



CASE STUDY

HERMITAGE PARK, MAIDSTONE

THE PROJECT

Piling into complex ground for a new residential community development at Hermitage Park, Maidstone.

THE PROBLEM

Development of a piling strategy for karstic Hythe Formation near Maidstone, Kent.

THE SOLUTION

A practical and robust piling methodology was developed so the piling contractor knew what actions to take in response to the ground conditions encountered.

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Piling in Complex Ground

Due to the potential for highly variable karstic Hythe Beds at this Croudace Homes site, piling contractor Roger Bullivant Ltd. needed a robust but practical piling methodology for this complex site.

To cope with variable thicknesses of loose made ground, superficial deposits and weathered non-intact rock overlying potentially very strong intact rock a 220/190 micropiling solution was adopted. Pile loads ranged from 100kN to 450kN. Identification of karstic features during piling was crucial. It was essential that the driller had a robust methodology to enable them to respond to varying ground conditions and take appropriate actions to ensure each pile was securely founded. Three design cases were identified:-

- 1) No-feature: Rock encountered at shallow depth (minimum pile length 7m).
- 2) Feature with depth proved: Minimum rock socket formed 4m length, maximum total pile length 20m.
- 3) Feature with depth greater than 20m.

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With the drillers briefed the process worked well and no Case 3 situations were encountered. To confirm differential settlement between piles of different length and loading was acceptable, Remedy carried out pile settlement analyses considering the extremes of a 7m pile under 100kN and a 20m pile under 450kN. The predicted pile settlements were then compared with pile test data, as shown in the figure above. This exercise demonstrated actual pile performance to be within the expected range.

With Remedy's input both Croudace Homes and Roger Bullivant Ltd. were confident that this complex site could be securely developed.

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

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