenge that, in 2015, Themar Al Emarat, looked to take on by planning a hydroponic farm in Sharjah to provide locallygrown, pesticidefree produce for local businesses. The company selected a soilless, recirculating hydroponic system in a climatecontrolled environment to support the highvolume commercial production of beef tomatoes, cherry tomatoes, lettuce, herbs and other crops.

With sustainability in mind, company executives sought to maximise environmentallyresponsible processes throughout the operations and created blueprints for five different greenhouses. To do so, without the support of the local grid which did not extend to the proposed farm, they recognised the need for a top-of-the-line solution to provide round-the-clock power for cooling equipment, water chilling, cultivation and other greenhouse processes.

The search for this reliable provider brought the company to local Cat dealer, AlBahar, who was commissioned to design, install and commission a comprehensive hybrid microgrid solution that would fully integrate advance power generation, control and monitoring technologies.

As the largest singlesite microgrid in the UAE, the proposed system would feature nearly 23,000 Cat PVT117 photovoltaic modules that generate up to 2.7MW of solar power for the facility during daylight hours. Five Cat 3412 diesel generator sets in soundattenuated, weather-resistant enclosures would supply up to 3.3MW of power in overcast conditions and at night and surplus energy would be stored in a 286kWh/250kW grid stability module supplied by a gridforming Cat Energy Storage System.

Photo Credit : Cat

The system features nearly 23,000 Cat PVT117 photovoltaic modules

Photo Credit : Cat

Themar Al Emarat executives sought to maximise the use of environmentally responsible processes throughout their operations

Together, the suite of technologies was designed to reduce fuel expenses, decrease emissions and reduce the total cost of ownership while also increasingly energy resiliency even in the most challenging environments.

Above and beyond

So far the power solution has helped Themar Al Emarat achieve all of its production milestones to date and the company has recently expanded its yield of white button mushrooms from six to ten tons per day. Total production capacity from its hydroponic operations is now surpassing 3.5mn plants per month.

One of the primary reasons for the success has been due to the integration of the Cat Master Microgrid Controller (MMC) which keeps loads continuously energising with highquality power at the lowest cost by managing the flow of power from every source in the system.

David Crabb, regional manager for Caterpillar, commented, “The ability to switch between sources is important with an integrated hybrid system, whether it is the generator sets, energy storage or solar panels. The MMC provides peace of mind for customers by perfectly integrating all the elements of the system based on changes throughout the day.”

Alongside this, Cat Connect Remote Asset Monitoring provides data visualisation, reporting and alerts from anywhere in the world through an easytouse web interface.

“It provides a complete, remote interface that allows customers to see the live performance of all the power assets of the plant and make operational changes via a phone or laptop,” said Syed Shahul Zindhanainar, account manager for AlBahar.

The hydroponic farm, and the supporting energy infrastructure, proved its worth during the Covid19 pandemic when transport and trade were severely affected.

“We now grow crops that the UAE used to depend on receiving from overseas,” remarked Dr. Ghanem Al Hajri, chief executive officer of Themar Al Emarat. “We have filled the gap by producing highquality food that provides the quantities our customers need while meeting their quality standards.” ■

Unlocking hydrogen projects in the Middle East

RAJA ATOUI, PARTNER, Bain & Company Middle East and Per Karlsson, partner, Bain & Company Nordics talk about the path to success for hydrogen.

THE MARKET FOR clean hydrogen and its derivatives (such as green ammonia, low-carbon steel, and synthetic fuel for aviation) is growing rapidly, with the number of announced projects up by more than 75% since the end of 2021.

The companies developing clean hydrogen projects have focused on developing their engineering and project management capabilities. Securing a base of offtake customers hasn't been a critical capability of their core business, so it is a new muscle to build. But getting potential customers to commit to long-term contracts is essential for project success.

Their work with early movers suggests three important steps in developing a customer-centric approach that are key to unlocking a successful clean hydrogen project:

1. Focus on high-potential segments and customers – In these early days for the hydrogen market, it's more efficient to identify the customer segments willing to pay the green premium—the price difference between traditional and low-carbon hydrogen. Once these segments are identified, developers can then narrow the search to find the highest-potential customers to make efficient use of lean sales teams.

2. Explore partnering with customers– Hydrogen producers that are not also customers of hydrogen—utilities, for example—should consider deepening their relationships with their offtake customers, like the partnerships we've seen in more established commodities such as gray ammonia. This helps secure long-term agreements and can help developers gain a better understanding of the challenges these customers face in selling a greener product and recovering the premium they have paid. Partnerships can also help hydrogen producers develop their commercial capabilities, as they learn more about hydrogen's economics and supply chain, while they develop their operational capabilities.

Photo Credit : Bain & Company

Raja Atoui, partner, Bain & Company Middle East.

3. Build the customer mindset in your organisation – To achieve these goals, hydrogen producers are becoming more customer-centric across their organizations. Some need to build new skills because companies that trade mostly in commodities typically have required limited sales capabilities. With a shift toward more differentiated products, they need to train the sales force to position their product as unique and valuable, form direct relationships with customers, and establish partnerships.

Developing these customer capabilities requires some of the same muscles that hydrogen producers have used in designing their clean hydrogen projects. A truly customer-centric organisation takes a systemic approach, talking to customers to gain a better understanding of the market and their long-term needs. Understanding customer priorities often leads companies to reconsider how they design their products and services and take them to market.

This may represent a cultural change for many utilities and other industrial organisations that have not worked at this level of customer engagement before. Instilling a customer-centric culture guides actions at all levels of the organisation and sheds light on where new learning is necessary.

To summarise, while the market for hydrogen is destined to grow, the path to success for any individual clean hydrogen project is far from certain. Access to the right sites, renewable energy resources, and partnerships will remain important, and given the limited supply of all three, assertive action is likely to generate a first-mover advantage. Adopting a customer-centric approach is a key ingredient in making the difference between failure and success.

Report: global solar panel market to reach US$166 billion this year

ACCORDING TO FUTURE Market Insights' most recent study, the world solar panel market value is expected to reach US$355.24bn by 2033, with a steady growth rate of 8.86%.

FMI has attributed this growth to developing countries, whose increasing population has had a direct impact on the production of electricity. With more people trying to reduce carbon emissions, electricity from renewable sources is seen as the best alternative to oil and coal. It is also growing at a rate that is sustainable, at 8.84%.

The majority of the international market was located in Asia and the Pacific region. In 2021, the area saw an increase of more than 81 GW in solar capacity. High solar irradiation and low component production costs are major contributing factors.

Moreover, investments in renewable energy dropped by 28% in developing nations, indicating that it can become cost-competitive with grid electricity without the need for subsidies. In 2017, renewable energy won major energy auctions throughout the world at pricing that would have been unimaginable a decade earlier, said FMI.

Unsubsidised bids in Dubai reached 2.98 cents per kilowatt-hour, which was lower than those for fossil fuels. Solarpack, a company in Chile, submitted a record-low bid of 2.8 cents per kilowatt-hour in 2016, which was about half the price of the most competitive bid for coal.

FMI said that efficient technology like thin film and polycrystalline panel innovation are adding to the efficiency of solar panels, which has increased during sunshine and rainy days. This has allowed energy to be generated year-round, increasing the demand for solar acceptance in residential areas.

Deep Sea Electronics reveals latest controller platform

DEEP SEA ELECTRONICS Ltd, which specialises in generator control technologies, has released the G8 Series – Advanced Paralleling Controller Platform. The product can handle complex paralleling applications, which include data centres and hospitals, apart from catering to demands from the rental and industrial sectors.

The initial release includes the G8600 Parallel Genset Control with Integral Heater, G8660 Mains (Utility) Failure Controller, G8680 Bus-Tie Controller and DSE SCADA Multi-Set Remote Monitoring Software. This new controller platform sees the introduction of DSE's next generation technology and delivers a brand new over mould case with integrated sealing gasket. This is a newly designed front delivering durability and resistance to on-site contaminants as well as an improved button layout for ease of operation. It consists of an enhanced display with a higher pixel ratio to present more information to the user as standard. The G8600 controller is fully configurable for use as a single-set, multi-set, mains (utility) failure or group controller, delivering advanced flexibility as standard.

Simon Nadin, managing director of Deep Sea Electronics Ltd, said, "The release of the G8 Series is a hugely significant moment for the company. The G8 Series has been developed to meet future industry demands for complex applications and will ensure DSE customers have access to an advanced control platform that will meet their advanced paralleling requirements for years to come".

The G8 platform boasts elaborate features such as:

Group Controller Functionality - The system is ideally suited to sites with multiple generators. The G8 Series allows 64 group controllers within the same system. Each group controller can have a maximum of 63 generators connected to it, meaning the G8-Series can handle synchronising systems with a maximum of 4,032 generators.

