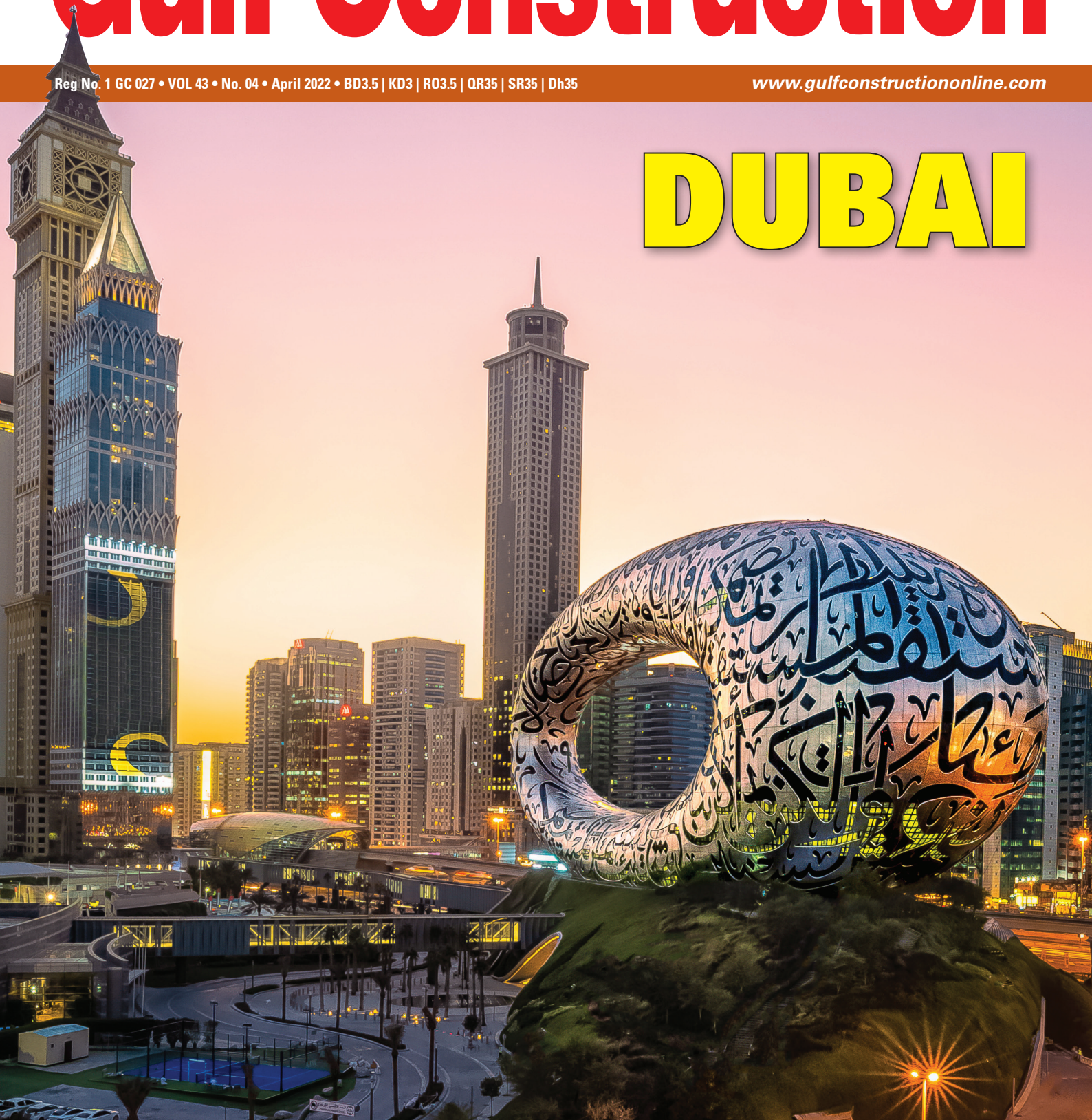


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البواني

ENTICING REALTY INVESTORS

Using the recent flurry of stunning property developments launched on the market as a barometer, Dubai is gearing up to cater for massive interest from foreign investors looking to avail of the emirate's latest residential incentives, namely the golden visas and 'work remotely from Dubai' initiative.

AS the curtains come down on Expo 2020 Dubai, which helped the emirate draw the world's attention to itself for over six months, the natural question is what next for the city that never tires of hitting headlines for the right reasons.

By all measures, despite the challenges of the Covid-19 pandemic, the Expo was a splendid success, once again proving to the world the organisational capabilities of Dubai and its vision.

Will there be a lull now that the mega event is finished?

Those who have followed the emirate's developments over the last two decades know the answer ... Dubai never sleeps.

The immediate focus is on repurposing the Expo 2020 site which hosted the world's largest showcase of human achievements. The site itself is home to three signature pavilions, the observation tower (Garden in the Sky), the Expo 2020 Water Feature – all designed by world-leading architects – along with numerous other structures purpose-built for the event which will now become part of the District 2020. Dubai is now set to reimagine and repurpose some 80 per cent of the site to host a smart and sustainable city. While an official announcement is awaited on the decisions being made in terms of legacy, the district will soon welcome a first cohort of 85 start-ups and small businesses as part of its global entrepreneurship programme Scale2Dubai before the end of this year (see Page 24).

Dubai is showing the world what can be achieved with good ideas, marketing and real estate – albeit in a desert environment – and has been amazing the world with awe-inspiring buildings, achieving several

“world-firsts” too along the way.

Its innovative strategy to attract high net-worth individuals (HNWIs) through its golden visas, programmes to ‘work remotely from Dubai’ and staycation appeal is already unleashing a plethora of uber-luxury properties.

Hence, the real estate market is now catering for these HNWIs with property that is unique, offering a dreamed-of lifestyle and even managed by international brands with all amenities money can buy.

For instance, Omniyat last month marked a double celebration – the handover of its ultra-luxurious One at Palm Jumeirah, managed by the iconic hospitality brand, Dorchester Collection, Dubai and the launch of its AVA Palm Jumeirah – with drones illuminating Dubai's sky in one of the greatest light shows in the Middle East. The AVA Palm Jumeirah will boast 17 hanging palaces (see *UAE Focus*, Page 59).

Also last month, another property developer Damac Properties pitched in its latest development, Safa One de Grisogono – The Nature of Luxury – with designs inspired by Swiss jeweller de Grisogono. The one-of-its-kind twin-tower project will feature luxury and super-luxury floors with hanging gardens, with the base of the project hosting an artificial beach (see *UAE Focus*, Page 58).

The emirate continues to be a magnet for international investors, accounting for the lion's share of new investments or AED99 billion (\$53 billion) of the AED148 billion in 2021, according to reports. Of the total 52,415 investors, 38,318 were foreigners.

Social housing, meanwhile, continues to be a priority and is a key part of the Dubai 2040 Urban Master Plan for sustainable



urban development announced by HH Sheikh Mohammed bin Rashid Al Maktoum, Vice President, Prime Minister of the UAE and Ruler of Dubai, early last year.

Sheikh Mohammed last year also approved the allocation of AED65 billion in funding for an Emirati housing programme in Dubai, which will be spent over the next two decades to provide quality housing for Emiratis.

Apart from real estate, Dubai is also looking to transform the emirate into a vital player in global economic development and one of the smartest and happiest cities in the world and to achieve this goal it is increasingly seeking private sector participation. Late last year, the Department of Finance (DoF) announced a large number of projects worth more than AED25 billion under the public-private partnership (PPP) portfolio. These include more than 30 significant projects in the infrastructure, public transportation and urban development sectors.

