PERFORMANCE OF BUILDINGS IN MARSHY LANDS

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An extensive study of the engineering behaviour of peaty soil, a predominant soil type encountered in low lying marshy lands and periodical monitoring of buildings constructed in these lands reveal that the severe problems,the designers have to face, is the excessive settlements of structures caused both by filling used for raising the ground levels and by the structure itself.

Unlike in the other situations where a firm base is assumed to withstand the foundation pressure, here, it is a flexible base and redistribution of stresses within the structure and the stressed soil strata take place. The high order or settlement and the subsequent effect on the structures are of paramount importance while evolving design methods incorporating soil structure interaction.

Considering the redistribution of stresses, rational design methods were evolved under a research programme, on evolving appropriate foundation types for construction in marshy lands, carried out by National Building Research Organisation (NBRO). However, many common questions such as determining the planned ultimate fill level, time gap required to commence construction after filling giving consideration to the foundation types selected etc., need field evidence to arrive at useful solutions.

This paper reviews the existing design methods applicable in marshy lands and summarises the performance of selected foundation types, as gathered from periodical monitoring of buildings. Under the same study some useful guidelines were also developed for design and construction in marshy lands.