

## CHAPTER 1

### INTRODUCTION

#### 1.1 Background

This project involves the preparation of an Engineering Soils Map of Trinidad (the first of its kind). The project is done as part fulfilment of the Diploma in Construction Engineering and Management at the University of the West Indies, St Augustine, Trinidad.

The topic for investigation was chosen by the author because he felt there was a need to compile the wealth of scattered information available on the engineering properties of the soils of Trinidad. A map was chosen to represent the information because of the distinct advantage of its excellent visual impact. The map is intended for use by geotechnical engineers and engineering geologists who recognise the limitations of a project of this nature ; it is prone to misinterpretation by the inexperienced.

#### 1.2 Scope

The Engineering Soils Map of Trinidad is done to a scale of 1:150,000. The map is based solely on existing data, i.e. data

from geotechnical investigations done throughout Trinidad. Information on boundaries and physical characteristics of the various soil categories are supplemented by information from Land Use and Land Capability Reports by Bally et. al. ( 1966, 1967), and the author's own working experience with the soils of Trinidad. Field-confirmation of proposed soil type boundaries, and laboratory testing to confirm engineering properties were not done. A more extensive soil survey, beyond the scope of this project, is a prerequisite for this type of confirmation. The boundaries and soil properties provided are therefore approximate only, and must not be considered for design purposes. In areas where engineering properties are unavailable, the particular soil type is labelled 'unclassified'. This is unavoidable as the engineering properties retrieved from geotechnical reports are restricted to the more developed areas of Trinidad. Some extrapolation is therefore attempted in order to provide a more comprehensive map. This extrapolation is by no means unfounded, and was carried out only after examination of the relevant agricultural soils and geological publications and maps.

The map represents the soil properties within the limits of 0 - 3m below ground level. However, as data was gathered

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for entire soil profiles at each location, some indication of the character of the underlying soil is provided where appropriate. This is presented in Chapter 4.2.

The Engineering Soils Map of Trinidad is intended to provide the base-map for a series of transparent overlays done to the same scale ( 1:150,000 ). Some suggested overlays are:

- topography and drainage overlay, In sedimentary soils.
- road map overlay:- useful for the precise location of soil types in relation to population centres, and existing major transportation routes.
- economic geology overlay:- useful for the isolation of economically available deposits, such as gravel and sand.
- swelling soils overlay:- useful for the isolation of the problematic swelling soils typically found in south and central Trinidad. This overlay could possibly be contoured for the expansive potential of these soils.

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