In spearheading its goals, the emirate has been a frontrunner in adopting the latest technologies including 3D printing,



Lifestyle properties ... Riviera, a French Mediterranean-inspired residential and commercial community at MBR City being developed by Azizi.

digitalisation and artificial intelligence and switching to renewable energy in line with its focus on sustainability. For instance, Dubai Electricity and Water Authority (Dewa) clinched the Guinness World Records title for setting up the first 3D-printed laboratory in the world last year.

Two key enablers in its drive to anticipate and address the challenges of the future will be District 2020 and Dubai's latest engineering marvel the Museum of the Future, which opened at the end of February to much fanfare (*see Page 14*).

POWER & WATER

In line with the Dubai Clean Energy Strategy, under which the emirate aims to produce 75 per cent of its energy requirements from clean sources by 2050, Dubai is developing one of the largest solar parks in the world as well as a hydroelectric power plant.

The mega solar park project – Mohammed bin Rashid Al Maktoum (MBR) Solar Park – is being implemented in five phases, with the first phase having begun with a pilot 13 MW project. The total production capacity of the solar park's three

operational phases has reached 1,013 MW late last year, with the commissioning of the 300-MW first stage of 900 MW Phase Five.

The first stage of the 950 MW fourth phase is now set to kick off with a capacity of 217 MW. Dewa and Acwa Power

formed a project company, Noor Energy 1, to design, build, and operate the fourth phase. It is 51 per cent owned by Dewa and 25 per cent by the Saudi-based Acwa Power, while the Silk Road Fund has a 24 per cent stake.

Noor Energy 1 is spearheading the largest single-site concentrated solar power (CSP) and a single hybrid solar power project in the world with three different solar energy technologies in deployment. The technologies called for the construction of a CSP central tower, a CSP parabolic trough and solar photovoltaic panels. This phase also has the largest storage capacity in the world for 15 hours, which allows for around-the-clock energy production.

Dewa has also implemented the Green Hydrogen project, in collaboration with Expo 2020 Dubai and Siemens Energy at the MBR Solar Park – which is the first in the Middle East and North Africa to produce hydrogen using solar power.

Meanwhile, work on Dubai's new hydroelectric power plant is reported to be more than 35 per cent complete. The \$386-million Hatta power plant will have a production capacity of 250 MW with a storage capacity of 1,500 megawatt-hours and a lifespan of up to 80 years.

The emirate has recently announced that one of its power plants is switching from clean coal to natural gas. The 2,400 MW Hassyan Power Complex, which has a current production capacity of 1,200 MW and is being developed using the Independent



The Colours of the World Parade at Expo 2020 during UAE National Day ... the site is being repurposed to host District 2020.

Power Producer (IPP) model, will be converted from clean coal to natural gas by its developer Acwa Power. The plant will add a further 600 MW of capacity in Q4 of 2022 and 600 MW by Q3 of 2023, thus taking its total capacity to 2,400 MW.

A pioneering project in the waste-to-energy sector is a mega \$1.2-billion development by a consortium comprising Besix, Dubal Holding, Itochu, Hitachi Zosen and Tech Group. The greenfield facility in Warsan will process up to 45 per cent of Dubai's municipal waste and generate up to 200 MW green electricity supplying 120,000 households.

Among other projects under way in this sector, work is set to reach the halfway mark on the Hassyan Sea Water Reverse Osmosis project, the largest Independent Water Project (IWP) in the emirate. Utico, a leading private utility company in the UAE, and Dewa are shareholders in the project which will have a 120-million-gallons-per-day capacity in its first phase.

The \$450-million project – billed as the 'most Sustainable Desal Project' in the region, and pathbreaking for its design, power consumption and sustainability – includes a 600-million-gallons-per-day seawater intake system for the first two phases, two 132-kV substations, and potable water storage tanks with a capacity of 120 million gallons of, according to Utico.

ROADS & RAILWAYS

Among the largest road projects in progress in Dubai is the AED5.3-billion Al Shindagha Corridor Project, which spans 13 km along Sheikh Rashid, Al Mina, Al Khaleej and Cairo streets. The project recently witnessed the inauguration of a



Infinity Bridge, a key component of the AED5.3-billion Al Shindagha Corridor Project,

key component, the architecturally striking Infinity Bridge (*see Gulf Construction, February 2022*).

Al Shindagha Corridor is a strategic project that is being undertaken by the RTA in 11 phases. Construction works for the project started in 2016 and will be completed by 2027 according to the urban development plan of the area.

Also, the completion of the railway track linking Dubai with Abu Dhabi on the Etihad Rail project last month marks the start of a new phase of logistic and economic integration between the two emirates (*see UAE Focus, Page 59*).

REAL ESTATE

With the delivery of One at Palm Jumeirah, Dorchester Collection, and the launch of yet another uber-luxury development AVA Palm Jumeirah, Omniyat and other key property developers such as Damac and Select Group have sent clear signals

that they are catering for the HNWI's who seek the ultimate in luxury.

Apart from Safa One de Grisogono, Damac Properties also recently launched 'Damac Lagoons', a new luxury development that promises its very own 'Eight Wonders of the Mediterranean' concept.

The fact that Dubai attracts HNWI's with a penchant for uber-luxury is amply illustrated by the fact that a number of duplex apartments and penthouses were snapped up recently for near record-breaking figures. These include properties at The 118, a boutique luxury project by Signature Developers located in Downtown Dubai, where one of its trademark apartments was sold for AED50 million.

Omniyat recently closed the sale of the three most expensive penthouses in the region, carrying a total value of more than AED260 million – at One at Palm Jumeirah, Dorchester Collection.

In addition, since the onset of the coronavirus pandemic and the popularity of the work-from-home approach, developers have been responding to the demand for larger homes in communities that offer lifestyle amenities.

While it was generally expected that there would be a lull in new project announcements following the intense activity in the years preceding the Expo 2020, Dubai has seen a number of project launches recently notably at Tilal Al Ghaf, a lifestyle destination, and Peninsula at Business Bay, in addition to the projects announced by Omniyat and Damac.

Majid Al Futtaim Communities is ex-



The 2,400 MW Hassyan power plant ... work in progress.

panding its exclusive resort-style community Tilal Al Ghaf with the launch of Elysian Mansions, featuring six bedrooms, multiple entertainment areas, spa and wellness spaces, Sky Suite and an underground glass-encased car gallery with a capacity for six to eight vehicles, and Alaya Beach, an ultra-exclusive neighbourhood which will include 14 mansions and 30 reserve grand villas, each set in landscaped grounds – with direct access to a lagoon bordered by white sandy beaches, and a range of premium amenities. This followed the launch late last year of Aura Gardens, featuring three and four-bedroom townhouses and four-bedroom twin villas with exclusive Sky Suites at the development.

Meanwhile, at the Peninsula masterdevelopment in Business Bay, Select Group's most recent launch is the 36-storey 'Peninsula Two' tower, which offers a mix of residential and commercial units with prime views of Burj Khalifa, Downtown skyline and Dubai Canal. Peninsula, which was unveiled last October, will be delivered in phases over the next five to seven years and will feature nine developments, ranging from high-rise towers to low-rise waterfront villas.

Another striking property under construction is the Uptown Tower, being developed by Dubai Multi Commodities Centre (DMCC) and designed by the architectural firm Adrian Smith + Gordon Gill Architecture. Being built by Besix, the 81-storey tower is scheduled to be delivered in autumn 2022 (*see Page 19*).

In line with Dubai's quest for the superlatives, the world's next tallest hotel tower – Ciel – is now being built in the emirate where it has now crossed the halfway construction milestone (*see Page 28*).

In response to the demand for branded residences at the luxury end of the market, Saudi-based developer Dar Al Arkan has unveiled two projects: the AED800-million DaVinci Residential Tower, being developed in partnership with Italian hypercar manufacturer Pagani Automobili; and the AED800-million Urban Oasis, a waterfront residential tower on the Dubai Water Canal with homes designed by luxury Italian fashion house Missoni.

