

The General Development of OSH in Hong Kong for the Past 30 Years or More

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Abstract

Safety and health development has greatly improved over the past 10 years (1997~2007). Apart from reducing the accident rate, awareness on safety and health has been increased and safety and health have been positively implemented by the most organizations. In retrospection to 70s and 80s, the Hong Kong construction industry was under-developed, coupled with a large number of immigrants from Mainland China worked in factories, and most of them were unskilled and lack safety concept, work injuries had happened inevitably with a formidable record according to the Labour Department statistics. After the consultation review of safety and health issued in 1995, the Labour Department collaborated with the Works Bureau and Housing Authority, developed a series of safety management system with inclusion of promotion, safety training, safety auditing and inspections to assist the construction sector to improve construction safety. In addition, safety and health training courses were also organized by the universities or training institute providers to enhance more people to have a better knowledge on occupational safety and health and safety awareness.

Despite the drop of the accident rate over the past few years, the record is not yet satisfactory. Sustainable development and effective measures to improve safety and health standards are required and these rely on respective parties' co-operation – Government, clients, trade associations, employers and employees to achieve the target for reducing accident rate.

Introduction

Limited occupational safety and health awareness by respective parties-clients, employees and employers in the past caused the high accident rate in construction industry as a result. In the 70s, manufacturing and industrial businesses were booming. The factories and construction sites did not have well equipped with effective safety devices to protect workers' safety and health. Employers lacked safety initiatives to improve workplace safety, while workers were weak on safety and health awareness. Coupled with workers were from Mainland China and most of them were uneducated, accidents and injuries occurred in mass as a result. Despite the effort of the Labour Department to promote safety and health and the establishment of a series of new safety regulations to protect the workers, little improvement had been made in the past.

With the booming of the infrastructure projects and housing construction development in late 70s, workers turned their job opportunity and worked in the construction industry. Immigrated workers also mostly worked in the construction field. They were uneducated and unskilled workers. These vulnerable groups did not know the risk of construction

activities, coupled with lack of implementation of safety measures, accident rate turned into high rate as a result.

In 1987, the Labour Department promulgated Safety Officers and Safety Supervisory Regulations that required the contractors to employ safety officers to look after safety when workers had employed with exceeded 200, and a safety supervisor was to be employed to supervise workers when 20 workers were employed in any one worksite. It was expected the provision of safety officers would give effective safety advice to the contractor and improve construction safety, thus reducing the accident rate on site.

In 1995, a Consultant paper on Safety and Health was issued by the Labour Department to the industrial and construction industry to seek advice from Industrial Undertakings and construction industry how to improve safety and health. In 1996, the Housing Department and the Works Bureau had collaborated and implemented an initiative of safety training of workers in the workplace, and monthly safety audit by employing Accredited Safety Auditors. It proved that accident rate was decreased effectively. In 1999, the safety management regulation was approved by the Legislative Council and followed with its mandatory implementation in 2002.

With the effort of the reputable contractors to implement safety management in the workplace, and the Labour Department's ardent promotion of safety by publishing more guidance notes and codes of practice on safety for implementation, the provision of safety training to workers before being allowed to work in the workplace, the accident rate has significantly dropped in the past ten years (1997~2007). The following paragraph describes the development of the safety and health in the past few decades in Hong Kong.

As a further step forward to enhance work safety, Construction & Design Management (CDM) and safe systems of work would be the next target to be implemented for sustainable development of safety and health, and also it is critical to assist the implementation of safety system and monitor the safety performance in the Small and Medium Enterprise (SME) organization. Safety and health is a long fight and will not end.

Development of Safety and Health

A productive labour workforce is a valuable asset to all industries and determines a region's production and economy growth. Hong Kong construction industry contributes much of the pioneer's economic growths amongst many industries and employs most of the workforce. On the other hand this economic growth also results in high accident and fatalities rate.

