

QUATERNARY DEPOSITS IN SÃO PAULO CITY: CHARACTERIZATION FOR ENVIRONMENTAL AND URBAN GEOLOGY

1TAKIYA, H & 2LANDIM, P.M.B. 1Secretaria do Verde e do Meio Ambiente, Prefeitura Municipal de São Paulo, São Paulo, Brazil, 2 Departamento de Geologia Aplicada, Instituto de Geociências e Ciências Exatas, UNESP, Rio Claro, Brazil

São Paulo City has a population of 10 million inhabitants irregularly distributed over an area of 1,509 km². The city was at the beginning developed on Tertiary hills of the São Paulo Basin, but nowadays is penetrating areas with accentuated slopes constituted by rocks of the Precambrian basement of the basin, mainly to the North and to the South of the municipal district. Colluvial deposits with thickness up to 15m have a generalized occurrence in the area and can be found over hillsides. They are characterized by muddy to muddy sandy porous (10 to 25%), poor selected, with yellowish to brownish colors and common organic clay at the top. Most of the observed deposits present stone lines as a pavement. Due to the urban expansion embankment beds now cover such deposits, mainly during the last 10 years in the eastern part of the city. Such filling up are made in illegal manner with no technical criteria and originating several environmental problems. When drought the colluvial deposits shows an apparent stability, but with water saturation they rapidly originated fractures mainly in the colluvial and embankment contact. Analyses of the geotechnical characteristics of these deposits in the landslide occurrences in several areas indicate a close relationship between the presence of colluvial deposits and high probability of landslides occurrence. In that way, a better knowledge of these deposits can contribute directly for preventive measures that must taken in order to decrease the number of existent critical areas for landslides in the municipal district of São Paulo as several slums are built over these colluvial deposits.