Construction Site Safety for Landslip Prevention and Mitigation Programme (LPMitP)

Key Messages: The Geotechnical Engineering Office (GEO) is committed to:

- ensuring safety of the public during construction works to upgrade substandard government slopes and to mitigate landslide risks arising from natural hillside catchments; and
- providing a safe and healthy environment for all personnel involved in the works.

Background

The GEO of the Civil Engineering and Development Department (CEDD) launched the LPMitP in 2010 to dovetail with the Landslip Preventive Measures (LPM) Programme. The objective of the LPMitP is to contain the landslide risks in Hong Kong within an as low as reasonably practicable level in the long term. The annual output of the LPMitP, among others, is to upgrade 150 substandard government man-made slopes, and implement studies and necessary risk mitigation works for 30 natural hillside catchments.

It is Government’s policy to accomplish public works safely, efficiently and with due regard for the environment. Safety considerations are given high priority in both design and construction. The Development Bureau (DEVB) is committed to provide a safe and healthy working environment for all personnel in public works construction sites and protect others who may be affected by the works. Every public works contract needs to adopt a Site Safety Management System and should aim at an accident frequency rate of less than 0.6 reportable accidents per 100,000 man-hours worked, measuring over a rolling 12-month period.

Safety Management Measures for LPMit Works

The GEO is committed to ensuring the safety of the LPMit works. Apart from adopting the Site Safety Management System as required by the DEVB, the GEO has implemented the following additional safety management measures for the LPMit contracts.

Involvement of GEO Senior Management

The Deputy Head of the GEO (Landslip Preventive Measures) (DH(LPM)) takes part in the CEDD Site Safety Review Committee meeting, which is chaired by the Deputy Director of the CEDD and held quarterly, for sharing experience on site safety issues, reviewing the safety performance of works contracts, identifying sites of special safety concern for closer monitoring, and formulating strategies and action plans to upkeep a high safety standard at works sites and monitor their implementation.
The senior management of the GEO pay caring visits and surprise visits to selected LPMit sites, in particular for those sites with exceptionally high risk construction activities, fatal/serious incidents and/or high accident rates. These visits allow the senior management of the GEO to review the safety standard and the working environment of the sites concerned, and to communicate with the frontline workers/supervisors on safety related matters. The senior management of the GEO proactively liaises with LPMit consultants and contractors to form a Working Group, which advocates to raise standards and awareness of good safety practice in the use of temporary works and operation of machinery plants for LPMit works.

Planning and Design of LPMit Works

LPMit works that are close geographically are grouped into the same contract whenever possible to enhance efficiency in the site supervision of safety and works quality. During the design of more complex LPMit works which may pose a significant risk to the public during construction, specific site safety measures, such as imposing restriction on the sequence/area/depth of excavation, will be considered and included in the contract.

Safety Training

The CEDD has set out the basic standard and time frame for mandatory training on site safety management and construction industry safety to be achieved by departmental staff and consultants’ site supervisory staff. The CEDD also organises appropriate training to keep GEO staff abreast of up-to-date site safety knowledge and legal site safety requirements. Site supervisory staff are also encouraged to attend training on first aid, fire prevention and fire fighting to enhance their emergency preparedness at work.

Promotion of Safety Awareness

Contractors involved in LPMit works are encouraged to participate in safety promotion campaigns organised by the DEVB and/or other organisations. In addition, the CEDD organises annually an award scheme to give recognition to contractors with good safety performance on construction sites. Since 2015, an Innovation Award for Site Safety has also been introduced into the award scheme to promote innovation and advanced application in the industry to enhance site safety. The aim of the award scheme is to promote site safety in CEDD works contracts and motivate the contractors to raise their level of site safety awareness.

Strengthening Contractual Safety Requirements

In March 1996, the then Works Bureau (WB) introduced the 'Pay for Safety Scheme' (PFSS) for all Bills of Quantities public works contracts in order to remove site safety from the pressure of competitive tendering. Recognising the benefits brought about by the new initiative, the GEO has proactively adopted the PFSS in all LPMit works contracts and Ground Investigation contracts irrespective of the contract sum since 1996.

Under DEVB’s current requirements, if there are more than 50 workers on site, the contractor is required to employ a full-time Safety Officer. However, the GEO has specified the requirement of a full-time Safety Officer in all LPMit contracts irrespective of the number of workers, in
order to ensure closer site safety supervision in LPMit contracts involving concurrent construction activities for multiple sites.

Safety guidance notes, safety alerts and lessons learnt from serious accidents issued by the Safety and Environmental Advisory Unit (SEAU) of the CEDD, Labour Department, etc. are disseminated regularly to contractors for information and sharing with their frontline staff for training purpose. The contract provisions of LPMit works relating to site safety, construction practices, working procedures/guidelines are reviewed and updated regularly for enhancing the safety standards of the LPMit works sites.

Administration of Contractors

The SEAU conducts safety inspections and attends safety meetings with GEO staff, consultants and contractors regularly. This assists the contractors in improving their site safety systems and allows the identification of contracts with unsatisfactory safety performance for proper follow-up action. The SEAU also conducts independent site safety audits for selected contracts with unsatisfactory site safety performance to further strengthen the site safety management systems of the contracts concerned.

The GEO implements the CEDD Construction Site Safety Monitoring System for all LPMit contracts. It ensures a close monitoring on the safety performance of LPMit works sites and involves 2 levels of actions for contracts with unsatisfactory safety performance. When a contractor’s accident statistic reaches Action Level 1 (i.e. 0.5 < Accident Frequency Rate < = 0.9 with 2 or more reportable accidents) in any rolling 3-month period, a number of actions will be taken, including an interview of the contractor by GEO senior project management team and a review of the contractor’s site safety management system for formulating an improvement action plan. When the contractor’s accident statistic reaches Action Level 2 (i.e. Accident Frequency Rate > 0.9 with 2 or more reportable accidents) in any rolling 3-month period, the senior management of the GEO will be involved in interviewing the top management of the contractor and reviewing the safety performance of the site.

Discussion Forum and Experience Sharing

Liaison meetings with the contractors, which are chaired by DH(LPM), are held quarterly. These meetings provide a forum for the GEO and the contractors to discuss matters that are of common interest about the implementation of LPMit projects, including the site safety issues. GEO’s concerns on site safety and any updates on the site safety policy or requirements can be conveyed to the contractors via these meetings. The contractors can also share their experience of good site safety practices or safe working methods in these liaison meetings.

Enhanced Care for Workers

In order to uplift the site safety standards, the GEO requests the contractors to adopt enhanced site safety measures in all LPMit projects. These enhanced safety measures include a new comers caring programme for new workers, the use of graphical working procedures to facilitate understanding of good safety practices by the workers, the distribution of safety reminders on recent fatal incidents for sharing of the lessons learnt, and the reporting of near miss incidents.
Further Works

The above safety management measures have proven to be effective in reducing accidents in LPMit works sites. The overall accident rate of LPMit works contracts satisfied DEVB’s safety target in recent years. However, constructing landslide hazard mitigation measures on steep natural hillsides with difficult access is always challenging in ensuring site safety. The GEO will therefore keep up its efforts to achieve a higher site safety standard in all LPMit contracts by collaborating with industry practitioners in enforcing good site safety practices, providing and contributing to education and guidance materials, improving construction safety management with the use of advanced technology and to develop new safety initiatives.

Geotechnical Engineering Office
Civil Engineering and Development Department
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Summary of LPM/LPMit Works Accident Statistics since May-1995

- 12 Months Moving Average
- Monthly Average
- Safety Target (less than 0.6 after 1.2.2011)