TESTING FORUM

talk by Saxena entitled "Engineering Properties of New Jersey Tidal Marsh Sediments and South Florida Mangroves," one by R. Bennett entitled "Total Organic Carbon Content of East Coast Shelf and Slope Sediments," and an address by A. G. Young, "Undrained Strength of Gaseous Gulf of Mexico Sediments." It was concluded that the form and quantity of organic matter can vary considerably but that geographic organic patterns do exist and that organic matter will affect engineering properties and behavior. For example, seafloor samples that experience elevated temperatures during storage may be disturbed by accelerated bacterial decomposition of organic matter. Gaseous soils, for their part, may be disturbed as a result of hydrostatic pressure release during coring, necessitating the use of specially designed in-situ test equipment for soil data of adequate quality.

Road Engineering Conference

The third conference of the Road Engineering Association of Asia and Australasia will take place in Taipei, Taiwan, 20-24 April 1981, with post-conference tours scheduled for 25-27 April. The theme of the third conference is "Road Engineering and Energy Conservation." The conference is organized for the benefit of members of the Road Engineering Association of Asia and Australasia, the China (Taiwan) Road Federation, and the Chinese (Taiwanese) Institute of Engineers, who are the sponsors of the conference. However, any person who is interested in the conference is welcome to participate. A formal letter of invitation to participate may be arranged by writing to the Secretary-General, Organizing Committee, III REAAA Conference, c/o Moh and Associates, 11th floor, 75, Nanking East Road, Section 4, Taipei, Taiwan.

Loss Prevention Supplement

The Association of Soil and Foundation Engineers has published a supplement to its *Directory of Publications and Loss Prevention Aids*. The supplement describes some 15 publications and loss prevention aids developed recently by ASFE, including case histories, magazine article reprints, and manuals. The new supplement is available without charge. Requests should be sent on company letterhead to the Association of Soil and Foundation Engineers, 8811 Colesville Rd., Suite 225, Silver Spring, Maryland 20910 (301/565-2733).

LETTER

Soil Bearing Footing Area Tests

To the editor:

We refer to the letter under the above heading in your Journal, Vol. 2, No. 2, June 1979, requesting information on portable bearing capacity testing devices.

In South Africa such a device is in fairly common use. It is called the dynamic cone penetrometer (DCP) and is in effect a scaled-down version of an SPT (standard penetration test) device. Reference is made to this in *Proceedings of the European Symposium on Penetration Testing* (Stockholm, 1974) in the paper discussing procedures in South Africa, pages 201-215. The version most generally used is that described as the CBR penetrometer but now known simply as the DCP. Its use for road work is common, and hence the parameter usually obtained is the CBR (California Bearing Ratio). Considerable work has been carried out by E. G. Kleyn of the Transvaal Roads Department in Pretoria on providing correlations between penetration resistance and CBR values; the DCP is now used with confidence.

In order to make use of this equipment for measurement of density or undrained shear strengths for bearing capacity estimations, there is no generally accepted method and there is a tendency to view the CBR obtained in a qualitative manner rather than quantitatively. However, the CBR test can be viewed as a bearing capacity test; by using conventional bearing capacity equations it can be shown for cohesive materials that:

$$q_{\text{allowable}} = 23 \times \text{CBR kPa} \quad (1)$$

where the CBR is expressed as a percentage in the normal way and q is the bearing capacity.

Similarly, for cohesionless materials the DCP can be related through CBR results to q_c, the CPT (static cone penetration test) cone value, or to the SPT value; when used with the bearing capacity equation given by Sanglerat in *The Penetrometer and Soil Exploration* (Elsevier, New York, 1972) this becomes:

$$q_{\text{allowable}} = q_{c/10}$$

and also

$$\text{CBR} = q_{c/280}$$

(also quoted by Sanglerat) where q_c is in kPa; hence

$$q_{\text{allowable}} = 28 \text{ CBR kPa} \quad (2)$$

An average of Eqs 1 and 2 is accepted as being suitable and convenient:

$$q_{\text{allowable}} = 25 \text{ CBR kPa} \quad (3)$$

The above are for shallow foundations and no account is taken of the possible influence of depth or overburden pressure on the penetration test result.

We should point out that the equipment is very simple and rugged and can be operated rapidly by one person and easily carried in a car. We therefore believe that it is entirely suitable for the requirements mentioned in the letter in your journal.

Yours faithfully,
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