

Construction Industry Council

Committee on Construction Safety

Meeting No. 001/17 of the Committee on Construction Safety (Com-CSY) was held on Friday, 24 February 2017 at 3:00 pm at Board Room, 38/F, COS Centre, 56 Tsun Yip Street, Kwun Tong, Kowloon.

Summary Notes of the Com-CSY Meeting No. 001/17:

Agenda Item	Paper	Major Resolutions/ Progress Highlights
1.1	CIC/CSY/R/004/16 (for discussion)	Confirmation of the Progress Report Members confirmed the Progress Report of the previous meeting held on 7 December 2016.
1.2	CIC/CSY/R/004/16 (for discussion)	Matters Arising from the Previous Meeting Agenda item 4.3 - Details were reported under Agenda Item 1.3 (to follow up the Application for CIC Research Fund - Health Profiling of Construction Workers in Hong Kong).
1.3	CIC/CSY/P/001/17 (Presentation) (for endorsement)	Application for CIC Research Fund - Health Profiling of Construction Workers in Hong Kong (Revised Submission) The researcher from the Hong Kong Polytechnic University presented the revised research proposal mainly with the following modifications and clarifications, and obtained Com-CSY's endorsement in-principle at the meeting: (i) Data-driven health improvement intervention will be proposed to specific trades; (ii) A longitudinal study will be conducted to study the effect of intervention measures to workers in trade-specific manner; (iii) Psychological health would be conducted through an internationally recognized health status questionnaire survey; and (iv) Review the sample size to an acceptable level according to the research principle and trade for

Agenda Item	Paper	Major Resolutions/ Progress Highlights
		further study and adjust if necessary.
1.4	(Presentation) (for information)	<p>Progress Report of the Research Project “A Practical Application of Integrated Micro-Environmental Monitoring System for Construction Sites”</p> <p>The researcher from the Hong Kong Polytechnic University gave a presentation on the progress report of this research project. The main objective of this research project is to deploy a low cost, extendable and automated micro-environmental monitoring system in construction sites. The user can change environmental parameters information in the Integrated micro-Environmental Monitoring System (IEMS). The data will then transfer to mobile application from the server in a real-time. The user will receive a warning system to remind workers to take safety precautions. This project is targeted to be completed in mid year 2017.</p>
1.5	CIC/CSY/P/002/17 (for endorsement)	<p>Construction Safety Poster No. 002/17 – “Fire Prevention”</p> <p>Members endorsed in principle the Construction Safety Poster No. 002/17 with some minor amendments.</p>
1.6	CIC/CSY/P/003/17 (for endorsement)	<p>Reference Materials – Site Welfare, Health and Safety Measures</p> <p>Members endorsed in principle the Reference Materials – Site Welfare, Health and Safety Measures with some minor amendments.</p> <p>[Post Meeting Note: Reference Materials on Construction Site Welfare, Health and Safety Measures was published on 17 March 2017 and attached in Annex A of this paper for information. A seminar to promote this Reference Materials was held on 17 March 2017 at Conrad Hong Kong. It was full house with around 150 people attended that they were mainly from private developers and their related main contractors.]</p>
1.7	(Verbal Report) (for information)	<p>Progress of the Task Force on Work Safety of Repair, Maintenance, Alterations and Additions (RMAA) Sites (TF-RMA)</p> <p>A working group meeting organised by Buildings Department (BD) was held on 14 February 2017 and views in design for safety for repair and maintenance works of external facilities especially the</p>

Agenda Item	Paper	Major Resolutions/ Progress Highlights
		<p>configurations of air-conditioners platforms were shared among Labour Department (LD), BD and professional bodies. The review of the Technical Guidelines on the Design, Installation & Maintenance of Cast-in Anchors at External Walls of New Buildings (Guidelines) is in progress. LD has touched base with Occupational Safety and Health Council on organising a new course to train competent persons to inspect and test the cast-in anchors so as to cope with the coming revision of the Guidelines. A RMAA works safety information kit for property management companies was being prepared.</p>
1.8	CIC/CSY/P/004/17 (for information)	<p>Progress of the Task Force on Safety of Bamboo Scaffolds Core Group Meetings were held on 4 January 2017 and 7 February 2017. The drafted Guidelines on closely placed bamboo scaffolding was being prepared. [Post Meeting Note: CIC held a meeting with the relevant government departments and construction industry stakeholders on 14 March 2017 to discuss measures to avoid serious accidents involving working on bamboo scaffolding or other working-at-height since 8 March 2017. Safety Alert No. 001/17 – Work Safety on Bamboo Scaffolds and Press Release were published on 7 April 2017 and attached in Annex B of this paper for information.]</p>
1.9	(Presentation) (for information)	<p>Progress of the Road Maintenance Works Safety Representative from the Highways Department (HyD) gave a presentation on the progress of the road maintenance works safety. HyD has implemented the following new measures to enhance road safety at its road works from November 2016:</p> <p>(i) For road works on public roads with a speed limit of 70km per hour or above (including expressways), a shadow vehicle equipped with a truck-mounted attenuator (or temporary safety barriers with an appropriate containment level) and a longitudinal safety clearance zone (buffer zone) should be provided in front of the works area in order to reduce damage to the work site and injury to its workers if it is hit by a vehicle during an accident;</p>

Agenda Item	Paper	Major Resolutions/ Progress Highlights
		<p>(ii) The current requirements of providing shadow vehicles equipped with truck-mounted attenuators, flashing arrow signs, warning lanterns and signage when conducting mobile operations (such as setting up and removing lane closure, emptying a gully, sweeping/watering, or emergency road surface repairs) on expressways was also be applied to mobile operations on public roads with a speed limit of 70 km/h or above; and</p> <p>(iii) The specification requirement of retroreflectivity on the rear of a truck-mounted attenuator on a shadow vehicle will be enhanced to provide better warning to motorists and the minimum weight of a shadow vehicle will be clearly specified to enhance the protection for workers.</p> <p>“Code of Practice for the Lighting, Signing and Guarding of Road Works” (COP) would be updated as above.</p> <p>After deliberations, Members suggested increase the brightness and frequency of flashing arrow signs, and analyse reasons of road works accidents. A Member also suggested informing utilities earlier the estimated time to implement the updated COP for better preparation.</p>
1.10	(Presentation) (for information)	<p>Experience Sharing for the Benchmarking Visit to Beijing</p> <p>A Member gave a presentation on experience sharing for Safety Experience and Training Centre in Beijing. The experience and training facilities were installed in the containers, which were more flexible for combination, easier for installation and could be used repeatedly. All facilities were come from Korea and further modification for use.</p> <p>[Post Meeting Note: A video of introduction on Safety Experience and Training Centre in Beijing was shared with Members by email on 27 February 2017.]</p>

1.11	<p>AOB</p> <p>(i) CIC Construction Innovation Award 2017 Construction Safety was one of the scopes of entry of CIC Construction Innovation Award 2017. Members were encouraged to join. [Post Meeting Note: A flyer was shared with Members by email on 27 February 2017.]</p> <p>(ii) Fatalities of Construction Industry in Recent Months LD informed members that they would issue “Work Safety Alert” to alert employers/contractors and employees whenever there is fatal accident to prevent occurrences of serious or fatal work injuries and remind them to take relevant measures to prevent recurrence.</p> <p>(iii) CIC Secretariat Jobs Update</p> <ul style="list-style-type: none">● CIC Seminars on Work-above-ground Safety were held on 6 December 2016 and 13 Feb 2017 with around 560 participants attending the four sessions;● CIC Seminar on Guidelines on Safety of Lift Shaft Works (Volume 4) – Builders' Lift within Lift Shaft was held on 11 Jan 2017 with around 420 participants attended; and● Construction Safety Poster No. P-CSY-001-17 - “Lifting Safety” was published on 27 January 2017. <p>(iv) Building Safety Week Buildings Department organised a Building Safety Symposium 2017 on 24 March 2017. Members were encouraged to join.</p>
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Remarks: The mentioned papers discussed at the Committee on Construction Safety and the full progress report can be made available to Council Members from the CIC Secretariat upon request.



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REFERENCE MATERIALS ON

CONSTRUCTION
SITE
WELFARE
—
HEALTH
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AND
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SAFETY
MEASURES

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CONSTRUCTION
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Disclaimer

Whilst reasonable efforts have been made to ensure the accuracy of the information contained in this publication, the CIC nevertheless would encourage readers to seek appropriate independent advice from their professional advisers where possible and readers should not treat or rely on this publication as a substitute for such professional advice for taking any relevant actions.

