

The Nile Corniche Project in Cairo: One of the largest construction projects in Egypt

19 February 2013 by Putzmeister

In a prime location along the banks of the Nile on Nile Corniche Street in Cairo city centre, construction of a building is currently underway that will eventually reach a height of 136 m. The complex will include a five star St. Regis Hotel as well as exclusive apartments and offices.

The project investor is the globally operating Qatari Diar Real Estate Investment Company, which is a 100 % subsidiary of the state-owned QIA (Qatar Investment Authority). The QIA from Doha, Qatar is primarily active in the international investment business.

The Consolidated Contractors Company (CCC) was commissioned to undertake the Nile Corniche project. The CCC is one of the largest construction companies operating in the Middle East. Its main areas of business include oil and gas, infrastructure projects and complex large-scale construction projects. The company headquarters is based in Athens, Greece; the annual turnover of CCC in the 2010 business year was approx. 11.19 billion US \$.

The overall building consists of three high-rise towers positioned at close proximity to one another and arranged in a U-shape. The basement and the first three floors share the same structural shell and form the spacious foyer, conference and seminar areas in the luxury hotel.

Meeting tight deadlines through perfect planning

CCC made contact with Putzmeister through the local dealer IDP as early as the planning stage. The concrete delivery process was planned in conjunction with CPD (Putzmeister Concrete Project Division) and took into account existing plans for the overall construction process as well as local factors. Two of the main challenges encountered when laying the delivery line were the extremely confined inner city location of the construction site and the daily placement of specific quantities of concrete in order to meet the tight deadlines.

The placement of concrete using a crane and bucket was quickly rejected during planning of the construction process. The main reasons were: a limited number of cranes available due to space restrictions on site cranes would be reserved for essential shuttering and reinforcement work unacceptably long concreting times due to the slow pace of the crane bucket method, in particular in the higher stories.

Staggered construction of the three building sections

Since it was not possible to select a central point for transferring ready-mix concrete to the stationary concrete pumps due to the lack of space, CCC planned to position a BSA 2110 HD stationary concrete pump supplied by a truck mixer in front of each of the three high-rise towers. Each concrete pump would then pump concrete to an MX 36-4 stationary boom with a reach of 35.1 m. This staggered construction process meant that concrete construction work could progress independently on each section of the building and potential delivery problems at one of the concrete unloading points would not have an effect on the progress of the other sections of the building.

Putzmeister Concrete Project Division once again demonstrated a high level of expertise when planning and implementing the project. The experienced engineers from the Putzmeister Concrete Project Division (CPD) actively support the local construction and project managers in planning the construction and building site facilities. Successful high rise and tunnel construction projects as well as projects involving the pumping of concrete to great depths demonstrate their level of expertise.

CCC sent Putzmeister the planning documents for the building and a plan of the construction site in CAD file format so that the stationary concrete pumps and MX boom could be integrated in the building site facilities plan to scale. The position, ranges and 1.00 x 1.00 m recesses required for the climbing columns on the stationary booms were coordinated with the site management and entered in the floor plan and section using a CAD computer program. Planning of the concrete delivery lines began once the positions of the concrete pumps and booms were approved.

CCC personnel set up the site with the assistance of Ronald Soussan, Putzmeister Service Engineer, who remained on site to oversee commissioning of the machinery and supervise the first few concrete placements. The concreting team received intensive instruction in the concreting processes, initial pumping with grout, cleaning procedures and the work required at the end of the concreting work. As a result of meticulous forward planning, all the materials required for the delivery line, including all the necessary brackets and accessory components, were available on site. Installation of the stationary concrete pump and the construction and commissioning of the MX boom started on the first day and progressed quickly and succinctly. The local Putzmeister Service partner, IDP, was on standby for any service call-outs during the construction phase and ensured the reliable supply of spare parts.

The competent planning of the concreting delivery process, skilled supervision during the installation phase and instruction on handling the machinery from Putzmeister also made a contribution to ensuring that the concreting work progressed speedily and was completed within the deadlines.