Multiple Bus Sections - This high-level feature allows certain parts of a bus to be separated into multiple sections. When a power failure/ fault occurs sections of the bus can be isolated from the system until it can safely be restored.

Load Demand Schemes - The G8 Series provides multiple load demand schemes including Spinning Capacity/Calling for More Sets/ Calling for Less Sets /Spinning Reserve / Balanced Engine Hours.

Advanced PLC Functionality – This software delivers intelligent drag & drop functionality for the user and provides user defined function blocks and inter-module communication, where the PLC software can communicate with all modules within the same paralleling system.

DSE SCADA – This powerful software tool provides multi-set remote monitoring & commissioning functionality and allows users to change multiple module settings at the same time using a Windows based device.

The company was founded in 1975 in England and manufactures technologies such as single and multi-set generator controllers, apart from displays for vehicles, intelligent battery chargers, and automatic transfer switch controllers.

The G8 Series – Advanced Paralleling Controller Platform.

Photo Credit : Deep Sea Electronics Ltd

Fugro to conduct offshore surveys for field development in Middle East

FUGRO, A SPECIALIST in geo-analysis solutions, has been selected to perform extensive offshore surveys for a major field development programme in the Middle East.

The contract was awarded for site characterisation services in support of one of the largest long-term field development programmes in the UAE.

The offshore surveys will commence in April this year, which will include geophysical, geotechnical and remotely operated vehicle (ROV) inspections supported by advanced engineering and geoconsulting studies to help inform the Front End Engineering Design (FEED).

The project consists of approximately 600 km pipeline route assessment with 800 crossings, 49 jacket surveys and island offshore surveys. Fugro's digital platform will also provide near real-time ground conditions.

Tim Lyle, group director for Middle East and India at Fugro said, "We are delighted to be supporting a project of such calibre. This significant award will allow Fugro to support our client's vision and sustainability targets whilst strengthening our commitment to in-country value (ICV) by working closely with our local supply chain."

Fugro Proteus and auxiliary workboat Thea.

Photo Credit : Fugro

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Photo Credit : COPA-DATA

A flexigrid is able to balance the intermittent nature of renewable energy.

Distributing energy effectively

Garry Forfar, sales director for energy at grid software developer, COPA-DATA UK, explains the challenges of flexigrids.

ENERGY INFRASTRUCTURE HAS never been so diverse. With renewable energy, microgeneration and battery storage redefining the grid, new technology is essential to bind this infrastructure together. Flexigrids – grids that incorporate this range of energy assets – could be the future of energy distribution. Here, Garry Forfar, sales director for energy at grid software developer, COPA-DATA UK, explains the challenges of these networks and the technology investment required to ensure resilience.

Energy demand is expected to grow by 50% by 2027, according to data from Sustainable Biofuels. Looking to the future, traditional energy infrastructure will not be able to cope with this surge in energy supply – not to mention energy assets that are required to provide this power in a sustainable manner. This is where flexible energy grids come in.

> The ability of flexigrids to support potential V2G set-ups among others, is what makes them stand out.

A flexible energy grid – or a flexigrid – is an electricity grid that is designed to handle the increasing volume of renewable energy sources by integrating these seamlessly. Unlike traditional grids, a flexigrid is able to balance the intermittent nature of renewable energy, such as wind and solar, by incorporating management assets onto the grid, such as battery energy storage systems (BESS) and control technology, to ensure this energy can be distributed effectively. It has multiple generation points into which distributed energy resources (DERs), small-scale electricity supply or demand resources, can be connected. DERs include the aforementioned solar, wind and stored energy, but there is also potential for electric-vehicle-to-grid (V2G) connectivity.

Among many reasons, one contributor to growing electricity demand is the increasing number of electric vehicles (EVs) on the roads. Sales of EVs in Europe increased by 65% in 2021 and this trend is expected to continue. Industry is currently discussing how adaptable charging could be possible for a V2G set-up. In practice, this could see power taken from charging stations, and put back to use elsewhere when large charging sessions are not necessary.

The ability of flexigrids to support a greater variety of energy sources, including potential V2G set ups, is what makes them stand out as an essential energy technology. But, what else is required to make them function?

Software for managing flexigrids

Control and monitoring software is crucial for flexigrids to be feasible. By their very nature, flexigrids connect a number of different assets – be that renewables, BESS or charging stations. Therefore, enabling their communication is crucial.

Let's say a manufacturer has a small microgeneration set-up on their industrial facility. The site uses solar panels on the roof to generate power and stores the energy from these assets in a small BESS. If the facility were to have a temporary shutdown, it is inevitable that excess energy will be available.

Flexigrids allow the manufacturer to sell this excess energy back to the grid. What's more, agile communication between the BESS and the wider grid mean this can be done automatically, allowing the grid itself to flex and redistribute energy depending on what is needed and when. Not only can this help microgenerators to gain capital from their renewable sources, but it can also improve the resilience of the grid as it relies more heavily on renewable power.

Flexigrids provide an idyllic vision of how our energy infrastructure can integrate new assets, include microgenerators and encourage the pace of EV deployment – but they simply aren't feasible without technology for monitoring and control. ■

Overcoming interoperability challenges in renewables assets

Alastair MacLeod, CEO of satellite-focused connectivity specialist, Ground Control, examines the challenges renewables businesses face in creating a network which is secure, cost-effective and ultimately operates as one.

AS RENEWABLE ENERGY assets are often located in remote locations, where terrestrial coverage is intermittent or unavailable, it can be difficult to maintain connectivity and monitor performance. This makes interoperability crucial for the management of these assets. Real-time data exchange between different systems, allows for more accurate and comprehensive data management. Due to the unpredictability of wind, sun, and water patterns, the ability to improve the speed and accuracy of output forecasting can be a game changer. This data can also be used to inform predictive maintenance ensuring at-risk parts are replaced before failure, avoiding costly downtime. The early detection of turbine damage, for example, can save wind farm owners millions annually. Interoperability makes it easier to add new systems and devices to existing infrastructure, making it more scalable and adaptable to changing energy needs.

Alastair MacLeod, CEO of satellite-focused connectivity specialist, Ground Control.

Interoperability challenges

Systems are often not compatible with each other. For example, solar panels from one manufacturer may not be able to communicate effectively with inverters from another manufacturer. This can result in inefficiencies, data silos and increased costs. This also means that interoperability increases cyber-attacks. Currently there is no universally accepted standard for renewable energy systems, which can make it difficult for different systems to communicate and exchange data effectively. This can lead to inefficiencies, reduced data quality, and increased costs. Renewable energy assets such as wind turbines or solar farms, are located in remote areas, which are located in challenging terrain. Assets such as reservoirs and wind turbines are often in remote and rugged environments, making it difficult to build or maintain the infrastructure required to support them via terrestrial or fibre connectivity. Satellites can come to the rescue in such cases. They complement 5G and terrestrial networks, and can reach rural and remote areas. They also have additional backhaul capability apart from providing global coverage and being unaffected by natural disasters.

Important considerations for satellite integration

Hardware compatibility and power management are important considerations for anyone looking to introduce satellite IoT modules into their network. It is important to ensure that the modules you select are compatible with your existing hardware and software infrastructure, because satellite IoT consist of differing communications. Satellite IoT modules are also dependent on satellite connectivity and require a long battery life. So it is important to select modules that are designed to operate efficiently in low-power environments, and implement power management strategies to minimise power consumption and maximise battery life. Costs can be reduced by integration.

In the case of one of our customers managing a water treatment works, sensors utilised LoRaWAN to transmit data to a hub. The hub then optimised the data payload to reduce transmission costs, and transmitted this via satellite only when cellular connectivity was unavailable. This solution proved very successful for the client.

Seamless network integration

It is important to consider factors such as compatibility, data exchange standards, and communication protocols. By choosing solutions that are designed to work together, companies can streamline communication and improve efficiency. APIs provide a standardised way for different systems to communicate and exchange data, while data integration tools enable companies to consolidate and manage data from multiple sources. Through this, companies can improve data quality, reduce data silos, and streamline communication between different systems. Moreover, cloud-based solutions are a cost-effective method to enable remote connectivity for renewable energy systems. By storing data in the cloud, companies can access data from anywhere with an internet connection, enabling remote monitoring and management of renewable energy systems. Moreover, US$8.5bn was spent on unplanned repairs and corrections caused by component failures in wind operations in Europe in 2022. Many of these costs can be mitigated with reliable monitoring and control, preventative maintenance, especially for devices in hard-to-reach areas. ■

Teledyne FLIR releases latest series of thermal imaging cameras

TELEDYNE FLIR, A Teledyne Technologies company, a global provider of intelligent sensing solutions for defense and industrial applications, debuted a series of cooled-core optical gas imaging (OGI) cameras in April.

These cameras can help leak detection and repair (LDAR) professionals seamlessly locate and document harmful gas emissions.