Enquiries

Enquiries on this Reference Materials may be made to the CIC Secretariat at:

CIC Headquarters
38/F, COS Centre
56 Tsun Yip Street
Kwun Tong, Kowloon
Hong Kong

Tel : (852) 2100 9000
Fax : (852) 2100 9090
Email : enquiry@cic.hk
Website: www.cic.hk



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Preface

The Construction Industry Council (CIC) is committed to seeking continuous improvement in all aspects of the construction industry in Hong Kong. To achieve this aim, the CIC forms Committees, Task Forces and other forums to review specific areas of work with the intention of producing Alerts, Reference Materials, Guidelines and Codes of Conduct to assist participants in the industry to strive for excellence.

The CIC appreciates that some improvements and practices can be implemented immediately whilst others may take more time to adjust. It is for this reason that four separate categories of publication have been adopted, the purposes of which are as follows:

Alerts

Reminders in the form of brief leaflets produced quickly to draw the immediate attention of relevant stakeholders the need to follow some good practices or to implement some preventative measures in relation to construction industry.

Reference Materials

Reference Materials for adopting standards or methodologies in such ways that are generally regarded by the industry as good practices. The CIC recommends the adoption of these Reference Materials by industry stakeholders where appropriate.

Guidelines

The CIC expects all industry participants to adopt the recommendations set out in such Guidelines and to adhere to such standards or procedures therein at all times. Industry participants are expected to be able to justify any course of action that deviates from those recommendations.

Codes of Conduct


Under the Construction Industry Council Ordinance (Cap 587), the CIC is tasked to formulate codes of conduct and enforce such codes. The Codes of Conduct issued by the CIC set out the principles that all relevant industry participants should follow. The CIC may take necessary actions to ensure the compliance with the Codes.

If you have attempted to follow this publication, we do encourage you to share your feedback with us. Please take a moment to fill out the Feedback Form attached to this publication in order that we can further enhance it for the benefit of all concerned. With our joint efforts, we believe our construction industry will develop further and will continue to prosper for years to come.



1 Introduction

- 1.1 In recent years, it is delighted that many construction sites have drastically improved the working environment. To enhance and promote the importance of the working environment at construction sites to real estate developers and construction industry, the Construction Industry Council (CIC) has compiled Reference Materials for the provision of welfare, health and safety measures on construction sites.
- 1.2 Provide a good working environment is not only for workers' safety, health and well-being, but also reduce the occurrence of accidents and enhance a sense of belonging towards the company and work efficiency. Moreover, it can uplift corporate image of construction industry, result in attracting more newcomers and to support a healthy, long lasting and continuous development in construction industry.
- 1.3 This Reference Materials are provided to promote the good practice on the provision of workers welfare and health facilities and measures adopted by the Development Bureau, the Hong Kong Housing Authority (HKHA), the MTR Corporation Limited and main contractors to protect the safety of workers for consideration for adoption on construction sites.



Development Bureau

Hong Kong Housing Authority

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Main Contractor

- 1.4 Employers, contractors, subcontractors, and building professionals should consider the merits and suitability of the proposed facilities and measures for the specific site conditions and nature of building works.

2 Limitations

- 2.1 It is important to note that the compliance with this publication does not of itself confer immunity from legal obligations in Hong Kong. Employers or contractors are reminded to observe and comply with statutory provisions, relevant codes of practice and other Government departments' requirements so as to discharge their legal and other pertinent duties in respect of construction workers.
- 2.2 Any standards, procedures, forms or specifications stipulated in this publication are by no means exhaustive. Contractors and subcontractors shall critically examine their applicability and suitability taking into account the actual conditions of the site and the workers, and the specific hazards of the project.
- 2.3 Whilst the content and suggestion details may differ slightly from individual contracts, this publication addresses the items to be noted when reviewing the contracts as identified by the CIC and the industry stakeholders. Developers, contractors and subcontractors should review their existing contracts and seek opinions from legal consultant based on the recommendations of this publication.

3 Definitions

3.1. Employer

In relation to construction works, means any person or entity that directs the contractor under a construction contract and is obliged to pay for the services/ works provided by the contractor in compensation.

3.2. Contractor

Contractor means any person or firm engaged in carrying out construction work by way of trade or business, either on his own account or pursuant to a contract or arrangement entered into with another person, including the State or any public body.

3.3. Subcontractor

Subcontractor means a person or firm employed by a contractor to perform construction work under a contract for services.



4 Guidance for Implementation

4.1. Employers

- 4.1.1. Employers (i.e. Developers) directing contractors in a construction contract and paying for their services should render support to contractors for implementing the measures recommended in this publication. Employers are also encouraged to mandate the contractor to adopt this publication by incorporation into contractual provisions.
- 4.1.2. Employers are recommended to formulate appropriate specification clauses for including the measures in tender. As a result, contractors can be required to implement the measures on site.
- 4.1.3. Furthermore, as the publication is not intended to be exhaustive, the employers should determine the measures to be implemented according to the site conditions.

4.2. Contractors/ Subcontractors

- 4.2.1. Contractors and/ or subcontractors should implement the measures stated in contract by employers.
- 4.2.2. Contractors and/ or subcontractors are recommended to put up posters or notices on site to provide information of the welfare, health and safety measures for site personnel and workers.

4.3. Construction Workers

- 4.3.1. Construction workers should take note of and comply with the relevant site safety guidelines/ safety measures set out by the contractors and/ or subcontractors.

5 Welfare Facilities

Development Bureau

5.1. Workplace Sheltered Rest Area/ Rest Rooms

5.1.1. Sheltered rest areas shall be able to provide sun shade, wind screen, seats and tables, hand wash facilities, rubbish bins, drinking facilities with proper ventilation.

5.1.2. Sheltered rest areas shall be at convenient locations close to working places of workers for them to take rest break or meal break. Also it shall be in adequate number taking into account the number of workers and their locations on the site.

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5.1.3. The contractor shall provide adequate covered areas, equipped with tables and chairs, for workers to take their meals or refreshment on site. The areas shall be protected from the weather and adequately illuminated.

5.1.4. These areas may also be used for conducting tool box talks, safety briefings and other safety related gatherings and be equipped with a white board and a notice board.



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5.2. Drinking Water Facilities

5.2.1. The contractor shall provide free drinking water facilities and cups for workers on site.

5.2.2. The water dispensing points shall be a minimum of a 20 litres carboy, provided with a tap, a distilled water drinking fountain, or any other form of water dispensing facilities that the contractor considers appropriate and approved by the Engineer.

- 5.2.3. The contractor shall maintain the drinking water facilities in a clean and hygienic condition and refill the drinking water when empty.
- 5.2.4. The contractor shall provide a minimum of 1 water dispensing point for every 50 workers.



5.3. Dining Facilities

- 5.3.1. Site shall be provided with sufficient facilities for employees and subcontractors for taking meals which shall be equipped with tables, chairs and refrigerator; facilities for warming of food, supply of hot and cold drinking water, separate rubbish bins are to be provided where possible. Please refer to Cap 59I Construction Sites (Safety) Regulations section 66.



- 5.3.2. Dining facilities are to be provided with means of temperature and ventilation control and an area shall be provided to wash and dry eating utensils.
- 5.3.3. Vending machine with drinks shall be installed where possible.



5.4. Personnel Washing Facilities

- 5.4.1. Site shall provide hand washing facilities. The hand washing facility shall be equipped with liquid or hand soap and hand drying provisions.
- 5.4.2. Hand washing facilities are provided at each hand basin. Consideration should be given to supply emergency eye wash bottles in these areas.
- 5.4.3. The facility is to be cleaned and disinfected daily.
- 5.4.4. The contractor shall provide hand-wash facilities in the form of water points and sinks for workers working on site.
- 5.4.5. The number of hand-wash facilities provided on site shall be at a ratio of not less than one for every 25 workers or as determined by the Engineer.
- 5.4.6. The discharge from hand-wash facilities shall be collected to prevent spillage on the floor and discharged to a water reception tank or flushing water supply tank.

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5.5. Shower Facilities

- 5.5.1. Site shall provide showers on site. The shower is to be equipped with a private cubicle and screen.
- 5.5.2. The shower is to supply hot and cold running water such as where processes are particularly dusty/ hazardous. Soap and/ or suitable cleaning agents should be provided with shower facilities.
- 5.5.3. Separate female showers shall be provided.
- 5.5.4. All shower facilities shall be cleaned and disinfected daily.
- 5.5.5. Ratio of shower cubicles to workers shall be 1:50.
- 5.5.6. The contractor shall provide sufficient showering facilities on site. The showering facilities shall be provided indoors or inside containers, with appropriate drainage connections.
- 5.5.7. The contractor shall provide separate showering facilities at different locations / rooms for use by male or female workers.
- 5.5.8. Each showering point shall be furnished with a hot and cold water supply.

