

Construction Monitoring: 22 Bishopsgate London

CLIENT: LEICA GEOSYSTEMS/CAREYS

How the team responsible for building the second tallest building in Europe used Senceive technology to monitor stability

Challenge

Control of verticality and stability is essential during the construction of tall buildings. The team responsible for this during the construction of 22 Bishopsgate in London's financial centre used a combination of GNSS and wireless tilt sensors throughout the construction programme. With a height of 278 m, the 62-storey building is the second tallest in Europe. It is being constructed on previous foundations and a basement originally built for the Pinnacle project, which was abandoned in 2012. Leica Geosystems was commissioned to carry out verticality checks and setting out activities for two core walls and opted to use their GNSS systems. Data were fed back to their GeoMos visualisation software.

A highly accurate tilt monitoring system was required to calibrate and monitor the stability of the supports used for the GNSS systems to corroborate the equipment and data.

Solution

The Leica Geosystems Monitoring division brought Senceive onboard to deliver a solution that worked practically and easily in tandem with Leica Geosystems' own technology. Senceive's award winning FlatMesh platform was used alongside two sets of GNSS equipment, each mounted on rigs on top of each core wall. Four wireless tilt node sensors were installed on top of one rig, and four on the other. The intelligent tilt nodes sent measurements to two 3G gateways, which relayed data back to the UK's only approved Leica Geosystems developed interface to GeoMos.



Rigs on the top of two core walls

Outcome

Portability and ease of deployment are key attributes of Senceive's wireless tilt node sensors. They come with a wide range of mounting options and can be installed in any orientation, quickly and easily. This was vital in this project because it was important to repeatedly move the monitoring equipment up the building as the core wall construction advanced.

Due to the duration of the monitoring programme, Senceive's tilt nodes, set to a 30 minute reporting rate, were ideal. With a battery life of up to 15 years, no need for maintenance and the option to change firmware configuration settings remotely the FlatMesh platform proved ideal.

The project highlighted the ease of installation and redeployment as well as the reliability of the FlatMesh platform. It was a key enabler of successful planning/surveying by Leica Geosystems and Careys, and was used throughout the core wall construction programme.