The Factories and Workshops Ordinance was enacted in 1937 in Hong Kong. The Ordinance was based on the United Kingdom Factories Act. It was the first safety and health related regulations issued to protect workers safe at work in the work place. In 1955, the "Factories and Workshops Ordinance" changed the name and became the "Factories and Industrial Undertakings Ordinance".

Under the Factories and Industrial Undertakings Ordinance and its subsidiary legislation, the factory inspectorate of the Labour Department's industry division was responsible for the safety of workers in factories, building and engineering construction sites and other industrial undertakings. Advice and assistance were given to management on the guarding of dangerous parts of machinery, the adoption of safe working practices, and the general layout of factories to achieve safer working conditions (Hong Kong 1974).

Owing to the high accident rate in the construction industry before early 90s, a comprehensive review of industrial safety was undertaken in 1995 by the Labour Department and a public consultation paper was published in July the same year. In the paper, the government had introduced safety management systems at the company level to cultivate strong safety culture among proprietors and workers and to bring about long term improvements to safety performance

Following a comprehensive review on industrial safety in Hong Kong, a new Occupational Safety and Health Branch was created in the Labour Department in 1996 with two distinct functions: occupational safety and occupational health. The Labour Department besides strengthening its safety and health promotion and enforcement programme, had also appointed Factory Inspectorate responsible for occupational safety to assist in the formulation of safety management legislation and regulations.

In 1997, Occupational Safety and Health Ordinance was enacted and its protection cover it extended to more than 3,000,000 general workers including office and other industry to safeguard their safety and health at work. Employers and /or owners were to take care of accident prevention, fire prevention, work environmental, hygiene and first aid, provision of basic safety equipment and measures, manual handling assessment and display screen regulations.

Partnering Participation

The provision of safety and health supported by the Labour Department to the Airport Core Programme got satisfactory result in decreasing accident rate since 1992. The Housing Authority and Works Bureau followed suit in 1996 with introduction of safety and health in their construction projects contract. Buildings Department also took active role on safety and health issue in private construction buildings.

Airport Core Programme Projects (1992)

The Construction work on Airport Core Programme (ACP) Projects was announced in 1989. In 1992, Chak Lap Kok Airport Projects were commenced; the contract required the contractor to employ safety officers stationed on site with the implementation of safety management systems. The first time a contract included for employing safety officers in the construction projects. The Airport Core Programme Construction Safety

Manuals were published in the same year, setting out the government's policy and objectives and safety measures.

Before work started, the Provisional Airport Authority developed a comprehensive safety management system in the core projects, and developed construction site safety manuals to assist the workers understanding site safety. The contractors were required to prepare safety plans, employ full-time safety personnel on site, provide training to their workers and management, and establish site safety committees.

Safety standards on sites were closely monitored. A site safety management committee was established in each site to monitor each contractor's compliance with safety requirements. A safety management unit was established by the government to visit the ACP sites to audit their contractor safety standards. In addition, a database was compiled to assist with the accident rates, analysis of the causes of accidents, and formulation of prevention measures.

Contracts with high accident rates were brought to the ACP Construction Safety Steering Committee chaired by the Secretary for Work for review on specific safety actions taken. Lesson Learnt from accidents were circulated to the ACP participants.

Other measures taken to complement these safety effort included accident prevention and safety management training courses conducted for site staff. Safety promotion campaign and awards were organized to increase awareness, especially among construction workers. To ensure that the safety message reaches workers on sites, contractors were required to conduct regular safety training for their workers.

The construction Safety Award Scheme was organized to recognize contractors and workers of ACP sites which had implemented sound safety management systems and achieved good safety records (Hong Kong 1996).

ACP contractors with good safety management and safety record received commendations from the Secretary for Works. In 1998, the industrial accident rate for ACP contracts was 42 reportable accidents per thousands workers per year, compared with the corresponding rate of 227 for the whole construction industry in 1997.