Other design-led projects include Ellington Properties Harrington House in the heart of Jumeirah Village Circle (JVC), and a new wellness-integrated residential



Peninsula masterdevelopment ... to comprise nine developments.

development in Mohammed Bin Rashid (MBR) City.

Developers are also meeting demand for residential projects that offer lifestyle choices. Azizi Developments, for instance is developing a French Mediterranean-inspired residential and commercial community at MBR City. Work on the AED12-billion Riviera is well advanced - Phase One of the project is more than 85 per cent complete, while the second, third and fourth phases are 80, 50 and 20 per cent complete, respectively. Upon its completion, Riviera will boast 16,000 residences spread across 71 mid-rise residential buildings, a mega-integrated retail district, and an abundance of lifestyle-enhancing amenities including a 2.7-km-long lagoon.

Azizi is developing a string of other residential projects including Berton in Al Furjan, and Creek Views I in Dubai Healthcare City (DHCC).

Other real estate developments:

- Master developer Nakheel kicked off 2022 with the launch of Tilal Al Furjan, a new collection of 220 luxury four- and five-bedroom villas overlooking the Al Furjan master community. This followed the sell-out success of Murooj Al Furjan West in September and the 418-villa Murooj Al Furjan last May. Nakheel has also embarked upon transforming the Jebel Ali Village into an upscale residential community comprising a gated, hillside collection of luxury villas set among lush green spaces.
- Union Properties is pushing ahead

with its AED2.2-billion Motor City developments with the launch of the AED800-million Motor City Views, the first of the proposed phased developments within the mega project.

- Ithra Dubai has launched One Deira, which is District Four of the Deira Enrichment Project (DEP), which aims to rejuvenate Dubai's historic commerce and original community centre with a vibrant mix of residential, commercial, retail and hospitality offerings. One Deira consists of an office building and a 131-room hotel tower and a two-level retail podium and will introduce the UAE's first integrated central transport station.
- Emaar's 340-m-tall Il Primo Tower in Dubai Opera District is expected to be completed this year. It comprises a 77-storey structure with podium and six levels of basement and parking. Another Emaar project scheduled for completion this year is Creek Edge, a luxurious residential development in two towers of 40 and 20 floors that rise above the waterfront promenade of Creek Island.
- Sobha Realty is developing the 592-unit Waves, within its AED16-billion (\$4.35 billion) Sobha Hartland, an 8-million-sq-ft freehold master development at Mohammed Bin Rashid Al Maktoum City. The 35-storey Waves is one of the 12 towers the developer plans to build within The Waterfront District. Work on the project is due for completion in 2023. ■

DUBAI AT A GLANCE

Package name	Owner	Status*	\$ Million **
Al Maktoum International Airport Expansion – Overview	Dubai Aviation Engineering Projects (DAEP)	EPC ITB	36,000
Aykon City – Overview	Damac Properties	Construction	2,000
Bluwaters Island – Overview	Meraas Holdings	Construction	1,600
Ciel Tower	The First Group	Construction	600
Deira Islands Development – Deira Islands Boulevard	Nakheel	EPC ITB	1,300
Deira Islands Development – Deira Mall	Nakheel	Construction	1,600
Deira Waterfront Development – Overview	Ithra Dubai	Construction	816
Dubai Commercity Free Zone	Dubai Authority Free Zone Authority, Wasl	Construction	871
Dubai Creek Harbour – Dubai Square	Dubai Holding, Emaar Properties	Feasibility Study	2,722
Dubai Creek Harbour – Overview	Emaar Properties	Construction	8,333
Dubai Hills Estate – Park Ridge	Emaar Properties	Construction	700
Dubai Strategic Sewerage Tunnels Project PPP	Dubai Municipality	Design	8,000
Dubai to Abu Dhabi Hyperloop	Hyperloop One, Roads and Transport Authority (RTA)	Design	500
Emaar Beachfront – Overview	Emaar Properties	Construction	1,000
Emirates Towers Business Park	Tecom Group	PMC	1,400
Falconcity of Wonders – Overview	Falconcity of Wonders	Construction	1,500
Ghantoot Al Jurf Gardens	Imkan Properties	Construction	5,000
Hassyan Clean Coal Fired Power Station – Phase 3 – 1200 MW	Dewa	Design	1,500
Hassyan Gas Fired Power Station – Overview	Dewa	Construction	4,900
Hassyan Gas Fired Power Station – Phases 1 & 2 – 2400 MW	Acwa Power, Dewa	Commissioning	3,400
Jumeirah Village Triangle – Al Khail Avenue Mall	Nakheel	Construction	545
MAG City – Overview	MAG Lifestyle Development	Construction	2,000
MAG City – Phase 1 – Apartments & Townhouses	MAG Lifestyle Development	Construction	550
MAG Creek WellBeing Resort – Overview	MAG Lifestyle Development	Construction	600
Mall of the World	Dubai Holding	PMC	22,000
Marsa Al Arab – Overview	Dubai Holding	Construction	1,700
Mohammed bin Rashid Al Maktoum Solar Park – Overview	Dewa	Commissioning	5,500
Mohammed bin Rashid Al Maktoum Solar Park – Phase 4 – 700 MW CSP & 250 MW PV	Dewa	Commissioning	4,400
Mohammed bin Rashid Al Maktoum Solar Park – Phase 5 – 900 MW CSP	Dewa	Commissioning	600
One Za'abeel	ICD	Construction	960
Shindagha Corridor Scheme	RTA	Construction	1,360
The Royal Atlantis Resort & Residences	Investment Corporation of Dubai (ICD), Kerzner International	Construction	1,400
The World – The Heart of Europe	Kleindienst Properties	Construction	5,000
Tilal Al Ghaf Community	Majid Al Futtaim	Construction	3,800
Town Square Development – Overview	Emaar, Nshama Development	Construction	5,000
Uptown Tower	Dubai Multi Commodities Centre (DMCC)	Construction	500
Warsan Waste-to-Energy Plant	Dubai Municipality	Construction	1,100
Wasl Gate – Overview	Wasl Properties	Construction	10,000
Wasl Gate – Phase 2 – Hillside Apartments	Wasl Properties	Design	3,000

* E&P = Engineering and procurement; EPC ITB = Engineering, procurement and construction invitation to bid



