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City University of Hong Kong

Driving for CityU Entrepreneurship: Student Competition in Design of Innovative Fall Protection System for Work at Height Safety in High-rise Building in Hong Kong

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Abstract:

There have been many recorded instances of poor construction safety performance in Hong Kong. Every year, there are around 20 to 40 fatal cases occurred in the construction industry where 20% to 50% of the fatal cases were accidents regraded as "Fall of Person from Height". Also, among all the other workplaces, about 30% to 60% of the fall accident took place within the construction industry. The accidents, especially, involve the Bamboo Scaffolders and Formwork Carpenters which they always work at the highest point of the working area and having a great risk in horizontal and vertical working pattern respectively.

Labours working at height are now working at a dangerous and an unsafe environment on site. To cope with the urgent needs in improving work at height safety, the current safety measures and Personal Protective Equipment (PPE), such as lifelines, are not adequate to do so. For example, the existing Horizontal Lifeline System cannot provide protection in all angle. New and innovative engineering solutions and PPE should be introduced to narrow the gap of safety requirement.

We are now to propose one student project competition, also driving for CityU Entrepreneurship*, allows CityU students to brainstorm and to design an innovative system of Fall Arresting System, to which whether a tailor-made horizontal wiring system that allows to work continuously in the horizontal pattern. Also, it also comprises with body harness and retractable fall arrester to provide a full degree of protection for workers to work at height in both vertical and horizontal working patterns. Given some conditions that, say, the system shall meet almost all possible working angle and the "Pulley" could pass through with minimal friction, etc.,

If successful, the final entries may create a higher flexibility and more convenient working pattern for the Work at Height Safety. Life is priceless. The final winner (the new system) is expected to provide a more comprehensive protection in order to minimize the accidents as well as fatal case. This could help foster a safer working environment of Construction Industry in Hong Kong and around the world.