

**Deputy Director of Housing
(Development & Construction) cum
Chairperson of Housing Department
Site Safety Sub-committee**

**Keynote Speech by
Mr Stephen K M LEUNG**



The theme for our discussion today is “Safe Practice Bolstering Professionalism of Work Personnel”. At this Forum, we will focus our attention on high risk operations, including work-above-ground activities, lifting operations, prevention of falling materials, etc.

We often say that “prevention is better than cure”. Indeed, the best way to prevent accidents is to manage risks at source. In order to achieve site safety, members of the whole project team are required to work together and make sustained efforts to strive for excellence with professionalism in various aspects like design, contractual requirements, procurement, construction, supervision, training, research, etc.

Construction works involves complex and variable procedures. After years of efforts, the construction industry experienced a continuous decline in the overall accident rate. The Housing Authority (HA), being a firm advocate of site safety, succeeded in maintaining the site accident rate per thousand workers in single digits for the past decade. It was since 2016 that we have adjusted downward our target accident rate per thousand workers to not more than 9 in order to enhance the standard of site safety.

Nevertheless, site safety is a difficult issue with multiple challenges and risks where dangers and accidents may easily occur. While we could maintain a record of zero fatal industrial accidents for the HA in both 2019 and 2020, two such accidents occurred in early 2021, one at a New Works site and the other at a Maintenance Works site. Both incidents aroused our great concern and, once again, reminded us about the importance of taking appropriate measures for site safety. This is also a long-term commitment to us.

According to past records, half of the fatal cases involved the fall of persons. Early this year, there were several fatal accidents, all relating to working at height. Therefore, the industry must stay vigilant and manage well those risks in work processes at all times.

The past records also showed that over half of the fatal accidents relating to HA works involved the fall of persons. Besides, there were two accidents involving lifting operations in 2017, representing about 15% of the total cases. Therefore, we need to pay special attention to high-risk processes such as work-above-ground activities and lifting operations.

Facing the various safety risks on sites, the HA has adopted a three-pronged safety management approach. Our teams will manage a risk of all aspects in a professional way, be they the hardware including the management system, the working environment and equipment, or the software in terms of cognition, thought and behaviour. We will keep making reviews and improvements for further progress.

The First Prong - Procurement Strategy and Performance Monitoring Mechanism with Incentives and Sanctions

If contractors wish to register with the HA for inclusion in the latter's lists, they must have met the statutory registration requirements on enterprises, techniques and funding. They must also have obtained the certification for quality, environmental and safety management systems. Contractors with higher performance scores can get more tendering opportunities. Under the tender evaluation system implemented by the HA, the past performance scores of a contractor will have an impact on the award of a New Works contract to the contractor.

For the award of ordinary building contracts, foundation contracts, building services contracts, etc., the HA will also consider the performance score, the corporate score and the non-price score. The corporate score will be based on, among others, the occurrence of serious accidents and breaches of legislation on the part of a contractor. For the award of complex building contracts and foundation contracts, the HA will even consider the technical assessment which covers the contractor's capability and experience as well as its risk identification and management of individual projects. If tenderers fail in the technical assessment, the HA will not open their tender price envelopes.

The HA has to select competent contractors to take forward its projects with the purpose of ensuring site safety, and putting into practice its belief of caring for the lives and health of frontline workers. Performance scores can be obtained through various performance monitoring mechanisms of the HA. We consider it as "what get measured get done".

The Performance Assessment Scoring System (PASS) covers most types of project works as well as the Materials Testing Laboratories for Pile Testing. The HA will monitor the performance of contractors on all fronts. In addition to PASS, there are other performance monitoring mechanisms such as daily supervision by project teams, inspections by the Chief Technical Officers, the HA Safety Auditing System, the Surprise Safety Inspection Programme, and inspections conducted by the Housing Department (HD) management staff, the Contractors Review Committee and audit teams.

The HA will also take note of Labour Department (LD) site inspection reports like suspension notices, improvement notices, and Parts I and II of inspection reports. We will keep track of site accident and incident reports submitted by contractors, site accident reports notified by the LD, and sanctions imposed by the Development Bureau against contractors involved in serious incidents. Public scrutiny is also a way for us to collect vital information.

For contractors with unsatisfactory safety performance, the HA will take appropriate regulatory actions against them. Such actions can motivate those contractors to make sustained improvements to their performance. In case of a more serious situation, the Procurement Review and List Management Board may consider suspending the contractors concerned from tendering and disqualifying them from the Premier League Status. For contractors with poor safety performance, the disbursement under the Pay for Safety Scheme may also be deducted accordingly.