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5.6 Sanitary Facilities



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- 5.6.1. Site shall provide sanitary facilities. The facility shall be equipped with private cubicles, urinals, sanitary disposal units for females employed as well as connection to a sewerage system.
- 5.6.2. Mobile flushing chemical toilets should be used where it is not practicable to connect the sanitary facilities to a sewerage system.
- 5.6.3. Each cubicle and urinal should be washed and disinfected daily; and sanitary disposal units should be regularly serviced.
- 5.6.4. Sanitary facilities should be located near the workplace and easy to access without any, nuisance to the public or other employees.
- 5.6.5. Sanitary facilities should be located at least on each fifth floor, where the building operation extends over many storeys.
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- 5.6.6. The contractor shall provide toilet facilities of either of the following types on site:
- (a) Wet type with flushing water supply and the toilet waste properly collected and discharged into a sewerage system, septic tank, soak away system, or in-situ sewage treatment facilities proposed by the contractor and approved by the Engineer.
 - (b) Chemical type complete with containers for regular cleaning and removal by specialist appointed by contractor.
- 5.6.7. For connection to a public sewerage system, the contractor shall obtain approval from the Drainage Services Department prior to making the connection.
- 5.6.8. If a soak away system is adopted, the contractor shall carry out in-situ percolation test to prove that the soil shall have sufficient absorption capacity to treat the toilet waste flow. The test results shall be submitted to the Engineer for record before discharging.
- 5.6.9. If in-situ sewage treatment facility is adopted, the plant shall be equipped with disinfection unit to sterilize the treated effluent before discharging.
- 5.6.10. The number of toilet facilities provided on site shall be at a ratio of not less than one for every 25 workers and a minimum of one on every floor or at locations as determined by the Engineer. The contractor shall provide separate toilet facilities for use by male and female workers.
- 5.6.11. The contractor shall maintain the toilet facilities in clean and hygienic condition and shall ensure that they are emptied, cleaned and disinfected at least daily and adequate toilet supplies are provided continuously.



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- 5.6.12. The contractor shall rigorously enforce the use of the toilets for all workers. Disciplinary action shall be taken against workers from excreting or urinating outside the toilets provided in site.



5.7. Uniform

- 5.7.1. The contractor shall ensure that all workers involved in site works, except workers who are engaged for the execution of the works on the site for an aggregated period of 7 days or shorter, wear a set of site uniform when they are on the site in accordance with the provisions of contract clause. The site uniform, in the form of polo shirt (short-sleeve or long-sleeve to suit the weather conditions) and trousers, shall adopt the design of the anti-heat stress uniform of the Hong Kong Polytechnic University or a similar design submitted to and not disapproved by the Engineer/ Architect/ Supervising Officer within 5 working days after the date of delivery of the design to the Engineer/ Architect/ Supervising Officer. The contractor may show the contractor's logo or a subcontractor's logo on the site uniform.

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5.8. Changing Facilities

Main
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- 5.8.1. The site shall provide secure adequate changing facilities that are sheltered from inclement conditions and shall provide means of temperature and ventilation control.
- 5.8.2. A locker in which the employee can store his clothing/personnel belongings and PPE.
- 5.8.3. The facility shall be equipped with benches or chairs plus adequate lighting and ventilation.
- 5.8.4. Separate facilities shall be provided for female employees.
- 5.8.5. The facilities shall be provided with privacy consideration and allow employees' changing out of public view.

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- 5.8.6. The contractor shall provide secure PPE storage lockers for use by workers. The storage lockers shall be placed at a location, sheltered from the elements, as close to the site entrance as possible.
- 5.8.7. The contractor shall provide a storage locker for each worker.



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5.9. Implementation of P and N Caring Programme

The contractors shall provide caring programme for new workers, making reference to the practices recommended by the Guidelines on The Implementation of "P" and "N" Caring Programme issued by CIC, including but not limited to the following:

- 5.9.1. Regarding probationers (workers who newly join the construction industry or with relevant job experience of less than 6 months):
- Provide identification with "P" labels;
 - Assign mentors (with a ratio of 1 mentor to not more than 4 probationers) who possess good experience on the site to take care of the probationers and provide guidance on site safety with a caring period not less than 3 months;

- Provide a safety orientation programme covering the essential safety aspects related to the site, guidance for work and arrangement for familiarisation of the site; and
- Subject to the mentor being satisfied with the probationer's safety performance, remove identification label from safety helmet after the 3 months' caring period.

5.9.2. Regarding newcomers (workers with relevant job experience of more than 6 months but newly arrive at the site):

- Provide identification with "N" labels;
- The display of "N" labels shall not be less than 2 weeks; and
- Provide a safety orientation programme covering the essential safety aspects related to the site, guidance for work and arrangement for familiarisation of the site.



5.9.3. There are requirements of labels for Probationers and Newcomers:

- Each label shall be adhered on a conspicuous part of a safety helmet;
- The size of label shall not be less than 50 mm (L) x 50 mm (H);
- The name and telephone number of the mentor shall be shown on the label; and
- The date on which the worker joined the site shall be shown on the label.

6 Health Facilities

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6.1. First Aid Facilities/ First Aider

- 6.1.1. First aid room or containers are to be provided on site in accordance with the requirements of the Construction Sites (Safety) Regulations.

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- 6.1.2. The contractor shall provide a site clinic stocked with sufficient first aid supplies and facilities and equipment for transporting the injured (stretcher, man basket), appropriate to the site conditions.
- 6.1.3. First aid kits, up to the standards required by the Occupational Safety and Health Ordinance, Cap 509 and the Factories and Industrial Undertakings Ordinance, Cap 59, shall be installed on every office floor, every canteen, every workshop, at 100m intervals in tunnels, and carried in each supervisor's vehicle for work in remote areas.
- 6.1.4. A qualified first-aider is required on site at all times when work is being carried out. Under Cap 59I Construction Sites (Safety) Regulations, 1 first-aider is required for workers between 30-99 and 2 is required for 100 or more.
- 6.1.5. The contractor shall maintain a register of all persons having received first aid treatment.



6.2. Provision of Automated External Defibrillators (AED)

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- 6.2.1. The contractor shall provide an Automated External Defibrillator (AED) for resuscitation at the site office with trained personnel to operate the machine.
- 6.2.2. The operator of the AED shall have attained the training course or revalidation training on use of AED organized by the Occupational Safety & Health Council (OSHC) or the Hong Kong St. John Ambulance or equivalent training provider.



6.3. Medical Examination

6.3.1. The contractor shall provide regular health screening which includes tests on hearing, cholesterol and blood sugar levels, body mass index, waist to hip ratio, blood pressure and lung function test (peak flow and exhaled carbon monoxide level).

6.3.2. Divers shall undergo regular yearly medical checks and obtain certificates of fitness, which shall be available to the Engineer for review.

6.3.3. Medical Examinations for Health related matters which may affect the workplace such as fumes or vapours from hazardous or toxic substances, pollution, noise, radiation etc., are to be reviewed.

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6.4. Health Assurance Programme

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6.4.1. Work related health aspects, such as pre-employment and routine medical examination of employees engaged in specific jobs, shall be considered (refer to the Guidance Notes on Medical Examinations for Workers engaged in Hazardous Occupations in Industrial Undertakings issued by Labour Department (LD)).

6.4.2. Health surveillance is to be used to detect adverse health effects at an early stage. Appropriate risk assessment to identify the circumstances in which health surveillance becomes necessary.

6.4.3 Health related matters which may affect the workplace such as fumes or vapours from hazardous or toxic substances, pollution, noise, radiation etc., are to be reviewed.



6.5. Working in Hot Weather

- 6.5.1. The contractor shall provide safety helmets with ventilation slots to allow heat to escape. Also, they shall provide lightweight and light colored clothing.
- 6.5.2. The contractor shall comply with the LD's publication relating to the safe working in hot weather "Prevention of Heat Stroke at Work in a Hot Environment" and the "Guidelines on Site Safety Measures for Working in Hot Weather" by the CIC.

- 6.5.3. The contractor shall conduct a risk assessment and identify precautionary measures to reduce the risk to an acceptable level.

