IDENTIFYING & MINIMISING RISK Through a Value Engineered Geotechnical Solution

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The biggest risk to any building or civil engineering, construction project is the unknown...and the unknown is always what lies in the ground.
WHAT IS GROUND INVESTIGATION?

“the investigation of sites for the purposes of assessing their suitability for the construction of civil engineering and building works and of acquiring knowledge of the characteristics of a site that affect the design and construction of such work and the security of neighbouring land and property.”

WHAT IS GROUND INVESTIGATION?

Gi fieldworks will include a combination of the following techniques:

- Non intrusive: geophysical survey
- In situ testing (DP, CPT, CBR, plate load test etc)
- Formation of excavations (pitting and trenching)
- Cable percussive drilling
- Rotary drilling
- Sonic drilling
- Dynamic (window) sampling and probing
- Groundwater and ground gas monitoring wells
PURPOSE OF GROUND INVESTIGATION?

Obtain samples and in-situ testing:
- Geotechnical logging
- Laboratory testing

Establish geotechnical parameters:
- Soil and rock
- Ground water/ground gas
- Contamination

Allows designers:
- Qualitative data for design purposes
- to understand the ground model
- to add value to foundation designs
- to reduce risk
MANAGING RISK

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....and the unknown, is always what lies in the ground
MANAGING RISK

A review of 5,000 industrial buildings by National Economic Development Office found 50% overran by at least a month?

... a study of these projects showed that 37% of the overruns were due to unforeseen ground conditions

- BRE Digest 472 Optimising ground investigation November 2002
MANAGING RISK

Without adequate and appropriate GI the ground remains a Hazard!
MANAGING RISK

DESK STUDY - Land Registry, Former land uses, Geological Maps & Records, The Coal Authority etc.

Adequate and appropriate ground investigation is cost effective & reduces risk - FACT
Inadequate ground investigation results in....

programme overruns and costly claims

NHBC has year on year paid out between £5 and £10 million on claims with 50% being related to ground problems

Of the SSL investigations carried out, approximately 20 – 25% of these sites have previously been investigated

“Yet ground related problems typically account for 33% to 50% of construction programme overruns – the average cost of these delays far exceeds the original sums expended on site investigation.”

T. Chapman, Arup
MANAGING RISK

GET THE MOST OUT OF YOUR CONTRACTOR

- EARLY ENGAGEMENT
- PLAN EVERY DETAIL
- CHOOSE & MAXIMISE USE OF THE RIGHT TOOLS
- GET IT RIGHT FIRST TIME OR PHASED APPROACH
- CHOOSE YOUR CONTRACTOR WISELY

The biggest cost of any GI is mobilisation
Communication, co-operation and collaboration is key
MANAGING RISK

Delivery Team

Complete control of:
Health and Safety
Quality
Resources & Availability
Programme
Costs

TOTAL RISK MANAGEMENT - END TO END
MANAGING RISK

Ground Investigation is important –

▪ It saves time and money
▪ It reduces risk

So long as you:

▪ Ensure it is adequate and appropriate to the end use of your site
▪ Get it right first time
▪ You choose the right team