Consultant	Contractor	Start date	End date
-	-	2014-Q1	2027-Q4
Lacasa	China State Construction Engineering Corporation (CSCEC)	2016-Q1	2023-Q1
Antonio Citterio Patricia Viel & Partners, Artelia, Faithful+Gould, Mirage Mille Leisure, WSP	ASGC, Alec, Habtoor Leighton Group, Hyundai Engineering & Construction, Kier Group, Starneth Engineering, Van Oord, WSP Middle East	2012-Q4	2022-Q1
-	China Railway 18th Bureau Group	2016-Q1	2023-Q4
-	-	2017-Q1	2022-Q4
RSP Architects	Unec	2016-Q1	2021-Q1
Ae7	Al Futtaim Carillion, Alec, Beaver Gulf Group, CSCEC, Ssangyong E&C	2015-Q1	2022-Q1
HOK	Aroma International Building Contracting	2018-Q1	2022-Q4
-	-	2018-Q3	2025-Q1
Atkins, Faithful+Gould, Hill International, Turner Construction	Al Basti & Muktha, Al Futtaim Carillion, Al Naboodah Contracting, Al Shafar General Contracting (ASGC), Nurol Group, Trojan General Contracting	2006-Q1	2022-Q2
-	ECC	2017-Q3	2022-Q2
Parsons	-	2015-Q1	2023-Q4
-	-	2016-Q4	2030-Q4
-	Al Basti & Muktha, CSCEC, Engineering Construction Company, Nurol Group	2017-Q3	2022-Q3
Tecom Investments	-	2017-Q3	2025-Q4
Engineer Adnan Saffarini Office, Hyder Consulting	Evolve Contracting (Salem Ahmad Almoosa Enterprises), Ghantoot Transport & General Contracting, Pauling Middle East	2008-Q3	2025-Q4
-	Al Dhabi Contracting	2018-Q4	2022-Q2
-	-	2017-Q4	2024-Q4
Poyry	Acwa Power, General Electric (GE), Harbin Electric	2008-Q4	2024-Q4
Poyry	Acwa Power, GE, Harbin Electric	2008-Q4	2023-Q3
Dar Al Handasah (Shair and Partners)	Dhabi Contracting	2016-Q1	2022-Q4
Parsons	China National Chemical Engineering Group Company	2019-Q1	2025-Q4
Parsons	China National Chemical Engineering Group Company	2019-Q1	2023-Q1
VX Studio	-	2017-Q3	2022-Q1
KEO International Consultants	-	2014-Q3	2024-Q3
-	ASGC	2017-Q2	2025-Q4
Gopa intec, ILF Consulting Engineers, Mott MacDonald Indonesia	Abdul Latif Jameel, Acciona, Acwa Power, EDF, First Solar, Fotowatio Renewable Ventures (FRV), Ghella Construzioni, Abu Dhabi Future Energy Company (Masdar), Shanghai Electric Group, TSK Electronica y Electricidad	2012-Q1	2023-Q4
Mott MacDonald Indonesia	Acwa Power, Shanghai Electric Group	2016-Q2	2022-Q4
Gopa intec	Acwa Power, Shanghai Electric Group	2018-Q2	2023-Q4
Mace Group	Al Futtaim Carillion, Alec	2008-Q1	2022-Q4
Parsons	Belhasa Six Construct, CSCEC, Wade Adams Contracting	2015-Q1	2027-Q1
Faithful+Gould	Six Construct (Sixco), Ssangyong Engineering & Construction Company	2014-Q4	2022-Q2
-	City Diamond Contracting, JK Bauen, PSE Building Contracting, Sino Great Wall International Engineering Company, Wuchang Shipbuilding Industry Company	2007-Q1	2023-Q4
Faithful+Gould	ASGC, Unec	2018-Q2	2027-Q1
Al Wasl Al Jadeed Consultants	Beaver Gulf Group, Engineering and Contracting Company (ECC), Larsen & Toubro, United Engineering Construction (Unec)	2015-Q1	2022-Q2
Turner International Middle East	Besix	2013-Q2	2022-Q3
Ramboll	Besix, Dubai Holding, Dubai Aluminium Company (Dubal), Hitachi Zosen, Itochu Corporation	2015-Q2	2024-Q3
-	Al Futtaim Carillion	2015-Q4	2030-Q1
-	-	2017-Q1	2022-Q1

** List includes projects worth over \$500 million only.

Source: DMS Projects

A MASTERPIECE FOR FUTURE



'The future belongs to those who can imagine it, design it and execute it. It isn't something you await, but rather create' reads the calligraphy on Dubai's latest architectural marvel which is expected to position the emirate as a testbed for emerging technologies. BINA GOVEAS provides an insight into its engineering excellence.

DUBAI'S latest unique architectural masterpiece – the Museum of the Future – which will be peerless for quite some time, opened on a highly memorable date: 22.02.22.

Perched alongside Sheikh Zayed Road, Dubai's main arterial highway beside the metro system and just in front of Jumeirah Emirates Towers, the futuristic torus-shaped marvel speaks volumes of the emirate's ambitions of pushing boundaries to reach new architectural and engineering horizons and anticipate the future.

Nine years in the making, the Museum of the Future is the latest icon to be added to the list of modern global landmarks and is considered one of the most complex construction projects ever built due to its unconventional design, its sustainability goals and its awe-inspiring aesthetic.

The 77-m-tall expressive landmark is a departure from the customary high-rises that dot today's skylines – the circular building represents humanity; the green mound it sits atop represents the earth; and the elliptical void represents the un-

known future.

Classified as one of the most architecturally creative structures in the world, it has been built by man and machine utilising the latest technologies.

Developed by Dubai Future Foundation, the building is a symbol for adopting innovative methods and tools that deploy futuristic technologies to reimagine the possible. This novel "living" museum tells the narrative of the future through a series of interactive exhibitions and invites people to experience the technologies and trends that will shape the future of humanity. The Museum of the Future is also set to position Dubai as a testbed for emerging technologies and an exploration base for talents, inventors and creative professionals from all over the world to unravel the challenges that will shape the future of humanity.



Emblazoned on the facade of the Museum of the Future are the quotes from poems written by HH Sheikh Mohammed bin Rashid Al Maktoum.

The pillarless structure spans an area of 30,000 sq m and comprises seven distinct floors. The main contractor on the project was BAM International – supported by BAM Ireland – which was responsible for all aspects of the construction execution and the complex design elements such as the façade and landscape mound. The structure consists of a steel framework, comprising 2,400 diagonally intersecting steel members, which was completed in November 2018. It is dressed in stainless-steel-clad glassfibre-reinforced plastic (GFRP) panels with illuminated glazed Arabic calligraphy.

BAM says its experience in digital-led projects and the project team's dedication to building information modelling (BIM) and digital construction have enabled a high level of integrated design and construction, perhaps impossible to achieve



The 77-m-tall expressive landmark is a departure from the customary high-rises that dot today's skylines – the circular building represents humanity; the green mound it sits atop represents the earth; and the elliptical void represents the unknown future

with traditional methods.

The architect of the project was Killa Design, while the lead engineering consultant was Buro Happold. Working with Killa Design, Buro Happold says its multidisciplinary team solved the project's unique and complex design challenges by optimising computational tools to deliver one of the most advanced buildings in the world. Its specialist engineers developed bespoke, in-house BIM software to model and analyse numerous options for the structure to achieve the museum's iconic torus shape.

FACADE

Clad in a striking stainless-steel façade, the Museum of the Future is the only building in the world that has a surface covered entirely in calligraphy art – some 14,000 m of Arabic calligraphy designed by the Emirati artist Mattar bin Lahej. The façade is lit at night by over 14,000 m of LED lights.

Emblazoned on the exterior are the quotes from poems written by HH Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and the Ruler of Dubai. It features three extracts from Sheikh Mohammed's quotes; one particularly befitting the intent of the architectural marvel is: "The future belongs to those who can imagine it, design it and execute it. It isn't something you await, but rather create."

The avant-garde façade is made of stainless steel and glass, consisting of 1,024 separate panels, each one specially created by robots and algorithms. The number of panels has its own significance, representing a basic unit of the digital information storage system of computers – a kilobyte, which is equal to 1,024 bytes. These panels cover a total surface area of 17,600 sq m.

Windows allowing natural light to flood into the seven-storey structure are designed in the form of calligraphy intricately 3D-mapped onto the building's

curved body.

Due to the building's complex geometry and flowing calligraphy, each separate panel is unique. Each piece had to be individually precast and produced, with numerous prototypes designed and manufactured before a winning formula could be achieved, according to a spokesman of the Museum of the Future.

"Every single panel was produced using automated robotic arms. Each panel is made up of four layers and was created following a complex 16-step process. The precision and focus required to create each panel meant that only several could be produced per day.

"Parametric modelling was essential to determine the final position, size and dimensions of the Arabic lettering on each panel to ensure it offered optimum balance between natural light, solar heat gain and air-conditioning load without compromis-



Natural light floods into the seven-storey structure through the windows.

ing its architectural aesthetic," he says.

The installation for the façade was carried out in around 18 months.

INTERIORS

The Museum of the Future invites visitors to embark upon an expedition to the future and, through individual choices, become part of a collective effort to create a better future for all humanity.

Among the designers of the exhibition spaces, Atelier Brückner has designed the "Journey of the Pioneers" stretching over three floors and 3,000 sq m of exhibition space: every floor has been created as an immersive experience, with strikingly powerful spatial narratives focusing on a vision of the future.