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- Provide compulsory rest break;
- Supply fans in working locations,
- Provide misting machines, and
- Provide air-conditioners in the cabins of tower cranes, tunnel boring machines and other plant where the operator is likely to be exposed to high temperatures.



- 6.5.4. The contractor shall keep heat-generating machinery (e.g. diesel air compressors or generators) away from workers or use insulating materials to minimize heat dissipation as far as reasonably practicable.



- 6.5.5. The contractor shall use mechanical aids for execution of works where appropriate to minimize workers' physical exertion.

- 6.5.6. The contractor shall establish administration control measures with trained supervisors to take heed of hot weather report and if necessary, to reschedule outdoor work or to arrange job rotation or suitable rest breaks to avoid prolonged working in hot environment.

- 6.5.7. The contractor shall assign a lower workload or shorter working duration as a start to the workers new to a hot environment.

- 6.5.8. The contractor shall avoid assigning workers who may have difficulties in coping with heat to work under hot environment.

- 6.5.9. The contractor shall arrange regular rest periods to reduce the period of exposure to the hot environment to let the workers cool down. Apart from the regular 30-minute rest period during the afternoon work session, allow an additional 15-minute rest period during the hot summer months (from May to September every year).

- 6.5.10. The contractor shall provide relevant training and site safety information to supervisors and workers in understanding the potential

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risks for working in hot environment inclusive of the knowledge in recognizing symptoms of heat-related disorders, the precautionary measures and the emergency responses.

6.5.11. The contractor shall prohibit consumption of alcoholic drinks.

6.6. Non-smoking Policy

6.6.1. The contractor shall mandate a non-smoking policy including the rules adopted by the contractor with respect to prohibition of smoking on site.

6.6.2. In the event that the contractor does not fully prohibit smoking on site, include a site plan showing the number and sizes of the designated smoking areas and describe the associated requirements of provisions of fire fighting appliances and cleaning services in the policy.

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7 Safety Measures

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7.1. Pay for Safety Scheme (PFSS)

7.1.1. The objective of PFSS is to remove site safety from the realm of competitive tendering and it has the support of the construction industry. The required items are as follow:

- Complete draft Safety Plan
- Complete Safety Plan
- Updating of Safety Plan
- Provide Safety Officer
- Attend Site Safety Management Committee
- Attend Site Safety Committee
- Arrange and attend weekly Safety Walk
- Provide safety training in the form of trade specific advanced safety training to skilled workers

- Provide safety training in the form of site specific induction training
- Provide safety training in the form of tool box training
- Participate in safety promotional campaign as instructed by the Architect/Engineer

7.1.2. A Safety Improvement Incentive Scheme shall be operated by the Engineer, to recognize the performance of the contractor above that required in the contract.

7.1.3. The employer is committed to maintaining a safety first culture for all his projects. The safety of customers, the public, contractors and employees, is the first priority. The employer is also committed to carrying out new projects in a responsible and environmentally friendly manner. To promote and enhance this safety first and environmentally friendly culture, the employer shall implement an Incentive Payment for Safety and Environmental Performance.

7.1.4. The employer has identified key areas and set challenging targets for safety and environmental performance to be achieved by the contractor. When the Engineer considers that the target criteria have been achieved, the contractor shall be entitled to the incentive payment.

7.1.5. The incentive payment will be certified by the Engineer and included in the valuation period during which the performance target is achieved. Unless otherwise indicated within the payment criteria, the Engineer's decision on achievement of performance targets shall be final. The Engineer will advise the contractor of the assessment result as soon as is practicable.



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- 7.1.6. The contractor shall submit a Subcontractor's Incentive Scheme for Approval by the Engineer, indicating how the Scheme is to be cascaded down to the subcontractors. Incentive payments may be suspended by the Engineer if there is no Approved Subcontractor's Incentive Scheme in place.

7.2. Safety Auditing Scheme

Independent Safety Audit Scheme under Pay for Safety (ISAS)

- 7.2.1. The requirement of the ISAS using the safety auditing system are to be incorporated into the documents of mega capital works contracts (estimated contract sums exceeding \$1,000 million) or capital works contracts involving unconventional construction method even if the estimated contract sum is less than \$1,000 million.
- 7.2.2. Safety audits shall be carried out in not more than 6-month intervals by the appointed Safety Auditor and the Safety Audit Assistant proposed by the Safety Auditor. They are to continue until the date of substantial completion of the works/ the expiry of the contract period.
- 7.2.3. Taking into account of the Safety Audit reports, the Architect/ Engineer shall issue warning letter to the contractor urging for improvements to be made. Besides, the Architect/ Engineer might consider marking the overall "site safety" section "very poor" if serious deficiency or non-compliance in the contractor's safety management system has been revealed or the contractor is persistently failed to improve to the shortcomings identified by the Safety Auditor.
- 7.2.4. Major contracts are subject to an independent safety audit and inspection regime. Safety audit is conducted at the start of the contract and then annually and a monthly 'surprise' site condition inspection shall be conducted. The audit and inspection is a compliance audit on contractual safety requirement, legal requirement and the contractors' own health and safety plan.



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7.3. Safety Policy

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- 7.3.1. A safety and health policy is a written statement produced by the contractor, signed by a senior member of the management board, in which it sets out its aims and objectives for securing safety and health and the means whereby the objectives can be met. It is the contractor's statement of intent on matters of safety and health.

7.4. Safety Plan

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- 7.4.1. The contractor shall be in accordance with Special Conditions of Contract (SCC) to prepare and submit to the Architect/Engineer six copies of the Safety Plan signed by the Site Agent and the Safety Officer. It shall contain details of the following 14 key elements of a safety management system :

- Safety Policy
- Safety Organization
- Safety and Health Training
- Safety Rules and Regulations
- Safety Committees
- Safety And Health Inspections
- Job Hazard Analysis
- Personal Protective Equipment (PPE)
- Accident/Incident Investigation
- Emergency Preparedness
- Safety Promotion
- Health Assurance Program
- Evaluation, Selection and Control of Subcontractor
- Process Control Program



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- 7.4.2. The contractor shall supervise and monitor implementation of the Safety Plan.
- 7.4.3. The contractor shall ensure that sub-contractors and all persons working on the site are made aware of and comply with the Safety Plan.

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- 7.4.4. The contractor shall submit, as part of the health and safety documentation, a Health and Safety Policy Statement, Health and Safety Plan and Health and Safety Procedures for the Works within 60 days.
- 7.4.5. The Health and Safety Policy shall declare that health and safety shall be given the highest priority in all aspects of the work and in the discharge of all contractual obligations.

- 7.4.6. In the event that the contractor is a consortium, partnership or joint venture, there shall be only one Health and Safety Policy that shall be signed by the Chief Executive Officers of each of the companies comprising the consortium, partnership or joint venture.
- 7.4.7. The contractor shall develop and implement a Health and Safety Plan to fully comply with the requirements of the contract, the employer's safety documentation and all relevant enactments, Codes of Practice, safety guidelines and relevant international standards.
- 7.4.8. The contractor shall review every 6 months, following a major incident or accident or as required by the Engineer, all health and safety documents to reflect changes to work practices, phases of work and enactments.
- 7.4.9. The contractor shall submit copies of the proposed changes to the safety documentation to the Engineer for approval prior to inclusion and implementation.
- 7.4.10. The contractor shall include in the Health and Safety Plan an organisation chart which shows all staff on the contract and highlights those who are employed solely in connection with health and safety. The chart shall show the seniority of staff and their reporting lines to the most senior person on site. A safety responsibility statement shall be included for each position shown on the chart.

7.5. Safe Working Cycle

7.5.1. Practise Safe Working Cycle to improve and promote the safety and health of the site. Safe Working Cycle should begin when there are workers working on the site, and shall cease by the date of substantial completion of the works. The activities of Safe Working Cycle are classified into 3 categories. They are Daily Cycle, Weekly Cycle and Monthly Cycle. Details of the each category of Safe Working Cycle are given below:

(a) Daily Cycle:

- Pre-work Exercise and Safety (PES) meeting;
- Hazard Identification Activity (HIA) meeting;
- Pre-work Safety Checks;
- Safety inspection by Site Agent or his representatives;
- Guidance and supervision during work;

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- Safety coordination meeting;
- Daily cleaning and tidying up of the site;
- Checking of the site after each day's work.

