

## Abstract

Nairobi City is mainly underlain by pyroclastic volcanic rocks that were deposited during the formation of the East African Rift Valley. Some of the volcanic rocks were deposited in aqueous conditions over a long period of time and are intercalated with lacustrine sediments. River valleys and other depressions that existed during the periods of intermittent inactivity were filled with alluvium and clays. At building sites, the alluvium, clays as well as decomposed volcanic tuffs are found to have variable thicknesses and sensitive to moisture. The objectives of this research were: to identify localities covered by the sensitive and variable soils; to determine the geotechnical properties of the soils and to examine the methods and processes that make for a successful construction program. Geotechnical test results and reports from fifty seven sites underlain by these soils were analysed. The results show that structures with defects exist side by side with those in sound condition. It is concluded that some methods of construction work well in these soils. These successful construction methods that are applied to avoid/ remedy total and differential settlement in buildings are discussed here. Since the methods are quite successful, the authors suggest use of the same approach for addressing similar subsoil problems.