Part of the company's latest G-Series, the cameras can aid professionals in the oil and gas, manufacturing, steel, and utility industries to spend more time prioritising leak repairs, and less time documenting them while gaining better insight into the severity of the emission.

All seven models are available with wireless connectivity to allow operators to automatically upload and store saved images and videos to FLIR Ignite cloud software while in the field.

They are compatible with third-party analysis software, which enables operators to wirelessly share captured content with colleagues across the world for review, providing further analysis and processing.

Teledyne FLIR engineered the FLIR G620, Gx320, and Gx620 models to detect and accurately quantify hydrocarbon, fugitive gas, and other volatile organic compounds (VOC) emissions in the oil and gas industry. The G346 and G304 provide an effective method to detect carbon monoxide or refrigerant leaks and potential issues that will improve safety and productivity within the plant environment.

Photo Credit : Teledyne FLIR

Teledyne FLIR's newest cameras can detect carbon monoxide and refrigerant leaks.

"For the first time, the Teledyne FLIR G-Series provides unmatched user ergonomics with quantification in camera for the hydrocarbon models, adding seamless emissions measurement into the everyday leak detection and repair process," said Craig O'Neill, global OGI business development director at Teledyne FLIR.

"These new models represent a breakthrough in OGI with advanced features, updated wireless communication protocols, and a rotatable touchscreen LCD to maximise user efficiency in the field," he added.

Setting a new standard for reliable power supply in the Middle East

THE SAUDI ELECTRICITY Company (SEC) has reduced its yearly operational costs by 20% and improved customer service by upgrading its maintenance capabilities with inspection equipment from Fluke, the global technology leader in professional electronic test and measurement tools and software

SEC's value-based maintenance strategy has transformed its maintenance routines with the use of Fluke Ti32 definition thermal imaging cameras and Ti400/Ti450 portable infrared cameras, leading to a reduction in power outages.

Thermal imaging capability

Infrared cameras are invaluable for detecting small temperature differentials and can demonstrate progressive heat changes over time, allowing maintenance professionals to detect critical issues before they become failures. Fluke has recently relaunched its popular range of thermal imaging cameras, Ti300+, Ti401PRO and TiX501, which allows users to get the images they require in focus every time.

Transition from CBM to value-based maintenance

With the implementation of Fluke equipment, the SEC has been able to transform its maintenance routines and improve the reliability of its networks.

The Saudi Electricity Company improves service and reduces costs with Fluke inspection equipment.

Photo Credit : Fluke

Increased reliability

Zakaria Al-Ramadhan, distribution engineering specialist at SEC commented, "Reliability is the key issue when supplying power. Customers pay the company to supply power with no outages, which is why minimising disruption to supply is the most important focus for us."

As a result of the successful implementation of Fluke equipment, the SEC is planning to purchase more corona cameras and deliver training to more of its

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Diversifying water sources in the GCC

Lina Abolail, regional director of water management solutions at Polypipe Middle East, assesses the most cost-effective and sustainable ways to reduce water stress in the arid Middle East.

WHILE IT MAY be daunting, there's no denying the looming water crisis in the Middle East. Home to approximately 5% of the global population, the MENA region has access to only 1% of the world's natural freshwater. Rapid urbanisation, population growth, and some of the highest water consumption rates in the world are just a few of the factors accelerating the onset of an imminent water shortage.

Fortunately, GCC governments have acknowledged that a heavy reliance on finite groundwater reserves is not a long-term solution. Consequently, over the past decade, governments have invested US$76bn in numerous large-scale water projects, to diversify their water sources. These projects are centred around three key strategies – desalination, wastewater recycling, and rainwater harvesting. While each approach has its own set of advantages, there are also certain drawbacks that must be taken into consideration.

Desalination is among the most widely adopted alternatives to freshwater, and in 2022, the UAE government announced that it would be investing US$2.1bn into new plants. With sea levels on the rise, oceans offer an almost inexhaustible supply of water, meaning that even in periods of drought, desalination will enable reliable access to clean water.

However, this solution comes with its fair share of environmental concerns, including the masses of energy required to operate the plants. Desalination plants require more energy to produce potable water than any other water supply option. In addition, the disposal of the salt extracted from the water presents another significant challenge as the brine solution is often released back into the sea, where it can alter the salinity and reduces oxygen levels, resulting in increased animal stress and death.

The GCC governments have invested US$76bn in large-scale projects centred around desalination, wastewater recycling and rainwater harvesting.

Photo Credit : Polypipe Middle East

Wastewater recycling is defined as any water that is discharged by households, agriculture, and industrial facilities which can be treated and reused to help mitigate water shortages and support a circular economy. While greywater – wastewater from sources such as showers, washing machines and sinks – can be easily treated on-site and reused for irrigation, the treatment process for making the water safe enough for drinking is much more complex. Wastewater treatment plants, like desalination plants, consume masses of energy and emit large quantities of greenhouse gases. By recycling greywater for non-potable purposes, the demand for more energy-intensive treatments can be reduced and more sustainable water management practices can be contributed.

Like greywater reuse, rainwater harvesting is another zero-energy approach to capturing, filtering, and storing water for future use. This is Polypipe Middle East's area of expertise, where it offers two geocellular rainwater harvesting solutions –Polystorm and Permavoid.

When used for the objective of water retention, Polystorm collects water channelled from buildings' rainwater outlets and surface drains, and then filters out sediments and pollutants before storing it in underground tanks. Each Polystorm tank has a 95% void ration, capable of storing up to 190 litres of water. This essentially provides owners with a plentiful reserve of treated water for agricultural, industrial, or some domestic applications free of cost.

Permavoid combines the same engineered water storage solution with innovative capillary cones and wicking geotextile technology to create a passive irrigation system. This enables captured rainwater, or recycled greywater, to flow up into the soil on a demand-only basis, lowering consumption by up to 40% compared to above-surface drip irrigation and encouraging responsible consumption.

Despite their relatively low scalability, rainwater harvesting and greywater recycling offer a valuable opportunity for private organisations and households to address their consumption habits and reduce the demand for energy-intensive treatment processes. Implementing these strategies can even result in significant cost savings by reducing utility bills.

It's important to note that there is no one perfect solution and that these three measures should not be viewed in isolation. Achieving a sustainable source of water requires a comprehensive and integrated approach that includes reducing water waste, promoting water conservation practices, and implementing efficient treatment strategies. ■

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> – Undersecretary, Ministry of Works, Bahrain

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Setting the path for strong growth

Commercial vehicle solutions provider, UD Trucks, has continued its journey of growth throughout the Middle East, East and North Africa region by registering an average of 30% growth for the second year in a row.

THE JAPANESE MANUFACTURER continues to strengthen its position in a largely European-dominated regional truck market. UD Trucks places its 'Better Life' Strategy for people and the planet at the core of its objective.

In a media gathering attended by *Technical Review Middle East,* there were positive stories for UD Trucks across the region, throughout last year. Sales of heavy-duty trucks in Qatar were up by 35%, thanks to the brand's reputation for producing robust and modern trucks. This also contributed to UD Trucks' steady performance in other key segments, including the waste management and construction sectors in the UAE.

Mourad Hedna, president of UD Trucks MEENA, commented, "2022 has been an excellent year for UD Trucks in the region, a confirmation year that its trucks, services and values are well appreciated by our customers."

"With a strong foundation in place, we are on track for another successful year in 2023. We will continue to work on our growth and customer satisfaction in all areas," he added.

The company's first heavy-duty truck, Quester, developed specifically for growth markets has won praise for its highly durable chassis and flexibility. UD Trucks has deployed its experience and expertise in heavy-duty trucks to develop the Quester concept of meeting market needs in each country. Another heavy-duty truck, the Quon combines industry-leading fuel efficiency with dynamism and drivability, and offers an unparalleled driveline that delivers a smooth, stress-free and comfortable ride. Quon is equipped with advanced safety features that protects the driver and cargo, while also caring for the safety of the vehicle's surroundings.

UD Trucks continues to grow at a rate of 30% in the region.

Photo Credit: UD Trucks

Commitment to environment

In order to meet the challenges of a changing environment, improve logistics, and reduce emissions, UD Trucks is continually developing innovative initiatives. In this spirit, it has introduced Euro 5 compliant vehicles with improved engine performance and fuel economy, despite Euro 4 emission standards being the minimum requirement for some countries in the region, such as the UAE.

The company reaffirms its commitment to protecting the environment with its move to electrification and the adoption of autonomous driving technology. As part of its Smart Logistics initiative, the company intends to offer fully electric and autonomous trucks by 2030. Additionally, this initiative strengthens UD Trucks' Better Life objective – to be better for logistics, the planet, people, and businesses by integrating sustainability into the company's operations and those of its customers.