The "Journey of the Pioneers" exhibition's choreographed sequence of installations, and the sounds and scents that accompany visitors, take them away from the banalities of the everyday life and immerses them into a tangible future world where everyone has a role to play. The guiding lights and choice of materials play a significant role in the sensory experience. The space station walls, for instance, are interwoven 3D printed meshes that appear to be made from asteroid mined material, while the walls of the Heal Institute are made of sustainable rattan palm.

LANDSCAPING

The building stands on a huge green plateau. On closer inspection, guests discover that the hill is in fact a resplendent garden comprising around 100 species of trees and plants, reflecting the country's diverse natural ecosystem.

Featuring ghaf, sidr, palm and acacia



The façade is lit at night by over 14,000 m of LED lights.

trees, which are well adapted to local environmental conditions, the garden is equipped with a smart, automated irrigation system and supports local bee and bird populations.

With Dubai's summer temperatures hitting close to 50 degrees Celsius, and the average rainfall being 130 mm per year, the smart irrigation system uses a sub-surface mat that delivers water directly to the root system in a targeted, efficient approach. The plateau's steep slopes allow quick water run-off, removing the need for water-intense flood irrigation. Additionally, water collection and recycling systems are used to reduce water wastage by approximately 25 per cent.

Commenting on the project, BAM International's Project manager Seamus O'Sullivan says: 'Delivering the vision of Dubai Future Foundation has been a great achievement by BAM, the 1,200-plus BAM employees on site, construction

partners and sub-contractors. Together we have managed to overcome the numerous challenges; this building has pushed the boundaries of what we now believe is possible. We can be proud that given these difficult circumstances our continuous attention to safety has resulted in a very strong safety performance, with no major accidents.'

The Museum of the Future has Platinum certification from Leadership in Energy and Environmental Design (LEED) – the first museum project in the Middle East to achieve this level of certification.

The low-carbon project features passive solar architecture through its extraordinary façade, as well as low-energy and low-water engineering solutions with integrated renewable capabilities. The building is powered with 4,000 megawatts of solar energy.

According to Buro Happold, the development of a 3D energy model of the building also enabled the interaction of all 12 disciplines in real time.

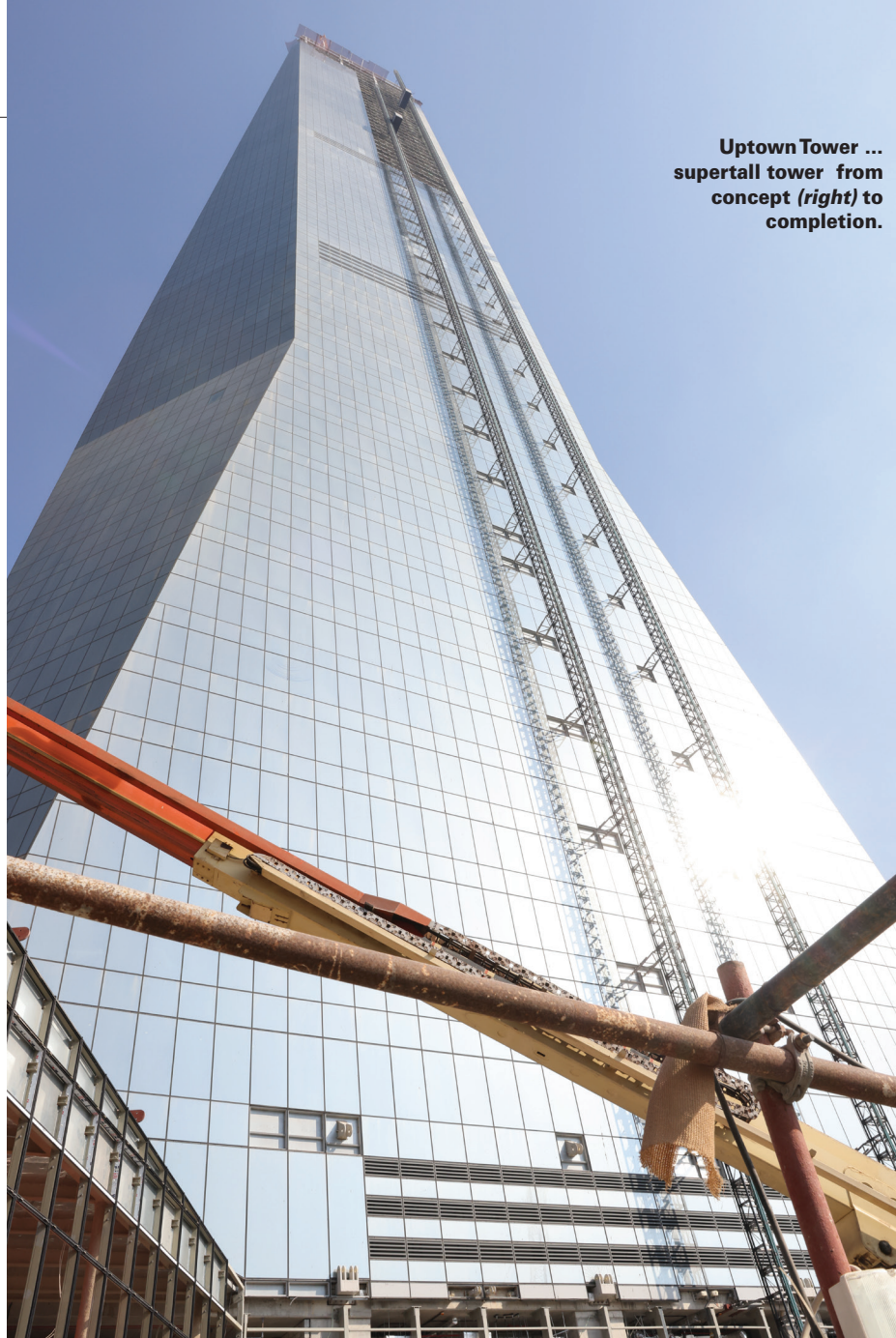
"This ensured sustainability was put at the heart of over 50 design decisions. As a result, we ensured a 45 per cent reduction in water use and total energy savings of 25 per cent, helping the project move towards achieving LEED Platinum status," says a spokesman for Buro Happold.

As you gaze up at the Arabic calligraphy-wrapped façade, one line from HH Sheikh Mohammed's quotes succinctly summarises the mission of the Museum of the Future: "We may not live for hundreds of years, but the products of our creativity can last even longer." ■



"Journey of the Pioneers" stretches over three floors and 3,000 sq m of exhibition space.

Uptown Tower ...
supertall tower from
concept (right) to
completion.



DIAMOND IN THE SKY

Designed by Adrian Smith + Gordon Gill Architecture, Uptown Tower replicates the brilliance of diamonds through its glass façades as a symbol of the commodities sector that DMCC oversees.

FAÇADE work is progressing apace on the striking diamond facet-inspired Uptown Tower at the heart of Uptown Dubai District, which is being developed by Dubai Multi Commodities Centre (DMCC), the Government of Dubai Authority on commodities trade and enterprise, and master developer of Jumeirah Lakes Towers (JLT) in the emirate.

The 340-m Uptown Tower, set in the DMCC free zone, is an integrated mixed-use development that offers world-class amenities, dining options, retail outlets, multi-purpose conference spaces, event facilities, and a broad range of other innovative business and lifestyle offerings, a spokesman of DMCC tells *Gulf Construction's* Bina Goveas.

The first super-tall tower in Uptown

Dubai district, the building will feature premium Grade A offices complemented by the elegant five-star SO/Uptown Dubai Hotel and exquisite branded residences. The office component will be across 22 floors with a highly efficient floor plate ranging from 14,096 sq ft to 22,113 sq ft.

