



CASE STUDY

Services & Ground Movements

THE PROJECT

Construction of a sub-basement for a large mixed use waterside development, Durham.

THE PROBLEM

Ground movements affecting an adjacent gas pipeline arising from excavation of a temporary sheet pile retaining wall.

REMEDY'S SOLUTION

A ground movement study to estimate the potential displacement of the gas pipeline.

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The construction of this riverside development in Durham required a temporary excavation up to 7.4m deep, supported by sheet piles and propping. An existing gas pipeline ran close behind the sheet piles. Remedy Geotechnics provided assistance to the project by undertaking a ground movement assessment to estimate the magnitude of displacement that could affect the gas pipeline arising out of the deep excavation. Using a combination of published data, backed up by a geotechnical finite element analysis, Remedy was able to provide a range of possible ground movements affecting the gas pipeline at various points along its line adjacent to the sheet pile retaining wall. In undertaking the analysis, Remedy considered the implementation of temporary propping to optimize the number of props, their location and the pre-stress applied to control

the magnitude of ground movement calculated.

The use of advanced geotechnical analysis tools provides a better understanding of soil-structure interaction effects than can be gained from routine retaining wall design tools. This in turn helps the experienced geotechnical designer investigate different construction and propping sequences to optimize site operations, therefore saving time and money during construction, while also providing an enhanced tool to manage ground movement risk.

Contact Remedy Geotechnics - we'll give you an answer every time.

London & Midlands

0207 206 2576
01788 211778

North & Scotland

01423 589500

admin@RemedyGeotechnics.com