> With a strong foundation in place, we are on track for another successful year in 2023.
>
> **Mourad Hedna, president of UD Trucks MEENA**

The company's commitment to the environment and sustainability is further highlighted by initaitives such as the support for the Arabian Ocean Rowing Team's 'Clean Seas' initiative. From La Gomera in the Canary Islands to Antigua in the Caribbean, the team has rowed 5,000 kilometres across the Atlantic to raise awareness about green energy and sustainable development, while balancing economic growth and environmental sustainability. In addition to this initiative, UD Trucks supports many more in other hubs around the world, including Australia, South Africa, and Indonesia, to name a few. ■

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Creating holistic systems

Technical Review Middle East spoke to Caryn Dwelle, business development manager UAE & Oman, Brady Middle East, regarding the company's latest innovations for industries across the region.

TECHNICAL REVIEW MIDDLE EAST (TRME): What are the products Brady showcased at Middle East Energy this year?

Caryn Dwelle (CD): Brady, as identification specialists, research, design and manufacture labels and systems to assist our customers with their marking requirements. Our products are meant to be used in environments that are the most demanding, for instance, here in the desert.

Brady's complete solution includes industrial-grade labels, label printing software as well as print and apply systems.

With Brady's complete RFID solutions, assets in any industrial environment can be given unique digital identities by applying a label. With a handheld RFID scanner, multiple assets can be located, identified, tracked and traced from a 15m distance without needing line of sight. Fixed RFID scanners can even cover the entire workplace to considerably accelerate asset tracking. As a result, employees can quickly find any asset they need, inventories can be automated and outgoing cargo can be checked for completeness in seconds.

One focus segment this year, is automation. We are getting more and more requests for RFID and smart identification in this region. Brady can offer several automation solutions depending on customer needs.

Lastly, we are showcasing our latest printer technology which includes our M211 and M611 portable models, which are operated by a smart phone; you can even create barcode labels with the easy-to-use mobile app.

We even have a system that combines printing with application for high performance wire and cable labelling, to help you optimise your workforce – that is, the Wraptor A6500.

Photo Credit : Brady Corporation

Brady can include sensors in RFID labels that can be activated by manual or fixed scanners on demand or at pre-programmed intervals.

TRME: How are Brady's smart RFID solutions helping wireless temperature and moisture control?

CD: We have both temperature-sensing and moisture-sensing labels that can be used for independent applications or jointly as part of a holistic system. RFID temperature labels enable wireless temperature reading and monitoring for a wide range of devices, equipment, machines, racks, cables, pipes and structures. The flexible, temperature-sensing smart labels can be applied to almost any surface to support informed, proactive decision-making.

Potential applications include environmental monitoring, material and equipment monitoring, cold chain monitoring, data centre monitoring, maintenance and safety data collection, and greenhouse monitoring.

Our RFID UHF moisture label is a general-purpose moisture sensor that is designed to detect and measure moisture levels in the surrounding environment, and it works across a wide variety of materials, providing both good read distance and sensing performance. This label is suitable for use in outdoor, indoor and UV exposed environments.

TRME: In this region, what industries are the main focus for Brady?

CD: Automated labels can significantly increase the speed at which products, components, cables and even laboratory samples can be identified.

From laboratories to process industries such as food and beverage or oil and gas sectors – we serve a diverse arrray of industries all in need of the same thing: high performance labelling. In the UAE, Brady's identification solutions are in great demand for the telecom/datacom sector as well as in manufacturing.

Any of these sectors can benefit from automatic data collection. Smart-labelled assets can help inform strategic decision making on capital asset numbers, their location, preventive maintenance and environmental elements. Decisions on stock levels can be supported by the latest data, generated and collected automatically, to further drive business efficiency and profitability – all by giving assets a unique digital identity. ■

With Brady's complete RFID solutions, assets in any industrial environment can be given unique digital identities by applying a label.

Delivering business excellence

Manuel Selva Ezhil, product manager, explains how his company, Hotline Trading LLC is providing quality systems to improve business performance and reduce costs.

Photo Credit : Hotline Trading

Manuel Selva Ezhil, product manager, Hotline Trading LLC.

HOTLINE TRADING, A leading supplier, installer and turnkey solution provider of boiler systems and steam accessories, represents manufacturers from the UK and US, across the Middle East.

"We have nearly 20 years of experience across the UAE and the wider region and have a track record of supplying, testing and commissioning for many prestigious projects in the GCC. We pride ourselves in supplying only reliable and quality products to building contractors after testing," says Manuel Selva Ezhil, product manager, Hotline Trading LLC. The company caters primarily to the region's HVACR industry.

"If the equipment fails, the client is forced to pay 40-50% more to replace the inferior product on the rooftop or in the basement of the building. So, replacement costs are higher if quality is not taken care of right at the beginning."

The company operates quality systems designed to support the highest levels of customer satisfaction and continuous improvement of business performance.

"For designing hot water systems for hotel projects, for example, all we need is the fixture counts and expected mode of heating. We then submit a complete calculation with design backups. Once the design is approved we submit our turnkey offer for supply, installation, testing and commissioning and take the whole responsibility for the system," Ezhil remarks.

"Whenever the equipment is supplied, we provide an annual maintenance contract and training for the technicians," he added.

Hotline Trading LLC incorporates a mix of steam accessories to ensure that the client receives accessories customised to their requirements. Its engineering team schedules site management to meet contractors delivery, construction commissioning test and hand over programmes.

Photo Credit : Hotline Trading

Byworth Boilers, has improved designs for increased efficiency.

What to look for in a good boiler system

Explaining the features of a good boiler system, Ezhil explains, "It is important to select and purchase the right boiler based on initial investment as well as on the technicalities involved and long- term running costs. There are many boilers available to match your budget from the same manufacturer but it's important for the buyer to carefully select and purchase the right boiler."

"For instance, Byworth Boilers, has improved its Three Pass Conventional Wet Back design by incorporating X-ID tubes, for increased efficiency, lower emission and maintenance costs."

"Efficiency is the most important consideration. We need to look at the experience and longevity of the manufacturer, as well. The heating surface of the boiler is also important, as more the boiling surface, better the boiler," he continues.

To support the product range the company has a project management capability for turnkey projects, which can involve the supply of boilers, M & E services, electrical and civil works as well as aftersales support. ■

SAUER 6000 series: Demonstrating versatility

Many applications require compact compressors for high suction pressures and high volume flows. At the same time, customised solutions are also in demand.

SAUER COMPRESSORS, A German group of companies boasts more than 135 years of history and over 85 years of experience in compressed air and gas technology.

The SAUER 6000 compressor series

The high-pressure compressors have a shaft power of up to 230 kW and are based on a flexible modular system. Despite the high volume flows, the classic plunger piston machines are very compact and therefore versatile.

Before the turn of the millennium, Sauer Compressors had identified a market niche: many industrial applications required high-pressure compressors in the upper performance range of plunger piston technology that could also be customised.

The SAUER 6000 compressor series enabled the company to make the leap from 87 kW to 230 kW shaft power in the high-pressure range. Among the first users are, for example, manufacturers of jet engines, pumped storage power plants, large research institutes and OEMs of plants for biomethane injection into gas grids.

High performance for a wide range of gases

The high-pressure compressors of the 6000 series are designed for suction pressures of up to 20 barg and reach discharge pressures of up to 500 barg with a shaft power of up to 230 kW. The volume flow range is between 200 and 1250 m³/h, depending on the configuration. The direct-drive water-cooled compressors are suitable for a wide range of gases such as air, nitrogen, helium, natural gas, biomethane or hydrogen. Pre-compressed gas can also be accommodated. Thanks to the gastight crankcase, leakage rates are minimal. The compressors, which are extremely compact for this performance range, require only a small footprint and, thanks to resilient mounts for lowest vibration, require neither a special foundation nor a bedplate, making them easy and cost-saving to install.

Flexible modular system

The 6000 series high-pressure compressors from Sauer Compressors are based on a sophisticated modular system and can be customised for a wide range of applications. Standardised crankcases with four or six cylinders can be combined with seven different compression stages, with piston diameters ranging from 22 mm to 195 mm. This opens up an immense number of possibilities for configuration. "Especially in the gas sector, customised solutions are currently in demand, just think of the numerous hydrogen projects in the industry," Dirk Slottke, chief sales officer, says. Because certain models of the series are particularly in demand, eleven standard types have now been defined.

Increased versatility means the option of subsequently exchanging the stages and thus adapting the compressor to new requirements. For example, a 100 barg compressor can be turned into a 500 barg compressor by replacing just two stages, with virtually no change in operating characteristics and maintenance parts. "Recently, we replaced two stages on a compressor for a customer in the process industry, because an application required more suction pressure and less discharge pressure. We often receive requests like this, because process parameters change," reports Slottke.