(b) Weekly Cycle:

- Weekly safety inspection by Site Agent and Safety Officer and the Contract Manager or his representatives;
- Weekly safety coordination meeting;
- Weekly overall cleaning and tidying up of the site;
- Advance planning of the cleaning and tidying up, safety checks of the workplace, machineries and plant, before and after public holidays in the coming week(s). Site Agent and Safety Officer shall prepare a checklist of work making reference to the Handbook on Work Safety Immediately Before and After Public Holidays issued by OSHC and assign competent personnel for implementation and monitoring.

(c) Monthly Cycle:

- Site Safety Committee meeting and pre-meeting inspection.

7.5.2. The first 3 items under Daily Cycle described in sub-clause 7.5.1(a), namely, Pre-work Exercise and Safety (PES) meeting, Hazard Identification Activity (HIA) meeting and Pre-work Safety Checks, are collectively referred to as the "Pre-work Activities". Pre-work Activities are to be held for attendance by persons employed on the works (excluding clerical and administrative staff in site office), irrespective of whether they are in the employment of the contractor or subcontractors. Detail requirements for the Pre-work Activities are:



- (a) Arrange and hold PES meeting of about 10 to 15 minutes for all persons employed on the works. The PES meeting shall be led by the Site Agent or senior staff of site management of the contractor, who has attended the training course on Safe Working Cycle of OSHC or CIC. The PES meeting shall start with physical exercise, followed by a briefing to workers on the prevailing safety and health matters related to the site, such as common hazards and control measures, safety precautions, specific safety concerns etc.
- (b) Arrange and hold HIA meeting of about 10 minutes for the attendees immediately after the PES meeting. Alternatively, the HIA meetings can be held in small groups according to the trades, work teams or works areas set out by the contractor for the site. If so, the contractor shall ensure that the assigned persons are competent to lead the HIA meetings. Persons who have attended one day training course on HIA leadership provided by OSHC are considered competent to lead the HIA meetings. The issues discussed at the HIA meetings shall cover, but not limited to:
- Implementation of the already devised safe systems of work for hazardous works to be carried out in accordance with the Safety Plan;
 - Hazards and control measures specific to the works or trades;
 - Special safety concerns;
 - Assurance of safety requirements and measures;
 - Reprimand of repeated irregularities and malpractice etc.
- (c) Arrange and hold Pre-work Safety Checks for the attendee immediately after the HIA meeting. The Pre-work Safety Checks shall be carried out by foremen, gangers, Safety Supervisors or Safety Representatives of the attendees according to the trades, work teams or works areas. The Pre-work Safety Checks shall include the checking of personal protective equipment worn by attendees before they start working on that day such as safety helmet, reflective vest, ear protectors, eye protectors, safety harness, safety footwear etc.



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7.5.3. Pre-Work Activities are to be held daily, but in any case the frequency of Pre-work Activities for attendance by each person employed on the works shall not be less than once a week. The Pre-work Activities shall be carried out prior to any work carried out by the persons attending the Pre-work Activities on that day.

7.5.4. Maintain attendance records of the workers participating in the Pre-Work Activities including their names and trades. Such attendance records are to be certified by Site Agent. Maintain electronic photo record showing the attendants during such activities. These records shall be made available for Contract Manager's inspection upon request by Contract Manager.

7.5.5. Trade Specific Pre-Work Activities (Hazard Identification Activity meetings and Pre-work Safety Checks) are to be conducted by the respective nominated subcontractors prior to the commencement of particular type of the nominated building services subcontract works.



7.6. Safety Representatives

7.6.1. The safety staff organisational structure including an organisation chart which shows the chain of responsibility and accountability from

- Managing Director
- Project Manager
- Safety Manager
- Site Agent
- Safety Officer(s)
- Safety Supervisors

Responsibilities and duties of these safety personnel shall be defined.

7.6.2. The contractor shall appoint at least the following number of safety staff:

- Safety Manager 1 no.
- Safety Training Officer 1 no.
- Nurse 1 no.

7.6.3. The Safety Manager shall have at least 5 years experience in relevant construction work, 3 years of which shall be at Senior Safety Officer or Safety Manager level.

7.6.4. The Safety Training Officer shall be a Registered Safety Officer with at least 1 year post registration experience in civil construction work and a formal qualification in training.

7.6.5. The nurse shall be a qualified, Hong Kong enrolled nurse or registered nurse with 2 years post qualification experience.

7.7. Specific Requirements related to Lifting and Use of Electricity

7.7.1. The requirements regarding safety for crane and lifting operation stated in contracts are as follows:

Lifting Operation


7.7.1.1. The contractor shall provide warning system in the form of light and/or sound to alert the crane operator.




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7.7.1.2. The contractor shall provide adequate buffer zone on both sides to slow down the slewing movement of cranes.

7.7.1.3. The contractor shall arrange regular inspection and maintenance of the warning system and automatic control device.



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7.7.1.4. The contractor shall ensure to tie all materials safely and securely.

7.7.1.5. The contractor shall provide site personnel to assist the slinger to carry out his work within the lifting zone.



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7.7.1.6. The contractor shall implement a Permit to Move and Permit to Operate System for all cranes, piling rigs and similar machines operating or moving in the site.

7.7.1.7. The Permit Systems shall ensure that a competent person, other than the plant operator, has inspected the area where the plant is to travel or operate to confirm that it is safe to do so.

7.7.1.8. Crawler cranes, hydraulic cranes and tower cranes are to be fitted with audible warnings and indicator light to show that the Automatic Safe Load Indicator (ASLI) of the crane is functioning correctly. (Under Regulation 7B of the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulation, Cap 59J, a crane shall fit with an ASLI unless the maximum safe working load of the crane is 1 tonne or less or is operates with a grab or any electro magnetic means)

7.7.1.9. The indicator lights shall be installed so that they can be easily seen by persons on site, i.e. above the control cabin, above the ballast or at a conspicuous location on the crane.



Safety of Electricity (low voltage hand held tools)

7.7.2. The requirements regarding Safety of Electricity (low voltage hand held tools) in contracts are as follows:

- 7.7.2.1. All electric portable cables shall be heavy-duty type or otherwise adequately protected against mechanical damage if laid on ground.
- 7.7.2.2. Install earth leakage circuit breaker for over 110V.
- 7.7.2.3. All hand-held electrical tools and portable equipment (e.g. submersible pumps), whether they belong to the contractor or subcontractors of all tiers, nominated subcontractor or specialist contractors under domestic subcontract, shall be examined by the Registered Electrical Worker before they are used on site. The examination shall include visual inspection for the general conditions of the tools and equipment and also tests for checking the functional, protective conductor continuity, polarity and insulation aspects. After passing the examination, all hand-held tools and equipment shall be registered and recorded. Identification labels showing the registration number, type of the tool, name of the owner and date of examination stamped with the contractor's company chop shall be affixed to these tools and equipment. Re-examination of the registered hand-held tools shall be carried out at 3-month intervals or each time after repairs to damages.

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7.7.2.4. Portable and hand-held tools and temporary site lighting shall be operated at a voltage of 110V or less supplied from a step-down transformer.

7.7.2.5. Temporary electrical distribution boards shall be kept locked. Legible warning notices (Danger-Electricity) in both Chinese and English, names and telephone numbers of such authorised persons shall be posted on the temporary distribution boards.

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7.7.2.6. The following voltages shall be adhered to throughout the distribution systems:

- site power kiosk for portable and hand held tools - RLV 110 V 1 phase;
- site lighting (other than flood lighting) - RLV 110 V 1 phase;
- portable hand-lamps (general use) - RLV 110V 1 phase; and
- portable hand-lamps (confined and damp situations) - 25V 1 Phase.

7.8. Safety and Health Training Requirement

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7.8.1. The contractor shall provide the following training:

- General induction training;
- Site specific induction training;
- Tool box talks;
- Trade specific safety and health training to be arranged and conducted by the respective nominated subcontractors; and
- Lunchtime's safety talks

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7.8.2. All contractor's workers and staff shall undertake a site-specific safety induction course before they commence work on site and attend a refresher training course every six months.

7.8.3. The induction course shall include the contract background, the employer's and contractor's safety standards, PPE requirements, safety rules, emergency procedures, site clinic locations, recent accidents and/ or incidents reporting procedures.