Elaborating on the progress of work on Uptown Tower, he says: "In terms of the overall superstructure, the last concrete pour to level 79 was completed in January 2022, concluding the supply of over 23,000 trucks of concrete to the site.

"The glass façade of the building is now completed to level 75 and a total of 7,800 of the 8,500 façade panels have been installed on the building.

"Mechanical, electrical and plumbing (MEP) works to the 22 office floors are largely completed and are now progressing throughout the hotel and branded residence sections of the building. The energisation of the building and the provision of chilled water to cool the building will also be completed over the coming weeks. Fit-out activities are proceeding at pace to the 188 hotel rooms and the 229 branded residence apartments."

Also, the building will be served by 27 lifts, installation of which is nearing completion, he adds.

The spokesman points out human resources dedicated to the project exceeds

3,000 people over a 24-hour period, which equates to a total of 15-million-man hours worked on the project so far. One of DMCC's highest priorities was ensuring the health and wellbeing of the teams working on Uptown Tower.

"Thanks to our broad range of health, safety and wellbeing initiatives, no loss time due to injury has occurred during the 15-million-man hours worked – which is major achievement on the project," he remarks.

DESIGN

Building on the success and growth of JLT, and with the aim of creating a unique commercial, residential and tourist destination, DMCC partnered with WATG – the world's leading destination creation consultancy – in appointing Adrian Smith + Gordon Gill Architecture (AS+GG), which is well-known for the supertall skyscrapers it has designed, as architect for Uptown Dubai and Uptown Tower.

AS+GG is renowned for designing high-performance, energy-efficient architectural marvels, especially supertall skyscrapers that encompass sustainable development philosophies, the spokesman adds.

"AS+GG has designed Uptown Tower to embody the best of 21st century Dubai and its landmark district Uptown Dubai.

STATISTICS

140,000 cu m
Concrete for substructure and
superstructure, delivered by
23,000 trucks

30,000 tonnes
Steel reinforcement

8,500
Glass panels in façade

30 km
Chilled water pipe

40,000 cu m
Earthworks for foundation

1,000 tonnes
Structural steel for roofs,
canopies and crown

The design of Uptown Tower is inspired by the facets of a diamond, which represents the core role that the commodities sector has played in the development of Dubai. The design reaffirms DMCC's

commitment to establishing Dubai as the global gateway for trade," he states.

The Dubai branch of Belgian infrastructure group Besix is responsible for the detailed engineering and construction of the skyscraper, and works are being carried out under the supervisory management of Turner International Middle East, with WSP and Woods Bagot as structural/technical and architectural consultants, respectively.

WORK ON SCHEDULE

According to the spokesman, the project is planned for completion later this year. Construction activities proceeded in a safe manner during the Covid pandemic, reaching floor cycles of three to four days per floor during the midst of construction, which was also a significant achievement that enabled work to stay on schedule.

The building is supported by more than 280 concrete foundation piles up to 1.5 m in diameter and some reaching depths of over 50 m. The foundation also comprises a 4-m-thick concrete raft, which was constructed with 12,000 cu m of concrete poured by more than 2,000 trucks over a 36-hour period.

The superstructure is a conventionally reinforced concrete structure with an inner core, peripheral concrete columns, and a post-tensioned concrete slab. It was constructed predominantly by using self-climbing formwork systems. The crange, concrete pumps, external safety screens, and the central core wall were all lifted automatically and hydraulically during the construction sequencing. This led to efficiency throughout floor slab sequencing times and removed valuable demand time on the cranes.

"Floor-to-floor cycle times of four days were consistently achieved throughout the higher levels of the structure and the team managed to reduce the floor cycle time to three-day floor cycles on a number of occasions," the official points out.

The façade comprises a unitised curtain-wall system with more than 8,500 panels, all of which have been designed to meet stringent specification requirements in relation to air- and water-tightness, acoustic performance, thermal insulation, light transmittance, and solar heat gain factors.

According to him, a major success in the project delivery process was the installa-



The superstructure is a conventionally reinforced concrete structure with an inner core, peripheral concrete columns, and a post-tensioned concrete slab.



AS+GG has designed Uptown Tower to embody the best of 21st century Dubai and its landmark district, Uptown Dubai. The design of Uptown Tower is inspired by the facets of a diamond, which represents the core role that the commodities sector has played in the development of Dubai

tion of one floor of glass in two days. “To put this into context, a single floor has in excess of 130 panels of glass to be installed and glass installation followed the completion of the structure four floors below the active construction slab,” the spokesman elaborates.

This apart, Uptown Tower is the first supertall building in the world to use robotics for the installation of the lift systems.

“This is something we are incredibly proud of as utilising the latest technology to increase efficiencies is a core philosophy of DMCC,” he stresses.

Technology played a major part in the project delivery: 3D BIM modelling allowed the project team to work collaboratively and efficiently throughout the design process. Booking systems for deliveries and the management of supply chain deliveries were all completed through online applications. A system of monitoring the exact location of the large workforce on the 79-storey building was also rolled out in the form of Wake-cap. In the unlikely



Uptown Tower will feature premium Grade A offices complemented by the elegant five-star SO/Uptown Dubai Hotel and exquisite branded residences.

situation of an emergency, the project team would be able to see exactly where each and every individual worker was located on a floor and deploy rescue teams to that

location if required, he explains.

CHALLENGES

Elaborating on the challenges of the project, the spokesman says: “Building a supertall tower of this height throws up many challenges in terms of ensuring the health and safety of personnel, managing site logistics with over 3,000 people on site, the constant supply of materials, which were sourced both locally and internationally, the schedule management on a day-to-day basis ensuring thousands of construction activities are completed, as well as the challenge of the climate conditions whilst building during the summer months.

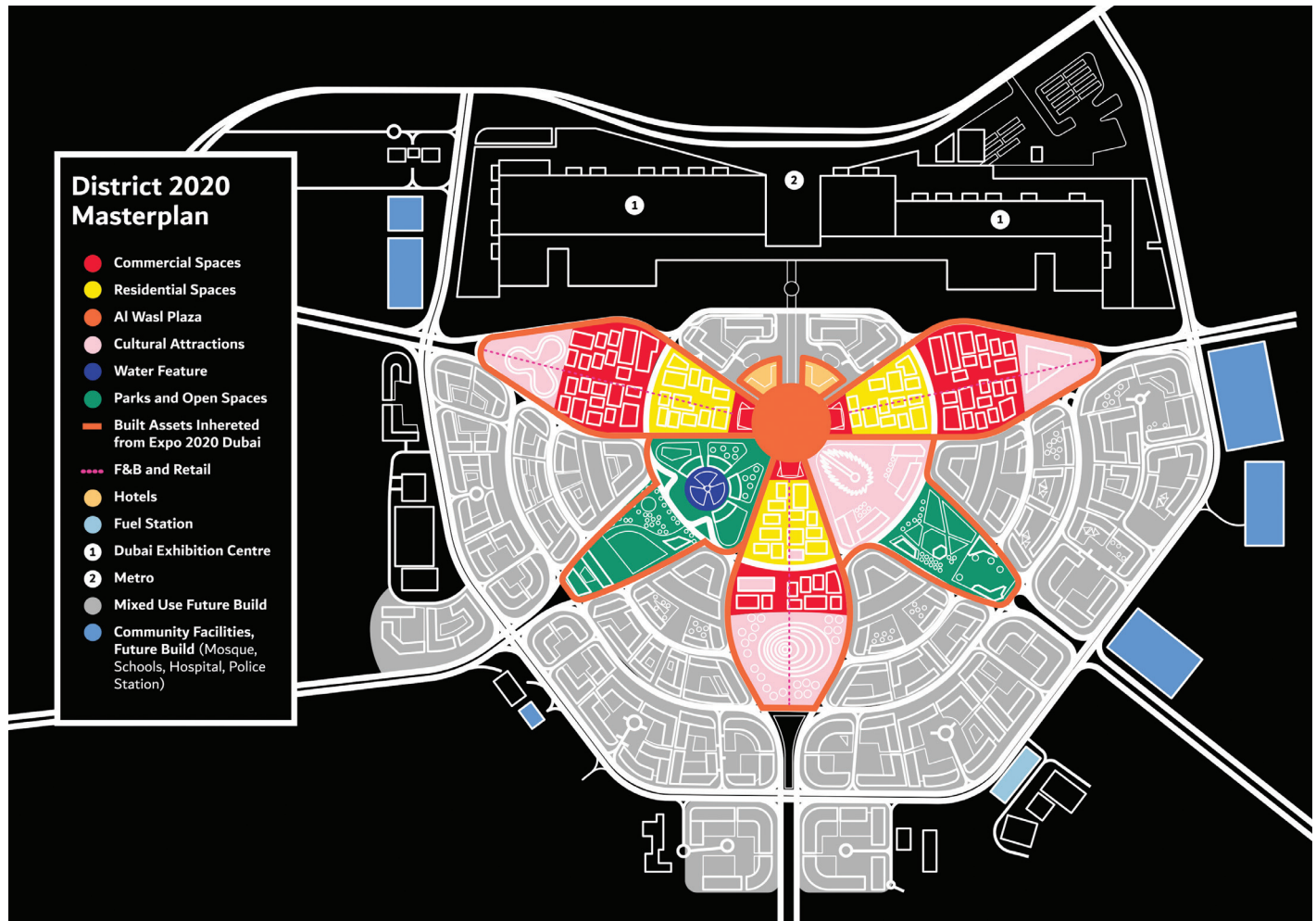
“Despite these challenges, the project team also successfully managed the delivery of Uptown Tower during a pandemic, which in itself shows the team’s initiative to adopt and overcome obstacles and ensure works proceeded without delay. This approach was rewarded when the project received an International Safety Award for the exceptional standard that the teams upheld for the wellbeing of the workforce,” he concludes. ■



