



PROJACS ACADEMY
by @egis



Construction of Buildings and Facilities on Difficult Soils

إقامة المباني والمنشآت على أنواع التربة الصعبة

08 - 12 October 2023

Cairo / Egypt

Introduction

In many areas all over the world, certain soils make construction of foundations extremely difficult. For example, expansive or collapsible soils may cause high differential movements in structures or facilities by excessive heave or settlement. Similar problems can also arise when foundations or facilities are constructed over sanitary landfills. Foundation engineers must be able to identify difficult soils when they are encountered in the field. Although not all the problems caused by all soils can be solved, preventive measures can be taken to reduce the possibility of damage to structures or facilities built on them.

This course is designed to identify the difficult soils, their types, parameters, and tests which should be done during the soil report. The course also deals with the problems that these types of soils cause to the superstructures and facilities. Consulting advices are given to construct the structure and facilities safe without deficiencies.

Engineers and managers working in the field of design, construction and maintenance of structures often feel the lack of a comprehensive practical guide on the practice with the difficult soils, needs and effective programs about how to counter pass the problems happened due to them. Few practical references are available that bridge the gap between theoretical, technical, practical and managerial matters in this regard.

Who Should Attend?

This course is designed to meet the needs of engineers, managers, Geotechnical engineers, Repair contractors, municipal building inspectors, designers and professionals, and owners /managers of buildings who are working in the area of construction, and facing the challenges of maintaining and preserving good, sound buildings or facilities. It is specifically useful for structural engineers, construction and supervision engineers, owners and managers.

Course Outline

Day One

Definitions

- Soils with problems
- Swelling soil
- Collapsible soil
- Soft clay.

Types of difficult soil

- Types of Swelling soil
- Types of collapsible soil
- Types of soft clay
- Other types of rock and soil related problems

Day Two

Geology and sedimentation soil conditions related problems

Foundation on swelling soils

- Definitions.
- Laboratory tests for classification and identification of Swelling soil
- Soil treatment and methods of foundation
- Basic requirements for Soil Research Report to investigate the swelling soil parameters
- Case studies

Day Three

Foundation on collapsible soil

- Definitions
- Laboratory tests for classification and identification of collapsible soil
- Soil treatment and methods of foundation
- Basic requirements for Soil Research Report to investigate the collapsible soil parameters
- Case studies

Day Four

Foundation on soft clay soil

- Definitions
- Laboratory tests for classification and identification of soft clay soil
- Soil treatment and methods of foundation
- Basic requirements for Soil Research Report to investigate the soft clay soil parameters
- Case studies

Day Five

Side effects and deteriorations of superstructures construction which rested on difficult soil

- Soils with problems.
- Swelling soil.
- Collapsible soil.
- Soft clay.

Consulting advices to repair and strengthening structures built on the difficult soil.

Case studies.

Training Method

- Pre-assessment
- Live group instruction
- Use of real-world examples, case studies and exercises
- Interactive participation and discussion
- Power point presentation, LCD and flip chart
- Group activities and tests
- Each participant receives a 7” Tablet containing a copy of the presentation, slides and handouts
- Post-assessment

Program Support

This program is supported by interactive discussions, role-play, case studies and highlight the techniques available to the participants.

Schedule

The course agenda will be as follows:

- | | |
|---------------------|------------------|
| • Technical Session | 08.30-10.00 am |
| • Coffee Break | 10.00-10.15 am |
| • Technical Session | 10.15-12.15 noon |
| • Coffee Break | 12.15-12.45 pm |
| • Technical Session | 12.45-02.30 pm |
| • Course Ends | 02.30 pm |

Course Fees*

- **3,200 USD**
**VAT is Excluded If Applicable*

المقدمة

لا يخلو مكان على سطح الكرة الارضية من انواع من التربة عند التأسيس عليها تسبب مشاكل سواء للمنشآت المرتكزة عليها او المرافق وذلك نتيجة للتغير النسبي في استجابة هذه الانواع من التربة للمؤثرات الخارجية مما يؤدي الى ظاهرة التصدع والانهيال للمباني.

وقد تم تصميم هذا البرنامج لكي يؤهل المهندسين والمقاولين والمدراء المتعاملين مع المنشآت والمرافق التي يتم تشييدها أو التي تم بالفعل تشييدها على الانواع المختلفة من التربة ذات المشاكل وذلك من خلال معرفة انواعها وخصائصها وكيفية التعرف عليها والاختبارات الواجب اجراءها عند عمل تقرير ابحاث التربة لمعرفة معالماتها.

الحضور

المهندسون المتخصصون في التصميم الإنشائي وابحاث التربة وتصميم الاساسات والمرافق والمقاولون ومدراء المشروعات ومهندسي الترميم والاصلاح ومهندسي تقييم المنشآت