

SKY GATE BEIRUT, LEBANON

CCL Client: MAN Enterprise

Architect: Nabil Gholam Architects

Contractor: MAN Enterprise

Project Date: August 2011

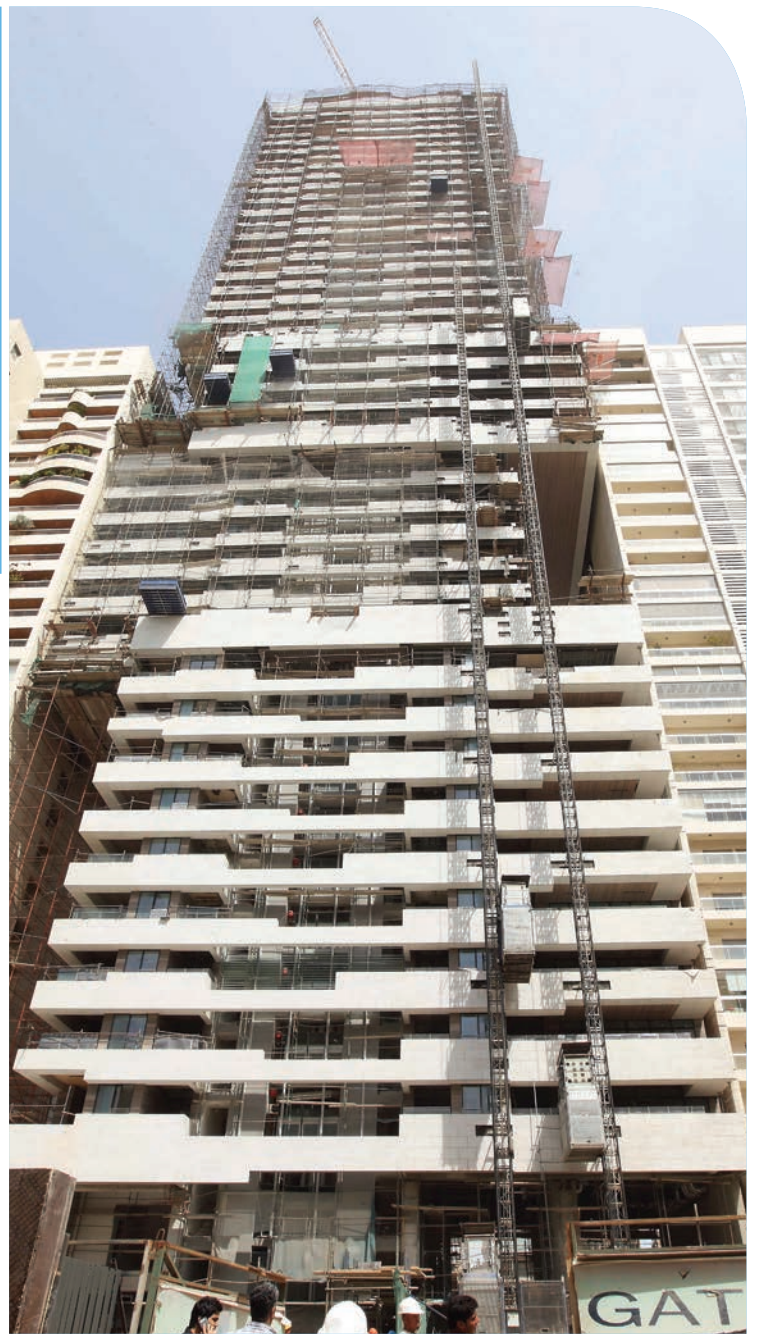
To accommodate the Lebanese law of setback requirements and because of its location between two buildings, the 42-storey Sky Gate residential development in Beirut has particularly unconventional geometry.

The tower is situated between two existing structures up to its 24th level and has 360 degree views from the levels above. The structure is made up of four cubical elements that are offset from right to left from levels 10/11 to 17/18 and then again from 20 to the roof, giving a staggered effect and creating four superimposed blocks.

The stagger of the two middle blocks is supported by a cantilever system of post-tensioned beams designed by CCL, which are located at each block's lowest and highest level. A further two cantilevered beams support the offset of the fourth block which, at 20 levels, is the largest of the group. This challenging project required particular care during construction to cater for the eccentricity resulting from the vertical offset of the superimposed blocks.

The level 10/11 technical floor transfer beams were designed to carry the weight of the second block above during construction by utilising sequences in stressing. In order to cater for the construction loading and remove the need for propping all the way down to the basement levels, the beams were stressed in more than one phase, thus reducing the cost of shoring resulting in savings for the contractor.

Sky Gate is situated in the uppermost point of Beirut, in the Achrafieh district, and is currently the tallest building in the city.



Post-Tensioning - CCL Middle East

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