# GE◉SENSE

## Case Study - Structural

## Shell Centre, London, UK



### PROJECT SUMMARY

NAME: Shell Centre

DATE: October 2015

CLIENT: Canary Wharf Group plc & Qatari Diar

INSTRUMENTATION SPECIALIST: GETEC UK

CONSULTANT: ARUP



## OVERVIEW

As part of an ambitious redevelopment of Howard Robertson's original 1961 Shell Centre complex, adjacent to the London Eye on the South Bank, construction work has started to build a mixed-use project comprising office, retail and residential space. Up to 877 homes are proposed in the joint venture of developers Canary Wharf Group plc and Qatari Diar.

The scheme includes affordable housing as part of plans to revitalise the area with high quality architecture and much improved public spaces.

Apart from the iconic 1960s Shell Centre Tower, everything else on the site is being demolished to make way for seven new residential and office buildings, one of which will incorporate new offices and trading floors for Shell.

## MONITORING

As part of the reconstruction, the existing four-level basement car park is to be partly demolished. The external walls will remain, but the internal floor slabs are to be removed.

Monitoring of the external walls is being undertaken at the three intermediate levels using 12 Geosense MEMS biaxial Tilt Meters connected to WI-SOS 480 analogue Nodes. The Nodes connect to the Gateway situated at ground level and the data is transferred via the internet to a website where it can be viewed, downloaded or transferred to any FTP address.

Prior to installation, signal coverage strength tests were carried out by the Instrumentation Specialist GETEC to prove connectivity of the Nodes to the Gateway. Despite the signals having to travel through several meters of mass concrete, connectivity of the system was confirmed. Full signal was even achievable from the basement level 13 metres below ground level.

## PRODUCTS USED

**WI-SOS 480 Gateway**
Central data acquisition logger fitted with SIM card to provide GPRS connection for remote access via the internet. It can be configured over air via an Android device and includes sampling intervals and sensor configuration. Data can be either downloaded directly or forwarded to any FTP address.

**WI-SOS 480 Nodes**
Long-range 800MHz wireless battery-powered multi-channel (1-5) node/logger for connecting the vibrating wire piezometers to the Gateway. Easily configured using Android phone or tablet via G-LOG APP.

**WI-SOS WebCentre**
Website where the connectivity, health of the Gateways and Nodes can be monitored in real time. Data can be viewed, visualised and downloaded.

**MEMS Tilt Meters**
Biaxial MEMS tilt meters used to monitor tilt on the external walls during demolition.