ABSTRACT

Slope stability in residual soil and weathered rock terrain derived from the in-place weathering of volcanic rocks in Hong Kong and Hawaii are found to be influenced by similar engineering, geological, and hydrogeological factors. Significant engineering and hydrogeological factors affecting slope stability in weathered volcanic terrain are found to include:

- Variation of weathering grades and material strengths with mineralogy and structural geological weakness;
- Presence of hydrological catchments and permeable zones with clayey colluvial deposits;
- Relationships between rainfall intensities, hillside hydrogeological regime, and slope movements; and
- Residual and colluvial clay soils that are susceptible to soil creep.

The general geological, geotechnical, and hydrogeological characteristics of weathered volcanics in Hong Kong and weathered basalts in Hawaii are compared and discussed, including examples of slope instability in both areas in terms of debris flows, fast occurring landslides, and slow moving landslides. Also discussed are the study approach and monitoring program for an on-going investigation of a large active slow moving landslide in Honolulu.