In-built interstage water cooler

A special technical feature of the SAUER 6000 series is the in-built water-cooling system, which directly cools the cylinders and the compressor valves. The powerful as well as maintenance-friendly system can also be used under very challenging operating conditions. The maximum water inlet temperature in the standard case may be up to 40 °C and the ambient temperature may reach 55°C. External cooling and additional piping are not required.

Magnetic coupling for hermetic gastightness

One important innovation is the integration of a magnetic coupling between the compressor and the electric motor, which enables hermetic gastightness. This further improved sealing is particularly relevant for valuable and hazardous gases and is unique on the market. Unlike mechanical seals, the solution is absolutely maintenance- and wear-free, so that regular inspections are no longer necessary at this point.

In the 6000 series, the basic design has been modified for better accessibility and maintainability of the solenoid valves and standardised for all models. The air filters have a higher flow capacity, and a special feature protects against compressor operation without a filter insert. The cooling circuit has also been optimised. Non-return valves at the cooling water outlet prevent reflux. Factory-installed compensators for the cooling water inlet and outlet have made the previous hoses superfluous and reduced the overall footprint. Drain valves on all cylinders ease the cooling water outlet. Zinc anodes have also been added. The materials of the cooler inserts are specially adapted to each gas type supposed to be compressed.

Optimised condensate system

Uniquely developed separators in the condensate system by Sauer Compressors achieve an efficiency of 80 to 100% – a previously unattained value. The separators and stages each have their own drainage. For easier access, the condensate system is located on the side of the motor. The oil lubrication system has a main-flow oil filter with an oil pump and optimised sealing. ■

A new compressor cost of ownership model

With the global rise in electricity prices, the energy costs of compressed air have increased to as much as 91% of the total cost of ownership, and operators need to urgently review the efficiency of their system, says Graham Read, product manager Industrial Compressors Europe at CompAir.

FOR MANY YEARS, industries have used a formula to calculate compressed air cost of ownership, which comprises of capital investment and installation at 10% and maintenance at approximately 8%. This means energy costs make up the largest proportion at 82%.

This breakdown has served many customers well, enabling them to make informed choices about how to lower running costs. This is especially the case when considering the cost of capital equipment and the potential payback that can be achieved by investing in an energy-efficient machine.

However, customers now need to re-evaluate the way that they assess their compressed air energy costs. Graham Read explains:

"Total running costs over the last ten years for a 160-kW compressor have more than doubled. Put simply, for every US$109,652 (100,000 Euros) spent on compressed air previously, around US$89,914 (82,000 Euros) of this was the energy costs. Now, this figure has risen to US$99,783 (91,000 Euros) – with energy costs doubling in the last two years alone.

"The good news is there are numerous high-performing, energy-efficient compressors available on the market, which can help reduce a site's reliance on electricity considerably, such as our new L160e-250e range."

The new L160e, 200e and 250ekW FourCore compressor range offers all the capabilities of an oil-lubricated two-stage compressor, but with only the footprint of a single-stage unit. This compact, two-stage airend uses four gears rather than three, to deliver flexible rotor speed adjustment at both low and high pressures, as well as the best possible performance at different discharge pressures and shaft speeds.

When compared with previous single-stage compressors in this size range from CompAir, the new models are up to 8% more efficient, offering a best-in-class oil-lubricated solution that can help significantly reduce energy costs. The new technology can save up to US$13,158 (12,000 Euros) a year, providing payback in as little as one year. This rises to cost savings in the region of up to US$24,000 (22,000 Euros) compared to a single-stage 250kW machine, and a return on investment in under 12 months in many instances.

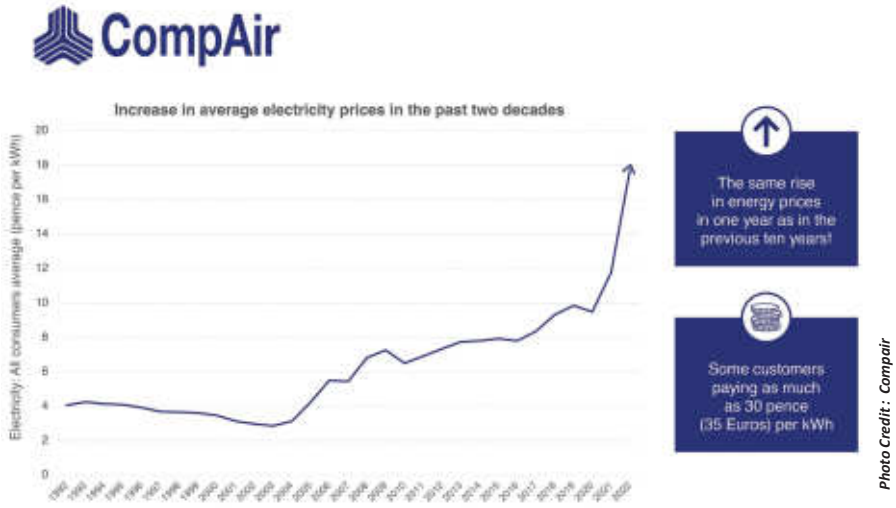


Photo Credit: Compair

In addition, integrated heat recovery is offered as an option on the new range. By recycling the heat generated from a compressor, businesses can re-purpose this energy to heat water, for space heating, or for application processes in other areas of the installation.

Based on a 160kW compressor, which runs for 6,000 hours per annum, there is the potential to save over 145kW of energy per hour – to offer payback in as little as four months.

Read continues, "While not every site will have the available capital expenditure to invest in a new energy-efficient compressor, significant savings can still be made by adopting a 'measure, manage and improve' approach.

"CompAir offers an air assessment service which looks at all aspects of a compressed air system's performance, including power and flow data, pressure measurements, leak detection, and heat recovery to name a few.

"Using data logging, precise measurements are taken to give a comprehensive overview of energy performance. Suggestions can then be made on potential equipment upgrade or investment, through to simple equipment optimisations and low-cost elements, such as fixing leaks, reducing pressures and switching off compressors when they are not in use.

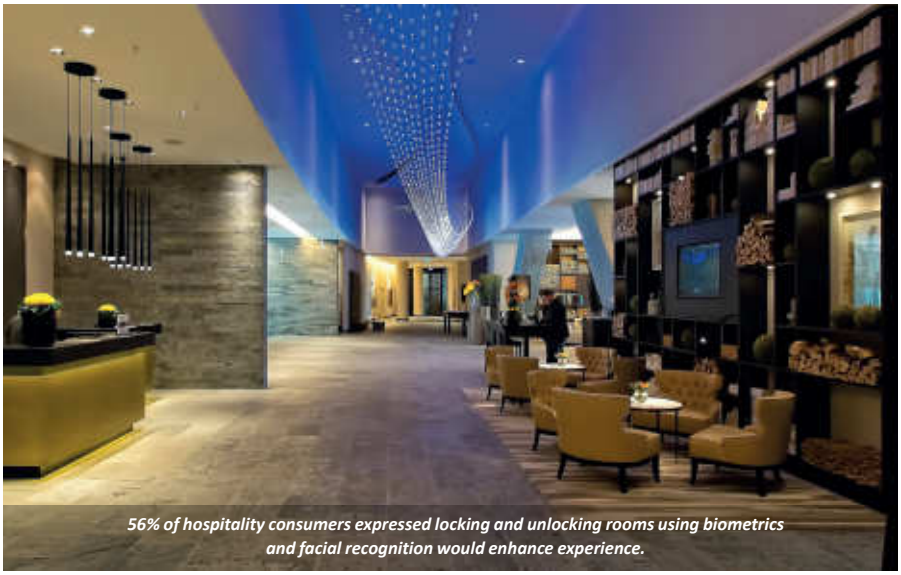
"The industry is becoming increasingly concerned about the substantial increase in electricity prices. By understanding how the cost of ownership balance has shifted, and adopting a system-based approach, it is clear that customers can achieve rapid payback on any investment made." ■

To find out more, please visit https://www.compair.com/en-gb/sustainable-compressed-air

Aesthetic access control: finding the balance

Daniel May of Consort explores the specification process of modern access control systems and why greater collaboration on projects is important in striking a balance between seamless integration and design.

FOLLOWING A PERIOD of innovation and integration, access control has developed into an ever-prominent facet of building design over the past decade. The push for smarter buildings has played its part too. In fact, according to a 2022 report by Insider Intelligence, the number of smart buildings worldwide is projected to climb from 45 million to 115 million by 2026, with global market size estimated to hit US$201.16 bn by 2031 – and this growth shows no signs of slowing down (omitting another global pandemic).



56% of hospitality consumers expressed locking and unlocking rooms using biometrics and facial recognition would enhance experience.

