

World Trade Centre

Abu Dhabi

Case Study



Manntech meets high expectations for Abu Dhabi World Trade Centre

The development consists of two sealed glass towers, a 58 story hotel and an 88 story residential tower, with a combined total floor area of 550,000m². The buildings use high energy-performance glass to maximise energy efficient air conditioned environments. The most striking part of the design aesthetic is the unique, curvilinear shape of the buildings and their sharply sloping roofs. The development includes an Arabian Souk, restaurants, luxury offices, hotels and car parking.

The client demanded that the Building Maintenance Units (BMUs) for this high-concept project must leave the building's design unspoiled without sacrificing any efficiency in operation. These challenges were met with a number of unique access solutions including four high-end climbing BMU systems, all of which are completely concealed when not in use, along with around 250 tons of track systems on each tower.

To complement the unique curvilinear shape of the building, we also developed a custom-built curved twin track on a roof slope of 55 degrees in order to effectively maintain the high energy-performance panels. The systems for the sloping roofs are integrated with a shunt car to park the machines inside the building and out of sight when not in use. The sloping roof also includes a turntable on which the BMU rotates, with a computerised control system automatically compensating for the positioning at the slewing ring.

Manntech's tender was the only proposal that could meet the high expectations of architects Norman Foster's in terms of build quality and the engineering solutions required to meet the brief. Part of the specification was the production of a comprehensive mock-up to test all machines, including shunt cars and track switches, in Europe so that the client could ensure complete accuracy and functionality of the system.

Facts and Figures

Commencement:
2010

Completion:
2014

Building Height:
▶ 381 metres
▶ 255 metres

Floor count:
▶ 88
▶ 58

Access solution:
▶ 4x climbing bespoke machines
▶ Custom-built curved twin track
▶ 1x shunt car

Outreach:
6.5 metres

Building Type:
Residential and hotel

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