

**Construction Industry Council**

**6<sup>th</sup> Progress Report of Committee on Construction Site Safety**

**Purpose**

This paper outlines the main points discussed at the 6th meeting of the Committee on Construction Site Safety held on 14 August 2008. The record of attendance is at Annex.

**Issues Discussed**

2. Members discussed the following items –
  - improvements to safety training for project management and site supervisory staff;
  - adoption of principles of the UK Construction (Design and Management) (CDM) Regulation by the local construction industry;
  - comparison of Pay for Safety Scheme (PFSS) and Safety Management System (SMS);
  - structural failure of mast section of tower cranes;
  - 5<sup>th</sup> Summary Report of Informal Task Force on Permanent Safety Features;
  - 3<sup>rd</sup> Summary Report of Informal Task Force on Working in Hot Weather;
  - 2<sup>nd</sup> Summary Report of Informal Task Force on Behavioural Aspects of Site Safety;
  - 3<sup>rd</sup> Summary Report of Informal Task Force on Co-operation with Property Management Companies; and
  - safety of repair, maintenance, alteration and addition (RMAA) works in public works projects.

**Progress on Matters Arising from 5th Meeting on 2 April 2008**

3. Members noted the following –
- (a) paragraph 21(a) – the guidelines on safety of tower crane, site vehicles and mobile plant as well as working in hot weather were endorsed by CIC at its 9<sup>th</sup> meeting on 2 May 2008 and were promulgated on 24 June 2008;
  - (b) paragraph 21(b) and (c) – the exemption of enclosures of gondolas from height restriction and air conditioner platforms from gross floor area (GFA) calculations as well as cast-in anchorage points would be discussed in latter parts of the meeting;
  - (c) paragraph 21(d) – PFSS and SMS would be discussed in latter parts of the meeting;
  - (d) paragraph 21(e) – the Secretariat would discuss with the Hong Kong Federation of Insurers on the ways for offering lower insurance premium to sites adopting PFSS;
  - (e) paragraph 21(f) – DEVB had secured the agreement from other Bureaux managing subvented projects to adopt PFSS in their subvented projects; and
  - (f) paragraph 21(g) – the work plan for the Committee was endorsed at the 9<sup>th</sup> CIC meeting held on 2 May 2008.

**Site Safety Training for Project Management and Site Supervisory Staff**

4. The British Chamber of Commerce (BCC) Construction Industry Group Safety Taskforce Group was established in 2006 and focused on three safety objectives, namely review and enhancements to safety training, industry safety award schemes and improvement of safety culture. On the first initiative, the Group had reviewed the competencies required for management and site supervisory personnel (classified as senior managers, middle managers, frontline managers, site supervisory staff, safety staff and project management team) and surveyed the site safety training courses currently available for these types of staff.

5. The Group concluded that there was minimal coverage of site safety in university curriculum. While various types of training courses on occupational

safety and health for project management and site supervisory personnel were currently offered by training institutions, their attendance was on voluntary basis and was not mandated through any contractual provisions. The Group had therefore identified the courses that were considered to be essential and desirable for project management and site supervisory personnel and recommended mandating the essential courses through contractual provisions.

6. Members supported the recommendations of the Group in principle and decided to conduct further deliberations on them by forming a task force led by Mr Charles Wong, Director (Training) of CIC, to review the competencies on construction site safety required by various types of construction personnel, determine the courses that should be undertaken to acquire such competencies and recommend measures for inducing construction personnel to take these courses.

### **Adoption of CDM Principles by the Local Construction Industry**

7. Messrs Thomas Ho and Derek Smyth briefed Members on the latest development of the UK Construction (Design and Management) Regulation first enacted in 1996. The latest version came into force in April 2007. The CDM regulation imposed legal obligations on project participants, including clients, designers and contractors, to maintain acceptable health and safety standards at all stages of a construction project.

