Presentation by Ms FUNG Yin Suen, Ada, BBS, JP
Deputy Director of Housing (Development & Construction) cum Chairperson of Housing Department Site Safety Sub-committee
Keynote Speech on "Safety Roadmap and Design for Safety in Public Housing Developments"

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We have been co-organising the Site Safety Forum for ten years now. Here I want to thank all of you for your tremendous support over the years. As this is the 10th anniversary of the Forum, I would like to take this opportunity to introduce and review the work of the Housing Department Site Safety Sub-committee (HDSSSC), and its support to the construction industry for promotion of site safety and to brief on the work of Housing Authority (HA) on design for safety.

HDSSSC is accountable to the Housing Department Environmental, Health and Safety Committee (HDEHSC). Its members comprise the representatives from all the supporting organisations present today and the staff of our Department. HDSSSC provides a platform to collect opinions and exchange views with the industry and also serves as a channel for dissemination of information. Its work facilitates the enhancement of the site safety management measures in HA's works and property services contracts.

HA adopts a three-pronged approach for its blueprint of site safety. Under this approach, HA continuously enhances the site safety measures through the work relating to "procurement strategy and performance monitoring", "strengthening contract requirements" and "research, training and promotion".

In the 1990s, on procurement strategy and performance monitoring, HA implemented a host of measures including the introduction of the Contractors List Management, the Performance Assessment Scoring System (PASS), the independent Housing Authority Safety Auditing System and the Tender Scoring System. On strengthening contract requirements, we had implemented safety requirements on lift shaft entrances and other qualification requirements such as the trade test as well as the Green Card and Silver Card Safety training before they were made statutory requirements. As for safety promotion, we held liaison meetings with the Labour Department and compiled accidents statistics.

In the 2000s, the measures on procurement strategy and performance monitoring implemented by HA included a quarantine on tender assessment, issuing of reminders and warnings to contractors in response to accident rates and the incorporation of safety audit scores into the PASS assessment. On strengthening contract requirements, the Pay for Safety Scheme, Safe Working Cycle and the restriction on subcontracting were introduced. As for safety training and promotion, we formed HDSSSC, established site safety strategies, organised the Site Safety Forum, set up the Safety Award and published the Site Safety Handbook.

Between 2010 and 2016, on procurement strategy and performance monitoring, we have implemented surprise safety inspection, strengthened the monitoring of machinery safety and introduced the safety alert mobile app. On strengthening contract requirements, we have enhanced the Integrated Pay for Safety Scheme, implemented the "P" and "N" caring programme, upgraded the safety training for contractor personnel, required the workers to wear safety helmets with chin straps and reflective vests, and demanded the contractors to provide step platform and ladder platform, to install protective cover for protruding reinforcement bars and to implement health caring programme. On safety training and promotion, we held safety workshops, published safety guidelines, enhanced safety training courses for works personnel, convened forums on lift safety, signed safety charters and organised the Competition on Pointing and Calling Practice.

In 1989, there was only one accident rate for HA works, which at that time was 206 over a thousand workers. With continuous efforts over the years, the accident rate on HA new works in 2015 was contained at 9.2 accidents per 1 000 workers, representing a drop of 95% over the past 27 years and the accident rate on maintenance works sites in 2015 was 1.5 accidents per 1 000 workers, representing a drop of

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99%. This shows that the accident rate on HA new works sites was down by nearly 60% compared to that of 10 years ago. Since 2010, both the accident rates on HA new works sites and maintenance works sites have been kept below 10 accidents per 1000 workers. In 2015, the accident rates in HA new works and maintenance works sites were 9.2 accidents and 1.5 accidents per 1 000 workers respectively, which were 76% and 96% lower than the figure of 39.1 accidents per 1 000 workers in the Hong Kong construction industry that year. Nevertheless, the accident rate on HA new works went up again from 6.4 accidents in 2014 to 9.2 accidents in 2015. The rise in the total number of accidents involving new works from 53 accidents in 2014 to 102 accidents in 2015 sounds the alarm. Between 2010 and 2014, there were about 11 000 to 12 000 workers working on HA's works sites each year. The number of workers involved in new works increased by 2 700 in 2015. These new workers, who were unfamiliar with the building work processes or the hazards on site, were more prone to accidents. The generally aging work force with a booming construction industry has also tightened the contractors' on-site supervisory manpower. All these factors challenge the site safety and should not be taken lightly. It affects all of us without exception.

