

ABSTRACT

The Geotechnical Engineering Office of the Civil Engineering and Development Department has undertaken a study of the natural terrain landslide hazards that affect the planned Small House development in the Ling Pei area, Lantau. The study assists the Planning Department in identifying the scale of the problem and the strategy to be adopted in providing a land use framework to guide Small House development in the area.

The key tasks that have been carried out comprise review of the available information, interpretation of aerial photographs, field inspections, geological mapping, assessment of the potential natural terrain hazards, quantification of Individual Risk and Societal Risk using Quantitative Risk Assessment methodology, and evaluation of possible risk management strategy.

The study has reached the following conclusions:

- (a) The calculated Individual Risk at the planned Small Houses is found to be acceptable.
- (b) The calculated Societal Risk is entirely within the 'As Low As Reasonably Practicable' (ALARP) zone. The Maximum Justifiable Expenditure for risk mitigation is found to be in the order of HK\$ 0.7 million based on ALARP principle.
- (c) Evaluation of two possible options indicates that risk mitigation is viable, provided that the planned development is arranged in a way that allows for coordinated provision of the risk mitigation measures. The cost of risk mitigation, which is about 0.3% of the estimated cost of the development, is not excessive.
- (d) From the point of view of management of natural terrain landslide risk, the planned Small House development is feasible.