- 7.8.4. The contractor shall issue a site label to all personnel, in a format approved by the Engineer, within 24 hours of attending the induction and refresher course.
- 7.8.5. The site label shall include the worker's name, employee and "Green Card" number, photograph, name of the sub-contractor, types of safety courses attended, and expiry date of the pass (maximum 6 Months). The site label is to be displayed on the workers safety helmet at all times when on site.
- 7.8.6. The contractor shall keep records, including staff attendance, of all safety training courses conducted.
- 7.8.7. The contractor shall ensure that all persons involved in construction activities on site, have attended the Mandatory Basic Safety Training Course (for construction site workers) and hold a valid training certificate.
- 7.8.8. Where enactments require personnel to attend safety training, the contractor shall ensure that those persons have completed task training before assigning them to the task. These shall include plant operation, confined space entry, flame-cutting and gas welding, lifting and slinging, scaffold erection and dismantling. The contractor shall establish competency matrices to ensure full compliance with enactments.
- 7.8.9. Persons involved in high risk activities shall attend CIC trade specific training courses applicable to their trade (Sliver Card Training), prior to starting work.
- Painters and decorators working at height;
 - Carpenters working at height;
 - Demolition workers;
 - Plumbers working at height;
 - Bar benders and fixers;
 - Plasterers, tilers and external wall installation workers;
 - Curtain wall installers;
 - Bamboo scaffolders and metal scaffolders;
 - Tower crane workers (erecting, dismantling, telescoping and climbing);
 - Riggers; and
 - Lift installation workers.



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7.8.10. Health and safety toolbox training shall be conducted for all workers once a week for a minimum of 15 minutes. The content of the toolbox training shall be applicable to the work being carried out by the worker. Records are to be kept showing details of those attending and the topic given.

7.8.11. The contractor's safety management staff shall conduct a minimum of 25% of the toolbox training and safety supervisors shall conduct the rest.

7.8.12. The contractor shall report the number of training sessions and employees trained each month at the Site Safety Management Committee meeting and in his monthly report.

7.8.13. The contractor shall maintain a record of training received by all persons employed as gangers on site.

7.8.14. The contractor's site supervisory staff shall undertake the following safety training courses, or their equivalent, within 3 months of their appointment unless they have previously successfully completed the courses.

- 
- (a) Occupational Safety Management for Project Managers (OSHC or CIC) (12 hours)
 - (b) Risk Assessment (OSHC) (12 hrs).
 - (c) Crisis Management (OSHC) (7 hrs).
 - (d) Safety, Health and Environmental Supervisor (Construction) (OSHC) (49 hrs).
 - (e) Accident Investigation (OSHC) (8 hrs).
 - (f) Major Safety Regulations related to Working on Construction Sites (LD) (1 day).
 - (g) Hazard Identification Activity (OSHC) (6 hrs).
 - (h) Working at Height Safety (OSHC) (6 hrs).
 - (i) Occupational Safety and Health Trainer (OSHC) (18 hrs).
 - (j) Safety Inspections Course (OSHC) (8 hrs).

7.8.15. The contractor's senior managers (Project Director, Deputy Project Director, Senior Project Managers, Project Managers, Construction Manager and Contracts Managers) shall undertake courses (a) and (c). It is recommended that courses (b), (e), (f) and (j) are also undertaken.

7.8.16. The contractor's middle managers (Senior Project Engineers, Project Engineers, Senior Engineers) shall attend courses (b), (d), (e) and (j). It is recommended that courses (a), (c) and (g) are also attended.

- 7.8.17. The contractor's front-line managers (Senior Site Agent, Site Agent, Site Engineers) shall undertake courses (b), (d), (e), (f), (g), (h) and (j). It is recommended that course (c) is also attended.
- 7.8.18. The contractor's supervisory staff (Senior Construction Supervisor, Construction Supervisor, General Foreman, Foreman, Supervisor and Ganger) shall attend courses (b), (d), (e), (f), (g), (h) and (i).
- 7.8.19. The contractor's Safety Manager (or equivalent) shall attend courses (b), (c) and (i).
- 7.8.20. The contractor's safety staff (Senior Safety Officers, Safety Officers, Assistant Safety Officers and Safety Training Officers) shall attend course (i).

7.9. Silver Card Training

- 7.9.1. The contractor shall include in Safety Plan the programme and the number of workers to receive the Silver Card Training.
- 7.9.2. The contractor shall identify those workers in the specified trades without valid Silver Card and coordinate their enrolment in requisite Silver Card Training provided by CIC.
- 7.9.3. The contractor shall arrange and release workers of the trades to attend Silver Card Training.
- 7.9.4. The contractor shall bear the fees for the training courses and pay workers the wages which they would otherwise earn during that period of attending the training courses.

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7.10. Provision of Personal Protective Equipment (PPE)

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- 7.10.1. The contractor shall inspect and test the PPE provided.
- 7.10.2. The contractor shall have records kept and the standard below which the equipment will be removed and replaced.
- 7.10.3. The contractor shall ensure proper and, where appropriate, mandatory use by all persons on the site.
- 7.10.4. The contractor shall ensure that information, instruction and training in the safe use, storage and maintenance of such equipment are provided.
- 7.10.5. The contractor shall ensure adequate supply and for replacement.

7.10.6. The contractor shall provide the followings with special requirement:

7.10.6.1. Safety helmet

- With ventilation vents and wear the Y-type chin strap as prerequisite and with sunshade accessories such as brim or neck protector where appropriate (The replacement cycle should be less than 2 years from date of manufacture or Suppliers/ manufacturers of safety helmets should be consulted for acquiring the lifetime of the helmets).

7.10.6.2. Clothing, eye protection and footwear

7.10.6.3. Wind breaker

- With reflective strips

7.10.6.4. Sunglasses of normal type and sunglasses of specific types suitable for putting over spectacles for civil engineering works.

7.10.6.5. Safety boots (except for bamboo scaffolders, plasterers and tilers)

7.10.6.6. Machine guards

- Provide and maintain effective guards to dangerous parts of machines.

7.10.6.7. Ensure that operatives using spray paint or similar materials wear suitable protective respirators.

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7.10.6.8. Operatives with relevant information, instructions, training and supervision. Ensure operatives understand the rationale of using and how to use properly the personal protective

7.10.7. Adequate safety equipment including, but not limited to safety helmets, safety boots, safety shoes, eye protection, ear protection, safety harnesses, fall arrestors, independent lifeline, respiratory protection, safety equipment for working in sewers, drains and enclosed spaces, equipment for rescue from drowning, fire extinguishers, first aid equipment and any other necessary safety equipment, shall be made available on site and maintained in an acceptable condition at all times.

7.10.8. Except in the site office and site office compounds, where strong shoes shall be worn, the contractor shall ensure that safety footwear is worn at all times by persons working on site.

7.10.9. All persons entering the site shall wear high visibility vests, which meet the requirements for working near public roads or operating railways.

7.10.10. A suitable dry, clean and well-ventilated area shall be provided for the storage of the PPE.

7.10.11. Safety harnesses, lanyards and fall arrestors, shall be inspected monthly by a competent person and prior to use by the wearer. The contractor shall maintain a register of inspection.



7.11. Safety Promotion / Incentive Scheme

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- 7.11.1. The contractor shall display the company safety policy, accident statistics, safety signs.
- 7.11.2. The contractor shall display safety posters, videos and films.
- 7.11.3. The contractor shall conduct talks and campaigns.
- 7.11.4. The contractor shall distribute safety bulletins or newsletters related to particular special safety issues.
- 7.11.5. The contractor shall display procedure to recognise and commend those site personnel, teams, sections or subcontractors with good safety performance.

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- 7.11.6. The contractor shall obtain posters, in both English and Chinese, drawing attention to safety on site and display prominently upon all structures or temporary huts on the site throughout the duration of the contract and remove on completion. These posters are obtainable from LD, OSHC and CIC.
- 7.11.7. The contractor can consider to join “Construction Safety and Health Promotional Campaign”, “Good Housekeeping Promotional Campaign” led by the OSHC and CIC”, “Construction Industry Safety Award Scheme” led by the LD; “Considerate Contractors Site Award Scheme” led by the Development Bureau and CIC, or “Occupational Safety and Health Award” led by the OSHC.

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- 7.11.8. The contractor shall actively promote and encourage high standards of health and safety on site which may include incentives and award schemes at all levels of management, supervisors, foremen and workers.



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- Hip Hing Construction Co. Ltd.
- Hsin Chong Construction Group Ltd.
- Leighton Contractors (Asia) Ltd.
- Sanfield (Management) Ltd.

Remark: This publication has been translated into Chinese. If there is any inconsistency between the English version and the Chinese version, the English version shall prevail.



Feedback Form

[Reference Materials - Construction Site Welfare, Health and Safety Measures]

Thank you for reading this publication. To improve our future editions, we would be grateful to have your comments.