Photo Credit : Consort

Aesthetic choices

Access control has become critical to the operative performance of a built environment, where from residential settings to commercial space, the adopted use of interconnected systems is further boosting accessibility, functionality and security. Using modern hotel environments as an example, a 2022 report by Oracle Hospitality found that 56% of hospitality consumers expressed locking and unlocking rooms using biometrics and facial recognition would enhance their experience. From Wi-Fi infrastructures to cloud services, technology has almost become synonymous with a hotel guest's experience and is designed to improve their stay. Where digital access control systems are adopted, guests can interact with the premises independently, streamlining their access to essential entry points while safeguarding rooms against unauthorised visitors. Similarly, hotel operators benefit from enhanced building security and increased traceability, not to mention improved business efficiency and higher guest ratings. However, while security and accessibility are frequently top of the agenda when it comes to specifying hardware, from an architectural perspective, a solution's aesthetic is just as valuable and plays a crucial role in the decision-making process. Often, door hardware can feel like the finishing touch to a design project, and so, careful consideration must go into consistent design choices that make a positive impact on the building's aesthetic. Ultimately, better-quality aesthetics enhance environments by making them more welcoming.

Combining value and visuals

Again, hospitality is a good case in point, where hotels must ensure their environment is visually pleasing as part of the service quality offered to their guests. However, a survey by ATG Access on urban design revealed 40% of architects find incorporating security measures into new developments without impacting aesthetic appeal a key design challenge. With this in mind, architects and design teams can be forgiven for past frustration towards the unattractive and cumbersome access control systems that were once in their infancy. In reality, current systems offer a much more seamless design, and with end users placing value on key elements such as accessibility, fire safety and reliability, it's now possible to incorporate a solution that works for everyone. From a building's security elements to its flow of movement, there are various objectives to reflect upon, and architects must look to develop their knowledge on access control solutions to ensure all end user objectives are met, and all while considering the final aesthetic. In many cases, manufacturers now offer bespoke access control solutions too, each designed to adapt around the end user's needs while working with the architect on a design level. Through greater collaboration and the use of tailored solutions, architects are given the ability to choose consistent finishes and materials that fit the planned aesthetic, removing the need to try and match across various suppliers later down the line. Seemingly, access control will continue to play a larger role in building design as the industry progresses. And while the adoption of new technology may inherit an element of uncertainty for some, by introducing tailored solutions with seamless integration at early stages of the design process, architects can rest assured that their proposals address core challenges such as security and fire safety, while keeping their aesthetic vision intact. ■

Leveraging Edge Computing

Edge Computing is proving invaluable for offshore oil and gas operations, providing highly reliable compute infrastructure capabilities right at the edge of operations, says Stratus Technologies.

DIGITAL TRANSFORMATION IN oil and gas remains paramount in managing mission-critical operations, enabling operators to gain valuable business insights, improve worker safety, reduce costs, and more. This is especially true for offshore oil and gas production, presenting a unique set of circumstances including – but not limited to – often inhospitable geographically remote locations, 24/7/365 operations, and around-the-clock rotating equipment required to move oil and gas and generate power to simply keep the lights on.

So, where does Edge Computing fit in this digital transformation equation?

Gone are the days of difficult communications and archaic two-way radios. Technology advancements over the years have brought an exciting digital revolution to the oil and gas industry, not only impacting the offshore production setting but also significantly improving the lives of those who leave their families for weeks at a time just to do their jobs. According to McKinsey and Company, "Technology has potential to boost performance across the entire upstream oil and gas value chain by enabling optimisation and automation."

Many offshore oil and gas organisations have chosen to leverage Edge Computing, providing highly reliable compute infrastructure capabilities right at the edge of operations. This is especially important as many offshore oil and gas companies reside in harsh environments without easy access to IT teams should a problem arise.

Some of the key components that make Edge Computing a trusted ally in digitising the oilfield and to those working in the industry include accurate, real-time data analysis; remote control operation capabilities; new levels of reliability and availability; and applications with the ability to predict equipment failures before they happen.

Offshore oil and gas facilities produce an incredible amount of data daily. According to a Cisco report, an oil rig can create two terabytes of data in one day, but due to the remote nature of the offshore oil and gas industry, this data is rarely analysed and leveraged for decision making without the support from Edge Computing solutions. In a recent Schneider Electric blog, the reduction of latency is highlighted as one reason many offshore organisations are turning to Edge platforms.

Photo Credit : Adobe Stock

Edge Computing facilitates real-time data analysis, remote operations and predictive maintenance.

"Excessive latency creates traffic jams that prevent data from filling the network to capacity. The impact of latency on network bandwidth can be temporary (lasting a few seconds) like a traffic light or constant like a single-lane bridge. When Edge Computing is deployed, very few latency issues occur, because the data is analysed locally instead of sent up and back from the cloud."

With zero-touch Edge Computing, data can be managed in real time, allowing for improved communications, storage and analysis, which in turn can improve business-critical decisions.

With an autonomous Edge Computing solution, those working in offshore oil and gas production have enhanced visibility of operations from a distance – especially with extremely limited support staff and access. Operators require the power of Edge Computing to manage and remotely run software and equipment continuously. Not only that, but workers can also remotely handle health monitoring, alerting, patching, and issue resolution that would often require IT teams.

In the upstream environment, many high value and mission-critical applications are run with basic IPCs, which do not deliver the level of reliability needed for geographically remote assets. By leveraging zero-touch Edge Computing, organisations find ruggedised fault tolerance, protecting these assets from downtime without the need for IT maintenance and support.

As technology continues to evolve, new analytical tools leveraging the accurate and real-time data provided by Edge Computing platforms are proven to optimise performance and safety. These tools play a key role in improving critical decision-making keeping assets at peak operation conditions. They also raise any concerns or anomalies that may need to be investigated further. This autonomous monitoring system identifies and releases software patches and updates, restores and backs up individual machines, and predicts failures and recovery.

To conclude, the Edge Computing platform is simple to install, deploy, and manage across applications and infrastructure. It protects your physical assets, data and security, reducing both operational and financial risk. It operates autonomously – at the Edge – with constant availability, even in the harshest offshore production environments. ■

Briefly

Vertiv formalises distribution agreement with iPoint in Bahrain

VERTIV, A WORLDWIDE supplier of essential digital infrastructure and continuity solutions, has announced a distribution partnership with iPoint, a major multi-brand distributor of electronic devices, computer peripherals, and gadgets for individuals and businesses.

Through this collaboration, Vertiv will expand its market presence in Bahrain and the GCC region by providing its strong power and IT infrastructure solutions for data centers and edge applications, enhancing iPoint's existing portfolio.

Arul Das Thomas, general manager at iPoint, elaborated, "We are very happy to start the distribution of Vertiv solutions across Bahrain. With a constantly evolving data center landscape in Bahrain, this partnership will help us in servicing the increasing demands locally.

"Vertiv is a global provider of critical digital infrastructure offering a wide range of solutions, programs, and services to support the important needs of infrastructure that will make it easier for data center operators to create more valuable and sustainable operations."

The new distribution partnership will offer customers and partners in Bahrain and the GCC markets improved access to cutting-edge support solutions for digitalisation, 5G, the Internet of Things, big data, data analytics, and other technological advances driving growth from enterprise data centers to the network edge. iPoint currently serves over 150 partners in the region, and with Vertiv's solutions, they will expand their data center solution sales footprint in the country.

Nassif Yazbeck, channel sales director at Vertiv for the METCA (Middle East, Turkey, and Central Asia) region, concluded, "Our alliance with iPoint in Bahrain is very exciting. Together, we will provide state-of-the-art technology and solutions to customers across multiple verticals in the country to enable the demand for data management to be met at the highest standard, from basic rack solutions to edge solutions."

Cold recycling revolutionises road widening

WIRTGEN HAS PROVEN the concept of cold recycling with Danish contractor Arkil A/S.

In just one pass, the Wirtgen Production System's cold recycling train, which focused on the W 380 CRi, was able to rehabilitate and widen Sinding Hedevej near Silkeborg. The project was completed remarkably quickly, with Arkil A/S finishing the new base layer and reopening the road for temporary use in just four days.

In just one pass, the Wirtgen Production System's cold recycling train, which focused on the W 380 CRi, was able to rehabilitate and widen Sinding Hedevej near Silkeborg. The project was completed remarkably quickly, with Arkil A/S finishing the new base layer and reopening the road for temporary use in just four days.

"Essentially, cold recycling is suitable for the rehabilitation of all kinds of roads. It was particularly good here, as no material had to be moved to or from the site and we were also able to widen the roadway in a single pass. And that seriously reduces our carbon footprint," explained Mikkel Caprani, Site Manager, Arkil A/S.

Arkil reported that using cold recycling resulted in a 30% cost reduction compared to a conventional rehabilitation project, which left the municipal authorities in Silkeborg impressed enough to already plan their next road construction project using this method.

