

Here is the footage from “Site Safety Seminar for Capital Works New Works Contracts”, which was held on April 8, 2014

The speaker is Mr TAM Chiu-kwong, Divisional Occupational Safety Officer of Labour Department

His presentation topic is “Working at Height”

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Hello everybody! Let me introduce myself first. I am Tam Chiu-kwong, an Occupational Safety Officer from Labour Department. Today I am going to share with you safety of working at height. Before the core part, let me give you some statistics of accidents, followed by hazards of working at height, how Labour Department executes as a law enforcement department and discussed the major issue and the probable measures according to the legislation. In the end, I will share some of my experience.

Labour Department counts the number of accident by fall of person. “Fall of person” is generally categorized as “vertical drop”. Industrial injury such as tripping and falling may not be categorized as fall from working at height.

Let me share with you statistics of accidents in recent years. The number of accidents in construction industry ranges from over 2000 to nearly 4000 from 2008 to 2012. You may wonder why Labour Department has not released the number of accidents for the whole year of 2013 while it is now already April of 2014. It is because in each quarter we would finalize the statistics of the period prior to the previous three months and count accident rate of each quarter according to the numbers of the employed and vacancy released by Census and Statistics Department. Therefore, the due date for getting the final accident number of the whole year of 2013 is the end of March, 2014, which is the first quarter of 2014. We spend approximately a month to work out the statistics. Soon you will know the statistics of whole year of 2013 in late April. Please take heed of that.

Statistics of first half of 2013 has been submitted by the Labour Department and published on papers of Panel on Manpower of the Legislative Council. You can download the relevant statistics from the website. During the first half of 2013, the number of construction industrial accidents was around 1,400. The statistics trend shown was rather good in the construction industry. There are 3,100 cases for one year. The number of the first half of 2013 is less than that of 2012, which was 1,470.

Therefore, we look forward to seeing if the number of the whole year of 2013 exceeds that of 2012. The trend of the first half year of 2013 is quite good with a decrease of 2.1%.

The number in red means fatal cases of construction industrial accidents. In 2008, there were 20 workers died in construction industrial accidents. The number rose in 2012 to 24. In the first half of 2013, there were 3. Compared to the first half of 2012, the trend of 2013 was rather good. Please continue to work hard.

Your attention is drawn to the accident category listed below, fall of person. You can see in every year there are around 300 to 400 cases. There were more than 400 cases in 2012 while there were 186 cases in the first half of 2012. However, there were 201 cases of working at height in 2013, which was 8% higher than the same period. We must pay attention that the number of fall of person for the whole year of 2013 may probably be higher than that of 2012. Please stay tuned for the accident number of whole year in the end of the month.

The numbers in red are fatal cases. It is the pretty much the same as before. There were 3 in the first half of 2012, while there were 2 in the first half of 2013. In January, our Commissioner had a news release that there were 24 fatal cases in the whole year of 2013 involving 7 cases of fall of person from height, but it was just a temporary figure. Please stay tuned for the actual number released in the end of April to see if there is any change.

As to why there are temporary figures, it is because our due date is in the end of March. If any workers got injured in 2013 but died in 2014, the number of such case would be counted in the statistics of 2013.

Common hazards on site may cause serious bodily injuries, one of the most common hazards is fall from height, others include objects falling from height, flames and electric shock, etc. These are the common hazards happening on construction site.

This time I will especially talk about work at height. As mentioned in “A Casebook of Fatal Accidents Related to Work-at-Height” published by us, a worker died from falling from scaffolds. As Mr. Tsui from Occupational Safety & Health Council said just now, building edges on new construction site may not be fenced due to work progress. Building edge is the second common area that causes death. Accidents may happen in cleaning works on retaining wall, too. Ladders may be used

in electrical engineering and testing when a project is near completion. Labour Department stresses that workers should not use ladders when working at height, because it is of very high risk, especially A-ladder made of wood.

The above points were shared in the cases presented by Mr. Tsui and Mr. Cheung before, including failure to provide working platforms, safe access and egress from working platform, collapse of working platform, failure to provide guard-rails and temporary protection and failure to provide personal protective equipment when working at height.

All these reasons can result in accidents related to work at height.

