



Key achievements

- **Multi-faceted monitoring scheme combining automated sensors for 24-hour data and regular manual surveys**
- **Complex installation of sensors on various sensitive assets**

- **The Project**

Located at St Pancras Hospital, Oriel is a partnership between Moorfields Eye Hospital NHS Foundation Trust, the UCL Institute of Ophthalmology and Moorfields Eye Charity, which is dedicated to advancing eye care, research and education.

Bouygues, the principal contractor on the £300 million project, began demolition of buildings currently on site in early 2023. The completed 10-storey, 47,000 sq. metre centre is planned to open in 2027.

- **The Challenge**

The project requires the structural monitoring of hospital buildings and roads next to the construction site. Other key assets that are a focus for monitoring include a water tower, chimney and utility tunnel. These required working at height or otherwise restricted access. Large parts of the monitoring scheme required high frequency readings 24 hours a day.

- **The Solution**

24-hour automated monitoring was achieved using Wireless Tiltmeters installed on key structures around the site as well as regular 3D surveys and levelling runs.

The sensors installed on the water tower and nearby chimney needed to be installed relatively high up compared to the other buildings, requiring access using a Mobile Elevating Work Platform (MEWP).

The tiltmeters were mounted on metre-long fibreglass beams fixed at each end to the monitored assets. Aligned vertically, they provide a highly accurate method of monitoring changes in inclination of the structure.

More than 50 3D survey targets were established on the same buildings to give a complete picture of structural movement related to site works.

Survey teams will undertake weekly 3D surveys and levelling loops during all the key phases of demolition and construction over the course of the project.

Application

Structural Monitoring

Technique

Automated Instrumentation
Manual Surveying

Market

Buildings

Client

Bouygues
NHS, UCL

Project Duration

4 years

Instrumentation

Digital Level
Automated Total Station
Wireless Tiltmeters

Keller companies

GEO-Instruments