CASE STUDY

harrisongroup
GEOTECHNICAL & ENVIRONMENTAL ENGINEERS

PROJECT: FEN DRAYTON ROAD
LOCATION: SWAVESEY, CAMBS
VALUE: £13K

BACKGROUND

Bloor Homes commissioned Harrison Group to carry out a site investigation and report the findings on a 4.7ha agricultural site in Swavesey, near Cambridge.

The site was earmarked for mixed-use residential development of 99 homes.

Site location

The findings from the investigation would be used in the design of roads and sewers, foundations, pavement construction and to conclude if any remediation measures would be required.

SCOPE OF WORK

Phase 1 Assessment (Desk Study) to produce a hazard assessment and conceptual ground model.

Phase 2 Investigation (Intrusive) to include:

- Soil sampling and standard penetration testing using a dynamic continuous sampling dual-purpose rig
- Machine-excavated trial pits with infiltration testing
- CBR testing
- Return visits for ground gas and flow monitoring
- Physical soil analysis to UKAS mCERTS standards
- Chemical analysis, general suite to include TPH, PAH and asbestos screening
- Interpretative report

Gas monitoring

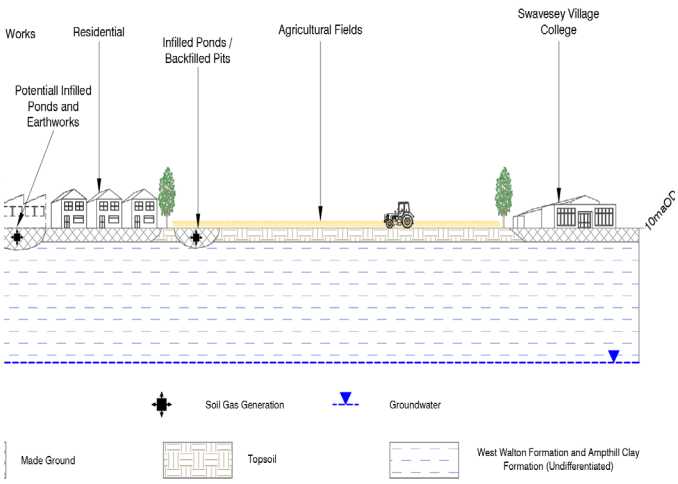
OUTCOMES

Risk assessment based on the results of the investigation suggested that there was a low risk with respect to soil and groundwater contamination. However, elevated levels of carbon dioxide and carbon monoxide, coupled with a high flow rates were observed, potentially requiring gas protection measures to be utilised in construction.

Harrison Group recommended additional monitoring followed by more detailed risk assessment in order to better understand the potential risk. Further characterisation of the ground gas regime could reduce overall construction risk, with the potential for reducing development costs.

Further ground characterisation was undertaken involving:

- Additional boreholes and installation of ground gas monitoring wells
- Further ground gas monitoring
- Detailed quantitative risk assessment with conceptual ground model, incorporating geology, potential ground gas sources & migration and exposure pathways



Conceptual ground model

By combining the site model with proposed construction details and estimating ground gas equilibrium concentrations in the sub slab void, the ground gas risk was shown to be lower than originally envisaged.

As a result of this, there was found to be no requirement to include gas protection measures for the structures.

Bloor Homes was able to use the original design of pre-cast concrete beam and block floors in the construction, with resultant saving in terms of both time and cost.

ISOQAR 0026 UKAS MANAGEMENT SYSTEMS
Certificate Number 5933
ISO 9001, ISO 14001
UKAS TESTING 4031