Now let's go back and talk about Labour Department's major duty, i.e. law enforcement. Regarding law enforcement, you should be aware of General Duties under the legislation, especially Sections 6A and 6B, i.e. the Factories and Industrial Undertakings Ordinance and the Occupational Safety and Health Ordinance which stated the duties of an employer.

Section 6A states that an employer has a duty to provide safe system of work, while Section 6B states the duties of worker. It means after employer has provided such system of work, employees have the responsibility to assist the employer to comply with the employer's requirements and coordinate with the employer.

I would like to highlight that without your cooperation, Labour Department's promotion would be useless. While it is good to have employers work together to enhance safety, efforts on workers' side are of same importance. In a fatal accidental case, the workers or engineers did not comply with conditions or rules set by employer and took a short cut at work, an accident took place where the engineer was charged by Labour Department for breaching Section 6B and was punished with the highest fine in Section 6B.

Peers in the industry, friends of engineers and engineers should all pay attention. Everyone should comply with the safe system of work set up by the employer and carry out their own duties and job responsibilities.

Labour Department has listed legislation about avoidance of accidents of work at height according to Section 5A of Construction Sites (Safety) Regulations. There are A, B, C, D, E and F in the Regulation 38. Regulation 38A is simple and related to safe

place of work, it states that the employer should provide a safe means for access and egress. Just now Mr. Tsui and Mr. Cheung presented that many sites had failed to provide safe access and egress. Hence I will not discuss with you in detail.

According to Regulation 38B1, if a worker is working at level of not less than 2-metre high, there should be sufficient procedures to ensure the worker will not fall from height. The regulation specifies the requirements of working platform, such as railing, toe board and closely boarded etc. Everyone should know what is toe board. I will not explain in details. The height is 200mm high. Working platform has to be 400mm wide. There are two important points, the first one is there should be a top and a medium railing. There are some fixed working platforms. Similar idea can be applied here.

This is a mobile working platform, it also needs railing. This kind of work platform is rather convenient, it is an elevated platform. Apart from going up and down, workers can carry out curtain wall installation and clean external wall over sloped area with the use of work platform. This type allows workers to work at a narrow environment or slopes and at the same time prevents workers from falling.

I especially select this photo from a new construction site to share with you. There was no construction works in progress on this roof floor. Workers mainly worked at non-roof area, the roof floor was empty and temporary. I especially select this photo for sharing because of the temporary railing installed here. Other railings elsewhere on the site were already fastened, but we can also find firmly installed railing here on the roof floor even though not many workers would come up. The pillar was fastened with screws. The wire was firmly fixed. The toe board was fastened on the floor and the railing was set back from the building edge to prevent workers from getting too close to the building edge when clearing garbage. It is worth sharing. We can do it if we have the heart to do so. It is not difficult.

Floor openings are common on new construction site because space needs to be reserved for trenches or building services. I would like to share with you the practice of covering floor opening with boards. Many workers would use wooden boards for convenience, but such boards would be taken away easily. Therefore, we suggest if the openings are to be covered with wooden boards, it should be marked on the board that there are floor openings to remind people that the purpose of the board is to cover the floor openings so as to avoid fall of people or objects. This also tells others not to take away the wooden board. A more appropriate method is to install railing around

the floor opening, to avoid people from walking too close or kick away the wooden boards.

On some new construction sites, the covering boards were taken away and the floor openings were filled with debris such as coke cans, bricks or trashes, etc. Though the openings were filled of debris and thus fall of human was not likely to happen. But the opening looked like a trash trench and hence more and more debris were left around there, workers working on the lower floor would be vulnerable to the risk of falling objects.

Installing lighting, painting or installing the false ceiling are typical works involving mobile working platform when the construction or maintenance project is near completion. You can see a pair of leg here, representing a worker working at height. In this situation, workers likely to move and climb up the working platform for convenience. I have already shared with you that such act has already breached Construction Sites (safety) Regulation 38B on working at height.

In regulation 38C, employers are only required to provide working platforms and ladders but this has not mentioned on the height requirement of 2m. You may ask, whether a ladder could be used for working at a level not more than 2m in height? What's the judgment of Labour Department? For Labour Department, it is simple. Ladder is a tool for access and egress to the work area.

When using ladder equipment, three points contact should be emphasized. For means of access and egress, many workers may directly climb the ladder for convenience once it was set. They do not pay attention to the safe angle of 1:4 and the minimum height of guardrails of 1m on top.