The Second Prong – Through Contractual Requirements and Management
The HA introduces safety practices with higher standards beyond the statutory requirements:

- Contractors are required to comply with the Guidelines on Site Safety Measures issued by the Construction Industry Council (CIC).
- Contractors are required to adopt a series of measures to enhance site safety and management, such as:
 - adopting the Safe Working Cycle;
 - creating designs by way of Building Information Modelling (BIM);
 - making a quarterly assessment of the safety performance of contractors;
 - implementing the Pay for Safety Scheme;
 - getting certifications under safety accreditation schemes.

The HA also strives to provide a better environment for construction sites through contractual requirements. For example, to improve the site environment, contractors are required to practise hard-paved construction, to mechanise working procedures, and to use a lot of precast concrete components and metal formworks. It is very important to ensure the safety of lifting operations with tower cranes. Contractors are required to set up various monitoring and alert systems like:

- installing anti-collision systems for tower cranes;
- installing video recording devices at the saddle of a tower crane, around lifting zones and in the operator's cabin, where contractors are required to monitor such devices;
- installing a secondary braking device for tower cranes; and
- installing the Radio Frequency Identification (RFID) System, sticking an RFID tag on the hook of a crane and placing sensors on the ground. When the hook is lowered to a pre-determined height, the sensor will emit a signal to alert workers nearby.

To prevent the fall of persons and materials, we have adopted some enhanced precautionary measures. For example:

- hop-up or step platforms with guardrails are used when working at a height of 0.9 to 2 metres above ground level;
- bamboo scaffolds must be either closely spaced or closely boarded;
- floor openings must be covered with boards that are securely fixed in position and provided with warning notices; and
- guardrails must be provided around openings on the floor and of a facade.

Heavy mobile plants pose a certain degree of hazard to site staff. Cases of workers hit and killed by these plants are heard from time to time. In order to enhance the safety of workers operating mobile plants, contractors are also required to upgrade their equipment. For instance:

- installing the Smart Card Control System designed for authorised operators to prevent unauthorised persons from operating such plants; and
- installing reversing video devices. Just a note to contractors, the viewing angle of the device must be able to show the entire rear of the vehicle, and where necessary, additional lenses or lenses of a wider angle should be attached to eliminate blind spots.

Furthermore, the risk of death resulting from contact with electricity should not be overlooked. To ensure safe use of electricity on site, the HA requires that the temporary power supply on site be set at a voltage of 110V, and hand-held electric tools, excluding heavy machinery and working in an office, of the same voltage be used so that the voltage can be stepped down to minimize possible accidents. Some hand-held electric tools have to be cordless to avoid possible accidents caused by current leakage in cords. Contractors are required to provide a video monitoring system for material hoists where a video recording device be installed in the hoist cage to facilitate the safe operation of the hoist.

To comply with CIC guidelines, foundation contractors have to provide dedicated working platforms and fabrication frames for workers engaged in the fabrication of a bored-pile reinforcement cage. Even if an excellent system and a well-designed hardware are in place, we still need staff to make them work. Therefore, it is very important to raise the safety awareness of those people whose behaviour and conduct are our emphasis. Contractors are required to:

- conduct the Safety Climate Index Survey and implement the Work Safe Behaviour Programme;
- arrange site management staff to complete a safety training course;
- hold Lunchtime's Safety Talks;
- implement the Caring Programme by providing safety guidance to new construction workers who carry the "P" or "N" labels;
- encourage workers at construction sites to join safety campaigns organised by the industry;
- organise the construction site safety award scheme; and
- organise training programmes for tower crane operators.

The Third Prong - Research, Training and Promotion.

The HA endeavours to enhance communication and co-operation with the industry for a safety culture. The "Safety Forum for Works and Property Management Services" held today sets a very good example, where members of the HD Site Safety Sub-committee come to join the occasion and show their staunch support.

At the end of this year, the HA will also organise the “Quality Public Housing Construction and Maintenance Awards” in recognition of the outstanding performance achieved by project teams, contractors and workers. To learn about the latest information on site safety, you are invited to visit the Housing Authority Site Safety Website.

As for the training arrangements, HD new works staff are required to undergo an induction training on site safety. Afterwards, they have to attend a relevant online refresher course every 5 years. In addition to it, we organise site safety seminars twice a year. Our colleagues from the Site Safety Sub-committee will visit construction sites in person. They will also share information on safety with contractors, site management staff, workers and HD site staff at lunchtime or monthly safety meetings via video conferencing.

As far as the future work is concerned, the HA will extend the use of precast concrete components and consider adopting the Modular Integrated Construction method. All these will not only boost productivity, but also make it possible for some processes to be completed off-site in a factory, thus helping enhance site safety and environmental performance. The HA will also strive to apply more technologies to site safety management and seize every opportunity brought by technological advancement to enhance site safety.

The HA hopes that the industry will work with concerted efforts to manage the risks properly, to uphold the values of “safety first, life first”, to follow safe work practices with team spirit and professionalism, and to ensure the safety and health of our workers. I would also like to take this opportunity to wish you all good health and success.