Housing Authority

The Hong Kong Housing Authority, established under the Housing Ordinance 1973, is responsible for co-coordinating all aspects of public housing and construction of housing estates. The Housing Authority had strictly implemented Asbestos Regulations when carrying out demolition of buildings and removal of materials containing of asbestos substances. The Housing Authority had introduced safety and health specification into construction building projects contract. In 1996, the contractor was requested to provide safety training and monthly safety audit by an independent safety auditor to assess the construction site safety performance.

Buildings Department

The Buildings Department was also taking active role in the implementation of safety and health in the construction industry. Owing to the high accident rate in hand-dug caisson work, in February 1996, Building Authority banned hand-dug caisson operation in any building construction for the protection of workers' health and safety and to promote industrial safety. Codes for building designs and practices notes on many practical aspects were revised accordingly.

In the wake of building collapses in August and September 1994, Buildings (Amendment) (No.3) Bill 1995 was introduced and aimed to set higher standards for site supervision and building safety and to provide a statutory framework for architects, engineers, surveyors and contractors to regulate themselves. A code of practice for the safe demolition of buildings was established. A special task force was also set up by the Buildings Department to monitor safety in building demolition sites.

Steps were taken to enhance further the safety and quality of building construction. The site safety supervision plan system, implemented in phases since 1997, has proved effective in improving general site safety condition. A similar supervision system was introduced to enhance supervision of the quality of foundation works and ground investigation works and superstructure works. The collapse of bamboo scaffolding from a construction site made the Buildings Department to issue a Guidance Note on Design and Construction of Bamboo Scaffolding in 2006. This is to assist the building contractors to take attention on the stability of bamboo scaffolding in the construction sites when the inclement weather is approaching and safety measures is required to be taken.

Works Bureau

In 1993, the infrastructure projects from the Environmental Transport and Works Bureau (Formerly Works Bureau) required covering safety in the contract which over the sum of HK\$50,000,000, the contractor required to provide a safety management system and safety management plan

The Works Bureau and the Housing Authority had introduced independent safety audit scheme to improve construction site safety. In March 1996, the Works Bureau and the Housing Authority implemented two safety schemes – pay for safety and Independent safety audit scheme to encourage the contractor to establish a safety and health system in his organization business in order to enhance safety performance. The OSHC administered the Independent Safety auditing scheme. Since then, Public works contractors had implemented safety management system through the Pay for Safety Scheme (PFSS) and the Independent Safety Audit Scheme (ISAS).

Enhanced safety training was also provided to construction workers. Safety Advisory Units of seven Works Departments such as Water Supplies Authority, Highways, Drainage, Buildings Department, Civil Engineering Development Department, Architectural Services Department, Electrical and Mechanical Services Department provided support to staff in maintaining safety and health on public work sites. With the implementation of these safety initiatives, the overall accident rate of public works sites in the year ending December 1998 was reduced to about 50 accidents over 1000 workers, which was less than 25 per cent of the average accident rate for the construction industry as a whole.

Efforts extended to be made to encourage contractors in both the public and private sectors to maintain a safe and healthy environment at, and adjacent to, their construction sites through the Considerate Contractors Site Award Scheme. Public works contractors had been encouraged to establish more efficient safety Audit Schemes. Apart from providing safety training, contractors were encouraged to practice a Site Safety Cycle to raise the safety training awareness of their workers and to pay more attention to housekeeping at their sites. Regulating actions were taken against contractor with poor site safety records (Hong Kong 1999).

In 2005, the Works Bureau introduced construction design management systems aiming at strengthening safe practice during construction and maintenance stages of a project by systematic consideration and documentation of the risk control measures at the design stage and was implemented in 13 more projects during the year. This would become the norm in future for major public works projects.

Occupational Safety and Health Council (OSHC)

The Occupational Safety and Health Council (OSHC), financed primarily by a levy on employees' compensation premiums, was established in 1988. The OSHC is to promote occupational safety and health for workers wellbeing. Apart from safety and health promotion, OSHC is also responsible for safety and health training, research study and information, consolation services provided to the public, increases in co-operation with district-based organizations in staging promotional activities.

