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In Mekka STAHL CraneSystems is lifting the largest tower clock in the world

Formidable time pressure, tight schedule: in collaboration with project partner Prime Source, STAHL CraneSystems Dubai supplied 23 wire rope hoists to Mecca for the largest clock tower in the world. Right on time, of course.

Mecca is not just Islam's holiest city, but at present also one of the largest building sites in the world. The hotel and luxury residential complex Abraj al-Bait, also known as »Royal Clock Tower Hotel«, is being constructed right in the centre of the city. Floor area: 1.5 km², 96 floors and a 601 metre high clock tower as the crowning touch. The tower resembles London's Big Ben, but is six times as high as the original. When it is completed this year, the Royal Clock Tower Hotel will for some time be the second highest building in the world. Only the Burj Chalifa in Dubai is even higher at 830 metres.

The largest tower clock in the world has been ticking away above the Masjid al Haram Mosque since August 2010: 80 m high, 65 m wide, the dials are 39 m in diameter. Each of the four dials is studded with 98 million glass mosaic tessera. Over 2 million LEDs provide illumination; five times a day, at prayer time, the dials flash green. The clock is intended to be seen from a distance of nearly 20 kilometres, and as it stands right next to the holy mosque, replace Greenwich as temporal reference point – for the Islamic world at least.

For the installation of the gigantic clock STAHL CraneSystems supplied 23 wire rope hoists installed on wall mounted jib cranes at varying heights on the tower facade. The project was planned and completed by STAHL CraneSystems' Dubai subsidiary, project partner was Prime Source Group from Saudi Arabia. »Owing to the very tight project schedule the customer was looking for a crane supplier with above-average project experience,« says Frank Hildebrandt, Managing Director of STAHL CraneSystems in Dubai. »Without the swift, magnificent support of our partner Prime Source the project would not have been possible.« Hildebrandt was able to demonstrate above average project experience right at quotation stage: less than 24 hours passed from initial contact to order – including technical clarification and the quotation for the first eight cranes – the final crane was erected four months later.

As both the dial components and the innumerable sections of building cladding had to be transported right against the walls of the building, tower cranes were ruled out for this work. The wall mounted travelling cranes and jib cranes cover the whole area around the tower. The wall-mounted travelling cranes work along the crane runways, the jib cranes serve the fringe and move loads around the corners of the building. The wire rope hoists lift between 3 t and 6 t and are radio remote controlled. The maximum height of lift is 120m.

The only problems arose during the approval process: as wall-mounted travelling cranes are never used at such heights, the authorities responsible had first of all to be persuaded that this design was safe. Thanks to STAHL CraneSystems' detailed static calculations of the crane runway and the anticipated forces exerted by the building the authority responsible was finally convinced and granted approval.

The Royal Clock Tower Hotel is to become the new symbol of the Islamic world, and is already a sign of change in the region. Increasing industrialization in Muslim countries enables more and more believers to undertake the hajj, the holy pilgrimage to Mecca. The rising numbers of pilgrims have given rise to a positive building boom in Mecca, which is being literally crowned by the construction company Saudi Bin Laden Group's Royal Clock Tower.

In addition to the 5-star hotel belonging to the Fairmont chain the building houses over 800 apartments, a conference centre for 1500 guests, a prayer hall for 3800 believers, a moon observatory and a Museum of Islam. The multi-storey car park has spaces for 780 cars and 10 buses, and it is also possible to arrive via the integrated railway station or on one of the two helicopter landing pads. A four-storey shopping centre planned along various themes recreates traditional markets from all regions of the Arab world. The complex was inaugurated at the beginning of Ramadan in August 2010, and is to be finally completed before the end of this year.

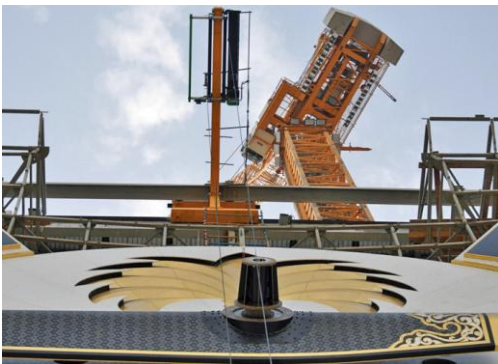
Pictures and legends



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The gigantic tower clock is already easy to identify.



One of the STAHL CraneSystems wall-mounted travelling cranes is mounted directly above the dial.