

Centre of the action

Ben Roberts , September 18th, 2010

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It has been a year of significant progress for the UAE capital.

Large-scale plans by master developer Tourism Development and Investment Company and the state-backed Urban Planning Council in particular showed Abu Dhabi's ambition across sectors and terrains.

Throughout the steady stream of news, and as the emirate's 2030 Economic Plan unfolds, the emphasis has been on a steady, gradual progress.

Nobody seems to have told Group 3 Engineers Contractors of this methodical pace. The company is main contractor on the construction of the AED700 million twin SinoGulf investment towers in the upcoming Capital Centre in the heart of the city.

For what is likely to be a new standard in business dynamism in the upcoming district, the company looks to be setting similar standards for its vigour in getting a building to touch the sky in double-quick time.

In February, the Abu Dhabi National Exhibition Centre – the emirate's landmark business venue next to the Capital Centre – announced that the SinoGulf towers were progressing at a rate of one floor every 11 days.

By mid-summer – as Mohammed Hussein Al-Ali, construction manager, outlines in the site office at the end of July – that number had reduced even further: today, the company is delivering one floor every week.

"The project is on schedule and we've managed to reduce the rate down to seven days," he says.

"Obviously there was a slight slowing of production during Ramadan, and we have the three-hour break in the middle of the day, but on the structural side, we'll be looking to have it finished by November."

The SinoGulf towers will be one of the most eye-catching of the eventual structures in a Capital Centre that will house 23 towers and seven hotels as well as a 20,000m² Marina Zone. Designed by Woods Bagot, the towers are designed to represent the abstraction of dune sand lines.

The Centre will sit beside Abu Dhabi's ADNEC building. The SinoGulf towers is just one of two plots snapped up by SinoGulf Investments, the client, in October 2007.

The 25 levels of commercial space and 20 levels of residential space comprising the overall structure are an example of the mixed- use buildings that will fill much of the Capital Centre.

It is situated on the corner of Al Karama Street, providing a short distance for machinery and materials to arrive on the site off the main road, though leaving only a small margin between street, advertising hoarding and plot.

Makram Takeddine, senior projects manager, says the need to be nimble in the smaller surrounding area has not resulted in any hindrance in construction.

"We are about 15-20 metres away from the roads with our tower crane about four metres away from the building." Closer still to the site offices, running adjacent to the road, is the car park and podium.

"The car park starts on the ground floor and is five metres high," he says, "then there are two podium levels on top of that: one around 3.3 metres and one 3.2 metres – making a structure around 12 metres."

The tower crane is a vital but unwieldy device as the floors stack up. Takeddine explains that the crane is attached to the main structure, but must be reattached every four or five floors and resupported by pipes from the ground so it remains rigid.

This process can take a day or so each time, meaning that the company's hasty momentum is unavoidably interrupted and it takes maximum effort to retain the floor-a-week speed.



But the site is working 21.5 hours a day – minus the two-and-a-half hours hiatus as per summer rules in the UAE – and the fluidity of the cranes and the men milling about on the ground with steel and pipes gives the impression of a well-oiled building machine.

The ground level area is full of piles of steel and other materials. Clamped to the side of the tower is the iron and steel lift, which has a fan inside to give partial reprieve from the heat.

The lift was constructed and provided by Kone. As it rises steadily men can be noted cleaning the facades on the side of the building.

Onto the tenth floor all depart the lift and the open floor space is being tidied, removing the concrete and scrap metal, and the electromechanical work is being installed. On the way to the top floor, up a flight of stairs, Al Ali points to the detailed pictures that outline safety procedures, in different languages.

On the roof – level 11 at time of writing – there is a transparent demonstration of the method used to get the building up into the air. The company uses two products from formwork specialists Doka, with which it has had a long-term relationship.

The tableform essentially creates a platform for each slab of floor to be supported while the columns that will eventually hold the slab are being built and the concrete is poured and sets.

Obaida El Rayes, area sales and branch manager for Doka Abu Dhabi, explains that tableform allows the contractor to keep three floors in mind at the simultaneously.

“A slab is laid on top of the table platform, and while you are waiting for the columns to set you can put the second table on the next floor up. Then, when the first floor is finished, you can slide out the table from the first floor and put it onto the third floor.”

On what is currently the roof of the building, around 100 workers are receiving bundles of steel rebar from a crane and constructing both the steel net structure used for the slabs of the floors and the square vertical sections that will for the skeleton of each column.

At the centre of the floor, running like a spine throughout the structure, is the core wall. The contractor builds the core wall at a height in advance of the placing and setting of the slabs, Al-Ali explains. For this, it uses Doka’s climbing formwork.

Building the core wall in advance needs clearance from the consultant, says El Rayes, and its execution takes some forethought. “Building the wall ahead of the slabs helps to get ahead for the crew,” he says.

“You need to plan ahead for the connection with the rebar as you are using an anchoring system and the connection with the slab and core wall.”

The time-saving secret to the climbing formwork lies in the fact that more work can be achieved up on the top of the building, with less need to return to ground level.

“With the crane climbing assembly, the formwork is attached to the climbing units,” he explains.

“When you cast the wall you can retract the formwork, clean the plywood and shift it up – you do not need to return to the ground at any stage. Normally you can return to the ground but here the space [on the ground] was not very big.”

This technique also ensures 100% verticality for the wall within a few millimetres, adds El Rayes.

“In any tower there are two parts: the typical floors and the untypical floors. In the basement and ground floor you will have walls of different thickness to the rest of the buildings, different columns and different items such as water parts. After that stage there will be the typical floors where the columns change and the materials will be the same.”

It is just one of four projects in which Doka is working closely with contractors in the area – the others include the Rotana hotel in the Capital Center, with Group 3 Engineers Contractors, a tower with UNIC, and a project with Man Enterprise. Its main projects in the emirate are on Al Reem island.

In August, subcontractors began installing the underground pipes for electricity and water of the building. Takieddine says this has been in line with schedule and has not hampered the construction workers.

This is better situation than at the site of the Rotana hotel nearby, CW learns separately, whereby the decision from ADNEC to implement the equivalent utilities came late into the construction schedule, meaning the hotel will be finished before it has access to power and water.

The main men at Group 3 Engineers Contractors are clearly pleased with progress. At the beginning of September, Takieddine says the company has maintained the pace even as temperatures soared.

"We're about 70% there now and are now up to the 20th floor," he says. Neat as ever, the project is on track to be completed within an even two years.

Project in focus

Project: SinoGulf Tower @ Capital Centre

Client: SinoGulf

Consultant: Connel Wagner

Project manager/management contractor: Blair Anderson

Main contractor: Group 3 Engineers Contractors L.L.C.

Sub contractors: Kone (passenger lifts)

Architect: Woods Bagot

Mechanical, electrical, plumbing work contractor: Thermo

Constructions start date: Middle of 2009

Contract period: 2 years

Completion date: Middle of 2011