

ANALYSIS OF SPT DATA IN PREDICTING SOIL PROPERTIES—A CASE STUDY

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Mode of Study : P. Time

ABSTRACT

Geotechnical investigations with high accuracy are the very important for finding the nature of soil or ground. Detailed specifications for geotechnical investigations are available in our Indian standards (IS 1892, IS 2720). The range of practices varies widely in India both in terms of field investigation and soil profile. Due to the variation of these practices, influential differences exist between actual soil profile and the profiles available at the time of design/ as a part of the tender specifications in a large number of projects. This becomes the reason which creates confusion and disputes between owner and contractor, if the soil strata during execution of the work project are found to be different from what is given in the tender document. On the other hand from the contractor's point of view, it is not possible for them to carry out an independent soil investigation within the limited time that is available between issue of tender documents and the time of submission of technical bids. Again it is expensive also. However for fear of the offer not considered by the tender committee, the bidder blindly accepts the stipulation as given in the tender. The reasons for such variations are inadequate and improper soil investigation in the beginning. Consequences of such variations are obvious and thus there is an urgent need to find a satisfactory solution to these alarming problems.

Based on the variation of soil type, if a guide map representing the engineering properties of soil in India is prepared, than it can help the builder/contractor to estimate the realistic soil properties before bidding, thus decreasing the dispute between owner and contractor a large extent during the execution of the project, which may arise due to some wrong interpretation.

The technical objective of this study is to review the generated soils data in the Guru Nanak Dev Engineering College, Ludhiana, in an attempt to correlate the more 'routine' laboratory tests to determine geotechnical design parameters (such as Φ -angle, cohesion, unit weight, Liquid limit, SPT no. etc.) that are typically obtained from more sophisticated laboratory tests or in-situ field tests. The range of values, variations, trends and correlation will be explored in terms of different types of soils and/or geological origin and compared to published correlations whenever possible