

FINAL YEAR PROJECT REPORT
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COMPARATIVE STUDY OF THE TUNNELLING
WORK FOR DIFFERENT GROUND CONDITION

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OCTOBER 1998

ACKNOWLEDGEMENT

In the name of ALLAH, the most Beneficent and the most Merciful. It is with the deepest sense of gratitude to the almighty ALLAH that I write this for if not His help and guidance to the report would not have been completed.

In the preparation of the report, I have had to draw upon the active help of a large number of people. Hence, I would like to take this opportunity to thank whom in their official or their time or labour, for which this short acknowledgement cannot express in any adequate way our profound, thank.

I wish to express my sincere gratitude and appreciation to my project supervisor, Puan Hajjah Ir. Zainab Mohamed, my co supervisor Puan Hajjah Juraidah Ahmad, and the lab technician of Faculty of Civil Engineering for all the assistance, guidance and continuous advice throughout the preparation of the thesis.

I also would like to thank to Ir. Reuben J.S Lamack, Senior Resident Engineer of HSSI Halcrow Consultancy, Mr. Siva Subramaniam from HSSI Halcrow Consultancy and Mr. Eric from PLRT Sdn. Bhd for supplying the facilities, valuable information and guidance and care in contribution to the completion of this project. Finally, I would like to thanks also to my parents; lecturers, technician and friend who have been directly or indirectly assist in completion of this thesis.

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ABSTRACT

Tunnels are structure, which are recognised as one of the alternative to accomplish convenient transportation routes through site conditions posing natural difficulty or special hazards.

There are different ground conditions, which are commonly encountered in tunnelling work. The selection of excavation / tunnelling procedures and techniques very much depend upon the types of ground condition. This study is to make a comparison of the various geotechnical problems encountered in tunneling work for different ground condition in Malaysia.

The study will be done for two different types of ground condition. One of the case study is PUTRA - LRT System Two Tunnel Sections at Kg. Baru Project in Kuala Lumpur, which is tunnelling through soft ground. The second case study is the Genting Sempah Second Tunnel Project at KL - Karak Highway, which the tunnel was excavated through a hard rock.

The comparative study highlighted the geotechnical problems encountered where tunnelling through hard and soft ground with and the respective problem solving methods.

1.0 INTRODUCTION

1.1 General

Tunnels are structures, which are recognised as one of the alternative to accomplish a convenient transportation route through site conditions posing natural difficulty or special hazards. Surmounting such as natural obstacles as mountainous terrain, river or seas by allowing save and convenient transportation at all times irrespective of weather conditions.

A tunnel is a challenge to nature. Construction of an underground opening is immediately releases stresses, over a short or long period of time, tend to close the opening by filling it with rock debris. Some of these stresses are related to presently active dislocation of in the earth's crust, other are residual unbalanced stresses stored in elastic rocks and still others are attributable to the dead weight load of overlying rocks.

Ideally, the tunnels would have been wholly in rock or wholly in soft ground. Therefore, It is essential that the designer have a good understanding of the likely method of construction of the tunnels and any associated shafts with respect of ground condition.