Buildings

DUBAI UPTOWN TOWER, CONSTRUCTED 4.0

IT WILL BE THE FIRST SUPER TALL TOWER IN THE DISTRICT AND BESIX-SIX CONSTRUCT ARE RESPONSIBLE FOR ITS CONSTRUCTION, WITH A DESIGN & BUILD RESPONSIBILITY ON THE STRUCTURE & FAÇADE. UPTOWN TOWER IS A 78-STOREY EYE CATCHER FOR DUBAI MULTI COMMODITIES CENTER (DMCC) THAT WILL BE A LEED GOLD CERTIFIED BUILDING, AND HOME TO A STATE-OF-THE-ART DMCC BUSINESS HUB. CONSTRUCTION BEGAN IN 2019 AND WILL BE COMPLETED IN 2022. FROM THE OUTSET OF THE WORKS, THE PROJECT TEAMS INTEGRATED STATE-OF-THE-ART DIGITAL SOLUTIONS INTO THEIR WORKING METHODS, USING NEW TECHNOLOGIES AND EVEN ROBOTICS.

Project details

DUBAI UPTOWN TOWER

Location
Dubai, United Arab Emirates

Client
Dubai Multi Commodities Center (DMCC)

Contract type
Design & Build

Construction Period
2019-2022

Architect
Adrian Smith + Gordon Gill Architecture

DUBAI UPTOWN TOWER, DUBAI, UAE

340 m
HIGH

22,009
PROGRAM ACTIVITIES

3,607
PEAK MANPOWER

IMPRESSIVE FIGURES

Designed by Adrian Smith + Gordon Gill Architecture, Uptown Tower at DMCC's Uptown Dubai District will stand at 340 m and feature 188 luxury hotel rooms and suites, exclusive restaurants, health spas, extensive conference facilities, Grade A offices with large efficient floor plates, and 229 uniquely designed branded residences. The development is designed to replicate the brilliance of diamonds through its faceted glass façade to illuminate the interior spaces with natural light while filtering out harsh glare. It will offer a breath-taking view of Dubai's waterfront and iconic skyline.

The super tall tower boasts some impressive figures. From 27,000 tonnes of rebar to 110,000 cubic metres of concrete. The façade will contain a total of 8,572 panels and the entire project will have required 18,938 shop drawings. At its peak, about 3,600 people will work on its construction to deliver the project in less than 38 months.

EXTREME PLANNING

The design and construction of the structure and façade is carried out by BESIX-Six Construct. BESIX's in-house design office and the extensive experience of its operations teams in the field of skyscrapers are true differentiating success factors. "The latter definitely helped us to manage Covid-19 on site," says Luis Miguel Monteiro, Project Director at Six Construct. "As for every high-rise project, selecting the right methods is key. This has more than ever been the case this past year of construction. To guarantee our productivity on site, we resorted to an extreme planning. It enabled us to keep on track, especially in areas where we cannot move people around as much as we used to, such as for the structure and façade works," Monteiro explains.

INTEGRATING ALL THESE TECHNOLOGIES, WOULD NOT HAVE BEEN POSSIBLE IF IT WEREN'T FOR OUR STRONG AND VERY DEDICATED TEAM.

LUIS MIGUEL MONTEIRO, PROJECT DIRECTOR AT SIX CONSTRUCT

CONSTRUCTION 4.0

The extreme planning adopted by the project team is also supported by several innovative technologies BESIX has implemented in its working methods to digitalise the construction site. Developed by start-up partners from around the world, these tools do not only contribute to ensuring site efficiency, but they are also indispensable in safeguarding safety on site. They enable superior site control and the ability to assess the construction progress in real-time – both in planning and in execution.

One of which is a solution based on geolocation developed by WakeCap, whose primary objective is to improve the human organisation of the construction site. As Monteiro illustrates: "On a site like Uptown Tower, we accommodate hundreds and sometimes thousands of workers at the same time. Having the capacity to monitor the geolocation of each provides us with valuable information in terms of improving both workers' health & safety, and efficiency in the workplace."

Another cutting-edge technology used on site is Schindler's Robotic Installation System for Elevators (Schindler R.I.S.E). The autonomous and self-climbing robot is used to install the elevator shaft of Uptown Tower, a world's first for a supertall tower to adopt robotics for this purpose.

Other solutions involve digital platforms with technologies focusing on supply chain efficiency (ProperGate), real-time monitoring of work progress (Sablono) and introducing renewable energy into the power generation mix on site (Enerwhere). The latter even resulted in the world's largest solar plant on a construction site. The 540 KWp solar system at the project's site has enabled Six Construct to reduce its carbon footprint and operation costs.

As in other industries, the success of all these technologies strongly depends on the teams implementing them. "Integrating all these technologies, would not have been possible if it weren't for our strong and very dedicated team. They've proven to be very multidisciplinary, innovative and tremendous in pushing these tools in the production process," Monteiro says.