8. Clients were responsible for providing key information to designers and contractors and for ensuring the availability of adequate time and resources for the safe delivery of projects. Designers had to ensure that clients were aware of their duties, to minimize foreseeable risks by eliminating hazards from the construction through the design of the works, reduce the risks from any remaining hazards through mitigation measures and communicate to other projects participants any such risks that were unusual or not obvious. Contractors were responsible for ensuring that construction works were properly planned, managed, monitored and resourced to assure the safety of construction personnel. Furthermore, principal contractors had to cascade health and safety information to project participants downstream on the supply chain including subcontractors and suppliers, to assure the competence of subcontractors and workers and to provide them with suitable induction and on-going training.

9. In contrast to the spirit of the CDM regulations, some local clients could set extremely tight construction programmes. Furthermore, existing practice did not encourage designers to take into account construction safety

requirements in the design of construction works. Compliance with these was largely viewed as the responsibilities of contractors.

10. Messrs Thomas Ho and Derek Smyth considered that a change in attitude in line with CDM principles was needed to deliver the needed improvements in construction health and safety. They therefore recommended that an immediate objective should be to increase the awareness of the principles and potential benefits of CDM principles through workshops, forums and seminars. Clients should consider incorporating CDM-type systems into construction contracts. CIC should consider issuing guidelines on practical CDM procedures.

11. Members noted that, under CIRC recommendation 81, LD had undertaken a detailed review on the need for introducing CDM legislation in Hong Kong and reported to the former PCICB at the 29<sup>th</sup> meeting held on 4 May 2006 that various problems were encountered in UK in the implementation of CDM like excessive amount of paperwork, high cost of compliance (up to 2% of annual industry output) and no apparent effect on safety performance. Since the regulatory regime in Hong Kong complemented by safety education/promotion and contractual measures embodied in public sector projects had achieved positive results, PCICB concluded that there was no real urgent need for CDM legislation in Hong Kong, and that voluntary adoption should be considered in light of the experience gleaned from public works projects and further developments in UK.

12. Members were generally supportive of the notion of giving due consideration to safety aspects of construction, operation and maintenance throughout the various stages of the project life cycle and therefore agreed to establish a task force led by Mr Thomas Ho to consider issuing CIC guidelines in the light of the successful experience of applying CDM principles in public works and housing projects.

### **Comparison of PFSS and SMS**

13. At the 5<sup>th</sup> meeting of the Committee held on 2 April 2008, Members explored ways for mandating the adoption of PFSS through statutory provisions in view of the limited response to the Safety Partnering Programme launched in June 2005 by REDA and HKCA as illustrated by the fact that only 38 sites had joined the scheme. Under the Factories and Industrial Undertakings (Safety Management) Regulation (the Safety Management Regulation) of the Factories and Industrial Undertakings Ordinance (FIUO), contractors were required to develop, implement and maintain a safety management system in accordance with the provisions of the regulation and the

Code of Practice on Safety Management issued by the Commissioner of Labour in April 2002. The Secretariat had therefore considered whether the features of PFSS could be enforced through incorporation into the code of practice.

14. Under section 8 of the Safety Management Regulation, contractors had to implement safety management system with features determined in accordance with the number of workers employed and value of construction contract. Depending on the size of construction contracts, the effectiveness of the SMS would be assessed through safety audits or safety reviews to be conducted at intervals not exceeding six months.

15. Members generally preferred mandating through legislation the inclusion of a pre-determined amount in construction contracts for ensuring proper provision of safety measures and considered therefore that there should be no need to further explore the incorporation of the features of the PFSS into SMS. The Secretariat was directed to consider whether it would be possible to mandate the PFSS through legislation and if so, the options for doing so. Consideration should also be given to mandating the PFSS through appropriate provisions in the lease conditions for disposal of government land.

#### **Detection of Defects in Mast Section of Tower Cranes**

16. HKCA advised that some of its members had experienced major problems arising from defects in the welded joints of mast sections. In one of the cases, cracking due probably to lack of fit developed in a mast section which were manufactured in 2007 and was therefore relatively new. Investigation of the incidence revealed that the obstructions caused by the configuration of the joints would have resulted in difficulties in examining them using current testing methods. HKCA proposed to conduct a study (estimated to cost about HK\$0.5 million) to determine the causes of the problem and put forward possible solutions.

