

Site Investigation and Ground Investigation

Introduction

“Site investigation” (地盤勘測) is defined in section 2 of the Building (Construction) Regulation as “investigation of the physical characteristics of the site and includes documentary studies, site surveys and ground investigation”. These works are carried out to obtain adequate geotechnical and other relevant data for the design and construction of building works such as foundation and site formation works. This practice note sets out the acceptable standards of site investigation in general and ground investigation, which constitutes a major part of site investigation, in particular.

2. In this practice note, the term “site investigation” covers a broad scope of investigation including the topography and history of the site. “Ground investigation” (GI) refers to actual surface or subsurface investigation by such methods as boreholes and test pits, including on-site and laboratory tests.

Technical Guidance Documents

3. The Geotechnical Engineering Office Technical Guidance Note No.1 provides a list of technical guidance documents including Geoguide 2 - Guide to Site Investigation and Geoguide 3 - Guide to Rock and Soil Descriptions, and other relevant documents currently used by Geotechnical Engineering Office (GEO) of the Civil Engineering and Development Department (CEDD) as geotechnical standards in Hong Kong. Site investigation carried out for the design and construction of foundations should be carried out in accordance with the recommendations of these technical guidance documents and the Code of Practice for Foundations 2017 (2024 Edition).

Registered Specialist Contractor (Ground Investigation Field Works Category)

4. Ground investigation field works (GIFW) include all site operations in GI and exclude laboratory testing of samples and field density tests. GIFW have been designated, by notice in the gazette, as a category of specialized works under the Buildings Ordinance (BO). A sub-register of registered specialist contractors (GIFW category) (RSC(GIFW)) has been established in the register of specialist contractors, and all GIFW are required to be carried out by the RSC(GIFW). Detailed scope of works and registration requirements of the RSC(GIFW) can be found in Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP) APP-96. Laboratory testing of samples obtained from site operations in GI is beyond the jurisdiction of RSC(GIFW). Field density tests and all laboratory testing of samples obtained from the investigation are required to be carried out by laboratories which are accredited for carrying out the tests concerned, as outlined in PNAP APP-64.

5. The RSC(GIFW) are responsible for the carrying out of GIFW mainly for compiling:

- (a) GI report for submission to the Building Authority (BA) in support of a plan for approval under the BO, including but not limited to, foundation plans, site formation plans, excavation and lateral support plans as prescribed under regulations 8(1) and 9 of the Building (Administration) Regulations (B(A)R); and
- (b) geotechnical assessment for submission under regulation 8(1)(ba) of the B(A)R with a general building plan. The assessment should include a suitable plan showing the scope and extent of the GI.

6. It is the duty of the RSC(GIFW) to ensure all information in the GI reports submitted to the BA is correct even though some of the actual operations e.g. geophysical surveys, might have been carried out by others. All drillhole cores and samples obtained during GI (other than those samples selected for testing) are to be kept in good conditions for inspection by staff of the Buildings Department and if necessary, GEO, until acknowledgement of the satisfactory completion of the site formation, foundation, or other related works has been given.

Quality Supervision Requirements for GIFW

7. The details of the quality supervision requirements for GIFW and the related administrative procedures are provided in the Technical Memorandum for Supervision Plans 2009 and the Code of Practice for Site Supervision 2009 (2024 Edition).

Submission of GI and Laboratory Test (LT) Reports

8. GI and LT reports should be submitted in digital form. Digital submissions must include both Portable Document Format (PDF) and data format in accordance with the rules listed in the “Electronic Transfer of Geotechnical and Geoenvironmental Data” (AGS Data Format)¹ published by the Association of Geotechnical and Geoenvironmental Specialists (AGS). Additions and amendments to the AGS Data Format are required to suit local practice in describing soils and rocks and reporting their engineering properties in accordance with Geoguide 2 and 3 published by the GEO. The following files should be included in the submission of GI and LT reports:

- (a) Individual GI stations (including borehole, trial pit, corehole, surface stripping, etc.), with accompanying photographs in PDF format. The filename of individual GI station should be unique for the project, e.g. SSB-BH1; and

/(b) ...

¹ AGS Data Format can be downloaded from the website of AGS (<https://www.ags.org.uk>) whilst the details of the additions and amendments to AGS Data Format are promulgated in the website of CEDD (https://www.cedd.gov.hk/filemanager/eng/content_732/GI_LT_Rpt_Digital_Format.pdf).

- (b) The AGS data should be in American Standard Code for Information Interchange (ASCII) textual format and should not be split into parts.
- 9. A similar practice note has been issued to registered contractors.

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