

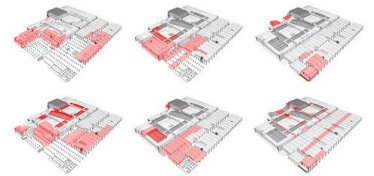
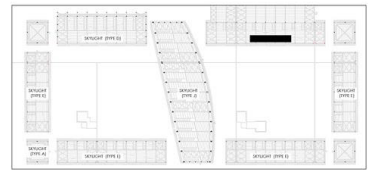
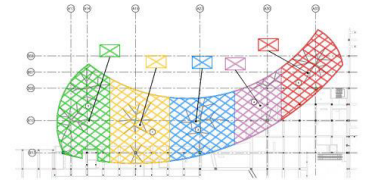
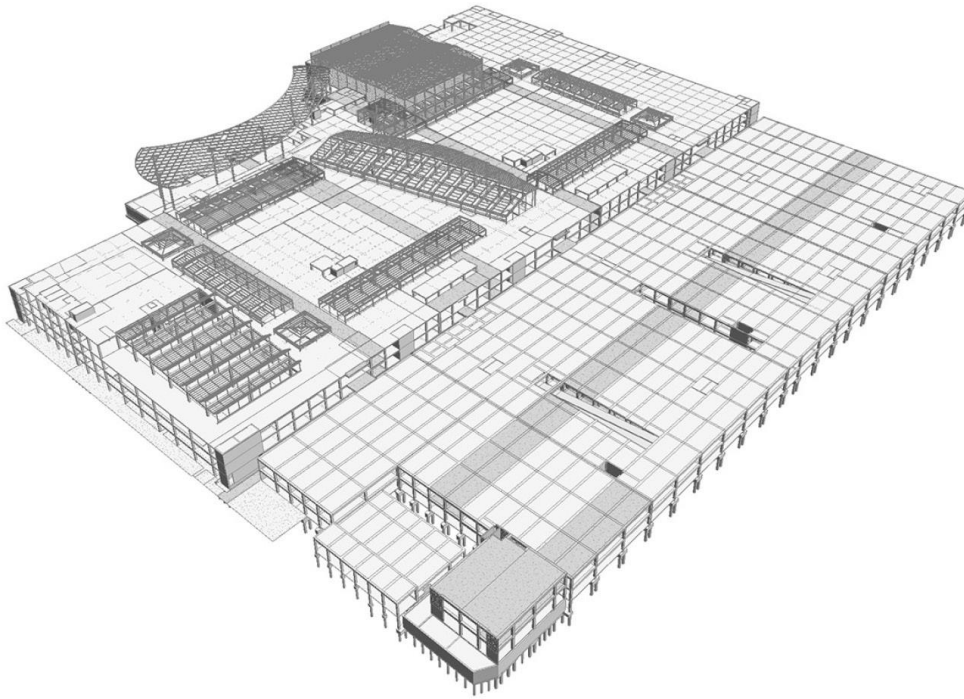


Al Zahia City Center Mall

Sharjah, United Arab Emirates / 2016

Owner
Client
Scope
Architect

Majid Al Futtain
TAV
bridge assessment / rating
Callison



Mall "City centre Al Zahia" is a retail mall developed to be primary regional shopping and entertainment centre in the Emirate of Sharjah to attract visitors from Sharjah, Dubai and Northern Emirates. The total plot area is approximately 183,505 m².

A mall of approximately 137,000 m² GLA is distributed over three levels and approximately 5,200 car parking spaces are distributed over a full under-croft level connected to the Mall. The mall area consists of 3 floors of an average height of 6.00 m. Plan dimension is approximately 400m x 230m. Columns are distributed in 8.40m x 8.40m bays.

The Parking consists of 2 floors with an additional future floor. Plan dimension is 400m x 100m. Columns are distributed in 8.40m x 16.80m bays.

The structure, in the general area of the Mall, consists of hollow core slabs (with an average thickness of 200 mm plus 75 mm of concrete topping), with 8.40 x 8.40 m spans. The hollow core slabs are supported by 650 x 650 mm in situ concrete beams. The secondary direction is composed of 500 x 650 mm in situ concrete beams. The beams are supported by 650 x 650 mm or 700 x 700 mm in situ concrete columns. Some other zones have different spans arrangements or solutions which were not studied.

The structure of the Parking area consists in general of hollow core slabs (with an average thickness of 150 mm plus 75 mm concrete topping), with 8.40 x 16.80 m spans. The hollow core slabs are supported by 1000 x 1000 mm post-tensioned in situ concrete beams (16.8 m span). The secondary direction is composed of 800 x 800 mm in situ concrete beams (8.4 m span). The beams are supported by 800 x 800 mm in situ concrete columns.

Both the mall area and the parking area are subdivided into 8 zones with a 25 cm expansion joint between each zone. The foundation consists of piles. In the Mall area, generally one pile is set under each column. In the Parking area, generally two piles are set under each column. Piles are connected together with foundation beams for seismic purposes.

Fhecor Ingenieros Consultores consists in the estimation of steel quantities for the different structural elements and cost of the project solution and the development of a value engineering.

During the technical assistance provided to the TAV construction company in the tender for the Al Zahia shopping center, a 4D BIM model was developed that made it possible to reproduce the construction sequence and identify the main challenges presented by the work.

The 4D model was developed in Revit 2016 from the work program and the Revit archive provided by the client. In order to reproduce the progress of the work, the execution has been divided into two-month periods (phases), which has made it possible to estimate the needs for machinery and auxiliary equipment in the different pits in each phase. By carrying out the phase in Revit's native model, it has been possible to obtain floor plans for each of the phases at each of the levels. In addition, each phase has been documented with a conical perspective that shows the progress of the work in each bimonthly period. The sequence also includes the assembly and disassembly of the tower cranes required during construction, which have been represented in both plans and perspectives.



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