The council's Occupational Safety and Health Employees' Participation Scheme has offered financial assistance to employees' organization running safety and health activities.

The Green Cross Group was formed on June 10, 1998; concerted effort has been made in the construction sites on promotional safety and health with covering the Green Cross day, Good Housekeeping Day, the Healthy Day, Safety Day and the annual Occupational Safety and Health Week.

The council extended to provide small- and- medium enterprises (SMEs) with technical advise and financial support by strengthening the SME Sponsorship Schemes, for

examples, the sponsorship scheme for Anchor Device for the Renovation and Maintenance Trade, the Sponsorship Scheme for Safe Working in Confined Spaces, the Sponsorship Scheme for Safety Inspection on Maintenance of Buildings and the Subsidising Scheme for Training Courses of Loadshifting Machinery (Compactor and Dumper) have greatly enhanced the safe and hygiene conditions of SME workplaces.

Local Safety & Health Associations

Local safety associations are active in promoting safety and health in the society. A number of safety and health associations have been established. The organizations cover but not limited to:

- Hong Kong Occupational Safety and Health Association (HKOSHA), established in 1977;
- Society of Registered Safety Officers (SRSO) (Established 1991);
- Society of Accredited Safety Auditors Ltd. (SASA) (Established 1996);
- Hong Kong Institution of Engineers –Safety Specialist Group (HKIE-SSC) (Established 1995);
- Construction Industry Safety-Management Association (CISA);
- The Institution of Occupational Safety & Health (IOSH)-Hong Kong Branch (Established in 1999);
- Hong Kong Safety Auditors Association (HKSAA);
- Hong Kong Industrial Safety Association (HKISA) (Established in 1985);
- Institute of Safety and Health Practitioner (ISHP);

A Joint Liaison Group of Occupational Safety and Health was formed to unit the safety organizations for expressing the views on safety consultation papers, technical knowledge in occupational safety and health and jointly organized safety and health conference.

The Hong Kong Occupational Safety and Health Association (HKOSHA) is one of the active safety organizations in promoting occupational safety and health and exchange of knowledge, and experience in occupational safety and health. The HKOSHA is a voluntary and non-profit making organization. The members are safety practitioners. The Association organizes various technical talks, visits and conferences every year for the benefit of the safety practitioners in promotion of safety and health. The HKOSHA is also a founder member of the Asia Pacific Occupational Safety and Health Association (APOSHA) and China, Taiwan, Hong Kong and Macau Occupational Safety and Health Regional Conference. Safety Conference is held annually in different regions. This year, the Hong Kong Occupational Safety and Health Association (HKOSHA) is to be celebrating its 30th anniversary in October.

The Society of Accredited Safety Auditors Ltd. (SASA) and the Hong Kong Registered Safety Auditors Association (HKRSAA) collaborated in promoting Safety and Health Audit Recognition Programme (SHARP). They are enhancing the professional standard

and performance of safety and health audits conducted in accordance with the Factories and Industrial Undertakings (Safety Management) Regulation.

Safety Legislation

The Labour Department has developed 29 regulations for industrial undertakings and construction contractors to comply with. These subsidiary regulations included but not limited to:

- General: e.g. F&IU Regulations- Notifiable Workplace & First Aid), Notifiable Workplace for Fire
- Function: Safety Officer and Safety Supervisory Regulations, Safety Management
- Equipment: Abrasive wheel, Lifting Appliance and Lifting Gear, Load –shifting machine
- Work procedure: Electrolytic , spray inflammatory
- Environmental: Confined Space, Noise At work
- Substance: Asbestos Regulations, Dangerous Substance; Carcinogen
- Industry relation: Construction Site Safety Regulations, Quarry (Safety) Regulations

The Construction Sites (Safety) Regulations 1973 – was enacted on August 1, 1973 and came into operation on May 1, 1974. It provided specifically for safety and health measures on construction sites. Amendment was made and took effect on February 1, 1984, the regulations provided for the better protection of persons, particularly with regards to working at heights. Specific requirements were laid down as to the safety of workplaces and the means of access and exit. Amendment (No.2) was made in 1994; the regulation restricted the employment of young persons below the age of 18 years on construction sites, unless they have received proper training. Amendment was made in 2004; it required improving safety performance of construction subcontractors by holding both the principal contractor and the subcontractor jointly and severally liable for safety offences. Consequential amendments were also made to the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations, the Factories and Industrial Undertakings (Suspended Working Platforms) Regulations and F&IU (Loadshifting Machinery) Regulations to reflect the changes arising from the CSSR.

