

**FINAL YEAR PROJECT REPORT
BACHELOR IN ENGINEERING (HONS.)(CIVIL)
SCHOOL OF CIVIL ENGINEERING
MARA INSTITUTE OF TECHNOLOGY
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**VARIATION OF UNDRAINED SHEAR
STRENGTH OF CLAY WITH DEPTH**



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ABSTRACT

The main objective of this project is to find the relationship of the ratio of undrained shear strength with depth and Plasticity index of clay. Besides that the study also obtained the physical and engineering properties of the clay.

Based on existing data and results from this project, shown that the for different location, the physical and engineering properties of the clay are different .

The results of the study was plotted based on the correlation provided by Skempton. It was found that the data obtained were scattered around the correlation proposed by Skempton. The results for Shah Alam clay fall above the line and Batu Belah fall below.

However, no conclusive correlation could be deduced as it was felt the data so far are insufficient.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

The coastal region of Peninsular Malaysia is mostly made up of soft clay. Most of these areas, especially the western coastal areas like Klang valley, have undergone continuing extensive developments. All these developments are inevitable, extensive data available for Malaysian clay in this areas could be an advantage.

The geotechnical characteristic and field performance of most clays are influenced considerably by genesis, degree of weathering, morphological characteristic, chemical and mineral composition, topography, drainage and age as well as by environmental conditions.

Skempton (1957) had shown that the ratio of c_u/σ'_v is related to Plasticity index (PI) of the clay soil by the equation

$$\frac{c_u}{\sigma'_v} = 0.11 + 0.0037(PI)$$

where , c_u = cohesion in terms of total stress under undrained conditions.

PI = plasticity index.