MKAJ 1073 ENGINEERING ROCK MECHANICS

INTRODUCTION

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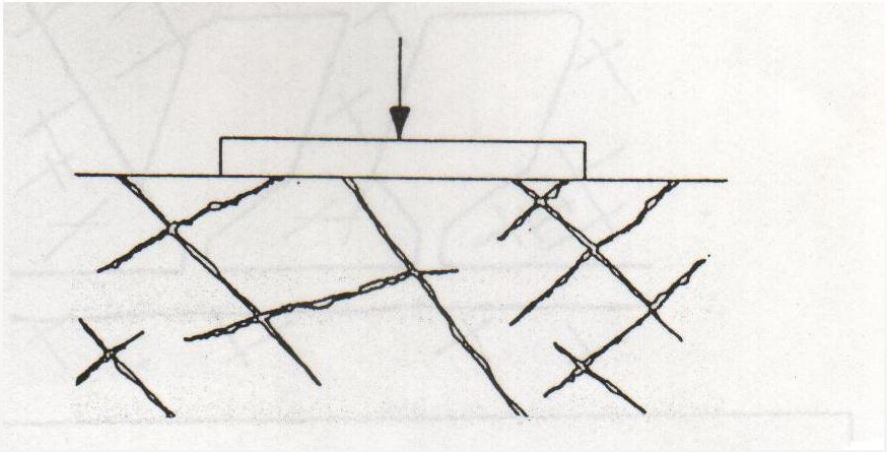
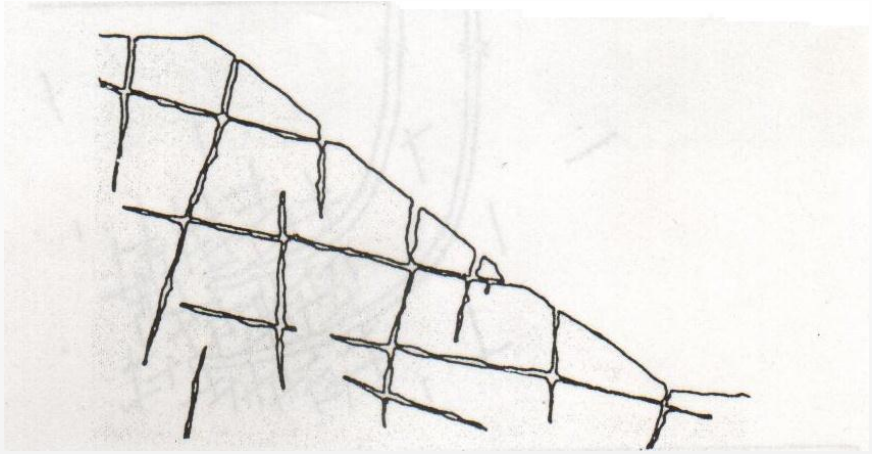
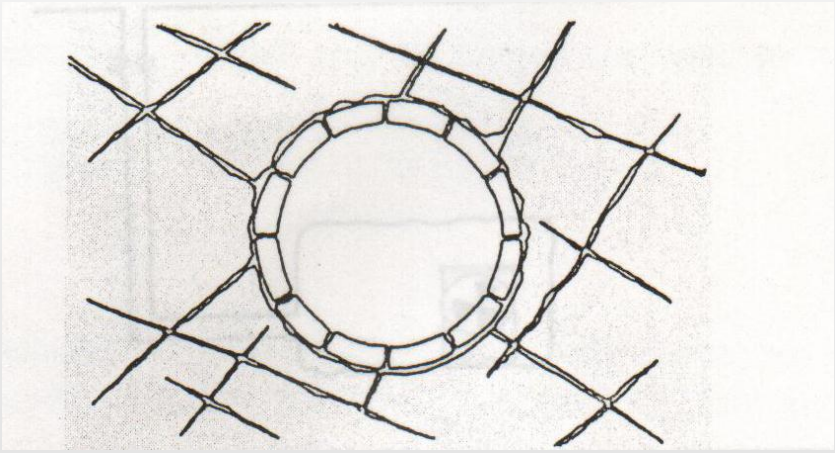
Why Engineering Rock Mechanics?

Civil engineers + construction in rock + mechanics of materials.

Construction activities deal with 2 types of geological materials; SOILS & ROCKS. Structures like building foundation, slopes & underground excavations are often associated with various types of rock hence, knowledge on Rock Mechanics is essential in designing & constructing these structures.

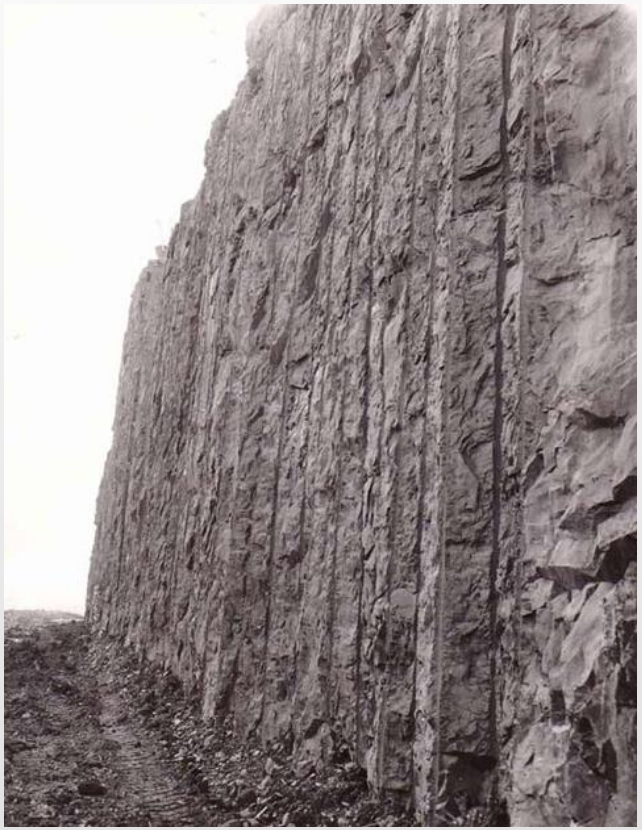






Rock as part/components of civil engineering structures – rock as foundation, slope cut in rock & tunnel excavated in rock

Civil engineering construction & rocks

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The design, construction & stability of the rock engineering structure greatly depend on the interaction between the surrounding rock mass & the structures.

How the surrounding rock mass respond to the construction will depend on many factors

Including its properties (mass & material scale), strengths & deformational behaviour.

In situ conditions of the rock mass (geological & structural discontinuities – Geological aspects), level of disturbance & construction induced stresses (design & construction of the structure) also control the response & interaction of the rock mass.

Geology is equally important!

"*Every each structure is constructed in or of a medium..... Geology should be used to greater advantage. We deal with geological materials, yet geological techniques, geological reasoning, and the implications of geology are rarely utilised to maximum advantage*"..... R.B. Peck, 'Presidential Adress', 8th Int. Confc. on Soil Mechanics & Foundation Engineering, Moscow, 1973.

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