The F&IU (Confined Spaces) Regulations 1973 were enacted on April 27, 1973. The Regulations provided for safety measures for work in confined spaces. Amendments were made in several times of these Regulations and abolished. A new Regulation on Confined Space Regulation 1999 was enacted and came into operation in 2000. This Regulation required to have conducted risk assessment by competent person before work commencement and certified workers entering confined space must hold a valid certificate for work.

The Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) (LALG) Regulations came into operation on November 1, 1974. The regulations provided for the

testing and examination of lifting appliances and lifting gear used in industrial undertakings other than construction sites. The regulations had been amended in 1995 with extending to cover lifting appliances operating at construction sites and strengthen the regulatory measures in respect of lifting appliances. Regulation 7B of the LALG Regulations became effective in March 1995. It required the installation of automatic safe load indication on cranes having a maximum safe load of more than one tonne. Regulations 15A of the LALG Regulations became effective in January 1996. It required the owner of cranes and lifting appliances to ensure that operators are competent and hold valid certificates.

The F&IU (Abrasive Wheel) Regulations were approved on April 23 and came into operation on January 1, 1976.

The F&IU (Work in Compressed Air) Regulations came into operation on April 1, 1976, the Regulations provided for the safety and health of people working in compressed air -a new aspect of work arising from the construction of mass transit railway which required a considerable amount of tunneling work under compressed air.

The F&IU (Cartridge–Operated Fixing Tools) Regulations came into operation on July1, 1977. They imposed, on the contractor or proprietor and the operator of the tool, certain safety and training requirements in the use of cartridge-operated fixing tools in construction work or other industrial undertakings.

The F&IU (Protection of Eyes) Regulations, which became effective on October 7, 1977, protects people employed in any industrial process that may give rise to eye injuries.

The F&IU (Amendment) Ordinance 1983 became effective in July 1984. It empowered the Commissioner for Labour to hold a formal inquiry into an industrial accident removes the requirement for factory registrations to be periodically renewed and made clear that construction sites did not need to be registered under the Ordinance. The Ordinance was amended in 1985. Under the new system, the person having the management and control of a notifiable workplace was required to notify the Commissioner for Labour before the work place commences operation. The F&IU (Amendment) Ordinance 1989 was enacted on December 15, 1989 and came into operation in December 1990. It imposed a general responsibility on employers and employees with regards to safety and health at work and introduced custodial sentences for serious breaches if failed to comply with industrial and health regulations. The F&IU (Amendment) Ordinance 1990, which came into force on December1, 1991, extended the ordinances' coverage to the catering industry so as to protect the health and safety of employees in restaurants and other catering establishments. Amendments were made to give the Labour Department more flexibility in initiating prosecutions against proprietors or contractors who failed to notify the Commissioner for Labour that their factories or industrial undertakings had commenced operation. A new regulation was also made under the same Ordinance to regulate the safe operation of load-shifting machines. In 1993, the Commissioner of Labour under the amendment of the F&IUO was authorized to issue a Code of Practice to supplement the

insufficient relevant safety and health regulations. An improvement notice or suspended work notice would be issued if the work is endangered to workers safety.

The F&IU (Asbestos) Special Regulations 1986 came into operation in August, prohibiting the use in any industrial undertaking of certain types of asbestos and any process involving the spraying of asbestos. They also control the use of other types of asbestos in industrial undertakings.

