CASE STUDY

A FIBRE OPTIC NETWORK FOR AL REEM ISLAND

Datwyler commissioned by Etisalat to develop the access network on Al Reem Island off the coast of Abu Dhabi. The project involved installing a PoP in the Sky Tower, the installation of fibre optic networks in several high-rise blocks and connections between the PoP and the individual buildings.

As the general contractor appointed by Emirates Telecommunications Corporation (Etisalat) based in the United Arab Emirates, Datwyler Middle East was responsible among other things for design validation and optimisation, the supply and installation of fibre optic cables and system accessories, project monitoring and cost control, testing and acceptance, and for reporting and documentation.

The project on Al Reem Island essentially involved installing a PoP (Point of Presence) – also called a control centre, node or head station – in the Sky Tower, the installation of fibre optic networks in the individual buildings and connections between the PoP and the high-rise blocks. These were Gate Tower 3, 4, 5, 7A and 7C as well as the new buildings on the Sorouh site, i.e. the Sea View, Al Wifaq and Ocean Scape Towers as well as both Beach Towers.

Datwyler started the requisite work in late December 2011 and completed it in September 2013, using high-fibre cables, splice closures, optical distribution frames (ODF) and thousands of fibre optic patch cables in the aforementioned buildings.

Redundant links

The PoP in the Sky Tower is connected to each individual high rise by one primary and one redundant (secondary) fibre optic link. Connecting the Gate Tower involved bridging distances of between 600 and 2000 metres with between 300 and 1300 single-mode fibres, depending on the size of the building. The fibre optic links to the buildings on the Sorouh site consist of 300 to 600 fibres and are between 850 and 4400 metres long.

The indoor cabling on the PoP site is of redundant design, terminated in high-density racks on high-density distribution panels. In the individual towers the optical fibres are terminated in 42 U racks on the respective panels provided by the client. Here, among other things, Datwyler has installed splitters and patch cables to prepare the building for connection to Etisalat services.

Flexible response essential

The specifications stipulate that each link of the outdoor cabling should have several fibre optic closures in accessible manholes. Among other things a large closure was

provided in each of the individual high-rise buildings as a point of entry to the outdoor cabling. The cable access points and manholes had not yet been completed in several buildings, however, so in order to avoid delays and additional expenditure Datwyler placed the fibre optic closures on their own cable runs. This simple solution was then copied in all subsequent projects.

Datwyler was faced with even more challenges in the course of the individual development stages, for example modifications to the network structure on the PoP site, where a flexible response was once again essential. Continual network design optimization, cost control, careful material and resource scheduling and, last but not least, close collaboration with Etisalat, several authorities and the many firms involved in the project enabled Datwyler to complete this demanding project on time, as planned and within budget.

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