

WORKING IN TIGHT SPACES

Big Project ME tours the under-construction Juma Al Majid Tower. Gavin Davids reports on the work that Ali and Sons Contracting and Doka are doing on this addition to Sheikh Zayed Road's skyline

The buildings that line Dubai's Sheikh Zayed Road are amongst the best-known in the world, with several marketing and tourism campaigns focusing on the towering skyline that dominates the city. The development of the area around the highway linking Abu Dhabi and Dubai has turned a barren stretch of desert sands into some of the most coveted real estate in the region.

With the likes of the Dubai World Trade Centre, the Burj Khalifa, Business Bay and Dubai International Financial Centre all rubbing shoulders with each other, it comes as no surprise that this is real estate in demand. However, this also means construction here is often a highly complicated and considered process.

That is precisely the challenge facing Munzer Hayri, project manager at Ali and Sons Contracting, the contractor building the Juma Al Majid Tower on Sheikh Zayed Road. Situated near Business Bay, the project is a \$31.87 million residential tower with 47 floors, along with a seven-storey (plus three basement levels) parking lot that will also house the tower's swimming pool and recreation facilities.

One of the biggest challenges facing Hayri and his team is working in a busy area with a limited amount of space. There is another construction site on one side and the Dubai

Metro on the other, so establishing a wide perimeter around the project was not an option.

Outside of the standard assessments and procedures, some of the earlier challenges faced were in relation to the project's site," Hayri tells **Big Project ME** during an interview at his site offices. "[Given that the site is] located only a short distance from Dubai's Metro line, we had to ensure that all relevant NOCs were stamped and acknowledged by the RTA. This was essential before the piling could commence. In line with the strict standards issued by the RTA, no construction can take place within a distance of 30 metres from the Metro lines or stations themselves."

Expanding on the space challenge facing the project team, Hayri points out that the site area is so tight, his team had to rent the land for their site offices from the Dubai Municipality. They also had to rent a smaller patch of land to house their stores for the project.

"Another one of the earlier challenges to overcome was also in relation to our location. As an area which is under development, construction in the downtown area often means working on a small footprint, in our case meaning we had to rent a small area on an adjacent plot from the Dubai Municipality to accommodate our site offices and storage facilities," he explains.

PROJECT	Juma Al Majid Tower and Carpark Building
DEVELOPER	Juma Al Majid Group
PROJECT AREA	52,000sqm (for tower)
BUILDING HEIGHT	210m
BUILDING TYPE	Mixed-use building (residential and commercial)







"In total, the two structures are 52,000 and 17,000 square metres respectively, meaning we've had to plan our logistical operations very carefully when it comes to moving equipment, workers and materials to and from the site."

The site consists of two plots, with the tower covering an area of 1,200sqm on the first, adjacent to Sheikh Zayed Road and the Metro. The parking lot will have a total area of 1,000sqm.

"It is a residential project. Each floor will have four flats, except for the ground floor, which is going to be a showroom. It's going to be 47 regular floors, and we'll have a mechanical floor on the 24th level," Hayri outlines.

"The support building at the back will be the parking – there will be three basement levels and seven floors. The roof will house the facilities for the building – the swimming pool and the other recreation facilities. The building itself

will have just the one basement, which is going to be for the electrical substation," he adds.

Although construction on the project started in late 2012, the project is still only 23% completed. Hayri is quick to explain that shortly after Ali and Sons Contracting was awarded the nomination, major design changes had an impact on the construction start date and caused the delay.

"We are supposed to be [further along]. We were supposed to be at 40% or 45%. But after the nomination, within two months, I could say that 40% of the design was changed by the client [Juma Al Majid Group]. There was a change in management, and the new manager wanted this building to have a similar look to the buildings around the Burj Khalifa.

"The second change was that they had the substation in the ground floor and there was

no basement in the tower. It was a waste of a nice area on Sheikh Zayed Road. So that was another change, to create a basement for the tower and to have the substation in there, and then to have the ground floor as retail. Plus we had the swimming pool in the tower itself. They changed that to have it in the car park."

With construction having reached the 17th floor of the tower and work on the basement and raft complete, Hayri insists that work is back on track and on schedule to be completed by September 2016.

As speed is of the essence, the Ali and Sons team have been keen to incorporate time-saving measures on the project. Among the best time-saving devices are the Doka formwork systems that allow the team to aim to achieve cycle times of six days, faster than the contractor's anticipated seven days.

“I can only speak in general terms; however there have been clear advantages to using the systems we agreed upon in terms of supporting the speed of construction, mostly through approaching the project with a crane-independent solution in mind,” he points out.

Providing over ten different systems for this project alone, Austrian formwork specialist Doka was selected by Ali & Sons in order to provide a fully crane-independent formwork solution.

Where previously concrete placing booms (CPB) were located on the slab itself, Doka’s SKE100 Plus allows the CPB to be self-climbing, helping to maintain the pace of completing core walls in five-day cycles and the shear walls and columns in four.

