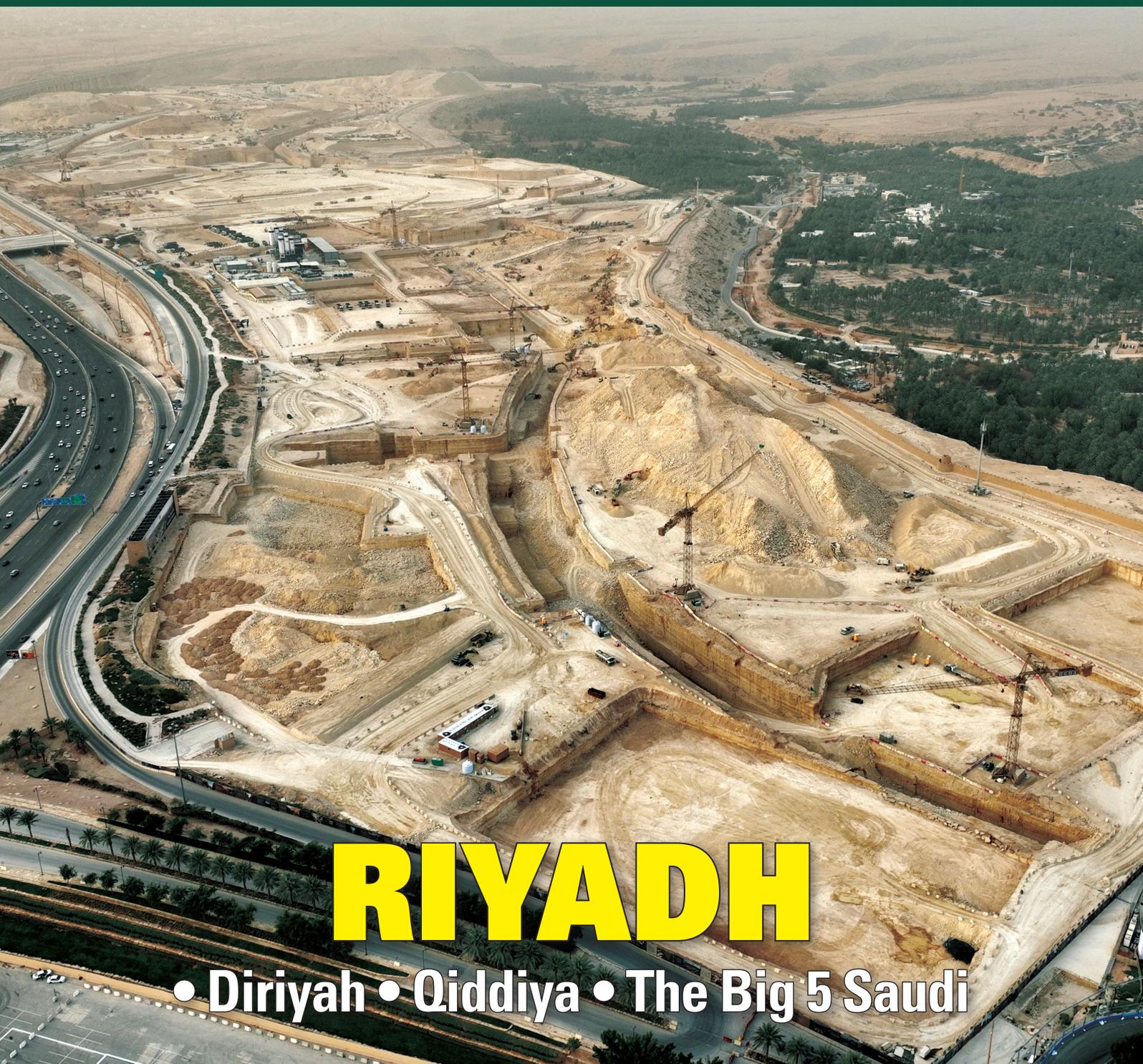


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AL BAWANI



البواني

MASSIVE deals each worth billions of Saudi riyals have been announced recently on two of the Saudi capital city's most ambitious development projects – Diriyah Gate and Qiddiya – with all indications pointing to further mega construction awards and the revving up of activity on site.

In addition, the pace has been picking on the four mega projects - the King Salman Park, Sports Boulevard, Riyadh Art and Green Riyadh, which were launched in March 2019 as part of Saudi Vision 2030 to position Riyadh among the world's top 100 most livable cities. These wellness projects are expected to jointly offer opportunities worth \$15 billion for the private sector to invest in the residential, commercial, recreational and wellness areas.

The Green Riyadh project received further limelight late last year when Saudi Arabia announced a SR700 billion (\$186.63 billion) investment in developing a green economy in a bid to spearhead a region-wide initiative to combat climate change and reduce carbon emissions.

As part of the first set of the Saudi Green Initiative (SGI) strategies, the kingdom will plant 450 million trees and rehabilitate eight million hectares of degraded lands by 2030. The SGI was announced by Crown Prince, Deputy Prime Minister and Supreme Committee for Green Saudi Arabia Chairman HRH Prince Mohammed bin Salman bin Abdulaziz Al Saud last October at the Saudi Green Initiative Forum.

At the forum, Crown Prince Mohammed bin Salman, also Chairman of the Board of Directors of the Royal Commission for Riyadh City (RCRC), launched the Riyadh Sustainability Strategy which aims to reduce carbon emissions in the city by 50 per cent. In addition, there will be SR346 billion invested in sustainability initiatives and projects, stimulating the private sector.

In line with the kingdom's green drive, the RCRC has embarked on its new sustainability strategy for the capital which includes 68 ambitious initiatives and projects across five sectors: energy and climate change, air quality, water management, waste management, biodiversity, and natural areas.

As per these plans, SR30 billion will be



AMBITIOUS VISION

With its ambitions set on becoming one of world's top livable cities, Riyadh has been focusing on diverse aspects ranging from raising the homeownership percentage to greening the capital and from entertainment and culture to wellness facilities, writes Bina Goveas.

invested to increase the use of treated water for irrigation in Riyadh from 11 per cent to 100 per cent, and nearly SR56 billion will be spent to recycle 94 per cent of waste into energy.

A key enabler in reducing carbon emissions will be the King Abdulaziz Project for Public Transport – which includes the Riyadh Metro that is expected to be flagged off later this year, which is projected to boost the use of public transportation in the city from five to 20 per cent. A mammoth infrastructure project, Riyadh Metro boasts six major metro lines and 85 railway stations that have been established to cover the capital city from all directions.

There will also be a network of buses that integrates with the network.

By 2030, the capital plans to take electric vehicle usage on the roads up to 30 per cent.

