

Site visit: Trust Tower, Abu Dhabi

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On track for a 2012 completion, the Trust Tower in the Central Market is one of the largest office towers in Abu Dhabi, with a third more space than the landmark Aldar headquarters.

The Trust Tower, with its angular shape, has been dubbed one of the tallest office towers in Abu Dhabi. In an effort to make the area the business hub of the capital, it sets a new benchmark in terms of office-building design. Floor-to-ceiling windows and oval-shaped spaces give the building an airy feel.

This high-rise tower has been designed by Foster + Partner's UK-based architect Lord Norman Foster specifically with sustainability in mind. It is part of three planned towers featuring smooth reflective façades intended to require little maintenance despite the dusty climate.

While the towers are grouped together, they have different appearances and sizes according to their respective functions, whether office, residential or hotel.

The development was designed with layers of internal shading on the towers to minimise glare and utilise the abundant solar energy. The roofs of the lower buildings will have terraced gardens. The three towers will have public access routes between them, which can be covered by mobile roofs during peak summer temperatures.

Trust Tower also boasts the latest in building technology, including an 'intelligent' façade that controls light levels into the building for cooling purposes. Three double-deck lifts provide high-speed access occupants to all levels of the building. There is also flexibility in the ceiling height, adding to the design flexibility so tenants have the freedom to customise their office space.

The building offers 59 levels and 72,000m² of office space. "The Trust Tower has been designed with efficiency and flexibility in mind to meet the needs of today's enterprise," says Rami Nasser, director of sales and commercial leasing at al Aldar.

"Occupants of the office spaces will be able to start their fit-out on a phased basis from November, before the official opening of the building in mid-2012," says Claire Hughes Munro, Aldar's senior manager of commercial leasing.

ACC is the main contractor of the project, which is set for construction completion in the second quarter of 2012.

"Construction is proceeding. The Trust Tower will be completed in Q2 2012 and the Emporium shopping mall in Q3 2012. The residential component, comprising 474 premium residential units, will be completed later that year," adds Nasser. "The entire project will be finished by 2014, including the four-star Marriot Courtyard Hotel and the five-star Marriot Renaissance hotel."

Imad Bordkani, ACC's project manager at the Trust Tower, elaborates on the timeframe: "Originally the time-frame was 39 months, from 15 October 2007 to 31 January 2011; now the timeframe has been revised to 54 months, from the same initial commencement date.

Construction completion is anticipated by the end of May 2012. The project is currently 5% behind schedule." However, Bordkani points out that this is a fractional lag that is unlikely to impact on the final completion date.

The high-profile Trust Tower has not been without its challenges, says Bordkani. "The upper superstructure of the building and its ring beam posed a challenge."

The curvilinear shape also posed a particular challenge for the building maintenance unit (BMU). "The purpose of the custom-made BMU is to access and clean the curtain-wall façade and sloped glazed roof, replace damaged curtain-wall panels and access and maintain façade lightings.

"However, the curvilinear-shaped façade profile with a 50° sloped roof resulted in an extremely complex BMU design, as the machine has to negotiate and traverse the steep incline through a rack-and-pinion system on a tight, curved twin-track system fixed along the outer periphery of the building profile, reaching up to 278m height to the top of the building," explains Bordkani.

In addition to cleaning the façade, the BMU has been designed to handle and replace 800kg of the damaged façade glass panel from outside the building. This resulted in a particularly complex BMU machine, with a 13.5t total weight, inducing tremendous load and uplift reactions to the specially-designed ring beam during operational positions.

The BMU was also challenging in terms of the twin tracking system deployed. The entire track system comprises 102 individual segments to form a complex curved twin track system, measuring 1.7m to 2m in length, with all the individual segments having had to be assembled individually on-site.

Due to the traverse principle of rack-and-pinion system, the tracks are fabricated and installed to a 1mm tolerance.

In order to maintain the aesthetic aspect of the sloped glazed roof, the BMU has to be accommodated within the building structure at level F54, where it is transferred from the track system to the garage through a complex shunt-car system, by means of a 10t glass sliding door.

"To achieve this safely means that safety sequences have had to be integrated into the operation of the BMU machine and the operation of the glass garage sliding door," says Bordkani.

Commenting on the construction methodology adopted on the project, Bordkani says: "Typical floor slabs commenced when we reached Level 5. We averaged four days a slab, a rate that we achieved when we reached from Level 8 on upwards." Table-form formwork was used for the slabs and jump-form formwork for the core walls. A total of 83,824m³ of concrete was used on the project, together with 16,666t of steel.

Another aspect of Trust Tower is the amount of parking accommodated within the building, a particularly useful requirement within the congested urban environment of Abu Dhabi.

"We know parking can be a hassle in Abu Dhabi, which is why we allocated 1,500 dedicated parking spaces." This is particularly important considering that Trust Tower is one of the largest office-space developments in the capital, and a third larger than the coin-shaped Aldar headquarters building, comments Claire Hughes Munro, Aldar's senior manager of commercial leasing.

"We have incorporated cost-efficient green technologies as well, including LEED certification for commercial interiors. We are also ensuring that all of our tenants are informed of this certification and what the implications are for them post-occupation," says Munro. "We know times are tough and that companies are now cautious in terms of their overall spending, which is why we have offered to assist with such aspects as the fit-out co-ordination."

Trust Tower provides an extension of The Souq and Emporium within Central Market, together with the 88-storey The Domain. Trust Tower, destined to be a new business hub, is anticipated to be home to numerous international companies.

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