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**THE EFFECTIVENESS
OF
MEBRA DRAIN**

BY

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Synopsis

Vertical drains are used to accelerate the rate of consolidation of saturated clays of low permeability. This is achieved by shortening the drainage path within the clay, resulting in the faster dissipation of excess pore water.

The objective of this experimental project is to test the effectiveness of prefabricated vertical Mebra Drain installed in soil placed inside a model tank. The settlement of the soil sample with vertical drain under load were obtained and compared to the settlement of the soil sample without vertical drain calculated based on oedometer test results. The change in pore water pressure during the test were also taken. Shear Vane tests were also carried out to determine the shear strength of the soil before and after the experiment.

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Chapter 1

INTRODUCTION

1.1 INTRODUCTION

Settlement, one of the fearful phenomenon to most engineers. News of houses cracking up, sinking highways, apartment block breaking up are few examples attributed to settlement problem. Engineers have come up with numerous techniques of soil improvement such as vibro-compaction, cement stabilisation, chemical grout, lime stabilisation and dynamic consolidation, and consolidation by using Prefabricated Vertical Drain (PVD). Soil stabilisation by PVD has been successfully applied in many engineering projects. Typical applications are construction of roads, railways, airfields, dykes, land reclamation projects, harbour construction projects, development of urban and industrial sites, etc.

Common types of prefabricated vertical drains available in the market are MEBRA DRAIN, COLBOND, DESOL and GEODRAIN. Each type of drain has its special features and characteristics. The selection of the type of drain depends on the designer.

To study the effect of soil stabilisation in soft soil, laboratory work is done to illustrate the