بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــسـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

Ain Shams University
Faculty of Engineering

GEOTECHNICAL CHARACTERISTICS OF COASTAL DEPOSITS IN THE RED SEA REGION

By

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A Thesis
Submitted in Partial Fulfillment for the Requirements of the
Degree of Master of Science in Civil Engineering
from the Department of Structural Engineering

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Cairo - 1999

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Date: 11 / 9 / 1999

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Abstract of M.Sc. Thesis submitted by : *Hany Guirguis Ishak Abdel Sayed*

Title of Thesis:

"Geotechnical Characteristics of Coastal Deposits in the Red Sea Region"

Supervisors: *Prof. Dr. Fathalla M. El-Nahhas*
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Abstract

The Red Sea coasts are considered as major historic and touristic sites offering an urban attraction that plays an important mounting role in the tourism industry of Egypt. Therefore, a huge future construction and development process is expected in these areas. The existing deposits along the Red Sea coasts differ entirely from common soils and rocks covering the remaining parts of our country. It is therefore essential to combine the role of geology, hydrology and geotechnical engineering in the study of these obscured deposits.

The origin of coastal deposits adjacent to the Red Sea is either from the land side, where sediments are transferred from the upstream eroding catchment areas to the coastal plains in the form of alluvial fans, or from the sea where deposits are usually carbonate rocks (reefal limestone) that were formed through cementation of the remains of marine organisms. Sharm El Sheikh was selected for this research as a demonstrative example for identifying some of the engineering problems which may be encountered along the Red Sea coasts.

Core samples of reefal limestone were collected during drilling of nineteen boreholes in a selected site at Sharm El Sheikh, and were tested under uniaxial compression. The results indicate relatively high Young's modulus values of 920 to 4230 MPa and low strength of 4 to 16 MPa. The Rock Quality Designation (RQD) of these cores varied from 0 to 25% and the Rock Mass Rating (RMR) was estimated to range between 25 and 50.

Geotechnical constrains that can be faced during construction on these types of deposits were identified. Problems can arise due to the presence of cavities of various sizes within the reefal limestone or due to potential swelling and/or collapse of some of the alluvial deposits.

Key Words : *Geomorphology, Hydrology, Sediment transport, Alluvial fans, Reefal plains, Reefal limestone, Raised beaches, Unconfined compressive strength, RQD, RMR.*

STATEMENT

This dissertation is submitted to Ain Shams University for the degree of Master of Science in Civil Engineering.

The work included in this Thesis was carried out by the author in the Department of Structural Engineering, Ain Shams University from 1994 to 1999.

No part of this Thesis has been submitted for a degree or qualification at any other University or Institution.

Date : 11 / 9 / 1999

Signature :

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