Makkah Royal Clock Tower

Facts

Official Name: Makkah Royal Clock Tower
Name of Complex: Abraj Al-Bait Endowment
Other Names: King Abdul Aziz Endowment Tower, Makkah Royal Clock Tower Hotel
Structure Type: Building
Status: Completed
Country: Saudi Arabia
City: Mecca
Street Address & Map: Makkah Haram
Building Function: other / hotel
Structural Material: steel/concrete
Proposed: 2002
Construction Start: 2002
Completion: 2012

Rankings

Global Ranking: #3 Tallest in the World
Regional Ranking: #2 Tallest in Middle East
National Ranking: #1 Tallest in Saudi Arabia
City Ranking: #1 Tallest in Mecca

Companies Involved

Developer: Saudi Bin Laden Group
Architect:
- Design: Dar al-Handasah Shair & Partners; SL Rasch
- Structural Engineer: Dar al-Handasah Shair & Partners; SL Rasch
- Peer Review: BuroHappold Engineering
MEP Engineer:
- Design: Dar al-Handasah Shair & Partners
- Wind: Alan G. Davenport Wind Engineering Group; Wacker Ingenieure
Project Manager: Turner International LLC
Main Contractor: Saudi Bin Laden Group
Other Consultant:
- Façade: Curtain Wall Design and Consulting, Inc.
- Lighting: Bartenbach; Har Hollands Lichtarchitect
- Wind: Alan G. Davenport Wind Engineering Group; Wacker Ingenieure
Material Supplier:
- Cladding: Gurit; GUTMANN AG
- Construction Hoists: Alimak Hek
- Crane: STAHLE CraneSystems GmbH
- Elevator: KONE
- Paint/Coating: Jotun
- Seals: Dow Corning Corporation

About Makkah Royal Clock Tower

At the heart of the holiest Islamic city, Makkah Royal Clock Tower brings an air of modernization to the bustling historic center of Mecca. The tower was developed as a component of the King Abdulaziz Endowment Project and provides comfortable accommodations for devout Muslims that make the journey to the city every year during the Hajj period. It is conveniently located adjacent to the Grand Mosque, which can accommodate up to two million worshippers over the course of the event.
The clock tower stands in the center of a high-rise complex called Abraj Al-Bait. Six smaller high-rises surround it at heights varying and accommodate both residential and hotel uses. True to its name, four colossal clock faces are mounted near the top of the tower. These clocks hold the record for both the largest and highest in the world. At night, the clock faces are illuminated by one million LED lights that transform the tower into a green and white beacon. Writing is inscribed above each clock, with the words "God is the Greatest" on the north and south sides, while the Koran adorns the east and west sides. The spire of the tower features a spherical observation center at its base. The spire is capped with a shining mosaic gold crescent that weighs 35 metric tons. A number of cultural amenities are present in the upper levels of the tower, including a center for lunar observation and a cosmology museum.

Since a great deal of residents and guests in the tower perform prayers five times a day, innovative solutions were provided in the elevator systems that transport people in a smooth and efficient manner. Group control systems were implemented that adapt to the travel patterns of passengers, intelligently anticipating their general location and destination. Using this technology, up to 75,000 people can exit all seven buildings without issue.

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