DEPARTMENT OF BUILDING

UNIVERSITI TEKNOLOGI MARA

(PERAK)

TENDER : SOIL INVESTIGATION

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ABSTRACT

Soil surveys must be carried out to determine the bearing capacity of the soil, its sedimentation rate and the position of the water level. One of the simplest methods is to dig an experimental hole and a visual inspection is carried out then samples with minimal disturbance are collected for the next laboratory test. Where possible, drilling should be done as this allows one to obtain an undisturbed sample from which solution rate and bearing capacity can be obtained. For loose soils, such as sand and gravel, plate bearing tests can be used to determine the insitu bearing capacity of the soil and to design static loads at the site of the spread. If the strength of the soil is not sufficient for the increased load, the foundation should be repaired by inserting piles or enlarging the site and strengthening it better to maintain the increased load.

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INTRODUCTION

1.1 Background of Study

Soil Investigation or geotechnical investigation is a procedure that determines the stratigraphy (study of rocks) and relevant physical properties of the soil underlying the site. This is done to ensure that this substructure, which is eventually going to hold up homes, is safe and enduring.

For any civil engineering project, however big or small, it is of primary importance that a proper field survey and a very precise geotechnical investigation be conducted. Geotechnical investigation is an integral part of the construction process which is done to obtain information about the physical characteristics of soil/rock around a site. It is a below-ground investigation wherein the soil strata is sampled and tested to establish its characteristics, which will influence the construction project.

These investigations form the basis for planning, designing, and constructing the structures. The serviceability and performance of the structure depend on the accuracy and adequacy of these investigations. How accurate the information in the geotechnical report is strongly influences the design, construction, project cost, and safety.(Source: tridentia March 2015)

Unfortunately, many underestimate the importance of proper geotechnical investigation during the concept phase of a project. One of the main causes of foundation failure is insufficient knowledge of soil conditions.

There have been a number of situations where attempts to salvage such site investigations have led to poor results. Because structures designed on assumed or inadequate data can lead to long -term complications. It can also result in loss of life and property, endanger residents, damage adjacent structures, and essentially not function for their intended purpose.

Thus soil investigation gives the engineer knowledge of the subsurface conditions at the engineering project site. It allows engineers to design safe and economical projects as well as inform construction engineers about the materials and conditions they will encounter in the field.