MEP works to the 22 office floors are largely completed and are now progressing throughout the hotel and branded residence sections of the building.

HUMAN-CENTRIC FUTURE CITY

Having hosted the largest global gathering since the onset of the pandemic, the Expo 2020 site is now set to be reimaged and repurposed to create a smart and sustainable district which will eventually house a population of 145,000.



District 2020's Masterplan ... shaped to create a vibrant urban environment.

WITH the giant entrance portals just closed on Expo 2020 Dubai – the first event of its kind held in the Middle East, a human-centric future city is now being created on the 4.38-sq-km site to provide everything that people and businesses need to thrive in a sophisticated urban community.

District 2020 is expected to be a global hub for innovation that brings together a diverse community and connects future sectors and technologies to create a more resilient, smarter and sustainable urban environment.

The district has been designed to re-purpose 80 per cent of the Expo's world-class

built assets into an integrated mixed-use community that will continue to attract businesses and people to work, live, visit and enjoy. It will provide a curated innovation-driven business ecosystem that brings together global minds and embraces technology and digital innovation to support industry growth.

The district's masterplan has been shaped to create a vibrant urban environment that encourages connection balanced with community, comfort and convenience, allowing residents, workers and visitors to effortlessly move between home, office, and leisure.

The development is expected to retain

more than 260,000 sq m of gross floor area (GFA) of Leadership in Energy and Environmental Design (LEED) Gold and Platinum structures from Expo 2020 Dubai. These will be transitioned in phases into residential, commercial, and cultural neighbourhoods in District 2020.

The built assets transitioned from Expo 2020 will include the Rove Expo 2020 hotel and iconic cultural attractions.

The district is expected to continue to grow over phases and will have a population of 145,000 at full capacity. Some 108 serviced land plots of residential, hospitality, commercial, and mixed-use assets are earmarked to become available for sale at a

later date. The total GFA planned for build out is 2.6 million sq m.

According to earlier timelines set for the destination, repurposing and transition is pencilled to continue until October, when phased handover to future occupants will begin. This includes more than 115,000 sq m commercial net lettable area (NLA) – high-rise plaza offices and low-rise campus-style offices – built and available to move in from the fourth quarter. More than 800 residential units are expected to be handed over starting from January 2023. A number of food and beverage outlets that have served the Expo 2020 are likely to express interest in operating in the district.

As part of its global entrepreneurship programme Scale2Dubai, District 2020 will welcome a first cohort of 85 start-ups and small businesses before the end of this year, joining the diverse organisations working in the post-Expo 2020 Dubai community. Anchor tenants DP World, Siemens, Siemens Energy and Terminus Technologies will also play a key role in developing tech-driven solutions as global industry leaders.



District 2020 ... the total GFA planned for build out is 2.6 million sq m.

INFRASTRUCTURE

District 2020 has a dedicated Dubai Metro stop, Route 2020, which operates on the Red Line, with future plans will extend it to be just one stop from Al Maktoum International Airport. The district is directly accessible through three major arterial roads with flyovers built to Expo 2020 Dubai. A dedicated autonomous vehicle public transit route will link all major landmarks and hubs of the project,

by way of a 4-km loop. Residential neighbourhoods will be connected by pedestrian walkways.

Three 132 kV substations will service District 2020, and solar panels are integrated across the site.

Other plans tabled earlier for the district, include a second hotel and the next phase of the conference centre, with the 45,000-sq-m first phase having been built to host global events during Expo 2020. ■



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World's tallest hotel crosses halfway mark

CONSTRUCTION of what is expected to be the world's tallest hotel tower has crossed the halfway mark, with work on the megastructure now well past its 52nd level, according to its developer The First Group.

The 356-m glass-clad Ciel tower located in Dubai Marina, is well on track to meet its scheduled completion date in the fourth quarter of 2023, with the grand opening slated for the first half of 2024, says the property developer, which is pressing ahead with its largest and most ambitious project to date.

Designed by award-winning London-based architect Norr, the latest landmark addition to the Marina district's world-famous skyline features a striking design, contemporary interiors and a remarkable glass observation deck, which will offer 360-degree vistas across Dubai Marina, the Palm Jumeirah and the Arabian Gulf.

When complete, the 82-floor Ciel will house more than 1,000 guestrooms and suites, as well as premium guest amenities and facilities, such as the Ciel Observatory & Lounge on the 81st floor and a signature rooftop Sky Terrace featuring an infinity pool and bar affording panoramic views of Dubai's world-famous skyline.

Despite the broader challenges presented by Covid-19 to the construction sector over the past two years, work on Ciel has continued throughout the pandemic, according to The First Group.

The skyscraper, being built by The First Group's chief development partner, China Railway Construction Corporation (CRCC), reached its first milestone in August 2020 when 12,000 cu m of concrete was poured for its foundation. In January this year, the project reached its halfway mark with the completion of its 52nd storey.

"Ciel will set a new benchmark for innovative design in super-tall buildings, not just in Dubai, but globally," says Danny Lubert, the Co-Founder of The First Group. "Standout design features include a 300-m-tall atrium with vertically stacked landscaped and naturally ventilated terraces



es spanning the building's 82 floors, which will provide occupants with shared communal and interactive space."