The F&IU (Safety Officers and Safety Supervisors) Regulations were approved in October 1986 and came into effect in December 1987. The Regulations required the contractors to employ safety officer when workers had employed with exceeded 200, and safety supervisor was to be employed to supervise workers when 20 workers were employed in any one worksite. The purpose of this requirement was to require the safety officers to give safety advice to the contractor in order to reduce the accident rate on site. The number of workers was reduced to 100 with employing one safety officer under the amendment of Safety Officers and Safety Supervisor Regulations in 2000. Amendment (No.2) was made in 1994 and came into operation in June 1995 stating that a site or shipyards must employ a safety officer, and must have a safety supervisor in any construction sites or shipyard with 20 or more employees. On June 6, 2002, Amendment was made to these Regulations and came into full effect on January 2, 2006 for extending the coverage to the container handling industry and to introduce a mechanism to have a 4-year term for the renewal and revalidation of registration of safety officers. In April 1994, the establishment of a safety officer's advisory committee and the registration of safety officers were also made under these regulations.

In 2002, The F&IU (Woodworking Machinery) Regulations were amended to prohibit the employment of person less than 16 years of age to work on any woodworking machine.

The F&IU (Suspended Working Platforms) Regulation became effective in July 1995 with the section relating to the requirements on certification of trained operators scheduled for operation six months later. It establishes safety standards relating to the construction and operation of suspended working platforms.

In 1997, the government made substantial improvements in employees' right benefits, safety and health through a serious of labour laws: The Occupational Safety and Health Ordinance was enacted to extend for the first time safety and health protection to some 1.8 million employees in the non-industrial sectors, this was milestone legislation.

The Factories and Industrial Undertakings (Safety Management) Regulation was enacted in late 1999 and came into operation in 2002 for the implementation of safety management system in designated industrial undertakings employing 50 or more workers; The regulation required mandatory safety management through safety audit by a registered safety auditor. The position of registered safety auditor and safety reviewer created since then. Registered safety audit required the qualification of registered safety officers with more than 5 years managerial experience responsible for safety and health

matter. In addition, safety auditor must have attained the 108 hours safety audit course with completion of project.

After the explosion of leakage gas under the false floor in a factory in 2000, the F&IU (Gas Welding and Flame Cutting) Regulations was enacted and prescribed to require workers engaged in gas welding and flame cutting work to receive safety training and to possess a certificate. It was brought to full effect on March 1, 2004.

In 2005, the employee's compensation Ordinance was amended to include Severe Acute Respiratory Syndrome (SARS) and Avian Influenza as prescribed occupational Diseases. A corresponding amendment has also been made to the list of occupational diseases specified in the Occupational Safety and Health Ordinance to enable the Labour Department to better monitor the health of workers who are at risk of occupational disease.

Unsatisfactory Safety Record

The construction industry has a high accident rate, it includes fall from heights, slipping and tripping, fall of objects and hit by object, it causes the people work injury even to death. The collapse of building structure during demolition work, tower crane collapse, and suffocated in confined space had been occurred in the past. Accident statistics in construction industry between 1976 and 2007 are listed below:

Industrial Accidents in Construction Industry (1976~2007)

| Year | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| No. of accidents | 8189 | 11916 | 14929 | 17350 | 18517 | 18111 | 19198 | 17530 | 17477 | 17034 | 20970 | 23846 |
| No. of Fatalities | 57 | 85 | 93 | 116 | 102 | 107 | 74 | 63 | 58 | 45 | 60 | 55 |
| Employment for construction only | 48761 | 63000 | 73716 | 81879 | 86186 | 82733 | 81243 | 71159 | 67732 | 64427 | 68951 | 71309 |
| Accident Rate /1000 workers | 167.9 | 189.14 | 202.52 | 212.05 | 214.8 | 218.9 | 236.3 | 246.3 | 258.0 | 264.4 | 304.1 | 334.4 |
| Fatalities rate /1000 workers | 1.169 | 1.349 | 1.262 | 1.417 | 1.183 | 1.293 | 0.911 | 0.885 | 0.856 | 0.698 | 0.870 | 0.771 |

