

**Handbook of
Housing Authority Safety Auditing System
for Maintenance and Improvement Works
Contracts**

HASAS(M&I) version 1.3

1 December 2022



Occupational Safety and Health Council 2022

Amendments

Amendment #	Date	Comments
A1	17/08/2012	Corrections in “Safety Audit Scheme” and “Maintenance & Improvement Works Contracts” Correction in text of Q14.5.9.2 Corrections in text and numbers in Scoring Table at Appendix A

Amendments

Amendment #	Date	Comments
A2	8/08/2013	Corrections in “Safety Audit Scheme” and “Maintenance & Improvement Works Contracts” Correction in text of adding Part C for Lift and Escalator Works Corrections in text and numbers in Scoring Table at Appendix C

Amendments

Amendment #	Date	Comments
1.1	13/02/2015	Sections removed: 14.2.1 Work over water or adjacent to water 14.4.2 Grit Blasting 14.4.4 Prestressing Sections updated: 14.2.6 Lift and Escalator Installation Works Sections added 14.4.3 Machinery Guarding 14.5.1 Mobile Crane 14.5.2 Gondola (Suspended Working Platform) 14.5.7 Hand Tools Corrections in text and numbers in Scoring Table at Appendix C

Amendments

Amendment #	Date	Comments
1.1.1	1/12/2016	Linkage mechanism between Surprise Safety Inspection System (SSIS) and HASAS (M&I) in the form of marks addition / deduction to Part B of HASAS (M&I) audit percentage score for District Term Contracts only. Content updated: Section 2 introduces HASAS (M&I) Version 1.1.1 Appendix A Appendix C Supplementary information updated: 12.3 Noise (12.3.2 & 12.3.3) 14.1.3 Working at Height (14.1.3.2 & 14.1.3.4) 14.1.5.1 Protection Against Falling Object (14.1.5.1, 14.1.5.6 & 14.1.5.7) 14.5.2 Gondola (Suspended Working Platform) (14.5.2.2 & 14.5.2.4)

Amendment #	Date	Comments
		14.5.6 Hand-held Power Tools (14.5.6.2 & 14.5.6.3) 14.5.7 Hand Tools (14.5.7.2) Weighting updated: C1-5 Monitoring Corrections in text in Table of Contents Corrections in typo errors Corrections in text and numbers in Scoring Table at Appendix C

Amendments

Amendment #	Date	Comments
1.2	1/3/2019	Section removed: 14.2.5 Lift and Escalator Installation Works 14.5.12 Excavator Section added: 11.2 Promotion of Safety and Health Caring Culture 14.2.5 Lift Maintenance Works 14.4.3 Work on Slopes Supplementary information updated: 1 Safety Policy 2 Safety Organisation 3 Safety Training 4 In-house Safety Rules 5 Safety Committee 6 Programme for Inspection of Hazardous Conditions 7 Job Hazards Analysis 8 Personal Protective Programme 10 Emergency Preparedness 11 Safety Promotion 12 Health Assurance Programme 13 Evaluation, Selection and Control of Sub-contractor 14.1.1 Fire Risks 14.1.2 Work in Confined Spaces 14.1.3 Working at Height 14.1.4 Housekeeping 14.1.5 Protection Against Falling Objects 14.2.1 Overhead and Underground Services 14.2.2 Flammable Liquids and Gases 14.3.1 Demolition 14.3.2 Excavations 14.3.3 Lifting Operations 14.3.4 Falsework / Temporary Works 14.3.6 Welding/ Cutting Operations and Installations 14.5.1 Mobile Crane 14.5.2 Gondola (Suspended Working Platform) 14.5.3 Compressed Air Tools 14.5.4 Electrical Supply System 14.5.6 Hand-held Power Tools 14.5.9 Abrasive Wheel