The Green Riyadh and Riyadh Sustainability initiatives aim to plant 15 million trees and increase the per capita share of green space from 1.7 sq m to 28 sq m, within urban areas by 2030. This will lower city temperatures by 1.5 to 2 deg C and reduce the main radiant temperature in the range of 8 to 15 degrees in the shade. More than 3,300 neighbourhood parks of varying sizes and 43 major city parks will be built in the city of Riyadh.



Six Flags Theme Park ... one of two theme park projects launched at Qiddiya.

The RCRC is also expected to invest another SR30 billion to increase energy production from renewable sources by 50 per cent.

Meanwhile, major contracts were awarded on Sports Boulevard – one of the four wellbeing projects planned at an investment of \$23 billion. In October last year, the Sports Boulevard Foundation announced contracts worth SR2.5 billion to multiple Saudi companies for the construction of Phase One of the wellness project. A first-of-its-kind project in the region, Sports Boulevard will feature a 135-km-long professional cycling track covering the city and the surrounding valleys. Adding 3.5 million sq m of new open space across

the city, it will also feature a sports pavilion, riding stables and athletics tracks.

Another key initiative launched last October was a national infrastructure fund to support up to SR200 billion in projects over the next decade. The National Infrastructure Fund (NIF) will invest in areas such as water, transportation, energy and health, contributing to Saudi Arabia's plans to transform the economy and make it less reliant on oil revenue, according to state news agency SPA.

HOUSING

Housing has continued to be a priority for the government and recently Roshn, a national community developer fully

owned by the Saudi Public Investment Fund (PIF) has been spearheading efforts to accelerate in-home ownership rates by citizens across the kingdom.

According to Knight Frank's recent Saudi Arabia Real Estate Market Review, the government's efforts to "support growth in the residential market are delivering an exceptionally active development market, with 155,000 new homes scheduled to be completed before the end of 2023 across Riyadh, Jeddah and Dammam; 100,000 of which are in Riyadh alone."

Roshn's first residential community in the capital, Sedra, will feature over 30,000 private homes. The community is spread across 20 million sq m and offers a walkable, feature-rich living environment with mosques, kindergartens and schools, hospitals, healthcare centres, shopping malls, commercial retail spaces and police stations.

Roshn said more than 4,500 homes will be built in Phase One of the project. In January, Roshn signed a partnership deal with Retal Urban Development – the first sub-developer for the project – for a neighbourhood featuring 103 villas and townhouses within Phase One.

Retal has also launched its key residential project, Nesaj Town Al Narjis, in Riyadh in partnership with the National Housing Company. The project spans over an area of 160,000 sq m and features 550 independent housing units.

Among other efforts, National Developmental Housing Corporation (Sakan) signed an agreement worth SR1.62 billion late last year with Al Birr Charitable Society to build 5,000 new homes for the needy families in the Riyadh region.

DIRIYAH GATE

Work is well in progress on Diriyah Gate as part of a \$50.6 billion transformation plan for the historic city of Diriyah, a massive undertaking being managed by the Diriyah Gate Development Authority

BIG-TICKET PROJECTS

- Riyadh Metro and Bus project: \$27 billion
- Diriyah Gate: \$20 billion
- Qiddiya entertainment hub: \$10 billion

4 Mega Wellness Projects: \$23 billion

- King Salman Park
- Sports Boulevard
- Riyadh Art
- Green Riyadh



Nearly 1 million sq m in floor area, the car park hosts an intricate network of underground roads and tunnels situated below Diriyah Square with multiple access points, with the capacity to accommodate 10,500 cars

(DGDA), whose aim is to position Diriyah as Saudi Arabia's foremost historical, cultural and lifestyle destination. The \$20-billion Diriyah Gate development is centred around At-Turaif, a Unesco World Heritage site (see Page 52).

Work on the development – located north-west of Riyadh – remains on time, on budget and on track and will be the first giga project in the world to simultaneously open, ground-break and announce world-class assets every year from 2022 until completion in 2026, said the DGDA.

Diriyah Development Company (DevCo), a development subsidiary of DGDA, has awarded a SR1.2 billion contract to Nesma for infrastructure work to form the principal Diriyah Interchange on Riyadh's Western Ring Road (see Page 14). This follows the award of the project's largest contract to date worth SR3.99 billion to Salini Saudi Arabia for the construction of its 'super basement' car park. The state-of-the-art three-level underground car park supports the commercial heart of the culture and heritage project's Diriyah Square.

The mixed-use district will offer a combination of leisure and entertainment, ultra-luxurious hotels, retail, Grade A offices and residential units designed in the

traditional Najdi architectural style, set for completion in 2024. It also includes the King Salman Grand Mosque.

The car park hosts an intricate network of underground roads and tunnels situated below Diriyah Square with multiple access points, with the capacity to accommodate 10,500 cars.

At the end of last year, DGDA announced the first 14 of its planned 38 hotel brands that will manage facilities at Diriyah Gate. The hotel brands are strategically located across two of DGDA's four masterplans – Diriyah Gate and Wadi Safar.

QIDDIYA

Work is also in progress on Qiddiya, which is expected to be the kingdom's future capital of entertainment, sports and the arts, under development on the outskirts of Riyadh. The Saudi-based Qiddiya Investment Company (QIC) has recently awarded contracts for two key theme parks at the entertainment hub – a SR2.8 billion deal to build the kingdom's first and the region's largest water theme park and a SR3.75-billion contract for the construction of its Six Flags theme park, a first in the region (see Page 57). ■

Read more online www.gulfconstructiononline.com



The kingdom will plant 450 million trees and rehabilitate 8 million hectares of degraded lands by 2030 as part of the Saudi Green Initiative.

SAUDI Arabia's construction market in 2022 will see a significant increase in activity with several more contract awards compared with the previous years.

A prime reason for this is several of the mega projects that were in the design and planning phase have now progressed to tendering and are being awarded to contractors.

This is illustrated by the magnitude of two major contracts placed recently: a joint venture of France's Bouygues and Saudi Arabia's Almbani General Contractors was awarded a \$1-billion contract by the Qiddiya Investment Company (QIC) for its Six Flags entertainment project; and Italian Salini Impregilo was selected for a \$1.06-billion contract to build infrastructure facilities for the Diriyah Square mixed-use district. Both projects are in Riyadh and US-based project and construction management company Hill International believes the capital city will continue to see the bulk of development in the kingdom.

Another difference in 2022 – compared with the previous years – is that the kingdom's construction market is signalling a strong demand for professionals and qualified contractors, with the scenario getting tighter for qualified resources as well as contractor capacity.

The two large contracts awarded by QIC and Diriyah Gate Development Authority (DGDA) are an indication that going forward the size of the construction contracts will get larger than the usual size for real estate developments and building projects. This excludes major projects like metro, aviation, oil and gas and power and water.

