

EVOLVING OF ENGINEERING BEHAVIOUR OF
ORGANIC SOILS (PEAT, ORGANIC CLAY ETC.)

N. Kuganenthira, J.J.P. Ameratunga
National Building Research Organisation, Colombo 5.

The development of the capital city of Sri Lanka has accelerated during the past decade. This has necessitated the reclamation of low lying areas in and around Colombo to build commercial, industrial and residential structures. However organic terrain formed by the accumulation of peat or muck supporting a superficial layer of living vegetable matter constitutes a major portion of these low lying areas. As the interest in these peaty soils are increasing due to development work in the low lying areas a major research programme is underway to understand the behaviour of these weak subsoils.

It is extremely difficult to study the behaviour of peat because of its variability and because standard procedures of laboratory testing are not applicable to these types of soils. For the present study, fine fibrous peat in the Kotte area has been used. It was found that the temperature at which laboratory tests are carried out has a major influence on its properties. The peat properties that were studied in this programme included the natural moisture content, liquid limit, plastic limit and specific gravity. The effect of different temperatures of 105°C, 80°C, 60°C, and room temperature on these properties was tested and analysed. It was found that a temperature of 60°C gives reproducible results and appropriate for peaty soils used for the test series.

Consolidation characteristics of peaty soils is highly complex and much different to the behaviour of clayey soils. Standard Terzaghi's theory of consolidation is not applicable because peaty soils show very high secondary settlements. A testing programme is now in progress to understand the fundamental behaviour and the preliminary results are presented.

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