Amendment #	Date	Comments
		<p>14.5.11 Loadshifting Machinery and Site Vehicles C1-1 Process Safety Information C1-2 Process Hazard Analysis (PHA)/ Risk Assessment C1-3 Development of safe methods C1-4 Implementing the system C1-5 Monitoring the system C2-6 Working at Height C2-10 Welding/ Cutting Operations and Equipment C2-11 Abrasive Wheels C2-12 Portable Tools C2-14 Dangerous Substances C2-18 Miscellaneous</p> <p>Weighting updated: 14.1.2 Work in Confined Spaces 14.1.3 Working at Height 14.1.4 Housekeeping 14.1.5 Protection Against Falling Objects 14.2.1 Underground and Overhead Services 14.3.3 Lifting Operations 14.3.6 Welding/ Cutting Operations and Installations 14.4.2 Ground Investigation 14.5.1 Mobile Crane 14.5.8 Woodworking machine 14.5.2 Gondola (Suspended Working Platform) 14.5.4 Electrical Supply System 14.5.11 Loadshifting Machineries and Site Vehicles</p> <p>Corrections in text in Table of Contents Corrections in text and numbers in Scoring Tables</p>

Amendment #	Date	Comments
1.3	1/12/2022	<p>Section added: 14.3.8 Asbestos 14.5.12 Power-operated Elevating Work Platform</p> <p>Supplementary information updated: 1 Safety Policy 2 Safety Organisation 3 Safety Training 4 In-house Safety Rules 5 Safety Committee 6 Programme for Inspection of Hazardous Conditions 7 Job Hazards Analysis 8 Personal Protective Programme 10 Emergency Preparedness 11 Safety Promotion 12 Health Assurance Programme 13 Evaluation, Selection and Control of Sub-contractor 14.1.2 Work in Confined Space 14.1.3 Working at Height 14.1.4 Housekeeping 14.1.5 Protection against Falling Objects</p>

Amendment #	Date	Comments
		14.2.1 Overhead and Underground Services 14.3.2 Lifting Operations 14.3.5 Structural Steel Erection/ Dismantling Works 14.3.6 Welding/ Cutting Operations and Installation 14.4.1 Piling and Foundation 14.4.2 Ground Investigation 14.5.1 Mobile Crane 14.5.4 Electrical Supply System 14.5.6 Hand-held Power Tools 14.5.7 Hand Tools 14.5.8 Woodworking Machines 14.5.9 Abrasive Wheel C1-1 Process Safety Information C1-2 Process Hazard Analysis (PHA)/ Risk Assessment C1-3 Development of safe methods C1-4 Implementing the system C1-5 Monitoring the system C2-7 Protection against Falling Objects C2-8 Housekeeping C2-9 Lifting Operations C2-10 Welding/ Cutting Operations and Equipment C2-11 Abrasive Wheels Weighting updated: 7 Job Hazards Analysis 11 Safety Promotion Corrections in text in Table of Contents Corrections in text and numbers in Scoring Tables

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Abbreviations

ASA	Accredited Safety Auditor
BD	Buildings Department
Cap	Chapter
CIC	Construction Industry Council
CICTA	Construction Industry Council Training Authority
CPD	Continual Professional Development
CSSR	Construction Sites (Safety) Regulations
EMSD	Electrical and Mechanical Services Department
F&IU	Factories and Industrial Undertakings
F&IU(CS)	Factories and Industrial Undertakings (Confined Spaces)
HA	Housing Authority
HALEISAS	Housing Authority Lift and Escalator Installations Safety Auditing System
HASAS(M&I)	Housing Authority Safety Audit Scheme (M&I) or Housing Authority Safety Auditing System (M&I)
LD	Labour Department
LPG	Liquefied Petroleum Gas
M&I	Maintenance and Improvement Works
N/A	Not Applicable
NW	New Works
OSHC	Occupational Safety & Health Council
PNAP	Practice Notes for Authorized Persons
PNRC	Practice Notes for Registered Contractors
PPE	Personal Protective Equipment
Reg	Regulation
RSA	Registered Safety Auditor
RSE	Registered Structural Engineer
RSO	Registered Safety Officer
SAA	Safety Auditor Assistant
SO	Safety Officer
SS	Safety Supervisor
SWP	Suspended Working Platform
TOP	Temporary Occupation Permit
ver	version
VTC	Vocational Training Council