One major factor in the cost reduction was the conservation of resources achieved through the cold recycling method. Foamed bitumen technology from Wirtgen allowed considerably less bitumen to be used as a binding agent compared to the production of new asphalt mix.

Photo Credit : Wirtgen

The road was reopened for use in just four days.

Hot bitumen was injected in-place during the milling and mixing process with the Vario injection bar, and machine control ensured the mix was homogenous and matched the machine's travel speed, resulting in cost savings.

The final surface layer could also be paved thinner than usual, with a 3cm layer instead of the typical 4 to 5cm, further reducing costs.

Site logistics costs were also reduced by the method, with over 12,000 sq m of recycled area producing almost 4,000 tonnes of material that did not need to be removed from the site. This saved approximately 200 haulage movements for material disposal, assuming a load of 20 tonnes per vehicle.

Cold recycling with foamed bitumen has demonstrated its advantages in numerous projects worldwide and has become a standard practice in the road construction industry. The choice of equipment for mix production and processing is determined by the specific requirements of the project site.

Yas Marina Circuit adopts HITEK's CAFM technology

SMART FM SOLUTIONS company HITEK SERVICES, based in the UAE, and a part of the Farnek group of companies, has entered into an agreement to provide more than 40 licenses for its CAFMTEK solution to Abu Dhabi Motor Sports Management (ADMM). ADMM manages the Yas Marina Circuit, which hosts the Formula 1 Abu Dhabi Grand Prix.

"The technology team at HITEK used cloud and mobility technology to develop the advanced and intuitive CAFM tool, enabling Yas Marina-based facility managers to operate more effectively by automating many of their physical duties," explained Javeria Aijaz, managing director, HITEK Services.

The FM contract for smart CAFM services at the Yas Marina Circuit was awarded to Farnek, which will provide services such as Mechanical, Electrical and Plumbing (MEP), cleaning, landscaping, pest control, waste management,

Photo Credit : Farnek

The circuit was inaugurated in October 2009.

specialist services, logistics, and additional civil works. Up to 160 Farnek staff will be present at the site at any given time.

A unique feature of the CAFMTEK solution, is its WhatsApp chatbot which allows technicians across the Yas Marina complex to raise service requests more efficiently. These service requests are also stored in the customer mobility app.

Project Databank

Compiled by Data Media Systems

CONSTRUCTION PROJECTS, QATAR

Project Name	City	Facility	Budget (US$)	Status
Qatar Museum Authority - Qatar Art Mill	Doha	Theatre/Entertainment/ Leisure Facilities	550,000,000	Design
Katara Hospitality - Katara Towers	Lusail	Mixed-Use Development	604,000,000	Construction
UDC - Gewan Island Development	Doha	Mixed-Use Development	823,859,000	Construction
Ashghal - Qatar PPP Schools Development Program - Overview	Various	Schools/R&D/Educational Institution	1,000,000,000	Construction
QRC - Doha Metro Network - Overview	Doha	Mass Transit Systems	37,000,000,000	Construction
Ministry of Transport & Communications (Qatar) - Al Sharq Crossing	West Bay	Bridge	8,000,000,000	Design
Aamal Company - Qatar City Centre Mall Expansion / Redevelopment - Phase 2 - New Retails Space and Upgrading Facilities	Doha, West Bay	Malls/Retail Outlets	82,400,000	Construction
NDIA - Hamad International Airport - Expansion Works - Overview	Doha	Airport	18,000,000,000	Construction
NDIA - Hamad International Airport - Expansion Works - Cargo Terminal 2	Doha	Airport	807,000,000	Design
Qetaifan Projects - Qetaifan Islands - Overview	Lusail	Residential Development	3,000,000,000	Construction
Qetaifan Projects - Qetaifan Island Phase 1 - Package 4 - Linear Park	Lusail	Canal	500,000,000	Construction
UDC - Floresta Gardens Three Gate Compounds	Vivya Bahriya, Pearl Qatar	Residential Development	150,000,000	Construction
Lusail Real Estate Development Company - Lusail Plaza Towers - Overview	Lusail	Mixed-Use Development	1,500,000,000	Construction
Ashghal - North of Mall of Qatar and Celebration Roads and Infrastructure Development	Various	Roads	90,000,000	Construction
Ashghal - Duhail South and Umm Lekhba Roads and Infrastructure Development	Al Duhail	Roads	150,000,000	Construction
Ashghal - South of Al Meshaf Roads and Infrastructure works - Package 8 - Roads and Infrastructure Works	Doha	Roads	145,000,000	Construction
Ashghal - Jeryan Nejaima Roads and Infrastructure Development	Various	Roads	1,000,000,000	Construction
Ashghal - Roads and Infrastructure Construction - Semaisma Package 2 - South	Doha	Roads	100,000,000	Construction
Kahramaa - Waste-to-Energy Facility	Doha	Waste Incineration Plant	450,000,000	Feasibility Study
NPP - Hamad Port - Strategic Food Security Facilities - NPP/0085	Mesaieed	Logistic Hub	500,000,000	Construction
Ashghal - Al Mearad and Southwest of Muaither Roads and Infrastructure Development	Various	Roads	100,000,000	Construction
Ashghal - Al Ebb and Leabaib Roads and Infrastructure Development -	Various	Roads	200,000,000	Construction
Ashghal - B Ring Road Development	Doha	Roads	170,000,000	Construction
QGIRCO - AST - Mozoon Towers	Al Dafna,	Mixed-Use Development West Bay, Doha, Qatar	700,000,000	Construction
Barwa Real Estate Company - Baraha Motor City (Madinat Al Mawater) - Phase 3 - Construction and Infrastructure Work	Rawdat Rashed	Mixed-Use Development	100,000,000	Construction
Ashghal - Roads and Infrastructure Construction Works - Package 2 - Al Mearad and Southwest Muaither	Doha	Roads	100,000,000	Construction
Manateq - Special Economic Zone - Um Alhoul Phase 1 and 2 - Reclamation & Rehabilitation	Al Wakrah	Mixed-Use Development	8,200,000,000	Construction
Manateq - Special Economic Zone - Overview	Various	Economic Zone	3,550,000,000	Construction
Ashghal - Roads and Infrastructure Construction - Package 7 - Doha Industrial Area	Doha	Roads	120,000,000	Construction
Ashghal - Roads and Infrastructure Construction Project - Phase 2 - Package 1 - Umm Salal Mohammed	Doha	Roads	200,000,000	Construction
Ashghal - Road and Infrastructure Al Mearad and Southwest Muaither	Doha	Roads	140,000,000	Construction
NPP - Hamad Port - Phase 2 Overview	Mesaieed	Port	1,350,440,000	Construction
NDIA - Hamad International Airport - Baggage Facility	Doha	Airport	500,000,000	Construction
NDIA - Hamad International Airport - Taxiways and Stands Package	Doha	Airport	870,000,000	Construction
Ashghal - Road and Infrastructure Works - Package 4 - South Al Meshaf	Doha	Roads	120,000,000	Construction
Ashghal - Al Ebb and Leabaib Roads and Infrastructure Works Road Works	Doha	Roads	110,000,000	Construction
QIMC - Abraj Al Tahwiliya (QIMC Tower West Bay) Construction	Doha, West Bay	Mixed-Use Development	330,000,000	Construction
Ashghal - Road and Infrastructure Works - Al Kharaitiyat & Ezghawa	Doha	Roads	185,000,000	Construction

Project Databank

Compiled by Data Media Systems

Project Focus

Compiled by Data Media Systems

UDC - Gewan Island Development

Name of Client	UDC - United Development Company
Revised Budget (US$)	823,859,000
Contract Value (US$)	600,000,000
Award Date	2019-Q4
Main Contractor	Midmac Contracting PORR Construction
Facility Type	Mixed-Use Development
Status	Construction
Location	Doha, Qatar
Project Start	2018-Q2
End Date	2024-Q3

Background

United Development Company (UDC) has unveiled its plans to develop the Gewan Island (previously referred to as Al Mourjan Island) during Cityscape Qatar Exhibition 2018. The Gewan Island Development will be the largest real estate project by UDC to date, with a total area of 400,000 sq m. Gewan Island will support a mix of property types and will cater to accommodation and investment needs. It has been originally designed as an extension to the Pearl-Qatar, offering living space, entertainment facilities and retail outlets with smart technologies.

Project Status

Date	Status
Mar 2023	586 apartments have been launched for the Crystal Residence. The Gewan bridge has officially opened. The works for the Crystal Residence have reached a progress rate of 75% and are set to be delivered by Q4 2023. The construction activities for the Corinthia Hotel, Beach Club,and Crystal Walkways are advancing.
Feb 2023	For the Gewan bridge, VSL has supplied and installed post-tensioning and pre-cast segments as well as the VSL SSI 2000 stay cable system, and 12 to 19 strands of anchorages, with pastel blue coloured HDPE stay pipes.
May 2022	Huawei Technologies has signed an agreement with UDC to provide smart systems for the project.
Apr 2018	Dar Al-Handasah has been appointed to carry out the design consultancy services comprising of the master planning, infrastructure, architecture and engineering consultancy services for the project.

