HIGHER TECHNICAL INSTITUTE

NICOSIA - CYPRUS

CIVIL ENGINEERING COURSE

DIPLOMA PROJECT

SITE INVESTIGATION

C/834

LESTAS A. CHARALAMBOS

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By:

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Project Report

Submitted to

The Department of Civil Engineering

of The Higher Technical Institute

Nicosia - Cyprus

In partial fulfilment of the requirements

for the diploma of

TECHNICIAN ENGINEER

in

CIVIL ENGINEERING

JUNE 1998

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ACKNOWLEDGEMENT

I would like to express my appreciation to all persons that have in any way contributed to the completion of this project. Thinking of acknowledgements, the greatest thanks must go the my project supervisor, Mr I. Economides, with whom I have discussed the different steps for the completion of this study.

I would also like to thank Mr A. Shiathas, geotechnical engineer of the GEOINVEST LTD, for his guidance and advise, especially concerning the information about Cyprus. Thanks are also expressed to the Land Survey Department and Mr A. Spyrou, site engineer of the Dhekelia Famagusta road.

Finally, I would like to thank all my lecturers of Civil Engineering Department, who though their lectures at the H.T.I., have helped me gain interest in Site Investigation, which resulted in this study.

SUMMARY

Site Investigation is an essential part of the civil engineering process and can be thought of as a process of discovery. The procedure followed is outlined in the following steps: boreholes are drilled to vast depths; samples are recorded (in situ tests are also performed); and laboratory tests are carried out on the obtained samples. Thus, a picture of the ground and its properties is build up. Using this picture, the engineer can meet the challenge of determining how structures will interact with the ground so that a practical, safe and economic design can be produced.

This project is mainly intended to analyse the objectives of Site Investigation and to discuss its importance, in conjunction with the main procedures, equipment and plant used in the Site Investigation of civil engineering works. A survey about procedures and extent of Site Investigation in Cyprus is also made.

Chapter One, introduces Site Investigation; its types and objectives. It also gives its relationship with Civil Engineering Construction.

Chapter Two, describes the formation of soils in a general manner. An understanding of the geology of the site is a fundamental requirement in the planning and interpretation of ground investigation.

Chapter Three, deals with the planning of Site Investigation. The stages followed are: desk study; reconnaissance; and detailed investigation.

Chapter Four, describes the methods and equipment of ground investigation in soils, rocks and water. A decription on the Geophysical methods used is also given.

Chapter Five, deals with the different kinds and procedures of in situ tests, as well as sampling. A description on the different kind of samplers used, as well as information on disturbed and undisturbed samples is also given.

Chapter Six, deals with laboratory testing. The different kinds of laboratory tests are outlined concerning the soil's classification, shear strength, consolidation, permeability, compaction and chemical composition.

Chapter Seven gives the importance of Site Investigation reports. The factual and the interpretive kinds of report are described.

Chapter Eight, describes the present day practise in Cyprus with reference to two projects (the Dhekelia Famagusta road and the Nice Day Tower) .

Photographs, tables and graphs are used whenever possible, to give a clear explanation of plant and techniques in all aspects of this project. Four Appendices are provided for further reference.