1. Introduction

2. Housing Authority Safety Audit Scheme for Maintenance and Improvement Works Contracts

- 1.1 In December 1996, the Occupational Safety and Health Council (OSHC) was invited by the Hong Kong Housing Authority (HA) to develop and manage the Housing Authority independent safety audit scheme for their new works contracts, namely the Housing Authority Safety Audit Scheme for New Works Contracts – HASAS(NW), previously called HASAS. The aim of the HASAS(NW) is to evaluate the occupational safety and health performance of the Housing Authority projects by means of independent safety audits undertaken by competent safety auditors accredited by OSHC. In addition, the audit scheme intended to promote the concept of safety management and to improve the safety standards in the construction industry.
- 1.2 In order to enhance industrial safety standards, the Government had introduced a law on safety management, namely the *Factories and Industrial Undertakings (Safety Management) Regulation* on 24 November 1999, making it mandatory for contractors and proprietors of certain industrial undertakings to establish SMS comprising 8 – 14 key elements, which came into effect on 1 April 2002.
- 1.3 Having seen that the safety performance of the new works contracts has significantly improved with the introduction of HASAS(NW), HA planned to introduce similar independent safety audit scheme in April 2012 to its maintenance and improvement works contracts so as to enhance the safety performance of their contractors to cope with its commitment in provision of good quality of public housing in safety manner. OSHC was then invited in September 2011 to develop and manage the new scheme called the Housing Authority Safety Audit Scheme for Maintenance and Improvement Contracts Works - HASAS(M&I).

3. Housing Authority Safety Auditing System for Maintenance and Improvement Works Contracts – HASAS(M&I) version 1.3

- 2.1 The safety auditing system for the scheme, name Housing Authority Safety Auditing System for Maintenance and Improvement Works Contracts – HASAS(M&I) version 1.0, was developed in November 2011 based on HASAS(NW) version 1.4 with reference to the new HASAS(NW) version 1.5 released on Nov 2011.
- 2.2 To achieve continuous improvement for the HASAS (M & I) scheme, periodic review process on the auditing system is to be carried out meeting the updated occupational safety and health standards as well as coping with the changes in modern technology and demand on services. The safety auditing system, HASAS(M&I) version 1.0, same as HASAS(NW) versions, has made reference to the *Code of practice on safety management* published by the Labour Department in support of the Factories and Industrial Undertaking (Safety Management) Regulation where the suggested safety management system should consist at least 14 elements.
- 2.3 To further enhance the safety standards on lift and escalator installation works, HASAS(M&I) version 1.0 is amended and implemented in September 2013 with the following enhancements:
- (a) Housing Authority Lift and Escalator NSC Safety Audit System (HALENSAS) version 1.0 is incorporated into Housing Authority Safety Auditing System (M&I) version 1.0 as PART C and used to conduct the safety audit for Lift addition Sub-contracts and Lift modernization contracts;
 - (b) Commencing from September 2013, Independent Safety Audit shall also be conducted for all Lift Addition Sub-contracts;
 - (c) Only Part C (HALEISAS) (originated from HALENSAS) of HASAS(M&I) shall be adopted for conducting safety audit for lift modernization contracts and lift addition contracts. Part A and Part B shall not be used for lift modernization and Lift Addition Sub-contracts;
 - (d) For lift term maintenance contracts, there shall be no change to the existing practice i.e. only Part A and Part B of HASAS(M&I) shall be used for conducting safety audits.
- 2.4 In order to further enhance the site safety performance in Housing Authority (M&I) construction sites, HASAS(M&I) version 1.1 was introduced in 2015,

HASAS(M&I) version 1.1.1 was introduced in 2016, HASAS (M&I) version 1.2 was introduced in 2019 and HASAS(M&I) version 1.3 was introduced in 2022.

2.5 The scope of HASAS(M&I) is divided into three parts:

Part A concerns about the safety and health management system that is evaluated through Element 1 to Element 13; and Part B concerns about the implementation of the safety management systems on site that is evaluated the process control by Element 14. The fourteen safety elements are as follows:

1. Safety policy
2. Safety organisation
3. Safety training
4. In-house safety rules and regulations
5. Safety committee
6. Programme for inspection of hazardous conditions
7. Job hazard analysis
8. Personal protection programme
9. Accident/incident investigation
10. Emergency preparedness
11. Safety promotion
12. Health assurance programme
13. Evaluation, selection and control of sub-contractors
14. Process control programme

Part C concerns the projects of lift and escalator addition and modernization works that is elevated by using HALEISAS version 1.2 with the following arrangements:

- (a) Lift and escalator safety addition and modernization works audit is conducted separately in a date or dates; inform by HA where the lift and escalator activity is/are in an active stage;
- (b) Safety audits are conducted two to three times within the period where the critical processes are in active progress;
- (c) Cover specific lift and escalator work activities and the main focus is on the lift and escalator contractor's work process control i.e. safe system of work; and
- (d) Safety audit standards are based on:
 - i) Code of Practice for Safety at Work (Lift and Escalator), Labour Department

- ii) Code of Practice for Safety at Work (Lift and Escalator) and Safety Guidelines published by Construction Industry Council (CIC) volume 2- during lift installation stage until issue of occupation permit (OP) and handing over to developer and volume 3 - Throughout the Occupation Stage of Building
 - (e) The HALEISAS audit programme consists of two parts:
 - Part C1: Process control programme – safe systems of work*
 1. Process safety information
 2. Process hazard analysis (PHA)/ Risk assessment
 3. Define of safe methods
 4. Implementing the system
 5. Monitoring the system
 - Part C2: Site verification checklist used on site for checking and verification of Part C1.*
 6. Working at height
 7. Protection against falling objects
 8. Housekeeping
 9. Lifting operations
 10. Welding/cutting operations and equipment
 11. Abrasive wheels
 12. Portable tools
 13. Electric works
 14. Dangerous substances
 15. Manual handling and mechanical material handling
 16. Noise
 17. Demolition of Lift
 18. Miscellaneous
- 2.6 The safety auditing system developed by OSHC has incorporated the use of a computerised auditing programme for HASAS(M&I) and is available at OSHC where interested parties can purchase at cost.
- 2.7 Disclaimer - This auditing system is produced for accredited safety auditors (ASA) to conduct safety audits for Housing Authority projects. Compliance with this auditing system does not itself confer immunity from legal obligations. Individual organisations, contractors and sub-contractors are responsible for ensuring that they meet their occupational safety and health obligations under the relevant legislation.

3. Definitions and General Audit Criteria

3.1 Definitions

The table below contains a definition of some of the general terms used throughout the legal requirements and audit criteria in this guide.

Term	Definition
ACCP	The "Competent Person of Selection, Installation, Use, Inspection and Testing of Anchor Devices and Cast-in Anchors for Attachment of Personal Fall Protection Equipment for Truss-out Bamboo Scaffolds" (ACCP) is accredited under Hong Kong Safety and Health Certification Scheme by OSHC. The aim of accreditation services is to ensure that ACCPs possess the necessary qualifications and capability in performing the specified duties in selection, installation, use, inspection and testing of anchor devices and cast-in anchors, for the attachment of personal fall protection equipment for truss-out bamboo scaffolds.
Accredited Safety Supervisor (Construction) (Accredited SS(CO))	The accreditation services of Accredited Safety Supervisor (Construction) (Accredited SS(CO)) are provided by the Hong Kong Safety and Health Certification Scheme under the Occupational Safety and Health Council. The services aim at ensuring that Accredited SS(CO)s possess the necessary qualifications and capability to perform their specified duties, such as to assist the safety officers in carrying out their duties; to supervise the observance by the workers of the safety standards; to conduct safety inspection and submit weekly reports in the approved form, etc.
Arrangement	It is a planning of action, organizing and preparation of resources, provision of measures and development of procedures to achieve the pre-designed objective.
Appropriate steps / measures	They refer to steps/measures that considered being practicable, reasonable and suitable to that situation.
Audit quarter	Audit quarters in conducting HASAS (M&I) safety audits are defined as follow: 1 st Quarter: December, January and February 2 nd Quarter: March, April and May 3 rd Quarter: June, July and August 4 th Quarter: September, October and November