Project Scope

The Gewan Island Development spans across 400,000 sq m and will include:

- 639 apartments
- 41 waterfront villas (out of which 20 villas are standalone)
- 26 beachfront villas
- 6 modern island villas
- 11,000 sqm of retail space
- Entertainment facilities
- Sports club
- Mosque
- 250-metre-long bridge based on two towers at 43 meters above the Pearl-Qatar Boulevard.

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خوض رحلة التحول إلى قطاع أكثر دائرية

تتبع الشركات العاملة في قطاع الإنشاءات، وتحديدا شركات مواد البناء، نهجاً استباقياً لتحقيق أقصى استفادة من التحول إلى اقتصاد منخفض الكربون. وتشير خبرتنا في العمل مع الشركات العاملة في هذا القطاع إلى أن الشركات الموجودة في المقدمة تسترشد بثلاثة مبادئ تساعدها على خوض رحلة التحول.

- **توقع انقطاع المواد الدائرية:** سيؤدي التحول إلى المواد الدائرية، مدفوعا بالسياسات واللوائح وطلب المستهلكين، إلى تعطيل قطاع الإنشاءات.
- **استخدم الاقتصاد الدائري باعتباره نقطة بيع تجارية:** من خلال التركيز على شرائح العملاء التي تضع قيمة عالية على الفوائد الدائرية وعن طريق تحديد القيمة المقدمة للعملاء، يمكن لصانعي المواد تحديد السعر الصحيح والهوامش المناسبة.
- **الوصول الآمن بتكلفة تنافسية إلى المواد الدائرية:** سيرغب منتجو وصانعو مواد البناء في تأمين الوصول إلى المواد التي انتهى عمرها الافتراضي في أقرب وقت ممكن، وذلك لتقليل التعرض لحالة من حالات التضخم والندرة.

يعمل القطاع أيضا على دفع التقنيات الجديدة وابتكارات المنتجات إلى الأمام لتعزيز ثقافة الاستدامة في سياق أوسع نطاقا، وبالتالي تقليل البصمة البيئية للمباني بشكل عام.

القواطع الدوارة الجديدة من شركة Cat®:

تكسير دقيق ومحكوم لحفر الخنادق والأنفاق وعمليات الهدم

توفر القواطع الدوارة من شركة Cat® للحفارات إنتاجاً عالياً للمواد الصلبة لتطبيقات مختلفة؛ مثل حفر الخنادق وعمليات الهدم. ومع الكسر المتحكم فيه والدقة العالية، تعتبر القواطع الدوارة مثالية للعمل في المناطق الضيقة أو الحضرية، ويمكن استخدام القواطع الدوارة في المناطق الحساسة مثل الأحياء أو المستشفيات، لأنها تنتج ديسيبل أقل من الصوت مقارنةً بأدوات التكسير الأخرى.

تتوفر موديلات شركة Cat® آر سي 20 وآر سي 30 الجديدة للاستخدام مع قارنات التثبيت ذات المسامير أو النوع إس أو قارنة التوصيل السريع ذات مسمار الإمساك من شركة Cat® أو قارنات التوصيل سي دبليو. وتتوافق القواطع الدوارة مع أقواس أدوات العمل الميكانيكية المائية من شركة Cat®، والتي تسمح للمشغّلين بالتحرك بسلاسة أكبر من مهمة إلى أخرى. وبالنسبة للمهام ذات المساحات الضيقة، يمكن تدوير القاطع الدوار يدويا إما 90 أو 270 درجة. ومن خلال إضافة مجموعة خطوط هيدروليكية اختيارية، يمكن تشغيل القاطع الدوار حتى 180 درجة لتنظيف الخنادق الضيقة أو العمل بعيدا عن الماكينة للمساعدة في زيادة الإنتاجية. وهي تعد مثالية لتطبيقات التجريف، إذ يمكن غمر القاطع الدوار في الماء دون إدخال تعديلات على الأداة.

ومحرك الدفع المباشر يوفر عزم دوران عاليا وإنتاجا وأداء لمساعدة المشغّلين على إنجاز المهمة بشكل أسرع، ومع وجود مساحة أقل بين البراميل. ويمكن للمشغّلين بناء خنادق أضيق مع حرق وقود أقل أيضا. كما يمكن استبدال اللاقطات الدوارة بسهولة بأداة بسيطة ويمكن تبديلها بسرعة. كما توفر لوحات الصيانة وصولاً سريعاً وسهلاً. وتساعد موانع التسرب الميكانيكية على حبس الشحوم، وإبعاد الغبار لفترة أطول بين عمليات الصيانة. وتعمل القواطع الدوارة على تفتيت المواد بشكل أكبر للمساعدة في تقليل التآكل والتلف على الجرافات.

يمكن للمشغلين تتبع أسطولهم الكامل من الملحقات والآلات من مصدر واحد، إذ بالإمكان عرض المرفقات مع تتبع الأصول داخل VisionLink® جنبا إلى جنب مع المعدات المشتركة في Product Link™. وترسل المرفقات مع أداة تعقب الأصول تنبيها إذا تركت حدود موقع سهلة الإعداد للمساعدة في الحفاظ على الأدوات أكثر أمانا.

يمكن الاطلاع على مزيد من المعلومات حول القواطع الدوارة المتوفرة حسب المنطقة من خلال زيارة الموقع الإلكتروني https://www.cat.com.

مفكرة الفعاليات 2023

مايو/أيار		
8-10	المؤتمر العالمي للمرافق	أبوظبي
يونيو/حزيران		
19-21	معرض بيج فايف مصر للبناء	القاهرة
19-21	معرض الشرق الأوسط للطلاءات	القاهرة

الصورة من Bain & Company

الصورة من Cat

كيف نُحسّن الاقتصاد الدائري في قطاع الإنشاءات بالمنطقة

في هذا المقال، يقول كريم شريف، رئيس قسم الإنشاءات ومنتجات البناء والعقارات وخدمات الأعمال التجارية في منطقة أوروبا والشرق الأوسط وإفريقيا، شركة باين آند كومباني (Bain & Company)، إن عملية تشييد المباني تساهم - بشكل كبير - في الانبعاثات العالمية والآثار المادية، إذ تمثل حوالي 40 في المائة من كل منها. وسوف يكون تحسين الاقتصاد الدائري في قطاع الإنشاءات ضرورياً لتقليل انبعاثات القطاع والآثار الكربونية للمواد.

وعلى الرغم من أن جهود الحد من الانبعاثات ستركز بطبيعة الحال على التقنيات منخفضة الكربون؛ مثل الفولاذ الأخضر والخرسانة المحقونة بثاني أكسيد الكربون، لتحقيق أهداف انعدام الانبعاثات، فإن الصناعة ستحتاج أيضا إلى تقليل الحاجة إلى المواد الخام البكر. وسيكون لدى التحول إلى اقتصاد دائري أكبر تأثير مدمر على الصناعة، ولا سيما صانعي مواد البناء.

تطبق الشركات الإستراتيجيات الخمس التالية لتحسين اقتصادها الدائري.

- **التجديد والاستخدام لفترة أطول:** يمكن أن يوفر تحسين المباني السكنية والتجارية القائمة لإطالة عمرها وجعلها أكثر استدامة، دفعة كبيرة للاقتصاد الدائري للقطاع.
- **الوزن الخفيف:** يمكن أن تقلل الابتكارات في التصميم والمواد من وزن المبنى بنسبة 20 في المائة، والكربون المتجسد بنسبة تصل إلى 15 في المائة، وذلك بحلول عام 2040.
- **المدخلات المتجددة:** سوق مواد البناء المصنوعة من المدخلات المتجددة صغير ولكنه ينمو بسرعة.
- **المدخلات الدائرية من صناعة البناء وخارجها:** يمكن أن تساعد زيادة كمية المحتوى المعاد تدويره، بجانب تحسين اتساق الجمع وإعادة التدوير، في مضاعفة حصة المواد المعاد تدويرها (إلى 28 في المائة) بحلول عام 2040.
- **خدمات وتقنية الاسترداد:** يمكن أن تساعد الإدارة الأفضل للنفايات أثناء البناء والهدم، بما في ذلك تقنيات فصل المواد الأكثر تقدما، في زيادة كمية المواد التي سيتعاد استخدامها أو يعاد تدويرها.

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كيف نُحسّن الاقتصاد الدائري في قطاع الإنشاءات بالمنطقة

ينبغي على الشركات العاملة في قطاع الإنشاءات أن تتبع نهجاً استباقياً لتحقيق أقصى استفادة من التحول إلى اقتصاد منخفض الكربون