For building projects, the size of each contract is growing and the award of contracts to international companies indicates a growing need for multinational players to increase their footprint and invest in growing capacity inside the kingdom.

There is also an expectation of a shortage of vendors as construction activity picks up.

SOURCE OF PROJECTS

Even as the government is progressing

Mega deals expected

Saudi Arabia is expected to witness a major uptick in construction activity this year, with the capital city likely to continue to see the bulk of development in the kingdom, according to ABDO KARDOUS, President of Hill International (Middle East).



Diriyah Gate ... major deals expected.

well with its privatisation and Public Private Privatisation (PPP) programme, Hill expects the prime source of project activity to be the Public Investment Fund (PIF) and associated companies that together will roll out the bulk of construction work.

As economic activity grows, the demand for services has started to increase too. This creates the platform for the private sector to step in and invest in the emerging opportunities like housing, retail, entertainment and hospitality sectors. The PIF is seen to be carrying out the mega projects; while the private sector will be filling in the gaps in associated services.

Whether it is the Red Sea development, Qiddiya, Neom, Diriyah and other Vision 2030 projects, all require significant infrastructure support and this is where the bulk of spending will be rather than traditional public sector projects.

INDUSTRY PRESSURE POINTS

It is an industry norm that an increase in project activity puts pressure on the sup-

ply chain driving up prices due to a lag in the supply/demand scenario. Hill International expects that prices will increase for a short period as the supply chain capacity will compete with the growing demand. However, the economy of the kingdom is resilient and the private sector is likely to step in at the first opportunity and gradually invest in the supply chain to cover the shortage.

Other potential bottlenecks will be labour and workforce availability. Appropriate work permits will streamline the import of foreign professionals and labour for early kick-start projects. Along with this, the need for higher levels of induction of Saudi workforce will be a challenge in the interim period as local professionals get additional training. Yet another hurdle is the availability of funding.



There is limited capital available for the significant pipeline of projects that are under planning and development. This will lead to prioritisation of the

planned projects and determine their pace of implementation.

EARLY INVOLVEMENT

With several new projects planned in the kingdom, Hill International recommends the involvement of operators and end-users at the early design stages to ensure the planned facilities are completed on time and within budget.

Hill's portfolio of projects in Saudi Arabia is quite diversified with existing clients like the Tatweer Building Company and the Rua Al Madinah Company, and with the US-based project and construction management company being awarded an increasing number of contracts in the Eastern and Western provinces as well as Madinah. Besides, in a joint venture with WSP, called the Riyadh Advanced Metro Project Execution and Delivery (RAMPED), it is the project manager for Package 3 which includes Line 4, Line 5 and Line 6 and covers 67 km of track with 48 km of elevated alignment, 5.5 km tunnel, 22 stations and nearly 13 km of bored tunnel constructed through some of the most congested districts in Riyadh.

On completion, the metro lines will give the city's planners the opportunity to develop new urban areas. ■



Hill International is also involved on the Riyadh Metro project.

UNIQUE HERITAGE HUB



By Bina Goveas

CONTRACTS worth around SR27 billion (\$6.34 billion) are on the table for the development of the 7-sq-km Diriyah Gate, a unique heritage and tourism destination taking shape in the Riyadh region some 15 minutes northwest of the centre of the capital, Ian Robinson, Chief Delivery Officer of Diriyah Gate Development Authority (DGDA), tells *Gulf Construction* in an exclusive interview.

The SR75-billion Diriyah Gate development is centred around At-Turaif, Saudi Arabia's Unesco World Heritage site. Spearheading work on this mega project is DGDA, which intends to make it a lifestyle experience that seamlessly blends the past and the future and is striving to re-establish what Diriyah once was: "a bustling hub of commerce and a global gathering place, while creating a truly unique destination, the likes of which cannot be found anywhere else globally".

The project's largest contract to date was recently awarded to construct Diriyah Square's 'super basement' car-park at a val-

ue of almost SR4 billion and foundation excavation on this package is due to start early this month, according to Robinson.

Excerpts of the interview with Ian Robinson:

Please elaborate on the scope of works on a) Diriyah Gate and b) Wadi Safar. What is the current status of work on each?

• **Diriyah Gate:** Upon completion, Diriyah Gate will be one of the Middle East's leading mixed-use developments, and will include 28 luxury and uber-luxury hotels,

a diverse collection of museums and cultural institutes, and a bustling retail heart to complement the new Bujairi Terrace dining district that will soon be open to the public in 2022. The development will feature an authentic urban environment designed in the historic Najdi architectural style of 300 years ago, that will be a place to gather, shop, dine, live, learn, and work.

Phase One of Diriyah Gate will offer 223,000 sq m of lifestyle, retail and food and beverage (F&B) units, 1,280-plus



Extensive excavation work under way at site.

One of the museums planned for Diriyah Gate.



Diriyah Gate – Phase One

- 223,000 sq m of lifestyle, retail and F&B units
- 1,280-plus residential units
- 2,236 luxury hotel rooms
- Six museums
- Art district
- King Salman University



The Bujairi Terrace dining district ... to open this year.

residential units, 2,236 luxury hotel rooms, six museums, a dedicated art district and will be the new home of the King Salman University.

Recently, DGDA awarded contracts to construct a network of road tunnels that will form the principal Diriyah Interchange on Riyadh's Western Ring Road (WRR) and a 'super basement' car park to accommodate 10,500 cars for Diriyah Square. The WRR will provide seamless traffic access and egress between all Diriyah Gate zones and Riyadh's arterial motorway system. Work on the substructure of the motorway network commenced in January this year.

• **Wadi Safar:** Wadi Safar is 60 sq km of pure magnificence and tranquillity, built upon the rich legacy of the past, and a bold vision shaping its future as a globally peerless, one-of-a-kind, ultra-luxurious destination; the future residence of Saudi Arabia's most discerning; and a playground for the global elite.

The project will offer world-class hospitality and lifestyle assets, including a Greg Norman golf course and clubhouse. To date, contracts worth SR2.2 billion have

been awarded for infrastructure in the east of the Wadi Safar development.

The Wadi Safar element of the project will allocate approximately 10-15 per cent of its land to residential plots. However, DGDA's commitment to the environment and natural habitat remains firm; the project will feature a one-of-a-kind animal sanctuary and visitors to Wadi Safar will learn about the kingdom's efforts to protect its wildlife and ecology.

Upon completion, Wadi Safar will be home to 10 luxury and uber-luxury hotels.

At present, most construction activities are related to infrastructure works to support future assets.