In collaboration with the Government and the Construction Industry Council (CIC), we have united all the industry stakeholders to actively promote "safe design". In May 2016, CIC and the Development Bureau (DEVB) jointly organised the Construction Safety Week 2016 with the theme of "Design for Safety". At the safety conference, a speaker remarked that, "We do not plan for these accidents to happen" and "Does anyone plan to prevent these accidents from happening?" The conference also introduced exemplary designs of temporary works, which will be the promotion highlight of the Construction Safety Week 2017. DEVB has published the Guidance Notes of Design for Safety and the Worked Examples of Design for Safety as the basis and reference for the design and construction teams of public works projects.

CIC's Task Force on Site Safety of Working in Lift Shaft, which is chaired by me, is responsible for examining the safety of lift shaft works. CIC has published the Guidelines on Safety of Lift Shaft Works: Volume 1 to Volume 3 and the Task Force is now preparing Volume 4 on Builder's Lift within Lift Shaft. Also chaired by me, the Task Group on Safety of Lorry-mounted Cranes under CIC is responsible for the study concerning the consideration on the overall safety of lorry-mounted crane. Recently, CIC prepared a safety alert on the safety and pre-use checklist of lorry-mounted cranes. I would like to take this opportunity to call for the designers and contractors of the industry to eliminate and reduce works hazards by controlling the risk at source in order to protect the safety of the employees. In fact, the innovations made in the past have become today's regular measures!

Prevention is better than cure. The implementation of total safety management relies on teamwork and the fostering of a safety culture. Designers should consider the safety aspect of various facilities used in project life cycle at an early stage and eliminate the potential hazards through design. In 2010, we organised a workshop on the related matter and published the Pictorial Guide to Planning and Design for Safety. When implementing total safety management, HA has well considered both the temporary and permanent designs, carefully planned the execution method for construction and given due consideration to the safety aspects for construction, operation, maintenance and management. I would like to reiterate that design for safety is a shared responsibility.

At the design stage, the designers will need to consider the safety matters in relation to the maintenance and cleansing workers, the access and egress and the working environment. HA has already had safety measures in place to protect the safety of these workers. Maintenance workers can install air-conditioners and glass

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panels from inside the room without the need to work at height. We have provided staircases for access to the upper roof level and suspended metal working platforms for work at height. Canopies are accessible from the common area on the same floor of the building through a lockable entrance, and are installed with railings to prevent workers from falling. In some public housing developments such as the Eastern Harbour Crossing Site Phase 4, there are many worked examples to illustrate the various safety passages to the upper roof level. To facilitate the use of gondola, the parapet walls on the rooftop are specially designed. Also, adequate space is provided to facilitate the repair and inspection of electrical and mechanical plants.

For prevention of electrocution, warning notices are displayed at the plant rooms. Also, the contractors are required to implement a lockout and tagout procedure and provide insulation floor mats. To ensure safe access to and egress from lift shaft, we install permanent anchorage for attaching safety harness as well as emergency stop button and permanent vertical ladder at the entrance of the lowest lift landing floor. Designers and contractors are required to review all project-related hazards, carry out risk assessment, consider adjusting the design or work procedures to eliminate the risk as necessary and contain the residual risk within an acceptable level.

We have encouraged and rewarded contractors for innovations on effective safety measures through the Pay for Safety Scheme. Some successful examples include the installation of CCTV inside material hoists to monitor their safe operation; the use of angle indicator to show the angle of bended steel bars so as to prevent workers from being hit or trapped by the steel bars; the installation of foot switch control and interlocking guard on steel bending machine to effectively control the risk of injuries from trapping; and the provision of electrically controlled steel wire protective mesh above the bar bending area to minimise the risk of bar benders being hit by objects falling from height. There are also some devices and methods such as the aluminum working platform on bamboo scaffolding, mobile rack for pneumatic hammer and the new grouting system to reduce manual handling. All the above are very good examples and in a few years will become the standard practices on HA sites.

Potential hazards should be nipped in the bud. It is always easier to address a problem at an early stage than looking for a remedy afterwards. I often encourage the practice and culture of "Three Earlies", namely early planning, early design and early management. We should nurture a caring culture, and encourage partnership, innovation and the use of technology to provide a safer workplace. Please remember that controlling the risk at source effectively will improve work performance at height.

I would also like to stress that it is not only the designers and professionals can design for safety. All contractors, sub-contractors, workers and practitioners engaged in various kinds of works can design your own safe work procedure every day. Lastly, I wish that workers of all trades working on HA sites can go to work happily and return home safely!

Thank you very much.