



Groundforce
Specialist Construction Solutions



RCM



Royal College of Music - Load Monitoring of Struts

CLIENT: ROYAL COLLEGE OF MUSIC / GILBERT-ASH / GROUNDFORCE SHORCO

Challenging excavation at historic London site demonstrated flexibility of Senceive FlatMesh™ platform to monitor temporary works

Challenge

June 2018 marked the start of an exciting redevelopment of the prestigious Royal College of Music (RCM) campus, which was first opened in 1882. The large courtyard will be dug out and a new basement and building is planned to go in its place.

Due to the total mass of the building and the depth required to excavate a basement, substantial shoring equipment was required to protect the existing building and ensure the safety of site workers from potential collapse.

Groundforce Shorco is one of the world's leading suppliers of trenching and shoring equipment, provided their MP150 and MP250 hydraulic struts which weighed five tonnes. The two MP150 struts and one MP250 strut had load pins which required monitoring to ensure that the correct hydraulic force was exerted to counter balance the pressure from the surrounding soil.

Solution

Senceive provided three wireless Millivolt per Volt nodes, which allowed load sensors to be integrated into the FlatMesh™ platform. These wireless sensors measured the pressure exerted on the struts' load pins during building works.

Data from the nodes is received by a solar 3G gateway, which was mounted on a crane using standard jubilee clips. The wireless nodes were mounted using Senceive's patented magnetic mounts in a matter of minutes.



Image courtesy of Groundforce Shorco



Outcome

This wireless solution proved ideal, as it cut the installation time, which in turn reduced risk to all parties working on the site. The installed system will also minimised the need for site visits because it enabled the Groundforce team to adjust the hydraulic pumps reactively in response to any changes in the measured loads. They could make changes to the monitoring configuration remotely, for example by altering reporting rates or the conditions that should trigger automated SMS alerts.

The flexibility of the FlatMesh™ system also allowed the Millivolt per Volt nodes to be quickly and easily moved from one strut location to another as the work progressed.