Other systems that have been used to maintain the pace of construction include Dokadek 30, which once integrated with the Table Lifting System (TLS) can move up to 40

panels (or 120 square metres of formwork), or two tonnes of materials in one go.

“The simple flat slab was very ideal for Dokadek slab formwork. With the use of two full sets with drop heads, forming one level can be done in one day,” the company explains in a statement.

As part of the process, the project team has dedicated more than 90 workers to the formwork alone, Hayri says. “We have 75 for the shifting and fixing of the platforms, and we have 18 for the jacking. This will be standard as we go on, it will stay the same.

“Doka have provided both an instructor and dedicated project coordinator, enabling our teams to familiarise themselves with the systems being used. Most importantly, the aforementioned cycle times can be maintained thanks to the ongoing support and training provided,” the company adds.

For the entire project, the project manager says

that 400-450 workers, including subcontractors, are currently on-site. However, when the construction programme hits its peak in the next three or four months, that figure is expected to reach 1,000.

“Currently we are working six days a week, with the night shifts being scaled back to approximately 30% of the full operational capacity. As we get closer to the most labour-intensive part of the construction in a few months, the night shift will be equal to the day,” the project manager says.

To ensure that this happens, the contractor had to secure all the permits to do the job properly, including night permits, noise permits and all the myriad permits required by law.

“We are adhering to all permits, including those related to noise, working at night and so on. While a challenge, we are lucky that we’re not too close to any occupied residential buildings. Behind us is another construction site that has

“THE METRO SIDE IS A CHALLENGE. FOR EVERYTHING, FOR EVERY STEP, YOU HAVE TO TAKE A NO OBJECTION CERTIFICATE [NOC] FROM THE RTA. AND THEN YOU HAVE TO HAVE FULL PROTECTION AND TAKE FULL PRECAUTIONS DUE TO THE ELEVATION OF THE METRO”



BACK ON TRACK
Despite several delays due to changes in the design, work on the project is back on track and will be completed by September 2016.

DOKA SYSTEMS USED ON-SITE

- Large-area formwork Top50
- CBI 50F
- Automatic climbing formwork SKE50 Plus (Corewall Formwork)
- Automatic climbing formwork SKE100 (Shearwall Formwork)
- SKE50 (Shearwall Formwork)
- Protection Screen X-climb 60
- Dokaflex 1-2-4
- Panel floor formwork Dokadek 30
- Load-bearing Staxo 40
- Load-bearing tower Staxo 100
- Doka Table Lifting System (TLS)

SUB-CONTRACTORS

- Piling and Shoring: Bauer (nominated by Ali & Sons)
- MEP: Al Arabia
- Elevators: Al Arabia Sigma
- Formwork: Doka

MACHINERY ON-SITE

- 2 x hoists
- 2 x Bobcats
- Telehandler
- Forklifts
- 2 x dumpers
- 2 x front loaders



ALL HANDS ON DECK
The number of workers on-site is expected to reach 1,000 once peak construction is hit.

just been completed, and on the other side the cooling district area,” explains Hayri.

This will come in handy during the coming summer months, when the mid-day work restrictions kick in, as well as during the Ramadan month, which is expected to be June this year.

“When considering the change in labour hours during both the summer and Ramadan, we follow the same rules as every other company from our industry. Six hours during the day, and then we have the night shift. Working hours from 15th June to 15th September will be from 6:00 until 12:00, with the night shift commencing after Iftar, most likely at around 22:00.”

Another aspect that Munzer Hayri will be paying close attention to is worker safety at heights. He explains that the project team follows the system of method statements, which means that for any activity, method statements will be submitted and risk assessments will be conducted.

“As a tall standing structure, we take the necessary precautions to ensure all our staff are both fully equipped and trained, in line with the system of method statements. For any activity, there will be method statements submitted, and for any activity you will have a risk assessment conducted.

“After the induction process is completed, ongoing training and checks are completed throughout the construction process. We also have specially designed safety harnesses for working at height. In the event that we encounter any incidents or problems, including near misses, we conduct extra education at the earliest opportunity,” he asserts

Doka’s hardware has also been integrated to support the HSE aspect of the project. Using its Protection Screen X-Climb 60, this hydraulic system offers a fully enclosed and safe working environment for labourers over two working slabs and one re-propping slab, while providing protection to the Metro.

In light of recent events, one area under close scrutiny is the quality of building materials in terms of fire and life safety. Having seen the Torch Tower go up in flames, Hayri is adamant that his building will not suffer the same fate.

“We have all the safety requirements as per Dubai Municipality and per our system. All of it is complied with and under control. All the people who need third-party certification, they are getting that and before it’s expired, the renewal is done. Plus, we’re giving third-party certification for Metro-related work – the tower crane operators, the diggers – for this they have additional training for working alongside the Metro,” he concludes. ■



“IF THERE ARE ANY INCIDENTS OR PROBLEMS WITH ANY OF THE ACTIVITIES – EVEN IF IT’S A NEAR MISS – THEN WE’LL DO AN EXTRA TOOL-BOX EDUCATION AND CONDUCT MEETINGS ON SITE SAFETY”