| Year | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| No. of accidents | 27125 | 26399 | 25138 | 23143 | 18847 | 16573 | 16422 | 15268 | 16469 | 18588 | 19588 | 14078 |
| No. of Fatalities | 58 | 59 | 58 | 54 | 48 | 80 | 51 | 63 | 51 | 41 | 56 | 47 |
| Employment for construction only | 73077 | 67544 | 706.54 | 63529 | 62337 | 56226 | 59710 | 65611 | 74907 | 81629 | 79007 | 79041 |
| Accident Rate /1000 workers | 371.2 | 390.8 | 355.8 | 364.3 | 302.30 | 294.76 | 275.03 | 232.70 | 219.86 | 227.36 | 247.93 | 198.45 |
| Fatalities rate /1000 workers | 0.794 | 0.874 | 0.821 | 0.850 | 0.770 | 1.423 | 0.854 | 0.960 | 0.681 | 0.502 | 0.709 | 0.663 |

| Year | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| No. of accidents | 11925 | 9206 | 6239 | 4367 | 3833 | 3548 | 3400 | 3042 |
| No. of Fatalities | 29 | 28 | 24 | 25 | 17 | 25 | 16 | 19 |
| Employment for construction only | 79599 | 80302 | 73223 | 64112 | 63520 | 59266 | 52865 | 50185 |
| Accident Rate /1000 workers | 149.81 | 114.64 | 85.21 | 68.1 | 60.3 | 59.9 | 64.3 | 60.6 |
| Fatalities rate /1000 workers | 0.364 | 0.349 | 0.328 | 0.390 | 0.268 | 0.422 | 0.303 | 0.379 |

Hong Kong's unsatisfactory record of industrial safety was in contrast to the success of its economy and the sophistication of its workforce. To remedy the situation, the government has made substantial amendments to the law on industrial safety.

Major accidents have happened in the past, in 1993, two serious industrial accidents occurred. In the first case, the main mast of a tower crane involved in the construction of the Tsing Ma Bridge buckled during a load test. The two operators inside the driving cabinet died. The other accident involved the failure of a passenger hoist installed at a construction site at North Point. The cage of the hoist plunged from the 20th floor, fatally injuring all 12 workers inside. The incidents were thoroughly investigated by the inspectorate in joint effort with other authorities. The inspectorate also took prompt action to ensure that the construction industry had adopted suitable safety precautionary measures to prevent the recurrence of similar accidents.

To ensure the safe operation of builder's lifts, a special inspection exercise was launched in June by an interdependence task force team, comprising factory inspectors and technical staff of the Electrical and Mechanical Services Department and the Housing Department.

Collapse of building structures had occurred between August and September 1994, the government announced an initiative to improve safety at construction sites. In 1995, a consultancy was commissioned to study the conditions of cantilevered structures and to prepare a code of practice for safe demolition of buildings. A task force in the Buildings Department was set up to monitor safety measures at construction and demolition sites. Consideration was being given to strengthening the provisions in the Buildings Ordinances. In addition, a number of accidents occurred in hand-dug caisson work, hand-dug caissons were banned as a result in 1996.

Other major accidents included a concrete beam collapse at level five of a KMB Bus Depot under construction site on May 29, 2001; workers died in confined space work in Nov 2000, Sept 2003, July 2004, Feb 2006 and 2007 respectively. A mobile crane collapsed from an operating truck in 2006, a structural canopy collapsed during demolition work in Nov 2006, fall objects during lifting operational work in 2006 and tower Crane collapsed in 2006 and 2007, and falling of person from height in building renovation and maintenance work were caused the government and public concerned. Since then, Labour Department has targeted high – risk process, including working at height, scaffolding safety, work in confined spaces and operating lifting appliances.

