



Description: **Implementation of Cellular Coverage Throughout The Shard**

Requirement: **Seamless Mobile Connectivity Within the Tallest Building in Western Europe**

Solution: **A DAS System Capable of Handling Voice and Data Transmission Across 87 Storeys**

◆ Overview

The Shard is an iconic new London landmark building on the south side of The River Thames. Totalling 87 storeys and standing at 306 metres (1004 feet high), The Shard is the tallest building in Western Europe, owned by Sellar Property and the State of Qatar.

Hosting 25 floors of office space, three restaurants and a Shangri-la Hotel on floors 34-52, the requirement for mobile communications is immense.

CAM's main client was Vodafone UK although CAM worked with a variety of stakeholders including the building owner Qatari Consortium Inc, the developers Sellar, the Principal Contractor Mace Projects and those involved in the development of the apartments, viewing gallery and office areas. In addition it was important that CAM incorporated the Shangri-la's requirements for its staff and customers.

◆ What did the Project Involve?

Design commenced in June 2011 with Installation taking place from October 2012 to March 2013. This was followed by a second mobilisation to complete installation within the apartments in November 2013.

Vodafone UK's requirement was to provide dedicated 2G/3G coverage into most areas of The Shard, including the apartment areas, the Shangri-la and the elevators. The request was made whilst The Shard was still in construction, which allowed our team to make plans and execute work prior to completion of construction. The project itself took approximately 27 months to complete, from concept and design through to build and integration.

Chris Hogg, CAM's Senior Project Manager was responsible for the successful implementation of this project and had regular contact with The Shard's developer, the principal contractor and CAM's end customer, Vodafone UK. The project management of this particular site was very hands-on and required careful attention in order to work around other elements of the construction. Work often took place out of hours and was conducted in a high security environment.

CAM provided a number of test and measurement engineers who assisted at the planning stage. The installation team included site supervisors, senior engineers, team leaders and operatives and was responsible for cabling and antennae around the building. Finally the site had to be integrated into the VF network with the help of CAM's integration team. Every part of the process was overseen by CAM's Design team who made frequent checks that everything was being produced to meet the original plans.



The scope of the project included coverage of all in-building areas to comply with Vodafone design guidelines and Joint Operator Test Specifications (JOTS). System capability was set to a total of 17 sectors (3G) including expansion provision for additional office floors.

All work on the Distributed Antenna System was completed by CAM. As part of the overall Vodafone deployment there were a number of other companies involved (BT, Ericsson, Kuehne & Nagel and Axell Wireless but CAM was responsible for the overall Project Management.

◆ Why was the Project so Successful?

The project met the client's requirements on time and on budget and can be attributed to two main areas: strong project management and a fantastic, first class installation. CAM's work on The Shard earned the recognition of the on-site Programme Manager for The Shard and senior members of Vodafone UK's management team.