

Here is the footage of "Site Safety Forum for Works Contracts and Property Services Contracts 2017" which was held on 6 July 2017.

The speaker is

Occupational safety veteran

Mr. Raymond Ng Lung-hoi.

His presentation topic is

Prevention through Design - Reducing Hazards in Work Activities of New Construction.

Thank you, host. I am going to share with you what are the benefits of safe design.

The most economical benefits are

identifying the hazards and eliminating them during the design stage, which is the best way to reduce accidents on the site.

Everyone is familiar with this safe design life cycle.

First of all, safety issues are involved before construction, during operation the maintenance and repairing stage, and the demolition and waste disposal are all our concerns.

At all stages of processing,

from inception, design, construction, operation, maintenance to demolition and waste disposal, all require everyone's hard work.

In 1992, the EU formulated guidelines which required developers and designers to consider safety during design, which should start from a safe design at the inception stage.

Different accidents often occur

during the renovation, maintenance, addition and alteration works in Hong Kong.

If the hazards can be reduced or eliminated during the design phase, it can greatly reduce these accidents.

In 1996, the United Kingdom conducted a study, 60% of accidents and deaths could be traced back to design safety and engineering plans.

In 2005, relevant statistics were also conducted in Australia.

37% of deaths on construction sites

and 30% of serious accidents were related to design,

especially mobile machines and fixed machines are more obviously the causes of accidents and we should pay more attention here.

A study conducted in the United States from the year 2000 to 2002 found that in 226 accidents, 22% of them were related to design safety.

In 224 death cases,

42% of them involved design safety,

therefore, we are paying special attention to this problem.

Hong Kong keeps improving with the times.

Although there is no special legislation,

we base on the risk management,

improve the construction design management (CDM) of United Kingdom

and make reference to the good operation examples from other countries to make our safe design better.

We use promotion, encouragement and training

to implement the safe design plans.

Also we develop guidelines and operation examples,

the government published the Guidelines Notes on Design for Safety

and the Housing Authority has also developed internal guidelines.

The photos shows different safe design guidelines and different manuals

which provide a lot of detailed examples for references.

The benefits of safe design are the elimination of hazards,

reducing the time spent on redesigning or improving work, saving money,

increasing cost benefits and fulfilling social ethical responsibilities.

This is a continuous improvement and

I hope everyone can participate.

The best way is to eliminate all hazards, control it and reduce it even if it cannot be completely eliminated. For a designer, they should consider to eliminate the hazard first during the design process. Helping the institutions to build, use, maintain, repair and demolish the buildings easier. For a major or special hazard, the designer should inform the relevant person in charge. For projects with particularly large hazards, use more resources to deal with the projects. Everyone generally thinks that architects or engineers are the designers.

However, in fact, stakeholders including owners, developers, professionals, management staff, contractors and subcontractors are all designers assisting in conceiving better designs. We mainly base on risk assessment, identify all hazards through hazard identification, assess the impact of hazards through risk assessments, then remove it and control it. We have five stages to eliminate and reduce the hazard. The best way is by eliminating, for example, no longer using asbestos and swing board. Second, using glass wool instead of asbestos, using the gondolas instead of the swing board. Third, using engineering controls to completely separate people from hazard, such as guardrails and shields. Fourth, through administrative management, for example, job placement, training and monitoring which are all good measures. The last line of defence is through personal protective equipment. Many examples just mentioned such as Building Information Modeling (BIM) and 3D printing models

are also good ways to eliminate the hazard. Prefabricated façade is also a good method to reduce the hazards of working at height. Semi-precast slabs and precast beams also reduce the need for working at height. The best way is to avoid working at height. No need to work at height is not beyond our mind, we can reduce the works at height by using our brains. For example, the innovative design of Hip Hing Construction Company Limited. The precast top slab of the water tank not only reduces the work at height but also reduces the need to work in confined spaces. This is a good innovative design. The speaker before has mentioned converting the danger of the process into safety by only installing two steel wires. This engineering control measure and the innovative design of Chun Wo Construction Engineering Co., Ltd. are worth learning. Everyone feels very special, very strange. The big achievements are all made up of small ones. Housing Authority has designed a horizontal iron gate which not only improves the traffic safety but also let the public cross the site entrance safely, which is a very good construction control. In the past, the exposed rebars were ignored. Putting a protective cover later on increases the level of protection a lot, it's a good engineering control. It looks like a simple hop-up platform which is suitable for the projects below two meters in height. The safety effect of these devices is not small. Massive use of mobile working platforms,

adding guardrail in the lift shaft,
replacing wooden scaffolding by metal scaffolding to reduce the risk of fire,
adding four iron gates to
prevent the human body and objects from falling,
are all engineering control measures to protect workers.
The locks on the electric box are well known,
but many electricians face the same problem in which
they are not allowed to lock and post on the electric box.
Everyone can take a step forward,
electricians may also face electric shock.
Many people think that electricians are not afraid of electricity,
but they may get electric shock too. Please be cooperative.
Before and after the start of the construction, during lunch, the electricity may be cut off and locked,
let them work.
Using a large amount of radio frequency identification (RFID) technology
on different sites
is a very effective administrative approach.
Gammon Construction Co., Ltd. uses virtual reality training
which can increase the fun and safety cognition.
In general, we pursue fast, awesome and nice which
is not correct in fact, we must remember that safety is paramount.
Japan, Singapore, the United Kingdom, and Germany are doing a good job in terms of safety,
because they implement the 2S2Q policy which
includes Safety, Speedy, Quality and Quantity.
Safe, fast, awesome and nice.
Please bear in mind, thank you.

Disclaimer

Safe Work· Zero Incident

Site Safety Forum 2017 for Works Contracts and Property Services Contracts

"Careful design can reduce accidents and ensure smooth and safe execution of works"

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