Intelligence Reporting System

Accidents involving small renovation and maintenance projects have become increasingly a matter of concerns. As these projects are very often completed within a short time and involve only a few people, it is difficult to locate the worksites and intelligence reporting system with the Hong Kong Association of Property Management Companies Limited. The Labour Department encourages association members to report renovation and maintenance projects at properties under their management to the department's occupational safety officers for prompt action.

Training and Education

The Industrial Safety Training Centre of the Labour Department provided basic and advanced safety training courses for workers and supervisors from industries and government departments, and to students from technical and vocational training centres. A number of seminars and short courses on safety in confined spaces and on construction sites were organized after the introduction of confined space and construction site safety regulations in 1973.

A six-week training course for safety officers in industry was set up for people who are interested to become safety officer, the centre also conducted a special course on accident prevention for those under the age of 21 participating in the Duke of Edinburgh's Award Scheme. The Centre's officers continued to inspect the government workshops and maintained a close liaison with their staff in the promotion of safety at work.

In 1979, The Industrial Safety Training Centre in conjunction with the Hong Kong Polytechnic to organize the evening course leading to a certificate of proficiency in industrial centre. This was the first collaboration between the two institutions; the training centre organized for the first time a part-time day-release programme leading to a certificate of proficiency in industrial safety. In addition, the department assisted the Construction Industry Training Authority to run a construction safety officer course which started in August 1983. To meet the increasing needs of industry, two advanced courses were also organized leading to the award of a Certificate of Proficiency in Advanced Industrial Safety.

The Proficiency of Industrial Safety Certificate was changed to Post-experience Certificate in Industrial Safety and Advanced Industrial Safety

In 1994, similar course was extended to the City University of Hong Kong to help training more safety personnel to meet the increasing the needs of the industry. A total of 6000 people had attended the course in 1995.

In 1996, Polytechnic University in collaboration with Western Sydney University of Australia to run a Master Degree of Safety Management and other universities the followed suit to organize the seminar courses. Up to now to over 400 students had obtained Master degree courses on safety and health.

With the introduction of safety auditor, safety auditing training course was organized by the Occupational Safety and Health Council in mid 1990. The safety auditor course had been extended to other universities and training institutes. The safety auditor must have attained the 108 hours safety audit course with completion of project.

Mandatory Basic Safety Training

The F&IU Ordinances requires mandatory basic safety training for people engaged in construction work and container handling operations. Upon satisfactory completion of training, workers are issued with a certificate commonly known as the Green Card, which valid for three years. To revalidate the certificate, the worker has to attend a half-day refresher course every three years. By the end of 2006, over 848,000 people have obtained the Green Card for working on construction sites and container handling workplaces. Some 460,000 workers had completed the half-day refresher course.

Conclusion

Safety and health is everyone's responsibility. The basic safety and health regulations only serve to protect the work personnel safety and health at work. To prevent accident from occurring, it relies on safety human behavior, safety culture, good working environment, provision of safety equipment with self-discipline for using safety equipment for personal protection, and an effective method statement for construction.

Rehabilitation should also be introduced in the organization to assist the injured worker to cover for returning to work.

Safety and health at work is to be promoted as a long-term task. To strive for successful and zero accident record, this is obviously a never ending journey. The Engineering Departments and the Labour Department should develop appropriate code of practices and guidance notes on safety to assist the construction sector to implement the safety and health management. On the other hand, clients, developers, designers and consultants when developing a construction management plans (CMP) should incorporate safe

considerations and safety procedures for construction and for subsequent maintenance activities. The trade associations should join together to educate frontline workers and employees by organizing relevant safety and health workshops and encouraging them to participate with an aim to raise their safety awareness. Relevant incentive schemes and safety and health family activities should be organized as these can enhance people safety awareness.

Independent professional engineers such as civil engineers, structural engineers, electrical and mechanical engineers should pay contribution on his expert to safety and health for assisting the safety practitioners, industrial undertakings and contractors in improving occupational safety and health.

Safety and health at work is a never ending journey, we should not be frustrated and the society should put in more effort to strive for, success and sustainable development for safety and health.

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