Diriyah Gate Development Authority indicated last year that it plans to award SR16 billion of contracts in 2021 across the development. Was this target achieved? What are some of the major contracts awarded and what is the status of work on each of these projects?

This target has been achieved, as DGDA awarded over SR16 billion in projects to date and in 2022, the authority has approximately SR27 billion on the table for

development projects.

Infrastructure works accounted for some of the most significant contracts, with DGDA awarding SR7.8 billion in contracts, including:

- SR1.1 billion for Diriyah Gate site-wide logistics;
- SR1.2 billion for Diriyah Gate landscaping;
- SR1.5 billion for Diriyah Gate North infrastructure;
- SR1.8 billion for Diriyah Gate South infrastructure;
- SR2.2 billion for Wadi Safar East infrastructure.

Already this year, DGDA announced two large infrastructure works packages. One was to contractor Nesma & Partners which was awarded a SR1.3 billion contract for a motorway substructure gyratory at the eastern portion of Diriyah Square and the Western Ring Road (WRR).

The second contract was awarded to Salini/WeBuild to construct Diriyah Square's 'super basement' car park, at a value of almost SR4 billion.

DGDA is also on track to complete the



This target has been achieved, as DGDA awarded over SR16 billion in projects to date and in 2022, the authority has approximately SR27 billion on the table for development projects

first phase assets by early 2022 as part of a progressive rolling master plan.

The total amount of Capex contracts awarded till date: SR25.3 billion, Capex-contracts in process to be awarded: SR 9.3 billion.

The total amount of Opex contracts awarded till date: SR1.8 billion, Opex contracts in process to be awarded: SR164 million.

Has work commenced on the ‘Super Basement’ carpark contract – DGDA’s largest to date? What are some of the challenges involved? And when is this contract due for completion?

Mobilisation work on the super-basement has commenced with foundation excavation due to happen in early March 2022. The methodology used will be open cut. Our target for completion of the super basement is December 2024. As ever, the challenges will be meeting our own deadlines and the high standard of quality

we set ourselves.

What is the current status of Bujairi F&B, Bujairi car park, Samhan Heritage Hotel, Diriyah Art Futures and Diriyah Gate Experience Centre?

Despite the challenge of the Covid-19 pandemic, the development of assets in the Diriyah Gate masterplan remains on time, on budget and on track. Diriyah will be the first giga-project in the world to simultaneously open, break ground and announce world-class assets every year from 2022 until completion in 2026. The first 20-plus restaurant brands – including four Michelin restaurants – launch in Bujairi Terrace in 2022.

Regarding the other assets mentioned, all projects are currently under construction and are scheduled to be completed in 2022/2023.

Please elaborate on the scope of work on the restoration of Wadi Hanifah?

Wadi Hanifah extends for approximately

7.6 km and covers an area of 2.5 million sq m (250 hectares). It is accessible from the escarpment walk, which provides views of the Unesco World Heritage Site At-Turaif. The Wadi offers recreational areas and boutique hospitality venues for guests to unwind with family and friends amid the natural surroundings.

This includes the historic farmlands between the Wadi and escarpment to the east. The Wadi will provide a rural parkland component to complement the new urban district of Diriyah Gate and create a ‘green spine’ for the residents of Riyadh.

The restoration of Wadi Hanifah will include four distinct areas of identity: Heritage and Culture, Wadi Living, Sports and Activity, and Eco-Tourism. The Wadi Hanifah Park aims to improve the quality of life of all people with access to gardens, trails and picnic areas located throughout.

The vision for the Wadi Hanifah masterplan is encapsulated within five guiding principles;



Diriyah Gate covers an area of 7 sq km.



Upon completion, Wadi Safar will be home to 10 luxury and uber-luxury hotels. At present, most construction activities are related to infrastructure works to support future assets

- To preserve and maintain the Wadi's palm groves;
- To provide active and passive recreational uses;
- To limit new building and repurpose specifically retained buildings;
- To provide visual and physical connectivity between At Turaif, Diriyah Gate and Bujairi Terrace;
- To green the Wadi by restoring and re-planting the Wadi's farms.

A large part of the Wadi's conservation is the protection of the palm groves and historic buildings, which will ultimately connect the community to nature, culture, and history. Certain farms with historical significance will also be re-purposed and restored.

Please highlight the challenges involved in restoration work on some of Diriyah's old buildings at At-Turaif? Which contractors have been appointed to carry out this work? And elaborate on the techniques being used to replicate the original adobe look.

The careful restoration of Diriyah has been undertaken through a comprehensive programme of preservation and renewal to create a living heritage site.

The Royal Commission for Riyadh City (RCRC), which had previously been responsible for At-Turaif since 2010, restored a significant portion of the site and handed over responsibility for the restoration process to DGDA in 2019. Under DGDA's supervision, restoration activities have progressed, and the approach and best practices initiated by RCRC to preserve and restore this national landmark have continued. The restoration process takes inspiration from traditional adobe techniques of the Arabian Peninsula, including the use of adobe bricks, adobe plaster, gypsum athel wood, jareed and Riyadh limestone.

Some of the contractors who worked with RCRC up to 2018 were Freyssinet Saudi Arabia, International Center for

Contracting, Al Yamama, Turathia, Dar Estabraq, Globecomm, Althat Al Arabia.

What are some of the major tenders expected to be issued this year at Diriyah Gate and Wadi Safar?

SR4.3 billion has already been awarded this year, and our total forecast for the year is approximately SR27 billion.

The majority of tenders will be related to DGDA's lifestyle retail precinct, the MISK Heritage Institute, luxury hotels in Diriyah Gate and Wadi Safar, the Digital Art Museum and the King Salman University.

What are your comments on DGDA's goals in terms of offering a unique cultural experience?

DGDA is curating an experience that authentically connects visitors to Diriyah's history, heritage, and culture – all of our built assets will be designed in the traditional Najdi style that is synonymous with Saudi Arabia, making it a lifestyle experience that seamlessly blends the past and the future. We are striving to retain what Diriyah once was: a bustling hub of commerce and a global gathering place, creating a truly unique destination, the likes

of which cannot be found anywhere else globally.

Alongside the retail and dining offerings, we will give visitors the opportunity to learn about Saudi Arabia's rich history and culture through a diverse collection of museums and heritage sites, in addition to providing one of the Middle East's most walkable, pedestrianised landscapes.

As a result, Diriyah will become a leading centre for culture in the Middle East. The Diriyah giga-project will add around \$7.2 billion to the kingdom's GDP, create 55,000 jobs, and welcome 27 million visitors by 2030.

Anything else you would like to add about the project.

From a construction perspective, the bulk excavation programme later this year is a fundamental element for the entire project as it supports many assets, such as Diriyah Square.