17. Members supported the study in principle and asked the Secretariat to work out its scope with HKCA with a view to seeking funds from the Committee on Environment and Technology for undertaking the study.

#### **5<sup>th</sup> Summary Report of Informal Task Force on Permanent Safety Features**

18. At the 5<sup>th</sup> meeting of the Task Force, Members noted PlanD's clarification of the rule for granting exemptions to rooftop structures from calculation of height restrictions and agreed that the rule would not be an

impediment to the provision of gondolas and their enclosures for residential buildings.

19. On outdoor units of split type air conditioners, safe access for their repair and maintenance of their outdoor units could be provided through installation in air conditioning plant rooms that could be exempted from gross floor area (GFA) calculations under Building Planning Regulation 23(3)(b). Where plant rooms could not be provided, consideration should be given to installing the outdoor units on utilities platforms that were also exempted from GFA calculations under the provisions of the Joint Practice Notes (JPN) issued by BD, LandsD and PlanD. Members would identify and bring up cases in which the provisions of the JPNs were inadequate so as to facilitate further discussions on the need for making further provisions for air conditioner platforms.

20. BD had prepared the draft technical guidelines for the design, installation and maintenance of cast-in anchor devices for providing proper anchorage for safety harness for protecting workers executing repair and maintenance works on external walls of buildings. It was agreed at a subsequent informal meeting with BD on 16 July 2008 that a task group consisting of interested Members of the Task Force and representatives of BD and the AP/RSE group of HKIE would be established to further consider the technical guidelines including any scope for reducing the frequency of inspection.

### **3<sup>rd</sup> Summary Report of Informal Task Force on Working in Hot Weather**

21. Following the issue of the initial set of guidelines on working in hot weather in June 2008, the Task Force considered the further developments which would be undertaken to establish the relation between thermal stress and safety measures for working in hot weather so as to develop more scientific method for applying the recommended safety measures. In this regard, the Task Force noted thermal stress could result from the rise of body temperature caused by the heat dissipation capacity of the body being exceeded by combined heating effect of the environment and the heat generated by manual labour. The Wet Bulb Globe Temperature (WBGT) which took into account air temperature, humidity, air movement and exposure to direct sunlight was one of the ways for measuring the heating effect of the environment. The Threshold Limit Value (TLV) based on WBGT was one of the ways for ascertaining a suitable work-rest regime to avoid over-exposure to thermal stress.

22. The Secretariat would attempt to collect information on WBGT measurements in Hong Kong; the findings of local studies on thermal stress; and the experience of economies in the region (including the mainland of China, Japan, Singapore and Korea) and the feedback from the industry to facilitate further discussions on the way forward.

### **2<sup>nd</sup> Summary Report of Informal Task Force on Behavioural Aspects of Site Safety**

23. At the 2<sup>nd</sup> meeting of the Task Force held on 16 April 2008, the Task Force discussed the points raised by subcontractors and workers during the site visit of the Task Force to the HD site for Sau Mau Ping Estate Phase 14 Redevelopment on 20 December 2007, the Safety Culture Index Survey conducted on the site and the outline of the proposed CIC guidelines on behavioural-based approach to site safety. On the latter item, the proposed guidelines would aim to promote wider adoption of behavioural-based approach and would feature Work Safe Behaviour Programme, Incentive and Corrective Scheme as well as Safety Climate Index Survey.

### **3<sup>rd</sup> Summary Report of Informal Task Force on Co-operation with Property Management Companies (PMC)**

24. At its 3<sup>rd</sup> meeting of the Task Force held on 5 August 2008, the Task Force considered the voluntary referral mechanism under which PMCs referred unsafe work practices of contractors engaged by individual owners to LD, the fatalities resulting from repair, maintenance, alteration and addition (RMAA) works in 2008, expansion bolts for supporting scaffolds, LD's publicity drive for 2008 and 2009 and the Buildings (Amendment) Ordinance 2008 for introducing the Minor Works Control System.

