Executive Summary
CE 544
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Overview

Hong Kong's terrain and climate make the territory very prone to landslides and significant risk has been created through the post-war urban development of its steep hillsides. The landslide at Po Shan Road, Hong Kong Island which occurred on 18 June 1972 was one of those landslides that had changed the geotechnical history in Hong Kong.
On June 17th, 1972, several smaller slides destabilized the slope. Finally, on June 18th, a circular failure plane developed below Po Shan road, leading to a slope failure on the hill above. This slope failure resulted in a 50,000 cubic meter landslide, which destroyed a 12-story apartment building, blocked off several roads, and damaged another building, killing 67 people.

Background Information

In Hong Kong, apartment buildings are commonly built on the hilly areas because of the lack of developable lands. Po Shan hillside had several existing apartment buildings, while some of the sites in the area were still under construction. This hillside was underlain by thick bouldery colluvium, which was old landslide debris deposited some 50,000 years ago. This colluvium was susceptible to development of high groundwater levels and to failure when disturbed by construction activities. In 1972, Hong Kong was also experiencing unusually high volume of rainfall. It was the second highest in record, and it was twice as the average rainfall for June. The constructions and the heavy rainfall are the major causes of this deadly landslide.

Slide Mechanics

Improper support of excavation on the toe of the slope destabilized the uphill portion of the slope. This lack of support at the bottom, coupled with increased rainfall on the hill (25.2 inches in 72 hours), produced the conditions necessary for the large landslide. The cut had an assumed factor of safety of 1.5, however the excessive rainfall was not accounted for, which lowered the factor of safety below 1.0. The initial slide took place below a garage near Po Shan Road, which triggered a slope failure above the hill, which caused most of the damage in the area.

References:

- Landslide Prevention and Mitigation Works at Po Shan, Mid-Levels: http://www.edb.gov.hk/attachment/tc/curriculum-development/kla/pshe/references-and-resources/geography/LPM%20Works%20at%20Po%20Shan%20(English).pdf
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