It will require approximately 7 million cu m of rock/earth to be excavated in parallel with ongoing construction works relating to infrastructure and utilities.

In terms of timeline, the excavation, disposal, and grading works are on track to be completed by mid-2022. ■



Key deals for entertainment hub



The Qiddiya Water Theme Park will cover 252,000 sq m of land and will be home to 22 rides and attractions.

TWO major contracts have recently been awarded for the construction of key theme parks within the ambitious Qiddiya destination city, which is expected to be the kingdom's future capital of entertainment, sports and the arts.

At the end of last month, Qiddiya Investment Company (QIC), which is spearheading the development of the 334-sq-km entertainment hub, announced the award of a SR2.8-billion (\$750 million) deal to build Saudi Arabia's first and the region's largest water theme park. The contract was awarded to a joint venture of Alec Saudi Arabia Engineering and Contracting and El Seif Engineering Contracting.

The Qiddiya Water Theme Park will cover 252,000 sq m of land and will be home to 22 rides and attractions – including nine that will be world firsts. Visitors will also be able to enjoy nine innovatively designed zones inspired by the

native animals that inhabit the area around Qiddiya.

Set to be a year-round immersive family entertainment destination, the water theme park which will also feature state-of-the-art competition water sports facilities and 17 food and beverage and retail outlets. The park design will incorporate advanced environmental systems to minimise the use of water through recycling and smart usage.

Some rides have been designed to use 75 per cent less water compared to the more conventional rides found in other water parks, according to QIC. In addition, rainwater that falls on the site will be captured, treated and reused for irrigating the destination.

Qiddiya entertainment city is being built from scratch, 45 km outside Riyadh around a stark escarpment – part of the Jebel Tuwaiq mountain range that

stretches over 1,000 km.

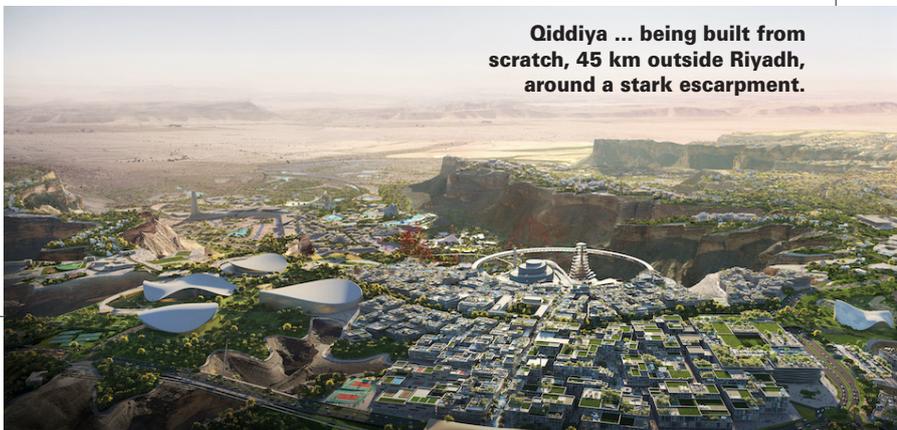
Qiddiya's offering will be based on five cornerstones: Parks & Attractions, Sports & Wellness, Arts & Culture, Motion & Mobility and Nature & Environment, along with a variety of real estate options and community services. The water theme park will be one of the key attractions of the Parks & Attractions cornerstone.

In December, QIC awarded a SR3.75-billion contract to a joint venture of French building and civil engineering projects pioneer Bouygues Batiment International (BBI) and Saudi Almagbari General Contractors for the construction of its Six Flags theme park, a first in the region.

The theme park will cover an area of 320,000 sq m and feature 28 rides and attractions of which 10 will be thrill rides, and 18 rides designed for families and young children.

The theme park will be home to five signature rides that will break 10 world records including: Falcons Flight, the world's tallest, fastest and longest coaster; Sirocco Tower, the world's tallest, free-standing shot tower ride; Gyrospin, the world's tallest pendulum ride; Spitfire, the world's tallest inverted top hat coaster; and Iron Rattler, the world's tallest tilt coaster. The rides and attractions at the theme park will be spread across six immersive lands. ■

Qiddiya ... being built from scratch, 45 km outside Riyadh, around a stark escarpment.



Work starts on \$3.7bn Avenues – Riyadh



The Avenues – Riyadh will feature five multi-purpose towers.

THE foundation stone has been laid for The Avenues Riyadh, a \$3.73-billion major shopping, entertainment and residential destination that is to take shape in the Saudi capital.

Being developed by Shomoul Holding Company, the mixed-use development will spread over a 390,000-sq-m area in a direct strategic location on King Salman Road and the King Fahad Road.

The project will offer a leasable area of 400,000 sq m and a total built-up area of 1.8 million sq m.

The project will boast five multi-purpose towers that include hotels, residential apartments, offices and parking for 18,000 vehicles. It includes multiple districts such as Prestige, Grand Avenue, The Souk, The Mall, Electra, Oasis, Grand Plaza, The forum and The Walk.

The Avenues – Riyadh will include four hotels operated by Hilton, including a 350-room Waldorf Astoria, a 400-room Conrad, a 450-room Hilton Garden Inn, as well as a 150-room Canopy by Hilton, the first of Hilton's lifestyle Canopy by Hilton brand in the Middle East.

On completion, The Avenues – Riyadh mall is expected to be one of the largest and most prominent tourism and entertainment destinations in the world.

A Saudi limited liability company established in 2014, Shomoul Holding brings together the combined experience of the three major Saudi and Kuwaiti companies: Al Fozan, a major Saudi retail, manufacturing, real estate, and trade conglomerate; Mabane, Kuwait's largest real estate enterprise by capital value and the owner of The Avenues – Kuwait; and Alshaya Group, the Middle East's powerhouse of retail, real estate, investment, automotive sales, and projects.

In November last year, Shomoul signed a SR6.4-billion (\$1.7 billion) agreement appointing Nesma & Partners as the main contractor for the construction of the project. ■



The mall will offer a leasable area of 400,000 sq m.

TRIMBLE Solutions says its software was leveraged in the designing and detailing of the entire steel structures that make up the 3B2 Western Station, one of the iconic stations of the Riyadh Metro.

The station has been designed by Omrania & Associates as an intermodal transit hub southwest of downtown Riyadh. The 3B2 Western Station has a complex design inspired by the kingdom's deserts, dunes, oases, and palm groves. Covering a gross area of 107,000 sq m, the four massive dune-like structures host an aboveground metro station, bus station, underground park-and-ride facility, and a mosque.

The construction of the Riyadh Metro itself – one of the largest infrastructure projects in the region – involved more than 56,000 on-site workers, engineers, and designers who ensured that this infrastructure reflected Saudi Arabia's culture and heritage, according to Trimble Solutions.

