

PENTOMINIUM

Dubai Marina

Construction of Pentominium started in 2009. At 526 metres and 126 floors, it was promoted as the first exclusive 'whole floor apartment' project in Dubai.

Developed and constructed immediately post the 2008 Global Financial Crisis. Due to financial stress on the de-veloper, Pentominium was put on hold in 2012 when construction was at level 30.

CONSTRUCTION SYSTEMS

The engineering of the structure managed a slenderness ratio of 1:18, one of the tallest to be designed and built.

A significant "A Frame" transfer structure at level G to 6 required tie structures through the core to the perimeter of the raft at both G and B1 levels. The ties consisted of 4 sets of 3 by 120mm thick 600 deep high tensile steel plates stud welded prior to embedment. Three 11 tonne sections each of approx. 18 metres, were craned and then 'rolled' through the core walls before site welding. Staggered junctions to facilitate site welding were necessary. Each weld was of 56 hours duration.

The southern half of the tower was shorter by 26 levels and had sections of up to 5 floors excised. The outcome was a structure that was inherently 'out of balance' - 126 v 78 levels. To counter that, the structure was being constructed 800mm out of vertical alignment, targeting equilibrium upon completion.

EPPIC PARTNER

As Project Director for Arabian Construction Company (ACC), Bill was responsible for the development and implementation of all construction systems including the survey strategies to build 'out of vertical'. A key to the structure was delivery and pumping of 100F'c concrete to a height of over 300m.

Client/Developer: **Trident Properties**

Architect: **AEDAS**

Engineer: **Hyder Consulting**

Project Director: **Bill Parker**

Contract Value: **300M USD**