This is common on site. I have seen too many workers acting in this way for the past 20 years. This is not the worst scenario. For the worst, I had seen a worker walking with the ladder. You may also see this and it is common too, but this is really not a good practice, though this is convenient and fast. I had seen many of this before I joined Occupational Safety and Health Branch.

I used to help hanging lighting decorations and had stopped many other volunteers who use ladder in this way. For this kind of accident, when the workers fall from height, it is highly possible to lose their lives if their heads hit the floor.

Among the many fatal accidents I have handled in my life, many of them were falls of person. I can still remember a case in which the worker did not die. The worker was around 20 year-old. I can still remember his condition of injury today. When I visited him at the hospital, he could only move his head horizontally without being able to move his limbs. This gave me a deep impression that the hazard of work at height could be very serious.

This situation would breach regulation 38C in which workers are not provided with safe scaffolds for work.

It is required in regulation 38D that scaffolds should not collapse and overturn and they should be designed correctly with sound structure. There was a case which you may still remember. At InterContinental Grand Stanford Hotel many years ago, the whole scaffolding at the lightwell collapsed, someone filmed the accident from a helicopter at height. The contractor in this case was sued by Labour Department according to this regulation. I also participated in investigating the bamboo scaffolds in the case. First, some workers cut the bamboo scaffolds for removing refuse because the existing refuse chute was not near. The second reason is overload, the bamboo scaffolds were overloaded with refuse which was not removed on time, all four sides of the scaffolds collapsed in the end. Scaffolds are needed in all kinds of construction. We should all be aware of that.

Labour Department has rules regulating the use of bamboo and metal scaffolds. In regulation 38E, competent person is required to inspect the scaffolds and supervise the erection of scaffolds. The scaffolds should be inspected every 14 days with the completion of the scaffolding inspection form. Many workers do not fill the form clearly. We require competent person to write clearly if the scaffolds are in safe working condition for work, but many scaffolding competent persons just wrote “safe and usable”, “usable”, “no problem” or any kinds of answer.

They always omit to fill in their post and sign the form. If you are the supervisor, you should be aware of that. If the supervision is strict enough, they dare not to take short cut and be careless. Strict supervision is helpful in avoiding the said accidents.

I have mentioned a lot of relevant measures. Simply speaking, floor openings need to be covered, lift shafts be fenced, building edge be fenced with toe board, etc. Ladders for access should be installed with guardrails. Working platforms at height need to be inspected and installed with proper railing.

Safety harness, from the view of Labour Department, offers the second tier protection only. Under reasonable, safe and feasible circumstances, railing, toe board and closely boarded should be installed in the first place.

The safety harness should be hung at high level and used at low level. Many workers do not know about this. What is equally important is the inspection of lifelines and eye bolt.

I once found an eye bolt without any lifeline at site. The worker on the scaffold uses a lanyard of more than 5m to assist his scaffolding works, which was a horrible scenario. With a more-than-5m lanyard, he could conveniently arrange bamboo and erect the scaffold from the one side to another. Since his lanyard was 5m long, he did not have to climb up and down or change lifeline or position and hence he could finish the work quickly. However, he was risking his life to finish the work. It was not allowed under regulation also. Though it does not happen everyday on site, many peer fellows have seen workers working at height riskily. We should supervise contractors stringently.

This is a real fatal case that happened in 2008. A number of workers were bending bars on a substandard working platform on a new construction site. This should not have happened, but it did happen to those workers. Without safety measures, without fall protection measures, without working platforms and safety nets, etc. After the inspection, we learned there was no instruction, no safe system of work, no information or training for workers. Eventually, they fell from height and died. What we learn is all common sense, but everyone support is required, because you would not know when accidents will happen. Some may say, with so much information, it is hard to report every incident. It is my hope that we can all do something to prevent the accidents. The more people attend the seminar, the fewer accidents take place.

We rely on you to deliver the message to your colleagues, by sharing the good practice and experience to stop contractors from doing wrongly and make them reflect. There may not be immediate return on investment, but the greatest return is to have workers happily come to work and go home safely.

This is the end of my sharing. For further information, you can browse the Labour Department website, regular safety warnings and announcement of accidents would be put on the website for sharing among the industry. Worker falling from height and

measures to prevent it from happening maybe a cliché to talk about, but I hope everyone can remember the message we delivered.