"Given how massive and important this project was, our innovative solutions were leveraged, particularly in AIC Steel's design of the 3B2 Western Station, which is one of the largest and most iconic stations. Our client, AIC, oversaw the design and details, including the entire steel structure of the station," Paul Walle, Regional Director, Trimble Solutions – Middle East and India, tells *Gulf Construction*.

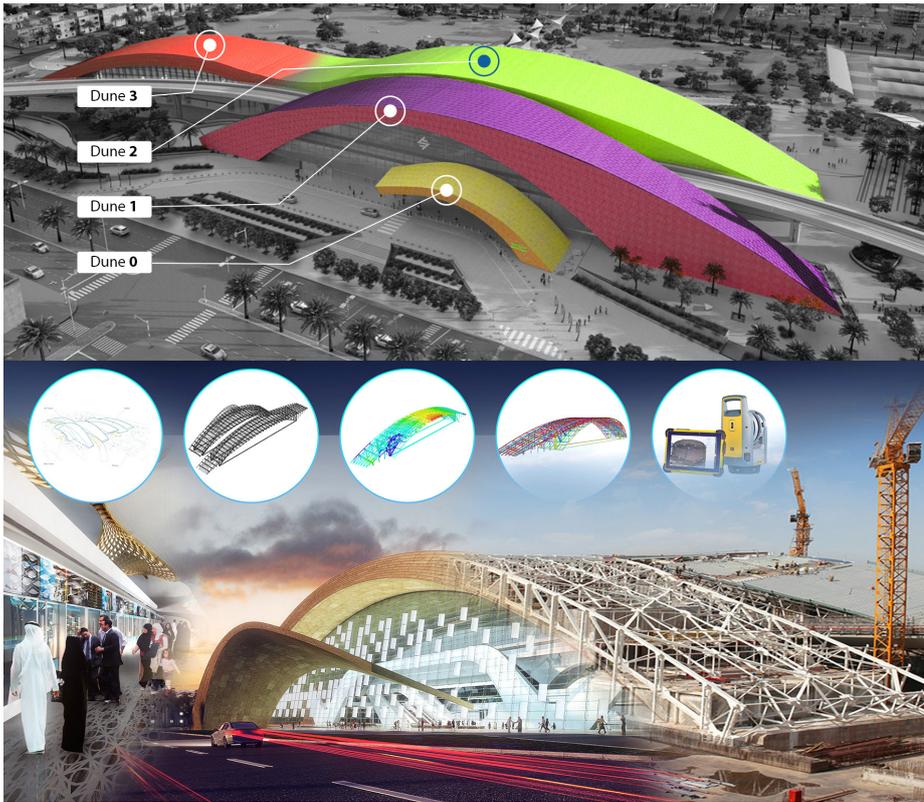
To achieve the desired level of details and specifications during the design and construction phases, AIC used Trimble's hardware and software solutions.

"Trimble's Tekla Structures, for one, had proved to be crucial with its powerful and intuitive 3D BIM capabilities, huge connection library, and absence of site fit-up issues. AIC's project team translated the accurate construction layout directly into the field with the Tekla software, which exports extensive 3D models straight into Trimble FieldLink. AIC also incorporated the Trimble Robotic Total Stations to avoid any errors, thus delays in the work processes and to increase the efficiency of their job site layouts and measurements," Walle explains.

"These examples of innovative solutions are suitable for the construction sector as they enhance efficiency, simplify the work processes, reduce errors, and provide stability to projects," he adds.

These software solutions afford a high

Trimble helps shape iconic station



AIC's project team translated the accurate construction layout directly into the field with the Tekla software, which exports extensive 3D models straight into Trimble FieldLink.

level of flexibility and hence can be easily used on any project requiring minimum customisation, according to Wallett.

"Tekla's powerful modelling tools were flexible to meet the complex requirements for the Riyadh Metro project. Since the project had irregular dimensions and shapes, AIC had to rely on Tekla Structures, a ready-to-use solution with minimum customisation required but with APIs (application programming interfaces) it can be further customised as per customer's specific needs to streamline the workflows. The major challenges included building models from design drawings to show the nodes of the structure."

Tekla Structures is an easy-to-use BIM solution for 3D modelling and detailing. If needed, Trimble can provide dedicated support teams to guide and assist its clients in implementing its solutions.

The Trimble Robotic Total Stations (Trimble RTS) allowed AIC to operate

remotely, with one qualified operator to control the entire process while the rest of the team performed other crucial project tasks, Wallett explains.

"With this, they could create faster and more accurate layouts, improve handover, and enhance accuracy due to access to real-time data. The 3D models helped AIC with efficiency and precision far beyond the scope of a manual layout tool.

Tekla Structures helped AIC simplify the complex designs, facilitated and accelerated the modelling, drawings, and workflow needed for the metro station. Tekla solution enabled AIC to design complex trusses, secondary trusses, infills, and bracing that had to be arranged in a knotted configuration, in addition to purlins and facade support systems. In addition, Tekla Structures parametric macros, a powerful 3D BIM software, were used to connect multimember joints with different slopes and orientations.

"Manual processes and tools, changes in the project files, and a lack of direct communication can delay the project and increase data errors. These challenges were prevented by AIC's use of Tekla and Trimble RTS during the design and construction of the 3B2 Western Station," he points out.

Tekla Structures for BIM 3D modelling and detailing has also been used for the Riyadh botanic garden (King Abdullah International Gardens), among many other projects.

"It's a complicated structure that was easily modelled, detailed and fabricated with Trimble Solutions," Wallett remarks.

Apart from AIC Steel, Trimble solutions are being utilised by Zamil Steel, Saudi Binladin, Cleveland Bridge Steel, International Building Systems Factory, Al Shahin Metal, Arabian Consulting Engineering Centre, Al Rushaid and many more, according to him.



Wallett ... focusing on providing local support.

Wallett says Trimble has a local support person in Saudi Arabia backed by

its support team in Dubai office. "They are always eager to help our customers in the Middle East region. We believe in providing local support to our customers which is easily accessible at any time," he says.

"We understand that, in terms of technical expertise coupled with the rapid digital transformation in the sector, some clients need further support to fully optimise the features of our solutions in construction projects. Assisting and supporting our stakeholders are part of our commitment as a solution provider," he adds.

Trimble has been present in Saudi Arabia for more than nine years, and also has projects in other parts of the region.

