

Jebel Omar is located in mountainous area overlooking the Grand Mosque of Mecca in Saudi Arabia.

Freyssinet Saudi Arabia was signed a contract agreement to design, supply and execute the Post-tensioning works for this mega project. The gross project value is in excess of US\$3.0 bn and it is consisting of many towers in addition to retail areas and car parks. It is planned to accommodate 34,500 pilgrims with a gross built up area of more than 800,000m².

Phase 1 of the project, which is divided to 9 Towers with a built up area of around 300,000m², underwent long delays prompting the master developer, Jabal Omar Development Company to replace the old contractor with Nesma & Partners Contracting Company. Being fully aware of the technical challenges and the time constraints, Nesma mobilized to site with the intent of adopting the Post-tensioning technique and appointed Freyssinet KSA to perform the work.

Freyssinet proposed to convert not only the suspended to PT, but also all the transfer slab and beams as well as the raft foundations. The transfer slabs are located on the 8th floor and support the load of 25-30 floors. The original design was based on a conventional flat slab of 2.0m with high passive steel rates. On the other hand, the PT transfer slab of 1.25m did not only generate significant savings in concrete and steel but also simplified constructability and shortened the executing time. All suspended slab had reduction in concrete thickness of 20% and steel ratios of 60%.

New structures

Post-Tensioning Works

Jabal Omar Development Project
Makkah - KSA



Client

Jabal Omar Development

Consultant

Dar Al Handasah

Contractor

Nesma and Partners

Construction

May 2012