The Nile Corniche project

Height of the building on completion: 136 m

Number of storeys: 31

Surface area: 9,500 m²

Putzmeister machines used

Pumps 3 x BSA 2110 HD

Booms 3 x MX 36-4

- The triple towers share the structure of the building up to the third storey. The towers on the right and in the centre will accommodate a luxury hotel, whereas the left tower will be home to exclusive offices and apartments.
- The CCC team on the construction site: (1st row, from left to right) Mohammed Nagui, Mohammed Al Areef, Osama Morris, Nader Ramzi; (2nd row, f.l.t.r.) Mohamed Elbaz, Atef Keylani, Sameh Mahmoud, Atwa Mohammed
- Hydraulic boom MX 36-4
- Stationary concrete pump BSA 2110 HPD

- Concrete shut-off gate valve GVHM
- Transition point between horizontal and vertical delivery line

International Development Programmes – IDP

International Development Programmes company, IDP was established in 1974 to become one of the market leaders in the field of supply and service of heavy construction equipment and machinery in Egypt.

For more than 35 years, IDP's name has been associated with some of the industry's leading manufacturers. As a sole agent and representative of international equipment manufacturers universally agreed upon to be among the best in the industry, IDP managed to become a reliable partner, supplier, know-how and service provider to Egypt's base of construction, industrial and logistics companies. Our deep knowledge and extensive experience as well as our reliability, competence and readiness to serve, all contributed to making IDP not only a market leader, but a preferred partner to the industry's best performers.

IDP offers a complete and diversified range of construction and industrial equipment and machinery. Concrete equipment, hoisting and lifting, material handling, earthmoving as well as road construction equipment and machinery.

IDP's diversity and ability to provide comprehensive solutions has allowed us to penetrate the market and become a leader in the field. This penetration is driven by a dedicated team of sales engineers and representatives who are well trained on all technical aspects of our scope and can provide the necessary

knowledge to identify the particular needs of each and every customer and project. This team is backed up by an efficient and competent after sales service department, the focus of which is customer satisfaction.

The professional IDP team:

(back, f.l.t.r) Khaled Soliman, Salah Marwan, Amr Soliman, Hazem Akil

(front, f.l.t.r.): Hosam Akil, Aladdin Ghondakly, Ahmed Ezz

The heart of the Arabic world beats in Cairo

Cairo ("al-Qāhira" in Arabic meaning "The Strong One" or "The Conqueror") is the capital city of Egypt and the largest city in Africa and the Arabic world.

Cairo is the political, economic and cultural centre of Egypt and the surrounding region. The city is home to the Egyptian government, the parliament, all state and religious central authorities as well as numerous diplomatic missions. Cairo is the most important traffic hub in Egypt and boasts numerous universities, academies, theatres, museums and monuments. The historic centre of Cairo is a Mecca of Islamic architecture and was recognised as a World Heritage Site by UNESCO in 1979.

The administrative district of Cairo has 7.9 million inhabitants (2008) and the metropolitan region has about 16.2 million inhabitants (2009), which is the second largest in Africa behind Lagos in Nigeria. Citizens in Egypt are not obliged to register, however, which is why the number of specified inhabitants is extrapolated based on the population census figures. Unofficial estimates put the number of inhabitants living in and around Cairo at 25 million, which corresponds to almost a third of the total population of Egypt.

The Nile is the longest river on the planet and has played an important role in the development of civilisation and the history of Egypt. The fertile land along the banks of the Nile gave rise to one of the earliest advanced civilisations. Even today, the river Nile is of great economical importance. The Nile Corniche project is located on the banks of the river Nile in Cairo nearby the famous Tahir Square. Hundreds of typical sailing boats cross the Nile daily close to the site. Both locals and tourists regularly use the boats to escape the hectic metropolis and enjoy some of the most spectacular sunsets along the majestic flowing river.

Source: Putzmeister