At the regional level, Trimble's Tekla solution has also contributed to many significant projects such as the Burj Khalifa, Ain Dubai and the Museum of the Future in the UAE; King Abdullah Petroleum Studies and Research Center (Kapsarc), King Abdulaziz Centre for World Culture, in addition to Riyadh Metro in Saudi Arabia; and the Adly Mansour metro station in Egypt. ■

Byrne builds on strength as single-source supplier

THE Riyadh Metro is one of the most notable projects in Byrne Equipment Rental's Saudi portfolio and is a great example of the company's equipment diversity and its offer of a single-source solution, according to James Dodgson, General Manager of Byrne Investments Saudi Arabia Limited (Bisal).

In an exclusive interview, Dodgson tells *Gulf Construction*: "We have been present on the Riyadh Metro project for the best part of eight years and although it is almost completed, we are still very much heavily involved and are supplying many products and services across all the lines where our clients are in the commissioning and testing phase. Our full suite of equipment has been utilised across all sites from sanitation and climate control to power, hoist and access and temporary buildings."

Bisal, a leading equipment rental firm and the Saudi arm of the Byrne Equipment Rental group of companies, has had in excess of 500 assets on hire to multiple site locations of the metro project, where it has been present since its inception.

Apart from the Riyadh Metro, Byrne is also supporting clients on other major projects in and around Riyadh such as Qiddiya, King Salman Park, Misk and Diriyah Gate projects where it has a good mix of products such as generators, mast climbers, compressors, tower lights, access platforms, temporary buildings and ablutions.

Also in Riyadh, it had great success supporting the King Abdullah Financial District (KAFFD) project.

Among other projects in Saudi Arabia, Byrne has played a pivotal role in supplying a major part of the equipment and services for the construction of the Jeddah Grand Prix track and pavilions – with over 500 assets on site at the peak – a project where it also supplied event services and equipment solutions for the front and back of house, he adds.

Dodgson took charge as General Manager of Bisal in November last year at the start of one of the busiest events periods the company has experienced since the on-



Byrne Equipment's generators have been engaged on the Riyadh Metro project.

set of the pandemic.

"We have kick started 2022 with some great wins in our events division in Riyadh and Jeddah and we are seeing some promising movement in the construction sector such as the Red Sea Project and Neom," he adds.

Over the past couple of years, Byrne has gone through its fair share of changes and challenges, welcoming new senior level management onboard and has drawn an energised and aggressive growth plan and released new product lines such as powered access and heating, ventilation and air-conditioning (HVAC) solutions into the market.

Commenting about the company's growth, he states: "We are in a state of consolidation and our main focus is to get our growth strategy back on track. The market now seems to be bouncing back stronger than ever and the level of investment within the kingdom is unmatched compared to our other operating territories; it is a key area of projected growth for us for many years to come."

Saudi Arabia is witnessing massive

growth and, as a result, is going to play a pivotal role in Byrne's strategy and growth over the next decade, Dodgson remarks. "Increased government spending on infrastructure, construction, events and oil and gas production is bolstering the pace

of activities in the country. We foresee that the country is fast becoming a hub for the Arab world and with the level of investment and diversification into events and attractions for the public, we predict that it will become a global hub for travel and tourism. This will bring a wealth of opportunities for Byrne – every development and project in this area will need support in some way or another in terms of services and equipment

solutions. Byrne is already geared up to support in any way and will continue its investment strategy to support this.

"Construction, events and the oil and gas sector will play a huge part in Byrne's growth in the coming years. The Red Sea and Neom developments have presented a need for us to expand our bases to new territories in the North West regions of the country. This area is also showing promising signs of a big upturn in events and construction, for which we anticipate opportunities that will come our way," he says.

Since launching its Saudi operations over 20 years ago, Byrne has expanded its footprint across the entire kingdom. Headquartered in Jubail, with offices and depots in Dammam, Riyadh, Turaif, Jeddah and Yanbu, the company has wide coverage across the kingdom to service its clients effectively and efficiently.

Today, Byrne is one of the largest single sources of plant and equipment rental in Saudi Arabia with an extensive rental fleet of more than 5,000 units of equipment which is growing rapidly to meet the current and anticipated future demand.

Byrne's power division has historically been the strongest in the Saudi market; the company has a wide range of generators and alternative power solutions which can be tailored to meet any requirement,



Dodgson took charge at the start of one of the busiest events periods.

Dodgson points out.

“In more recent years, with the deployment of new product lines in powered access, hoist and mast climbers and HVAC solutions, we are witnessing a more diversified demand, reinforcing Byrne’s key strength of being the largest single source supplier for plant and equipment rental in the kingdom,” he remarks.

“When it comes to construction projects, we have a wealth of experience and product diversity to become the preferred equipment supplier from the moment that you break ground and require office space for the project team, to the final commissioning and testing where power and HVAC solutions are required. Construction has always played an important part in Byrne’s historic growth in the region and although it has been volatile in recent years, we see a huge amount of potential here and we will continue to invest where we can add the most value to our customers and shareholders. We have exciting plans to expand our fleet and product lines that reinforce this strategy,” he adds.

Dodgson says the equipment rental

market in the GCC is maturing at a considerable rate; end-users are increasingly becoming more reliant on rental as an alternative to purchasing with heavy upfront costs.

“The flexibility that renting equipment offers versus buying is appealing to companies as renting means no upfront cash expenditure, no periodic maintenance and overhead costs. Furthermore, the flexibility to on/off-hire as a projects timeline permits, and the ability to access the newest equipment with the latest technology with the peace of mind the equipment is being well maintained, is a major advantage to companies across all industries.

“Demand for equipment rental is increasing with many new players entering the market; however, Byrne has been in this industry for over 30 years now, so we know what it takes to be at the forefront and excel in our service offering. We are able to provide packaged solutions for our clients and that is enabling us to lead the way in this field,” he emphasises.

Dodgson points out that equipment monitoring and maintenance is key to success in the equipment rental industry,

and having robust systems that ensure maximum uptime of machines is a must. Byrne has a wealth of experience managing machinery and plant and has built a strong foundation around its maintenance programme.

“Every asset is different and requires specific skills to maintain; our team of over 500 technical staff have the required expertise to ensure that our assets operate at peak performance. Also, technology over the last decade has influenced how we manage our equipment, from having the right ERP solutions which help manage our workflows to having the latest telemetry and remote monitoring solutions fitted to our assets. Given the vast territory we are operating in, remote monitoring is often non-negotiable as it enables us to manage data from our assets in a much more efficient manner than in the past where we would have to drive 500 km to diagnose a fault or problem. Now we can do this remotely and send our engineers with the right tools and spare parts for the specific problem, ultimately saving time and money for both the company and our clients,” Dodgson concludes. ■



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The Big 5 Saudi is expected to draw 15,000 industry professionals.

Big 5 Saudi set to open doors in the capital

The leading construction exhibition brand is now hosting its Saudi event live and in person in Riyadh after a hiatus due to the pandemic.

