FEDERATION OF PILING SPECIALISTS

Published Minimum Requirements for Site Investigation

There are many published documents which provide guidance on the minimum requirements for a site investigation.

For deep foundations the most relevant publications include: BS 5930; BS EN 1997- 1 and 2; Standards for the Execution of Special Geotechnical Works ; ICE Specification for Piling and Embedded Retaining Walls; ICE Specification for Ground Treatment; BRE Specification for Stone Columns; BRE Specification for Dynamic Compaction, BRE Digest 472, Site Investigation Steering Group documents, Tomlinson's Piling Design and Construction Practice; Fleming's Piling Engineering, NHBC Standards Part 4; and many more.

The key clauses of some of these documents are summarised below;

BS EN 1997-2: 2007 Ground Investigation and Testing - clause B.3 (Now the head code for ground investigations)

"The following spacing of investigation points should be used as guidance:

- For high-rise and industrial structures, a grid pattern with points at 15 m to 40 m distance;
- For large-area structures, a grid pattern with points at not more than 60 m distance;
- For linear structures, a spacing of 20 m to 200 m;
- For special structures, two to six investigation points per foundation;"

Regarding the depth of investigation, this clause recommends that for piles the investigation depth should be the largest of:

- Pile length + foundation width
- Pile length + 5.0 m
- Pile length + (3 x pile base diameter).

BS 5930: 1999 Code of Practice for Site Investigations - clause 12.6
"Although no hard and fast rules can be laid down, a relatively close spacing between points of exploration, e.g. 10m to 30m, are often appropriate for structures. For structures small in plan area, exploration should be made at a minimum of three points, unless other reliable information is available in the immediate vicinity."

ICE Specification for Piling and Embedded Retaining Walls 2nd edition 2007 - Part A
"A project involving piling requires an appropriate extent of Ground Investigation to be carried out to assess the choice of pile type, design parameters and constructability, including temporary works. Typical requirements include:

- Several exploration points (BS5930 requires a minimum of three)
- Appropriate geotechnical characterisation of the ground which would normally require boreholes
- Depth of exploration at least as great as the deepest pile depth."

For particular geotechnical operations the relevant execution standards provide specific guidance on SI:

BS EN 1536: Bored Piles (including CFA)
BS EN 1537: Ground Anchors
BS EN 1538: Diaphragm Walls
BS EN 12063: Sheet Pile Walls
BS EN 12699: Displacement Piles
BS EN 12715: Grouting
BS EN 12716: Jet Grouting
BS EN 14199: Micro Piles
BS EN 14475: Reinforced Fill
BS EN 14679: Deep Mixing
BS EN 14731: Deep Vibration
BS EN 15237: Vertical Drainage

Federation of Piling Specialists
Forum Court, 83 Copers Cope Road, Beckenham, Kent BR3 1NR
Tel: 020 8663 0947
Fax: 020 863 0949
email: fps@fps.org.uk
web: www.fps.org.uk

Revised July 2013