(Please put a "✓" in the appropriate box.)

1. As a whole, I feel that the publication is:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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Useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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2. Does the publication enable you to understand more about the Construction Site Welfare, Health and Safety Measures?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No Comment <input type="checkbox"/>		
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PRESS RELEASE

FOR IMMEDIATE RELEASE

Concern on Work Safety on Bamboo Scaffolds

Hong Kong • 7 April 2017 – The Construction Industry Council (CIC) expressed deep concern on a number of serious accidents involving working on bamboo scaffolding or other working-at-height since 8 March this year. To enhance the safety protection of people working on bamboo scaffolds and the general public, CIC held a meeting with the relevant government departments and construction industry stakeholders on 14 March 2017 to discuss measures to avoid similar accidents.

The meeting was attended by representatives of the Development Bureau (DEVB), the Buildings Department (BD), the Labour Department (LD), the Hong Kong Housing Authority (HKHA), the Hong Kong & Kowloon Scaffolders General Merchants Association, the Hong Kong Scaffolding SME Association, the HK & Kowloon Bamboo Scaffolding Workers Union, The Real Estate Developers Association of Hong Kong, the Hong Kong Institute of Architects, the Hong Kong Construction Industry Employees General Union, the Hong Kong Construction Sub-Contractors Association, the Hong Kong General Building Contractors Association, the Hong Kong Federation of Occupational Safety and Health Association, the Occupational Safety and Health Council, The Hong Kong Federation of Electrical and Mechanical Contractors, the Federation of Hong Kong Electrical & Mechanical Industries Trade Unions, and the Construction Industry Council.

Serious / fatal fall-from-height accidents when working on bamboo scaffolds which may also pose a danger to the workers and general public in the vicinity are attributed to absence of suitable safety measures. The CIC has issued *Safety Alert No. 001/17 – Work Safety on Bamboo Scaffolds (Safety Alert)* to encourage and remind contractors, employers, safety practitioners, subcontractors and workers to implement the following safety measures:

As Contractors / Employers:

- **Providing Safe Means of Access / Egress and Working Platforms** – Contractors / Employers should follow the Schedule 3 of the CSSR and provide safe and secure means of access to or egress from every place of work, and ensure that catch-fans are provided on different level of scaffolding, and the catch-fans should be properly maintained to prevent passers-by from being injured by falling materials.

- **Conducting Task-specific Risk Assessment** – Appoint a competent person to conduct task-specific risk assessments to identify all potential hazards that are associated with the work being carried out and formulate safe work methods, safe work procedures for the work and relevant safety measures.
- **Providing Training and Supervision** – Besides providing all workers / employees concerned with the necessary safety information, instruction and training, an effective monitoring and control system should be established to ensure all safety measures are strictly implemented.
- **Providing Fall Arresting System** – If the provision of working platform is not reasonably practicable, set up a fall arresting system by providing every worker / employee with a suitable safety harness and take steps to ensure that the fall arresting system is properly used by every worker concerned.

As Safety Practitioner:

- Conduct task specific risk assessments of work-at-height, provide safety training on working on bamboo scaffolds to relevant persons / workers, develop and implement effective proactive inspection programme, formulate an appropriate inspection check-list by making reference to the Safety Guidance for Working at Height in the Construction Industry 「建造業高處工作安全須知」 (with Chinese Version only) published by the Occupational Safety and Health Council.

As Subcontractor:

- Properly lay the working platforms and toe-boards on the bamboo scaffolds according to the instructions and requirements of the Main Contractors and maintaining their safe condition before instructing their workers to work on the scaffolds.
- Establish a monitoring system that should be strictly implemented to ensure that the working platforms and toe-boards are properly laid and ensure the working platforms are used properly.

As Workers or Persons who Need to Work on the Bamboo Scaffolds:

- Do not use substandard or not properly erected scaffolds / working platforms, no alternation, addition or dismantling of bamboo scaffold should be allowed without

authorization.

- If the scaffold is defective or the safety of which is in doubt, leave the bamboo scaffold immediately and inform the Main Contractor to take appropriate follow-up actions.
- Tightly control the loading imposed on the scaffolds during the execution of work on it. Do not overload the bamboo scaffolds.
- If use of fall arresting system and safety harness are required, workers / employees should continuously attach their safety harness to a suitable and secure anchorage point, an independent lifeline or a fall arresting system from a safe place before proceeding to and leaving the place of work and throughout the work.
- Wear suitable helmets with chin straps complying with relevant standards.

Mr. CHEUNG Hau-wai, Executive Director of the CIC added, "In addition to complying with the safety management practices in bamboo scaffolding, contractors and employees should also make reference of the above Safety Alert and adopt appropriate safety measures to ensure that construction works are carried out safely to protect the safety of general public and people working on bamboo scaffolds."

Mr. CHOW Luen-kiu, Chairman of the Hong Kong Construction Industry Employees General Union stressed, "We urge all people who need to work on bamboo scaffolding not to alter any bamboo scaffold. Workers should at all time wear safety harness which should be continuously attached to a suitable and secure anchorage point. If the scaffold is defective, workers should leave the bamboo scaffold immediately to protect their own."

Ms. Ada FUNG, Chairperson of the Committee on Construction Safety of the CIC said, "The Construction Industry Council, the Labour Department and the Occupational Safety and Health Council have issued a number of codes of practice, guidelines and points to note on the safety measures relating to work on bamboo scaffolding and working-at-height. In regard to the recent accidents, the CIC immediately took action by meeting with industry stakeholders and discussing safety improvement measures. The CIC has compiled the relevant information and published the *Safety Alert - Work Safety on Bamboo Scaffolds*, to enhance the safety awareness of contractors, employers, subcontractors, competent person and bamboo scaffolders."

The Safety Alert is available for download from the CIC's website:

http://www.cic.hk/cic_data/pdf/about_cic/publications/eng/alert/SA-CSY-001-17-E.pdf



About the Construction Industry Council

The Construction Industry Council (CIC) was formed in 2007 under the Construction Industry Council Ordinance (Cap. 587). The CIC consists of a chairman and 24 members representing various sectors of the industry including employers, professionals, academics, contractors, workers, independent persons and Government officials.

The main functions of the CIC are to forge consensus on long-term strategic issues, convey the industry's needs and aspirations to the Government, provide professional training and registration services, and serve as a communication channel between the Government and the construction industry.

Please visit www.cic.hk for further details.

Media Enquiries

Patricia CHIU / Lucy POON
Corporate Communications Department
Tel: (852) 2100 9044 / 2100 9041
Fax: (852) 2100 9090
Email: corpcomm@cic.hk

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**CONSTRUCTION
INDUSTRY COUNCIL**
建造業議會

Work Safety on Bamboo Scaffolds

Safety Alert No. 001/17

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Majority of serious/ fatal fall-from-height accidents when working on bamboo scaffolds which may also pose a danger to the workers as well as general public in the vicinity are attributed to absence of suitable safety measures, including failure to establish a safe system of work, failure to provide suitable and safe working platforms/ means of support, failure to provide and ensure proper use of suitable fall arresting system, etc. The following safety measures are recommended for the construction industry stakeholders to follow and implement:

As Contractors/ Employers:

To prevent any workers/ employees undertaking work on the bamboo scaffolds from falling from height, the contractors/ employers should:

Providing Safe Means of Access/ Egress and Working Platforms

- Provide and maintain suitable and adequate safe means of access to and egress from every place of work;
- Provide and ensure the proper use of bamboo scaffolds with working platforms which should be safe for the purpose. The width of the working platforms should be not less than 400mm;
- Ensure that every working platform on the bamboo scaffold is closely boarded or planked; and that every board or plank is of sound construction, adequate strength and free from patent defect, rests securely and evenly on its supports, and is of a thickness capable of affording adequate security having regard to the distance between the supports. Every board or plank forming part of a working platform should not protrude beyond its end support to a distance exceeding 150mm unless it is sufficiently secured to prevent tipping;
- Install guard-rails and toe-boards at edges of the working platform where persons are liable to fall from height. The guard-rails should have adequate strength and be securely fixed. The height of a top guard-rail should be between 900mm and 1,150mm above the platform. The height of an intermediate guard-rail should be between 450mm and 600mm above the platform. Otherwise, the platforms should be protected by not less than 2 horizontal bamboo members of the scaffolds spaced at intervals between 750mm to 900mm. The height of a toe-boards or other similar barriers erected on the platforms should not be less than 200mm;
- Ensure no scaffold is erected, added to, altered and dismantled except by trained workmen under the direct supervision of competent persons; and
- Ensure that every scaffold is inspected and certified safe by a competent person before being taken into use for the first time, after any substantial addition, partial dismantling or other alteration of it, after any exposure to weather conditions likely to have affected its strength or stability or to have displaced any part of it, and at regular intervals not exceeding 14 days.