SAUDI Arabia is set to stage its first major construction event this year, live and in-person, when The Big 5 Saudi makes its debut in Riyadh this month (March 28 to 31).

The event, which is now in its 10th year, was previously held in Jeddah. Expected to attract 15,000 industry professionals, The Big 5 Saudi will showcase around 1,000 construction products and solutions of some 400 exhibiting companies and 30 countries, including pavilions from Italy, Germany, the UAE, Greece, Kuwait, Poland, Spain, Egypt and Qatar.

Now taking place at the Riyadh International Convention & Exhibition Centre, The Big 5 Saudi continues to serve as a true testament to the country's growing attractiveness in the global construction arena, bringing together industry players in support of the kingdom's ambitious Vision 2030 objectives, says dmg events, the organiser of the event.

Muhammed Kazi, Vice President, Construction at dmg events, says: "The Big 5 Saudi has permanently moved to Riyadh now and will showcase the readiness of the construction industry to support the

tremendous transformation created by Saudi Vision 2030. As we celebrate 10 years of commitment to the Kingdom of Saudi Arabia, this year's event will lead the construction industry and align it with the 2030 vision, unlocking new opportunities with innovative technologies and best-in-class practices, contributing to the kingdom's new and vibrant landscape."

"As Saudi Arabia unveils a \$900-billion development plan driven by Saudi Vision 2030, new cities such as Neom, Jeddah Economic City and the Red Sea Project are under way together with



This year's event will showcase the products of 400 exhibitors.



Riyadh/The Big 5 Saudi

vancing careers.

The Big 5 Saudi and Stone & Surface Saudi 2022 is sponsored by Al Bawani Company; UCC Holding; Thabat; Souq Penny; Afaq Wood Industries Factory; Esad Services Group; Raknor; and Topwerk Middle East. Main sponsors for The HVAC R Saudi Expo are Carrier and Shaker LG. The FM Expo Saudi and Saudi Clean Expo is sponsored by Al Hajry Overseas Co; Al Majal Al Arabi Group and Takamul Aloula Facility Management. ■

The Big 5 Saudi will include a number of educational sessions.

major infrastructure projects including the \$22.5-billion Riyadh Metro and the \$20-billion Diriyah Gate project. The Big 5 Saudi 2022 provides buyers and suppliers unparalleled opportunities to engage in business-critical conversations that will facilitate the kingdom's ambition."

The Big 5 Saudi 2022 is co-located with specialised events such as HVAC R Expo Saudi, FM Expo Saudi, Clean Expo Saudi and Stone & Surface Saudi Arabia, thus showcasing products for the complete construction cycle in one place, at one time.

Included in the event this year, The Big 5 Saudi Construction Leadership Summit will provide direction, inspiration and support decisions on key themes covering economy, collaboration, technology and people. Key speakers for the summit include: Maryam Telmasani, Board Chair, United Nations Global Impact; Walid Al Murshed, Head of International Finance Corporation (IFC); Dr Anas Bataw, Director, Centre of Excellence in Smart Construction (CESC), Heriot-Watt University; Dr Walid Mahmoud, CEO, Aecom Arabia, and Alaa Abusiam, CEO, Egis Group, amongst others. The speakers will deliver impactful content sessions on the economic outlook of the industry including its impact and growth opportunities and how the construction industry is driving the future of Saudi Arabia.

Also included in the event are The Big 5 Saudi's 50 free CPD (Continuing Professional Development) certified educational sessions, encompassing all disciplines in the construction industry, which will support the ongoing development of the industry's young professionals helping discover industry best practices and ad-



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Al Kifah KRB has grown from just one factory to more than 27 branches all over the kingdom.

Al Kifah KRB to launch green concrete

AL Kifah Ready-Mix & Blocks (KRB), a leading provider of ready-mixed concrete and concrete masonry blocks products in the Kingdom of Saudi Arabia, is set to launch its green product line under its new slogan “Keep it ConGreen” at The Big 5 Saudi this month.

According to Al Kifah research and development centre, ConGreen concrete boasts a number of sustainable and environmental benefits, whilst providing high durability, improved performance, and better workability and pumpability properties. It also has high passing and finishability, making it suitable for self-compacting concrete.

ConGreen complies with the most onerous durability requirements and provides very low Rapid Chloride Permeability (RCP), water absorption and water permeability properties. With low heat of

hydration, temperature rise in mass pours can be controlled thus minimising the risk of cracking.

ConGreen has a low carbon footprint with a carbon dioxide (CO₂) emission factor as much as 30 per cent lower than standard concrete along with higher compressive and flexural strengths compared to concrete with the same cement content.

“We are committed to driving energy efficiency and addressing the global emission challenges. We aim to help build a better community and environment-friendly

facilities by producing high-quality concrete such as ConGreen that has a reduced environmental impact and is characterised by its high performance, durability and sustainability, with a low carbon footprint as compared with standard concrete,” says Nigel Harries, General Manager of Al Kifah Ready-Mix.

“ConGreen’ is a combination of words ‘concrete’ and ‘green’ and sums up our focus on sustainability by enhancing our green product line and raising the bar in the industry. By using raw materials that



Al Kifah also offers mixes utilising recycled metal slag aggregates.



ConGreen concrete boasts a number of sustainable and environmental benefits, whilst providing high durability, improved performance, and better workability and pumpability properties.

have lower carbon emissions such as natural pozzolan and applying the most advanced carbon emission technologies such as embedding recycled carbon dioxide licensed from CarbonCure Technologies Inc from Canada, substantial CO₂ savings can be made," he adds.

In addition, Al Kifah KRB has a range of mixes utilising recycled metal slag aggregates suitable for specialist construction where high density and protection from radiation is required.

In line with Saudi Vision 2030, Al Kifah KRB is enhancing its local and regional resourcing and maximises the use of raw materials produced in-house by group companies such as admixtures (Technical Factory for Concrete Additives – TFCA), aggregates (Alkifah Crushers) and local natural pozzolan.

The company also focuses on controlling waste through the use of reclaimers.

Al Kifah KRB says its green concrete has been approved by Saudi Aramco and has been used in numerous projects such as King Salman International Complex for Maritime Industries and Services project, East West pipeline and Waset projects.

It has also been used for the Al Moosa Hospital, a private project in Al Ahsa, where it has provided EPD certification and complies with the LEED Gold standards.

Established in 1980, Al Kifah KRB has grown from just one factory to more than 27 branches all over the kingdom. Since then, the company has expanded to nine main cities with a team of more than 1,500 employees and a fleet of over 1,000 vehicles with a total production capacity of more than 3,500 cu m per hour of ready-mixed concrete and more than 120,000 concrete masonry blocks per day. ■

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