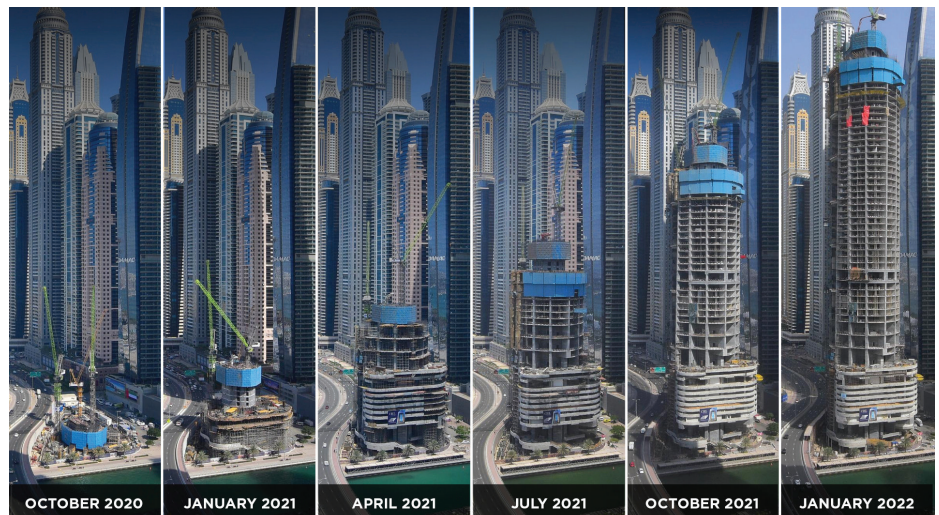
Ciel's interior design is inspired by the concept of Wabi-Sabi, a Japanese tradition with a key focus on understated elegance and rustic, warm aesthetics. Befitting its iconic status, Ciel will feature an impressive range of specialty food and beverage (F&B) outlets, including a soon-to-be-announced signature restaurant, a Sunset Lounge on the 74th floor and Horizon Bar on the 76th floor. A luxury spa and

health club will be located on the building's 61st floor.

Rob Burns, CEO of The First Group, says: "As an organisation, we are extremely proud to witness our vision for Ciel being brought to life in the heart of the world famous Dubai Marina in a truly idyllic location that will feature stunning views of the Arabian Gulf and Dubai skyline."

"Ciel is a landmark development for Dubai that will not only enhance its status as one of the world's great tourism and business travel destinations, but will set a new benchmark for upscale accommodation in what is recognised as one of the most dynamic and competitive hotel markets on the planet."

Ciel has already earned a number of prestigious industry accolades including the 2019 International Property Awards (IPAs) for Best International Hotel Architecture, Best Hotel Architecture Arabia and Best High-rise Architecture Arabia. It has also received the top prize in four major categories at the 2019-20 Dubai, Africa & Arabia Property Awards: Hotel Architecture; New Hotel Construction and Design; Commercial High-rise Development; and High-rise Architecture. Ciel is the flagship development of The First Group's portfolio of hotels in prime locations across Dubai, which also includes award-winning Wyndham Dubai Marina, Millennium Place Marina, TRYP by Wyndham Dubai and The First Collection JVC. ■



Ciel tower ... progress of work on site since October 2020.

ESAG's BMD eyes Saudi market

UAE-BASED Easa Saleh Al Gurg Building Materials Division (BMD) says it is poised to take its unique offering of choice international brands in sanitary ware, infrastructure and building materials to customers beyond its home market with its sights now set firmly on Saudi Arabia.

This move is being made in the wake of the company's encouraging performance this year despite the challenges posed by the pandemic over the past two years, Rafat Al Fahoum, Chief Executive Officer, ESAG Building Materials Division, tells *Gulf Construction*.

BMD is part of the multifaceted conglomerate Easa Saleh Al Gurg Group (ESAG), with a varied portfolio of over 300 international brands and proven competencies in the building and construction, retail, industrial and real estate sectors besides its numerous joint ventures.

The dedicated division for building materials was set up in November 1974 and has established itself as a leading address for building materials, enfolded Mac Al

Gurg and Al Semsam and their six different divisions.

"Mac Al Gurg and Al Semsam are already in Oman and our big move for this year will be to Saudi Arabia, where we will commence operations shortly," Al Fahoum reveals.

Al Fahoum says BMD also has plans to expand into the other GCC countries, while boosting both its building materials and sanitary ware portfolios as well as setting up a new showroom in the UAE.

"Mac Al Gurg and Al Semsam are expanding their product ranges, focusing more on their current portfolio and bringing in new sanitary ware products, thus offering the most reliable and quality brands under one roof and further enhancing the reputation of the division," he elaborates.

Mac Al Gurg has some niche brands in its portfolio include Niagara Conservation Corporation from the US which offers water conservation solutions, faucets, accessories and toilet fittings, ranging from entry level to high-end lines; Armitage Shanks from the UK, which specialises in sanitary



Al Fahoum ... gearing for growth.

ware for schools, laboratories, hospitals and villas; Tristone acrylic solid surfaces from the UK; Delta faucets from the US; Brizo high-end faucets from the US; as well as many other exclusive brands such as Purus and Sanco.

Niagara Conservation Corporation was the latest addition to the portfolio of Mac Al Gurg's sanitary ware division while OK Foundries of Lebanon was added to the company's Infrastructure portfolio recently.

Commenting on the company's perfor-



BMD's office in Dubai.

Niagara points way to water conservation

NIAGARA Conservation Corporation is set to become a market leader in water conservation, thanks to its patented Stealth technology, which reduces up to 77 per cent of the water utilised during flushing, according to Rafat Al Fahoum, Chief Executive Officer of Dubai-based ESAG Building Materials Division (BMD).

Mac Al Gurg, which is part of BMD, is the sole agent of Niagara Conservation Corporation products in the Middle East and Africa region.

“Niagara offers total solutions, which makes it unique and a pioneer in its area of specialisation,” Al Fahoum adds.

Niagara, based in the US, is backed by more than 50 years of experience in innovating and developing bathroom and kitchen faucets and bathroom fittings and accessories.

Elaborating on Niagara's faucets production technology, he says the company selects and tests all raw materi-



Niagara faucets ... robust.

als as well as parts to ensure the finished products live up to the reputation of the Niagara brand that guarantees quality.

For instance, only those cartridges procured from reputed brands and tested by Niagara are used in the mixers of its faucets, which are fitted with high-end, high-pressure-tested connecting hoses to ensure long term and safe use of

these important components.

Al Fahoum says Niagara uses state-of-the-art machines during the production stages. Its foundry is equipped with advanced casting machines that produce high-quality faucets while reducing waste to a minimum (virtually zero) and protecting the environment.

In the CNC and polishing stage, the faucets undergo



Niagara toilets offer significant water savings, thanks to Stealth technology.

grinding, peeling, polishing and brightening using automatic machines to ensure top quality finishes, before chrome plating utilising advanced technology so that the sheen of the products lasts for ages.

At the assembling station, only those products that pass computerised testing will carry the Niagara trademark, he adds. ■

mance, he says: “The past two years have been very challenging for the industry due to the pandemic. Many projects were on hold and many of our competitors tried to liquidate their stock at low prices, which created a disruption in the market. However, we have had a very strong start to 2022 and are 47 per cent up in topline growth.”

Al Fahoum attributes the success of ESAG Building Materials Division to the fact that it has built on the heritage of the Easa Saleh Al Gurg Group's name and its portfolio of brands – which together with the company's market expansion plans will ensure further growth.

ESAG Building Materials Division provides a two-pronged service approach to



Mac Al Gurg and Al Semsam are already in Oman and our big move for this year will be to Saudi Arabia, where we will commence operations shortly

the market – either supply only or supply-and-apply, working alongside consultants,

contractors and clients in both projects as well as the retail and distribution channels to achieve the best results for end-users, he says.

Al Fahoum is upbeat about the ample business opportunities that Dubai and the UAE offer for growth, which he says has enabled BMD to recover quickly from the impact of the Covid-19 crisis, as reflected in the company's results in the first quarter of 2022.

The company has supplied to numerous projects in the region, the major recent ones include the Creek Edge by Emaar, Expo 2020, Sheikh Zayed Housing Project and Hatta Hospital expansion, all in the UAE; and Mall of Oman by Majid Al Futtaim in the Sultanate of Oman. ■