



CASE STUDY

Infrastructure & Ground Movements

THE PROJECT

The development of a brownfield site for new residential properties.

THE PROBLEM

The development required excavation of a sloping site to form a 4.5m high cantilever retaining wall supporting a live railway embankment.

REMEDY'S SOLUTION

Ground movement assessment to optimize the retaining wall design and to comply with Network Rail requirements.

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The construction of this brownfield site requires the demolition of existing structures for the new construction of a 4 storey residential development situated at the foot of an existing Network Rail embankment, which sits on sidelong ground.

Ultimately the development proposals require the formation of a level plateau of ground to provide car parking around the new building. This requires a cutting to be formed into the natural slope and railway embankment. Because of the need to keep the railway embankment supported a 4.5m high contiguous bored piled retaining wall proved to be the optimum solution.

A raised berm piling platform is necessary on account of the general sloping topography of the site. This is where the expertise of Remedy Geotechnics was brought in to undertake an advanced finite element analysis of the retaining wall to optimize the piling scheme and assess the propagation of ground movements towards the railway line.

The use of advanced geotechnical analysis tools provides a better understanding of soil-structure interaction effects than can be gained from more routine retaining wall design tools. This helped the retaining wall designer investigate the effect of different pile sizing and the construction stages to optimize site operations, yielding cost and time savings, while also providing an enhanced tool to manage ground movement risk.

In this case the advance analysis was able to confirm the estimated rail track movements to be negligible and within acceptable limits.

Contact Remedy Geotechnics today if your project would benefit from a ground movement assessment analysis.

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

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