25. In 2008 (up to 19 July), there were nine fatal accidents associated RMAA works. Two of these resulted from electrocution, one from collapse of structure and six from fall of person from height. LD reported further that two more fatalities had resulted from electrocution since 19 July 2008 and indicated that the publicity on the associated safety measures would need to be enhanced in view of these accidents. On expansion bolts, CICTA would include their installation procedures in its training courses for scaffolders and other training courses where appropriate.

### **Safety of RMAA Works in Public Works Projects**

26. A review conducted by the works departments and HD found that safety performance of RMAA works in public works project was satisfactory

since only one fatality in relation to such works occurred in each of the years between 2002 and 2005. While the number jumped to four in 2006, no such accident occurred in 2007. DEVB considered that the satisfactory performance could be attributed to the procurement practice of selecting contractors with good safety records; the adoption of PFSS and contractual provision mandating adoption of safe work practices; contractual provisions requiring provision of safety training to workers and other site personnel; establishment of a liaison system with LD for conducting inspections on high risk RMAA works; and enhancing the safety of RMAA works through adoption of CDM principles.

**Further Actions**

27. The following further actions were agreed –
- (a) a Task Force led by Mr Charles Wong, Director (Training) would be established to review the training requirements for various types of construction personnel;
  - (b) a Task Force led by Mr Thomas Ho would be established to consider issuing CIC guidelines for promoting adoption of CDM in the light of the successful experience of applying CDM principles in public works housing projects;
  - (c) the Secretariat would consider whether it would be possible to mandate the PFSS through legislation and lease conditions and, if so, the options for doing so; and
  - (d) the Secretariat would work out with HKCA the scope of the proposed study on the ways for detecting welding defects in the mast sections of tower cranes and prepare a proposal for seeking funds from the Committee on Environment and Technology for conducting the study.

**CIC Secretariat  
August 2008**



**Committee on Construction Site Safety**

**6<sup>th</sup> Meeting held at 2:30 pm on 14 August 2008  
in Conference Room 1201, Murray Building**

**Record of Attendance**

**Present**

Mr Thomas Kwok	Chairman
Mr CHOI Chun-wa	
Prof KO Jan-ming	
Mr Thomas Ho	
Mr WAN Koo-sun	
Mr CHEUNG Hau-wai	Director of Buildings
Mr James Blake	Kowloon-Canton Railway Corporation
Mr C K Tsang	Hong Kong Federation of Electrical and Mechanical Contractors
Mr Charles Wong	Director (Training), CIC
Mr C K Lau	Real Estate Developers Association of Hong Kong
Mr Anthony Chan	Hong Kong Construction Association
Mr William Siu	Hong Kong Bar-Bending Constructors Association
Mr TANG Wah-shing	Occupational Safety and Health Council
Mr Dominic Lam	Hong Kong Federation of Insurers
Mr YU Koon-ching	Hong Kong Safety Supervisors Association
Mr S M Leung	Buildings Department
Mr Jonathan Leung	Development Bureau
Mr S H Tso	Labour Department
Ms Ada Fung	Housing Department

**Absent with apologies**

Mr Stanley Hui	
Mr NG Kwok-kwan	
Mr Philip Chan	Hong Kong Institute of Architects
Ms Ros Lam	Office of the Commissioner of Insurance
Mr PANG Long	Hong Kong Construction Site Workers General Union
Prof Francis Wong	The Hong Kong Polytechnic University

**In Attendance**

Mr K H Tao	Development Bureau
Mr Solomon Wong	Development Bureau
Mrs Terry Ching	Housing Department
Mr Desmond Tsoi	Sanfield (Management) Ltd
Mr Robert Tsoi	Sanfield Building Constructors Ltd

*For “Site Safety Training for Project Management and Site Supervisory Staff”*

Mr Steve Grant	British Chamber of Commerce
Mr Derek Smyth	British Chamber of Commerce

*Construction Industry Council*

Mr Christopher To	Executive Director (Designate)
Mr Alex Leung	Senior Manager (Council Services) 1
Ms Claudia Au	Manager (Council Services) 1