Disclaimer

Whilst reasonable efforts have been made to ensure the accuracy of the information contained in this publication, the CIC nevertheless would encourage readers to seek appropriate independent advice from their professional advisers where possible and readers should not treat or rely on this publication as a substitute for such professional advice for taking any relevant actions.

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Address: 38/F, COS Centre
56 Tsun Yip Street, Kwun Tong, Kowloon
Tel: (852) 2100 9000
Fax: (852) 2100 9090
Email: enquiry@cic.hk

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- Provide adequate putlogs (i.e. transoms) at bamboo scaffolds. Putlogs should be provided at a horizontal spacing not greater than 3.0m. At a height less than 100m above ground, the vertical spacing of putlogs should not be greater than 6.3m while at a height of 100m or more, and the vertical spacing should not be greater than 4.2m.
- Provide a sloping catch-fan at not more than 15m vertical intervals to give a minimum horizontal projection coverage of 1,500mm. The catch-fans should be properly maintained to prevent passers-by from being injured by falling materials; and
- Do not store materials on the catch-fans.

Conducting Task-specific Risk Assessment

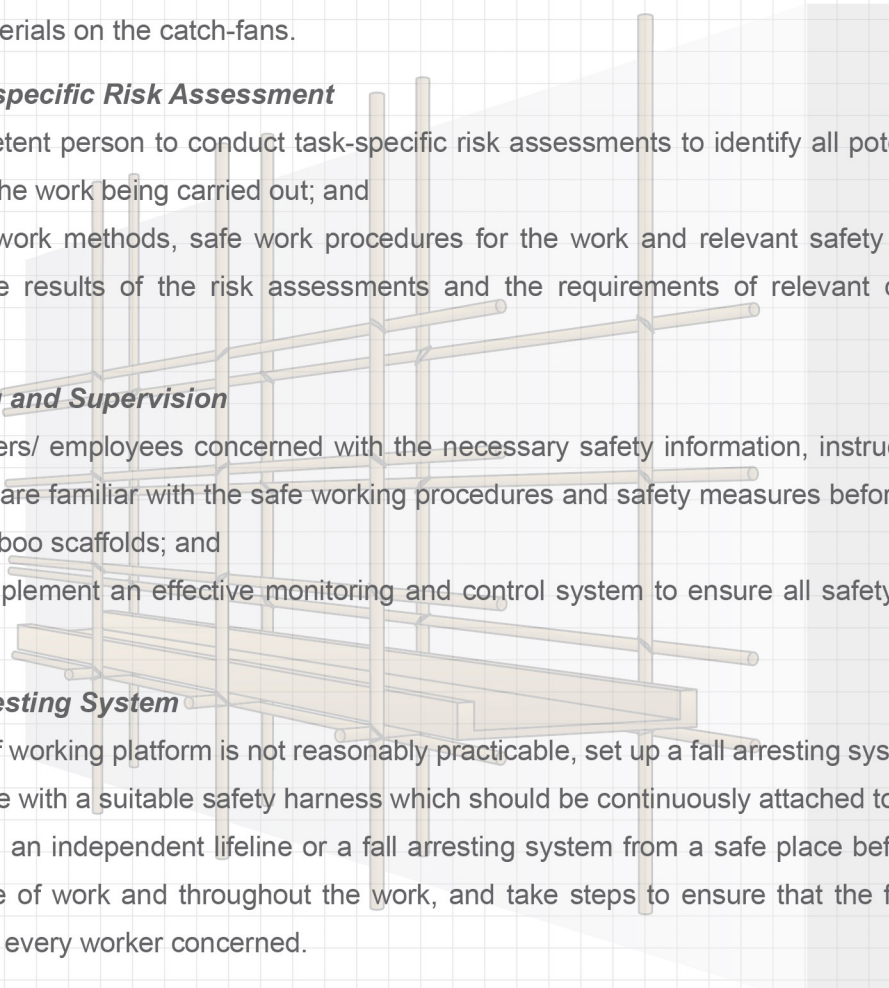
- Appoint a competent person to conduct task-specific risk assessments to identify all potential hazards that are associated with the work being carried out; and
- Formulate safe work methods, safe work procedures for the work and relevant safety measures, taking into consideration the results of the risk assessments and the requirements of relevant codes of practice and guidelines.

Providing Training and Supervision

- Provide all workers/ employees concerned with the necessary safety information, instruction and training, and ensure that they are familiar with the safe working procedures and safety measures before they are assigned to work on the bamboo scaffolds; and
- Establish and implement an effective monitoring and control system to ensure all safety measures are strictly implemented.

Providing Fall Arresting System

- If the provision of working platform is not reasonably practicable, set up a fall arresting system by providing every worker/ employee with a suitable safety harness which should be continuously attached to a suitable and secure anchorage point, an independent lifeline or a fall arresting system from a safe place before proceeding to and leaving the place of work and throughout the work, and take steps to ensure that the fall arresting system is properly used by every worker concerned.



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As Safety Practitioner:

Safety Practitioners should assist their employers/ clients to:

- Conduct task-specific risk assessments of work-at-height, and advise the suitable control measures for falling hazards;
- Provide safety training on working on bamboo scaffolds to relevant persons/ workers, including the safety measures and safety rules;
- Develop and implement effective proactive inspection programme on compliance checking and reporting of non-compliance of safety requirements; and assist the site management to remedy any unsafe conditions; and
- Formulate an appropriate inspection check-list by making reference to the Safety Guidance for Working at Height in Construction Industry 「建造業高空工作安全須知」 (with Chinese Version only) published by the Occupational Safety and Health Council.

As Subcontractor:

- Properly lay the working platforms and toe-boards on the bamboo scaffolds according to the instructions and requirements of the Main Contractors and maintaining their safe condition before instructing their workers to work on the scaffolds;
- Appoint a person to communicate and coordinate with the Main Contractors' site management team;
- Establish a monitoring system that should be strictly implemented to ensure that the working platforms and toe-boards are properly laid; and
- Ensure the working platforms are used properly

As Workers or Persons who Need to Work on the Bamboo Scaffolds:

- Do not use substandard or not properly erected bamboo scaffolds/ working platforms;
- Use safe access to and egress from the place of work;
- No alteration, addition or dismantling of bamboo scaffold should be allowed without authorization;
- If the scaffold is defective or the safety of which is in doubt, leave the bamboo scaffold immediately and inform the Main Contractor to take appropriate follow-up actions;
- Tightly control the loading imposed on the scaffolds during the execution of work on it. Do not overload the bamboo scaffolds;



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- If use of fall arresting system and safety harness are required, workers/ employees should continuously attach their safety harnesses to a suitable and secure anchorage point, an independent lifeline or a fall arresting system from a safe place before proceeding to and leaving the place of work and throughout the work; and
- Wear suitable safety helmets with chin straps complying with relevant standards. Be aware of the expiry date of the safety helmets and do not wear helmets that have already expired.

Reference Materials:

- Guidelines on Planking Arrangement for Providing Working Platforms on Bamboo Scaffolds, Construction Industry Council, May 2014
- Safety Poster – Working at Height Safety, Construction Industry Council, P-CSY-001-14
- Safety Poster – Tips of Using Safety Helmets, Construction Industry Council, P-CSY-002-15
- A Guide to the Provisions for Safe Places of Work under Part VA of the Construction Sites (Safety) Regulations, Labour Department, 1/2005
- Code of Practice for Bamboo Scaffolding Safety, Labour Department, 06/2014
- Guidance Notes on Classification and Use of Safety Belts and their Anchorage Systems, Labour Department 01/2005
- A Casebook of Fatal Accidents Related to Work-at-Height, Labour Department 12/2014
- Work Safety Alert – Fall from Upper Floor of a Superstructure, Labour Department 03/2017
- Systemic Safety Alert – Work at Height, Labour Department, SSA-01/2014
- Guidelines on the Design and Construction of Bamboo Scaffolds, Buildings Department, 05/2006
- Safety Guidance for Working at Height in Construction Industry (建造業高空工作安全須知), with Chinese version only, Occupational Safety and Health Council, 07/2012



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