

SETTLEMENT CHARACTERISTICS OF
LOW LYING AREA IN AND AROUND COLOMBO

K.T.R. Lakshman

National Building Research Organisation , Colombo 05.

The rapid industrial and economical development, and the heavy growth of population over the last two decades in Colombo has resulted in an acute shortage of good ground to cater for future development. With the limited good ground available, naturally at an exorbitant price, the developers are compelled to build on marginal marshy lands. These marshy lands of the low lying areas are predominantly of organic soils, which have very low shear strength and very high compressibility. Therefore even single storeyed or light buildings constructed in these lands undergo excessive settlements.

Many buildings in these marshy areas were monitored over the last two years by the National Building Research Organisation. In this paper the settlement records of these buildings are summarised separately for buildings which have shown distress and buildings without any distress. Based on these, the settlement characteristics of the low lying areas are discussed and some examples are given.

Generally it is the differential or distortion settlement which causes the distress in the building. However, total settlement is very much easier to predict than the differential or distortion settlement. In this paper, simple semi-empirical methods are proposed to predict the differential or distortion settlement from total settlement, giving due consideration to the subsoil profile, and the rigidities of the building and the foundation.