Term	Definition
Continuous improvement	The process by which the system and performance are continuously monitored to look for better ways of doing things and to constantly achieve better safety outcomes.
Hazards	A hazard is a source of potential harm or a situation with a potential to cause injury, illness, loss or damage.
Hazard identification	Process of recognizing that a hazard exists and defining its characteristics.
Hazardous	"Hazardous" refers to the potency of causing harm to health.
Hazardous substances	Refers to a biological or chemical agent that has the potential of causing harm by reason of its being a compressed gas, or a flammable, oxidizing, poisonous, corrosive or reactive substance.
Health surveillance	A means of checking the effectiveness of control measures; providing feedback on the accuracy of the risk assessment; identifying and protecting individuals from increased risk.
Imminent danger	The existence of any condition or practice in a construction site which could reasonably be expected to cause death or serious physical harm to any worker if construction operations were to proceed in the affected area or if workers were to enter the affected area before the condition or practice was eliminated.
Incident	Any event that has caused or has the potential to cause injury, illness or damage.
Mechanical integrity programme	A programme to assure the continued integrity of process equipment. Elements of a mechanical integrity programme include the identification and categorization of equipment and instrumentation, inspections and tests, testing and inspection frequencies, development of maintenance procedures, training of maintenance personnel, criteria for acceptable test results, documentation of test and inspection results, and documentation of manufacturer's recommendations.
Monitor	To check, supervise, observe critically, or record the progress of an activity, action or system on a regular basis in order to identify change.
MSDS	Material Safety Data Sheet – an information sheet, usually provided by suppliers of chemical and other like products setting out the nature and composition of the product as well as instructions for safe handling.

Term	Definition
Occupational exposure limit (OEL)	"Occupational Exposure Limit (OEL)" refers to the airborne concentration(s) of individual chemical agents that represent levels that are regarded to impose no adverse health effects to nearly all workers on exposures by the route of inhalation.
Occupational incident and disease surveillance system (OIDSS)	The Occupational incident and disease surveillance system (OIDSS) is a computer software developed by the Occupational Safety and Health Council have three major functions – record accident and incident cases (including near miss) happened in workplaces, assist the completion of forms for notification of accidents and incidents to Labour Department, and generate statistics and charts for workplace incident and disease surveillance.
OSH Star Enterprise-RMAA Safety Accreditation Scheme	Occupational Safety and Health Council and Labour Department jointly organize the “OSH Star Enterprise – RMAA Safety Accreditation Scheme” to encourage the industry to take practicable safety measures to improve the safety of the working environment and raise the safety standard. The Hong Kong Safety and Health Certification Scheme continues to provide certification and re-certification services to ensure these organisations comply with a consistent set of standards and procedures on reliability of safety and health management system.
Performance indicators	Common safety performance indicators include accident statistics, near miss incidents, safety audit scores, safety inspections, employee safety training, senior management safety tours, employees’ work safe behaviour, and safety climate survey scores.
Permit-to-work systems	Permit-to-work systems use a preprinted form, listing specific checks/or actions required at specific stages of the work. These may include working in confined space, isolation of supply systems and the fitting of locking devices to controls.
Procedure	Specific steps or flow of the task that anyone can follow and able to achieve its pre-designed purpose and meet the required standards. A good procedure should be repeatable, reliable and traceable.
Process control	Means that processes are efficiently planned, executed, and effectively controlled such that the equipment, environment, personnel, documentation, and material employed constantly

Term	Definition
	result in meeting safety requirements.
Process hazard analysis	An organized and systematic effort to identify and analyze the significance of potential hazards associated with a process.
Process safety information	Written information pertaining to the hazards and the technology of the process and the equipment in the process to enable people involved in process operation to identify and understand the hazards posed by the processes.
Risk	Combination of the likelihood and consequence(s) of the occurrence of a specified hazardous event.
Risk assessment	Overall process of estimating the magnitude of risk and deciding whether or not the risk is tolerable.
Safe system of work	<p>A safe system of work is a formal procedure which results from a systematic examination of a task in order to identify all hazards and assess the risks, and which identifies safe methods of work to ensure that the hazards are eliminated or the remaining risks are minimized. For all safe systems, there are five basic steps necessary in producing them:</p> <ul style="list-style-type: none"> ● Assessment of the task ● Hazard identification and risk assessment ● Definition of safe methods ● Implementing the system ● Monitoring the system
Safe system of work on Lift Shaft Works	<p>To ensure the safety and health of workers engaged in lift shaft works, the Contractor should:</p> <p>(a) plan the lift shaft works;</p> <p>(b) provide lift shaft protection;</p> <p>(c) conduct a risk assessment and prepare a method statement on any lift shaft work;</p> <p>(d) design, construct, use and maintain lift shaft platforms properly;</p> <p>(e) develop and implement a permit-to-work system for any lift shaft work for close supervision on the adoption of safety precautions;</p> <p>(f) provide fall-arrest system and safety training to workers; and</p> <p>(g) pay special attention to buildings under Temporary Occupational Permit (TOP) arrangement</p>

Term	Definition
Safe work method statement	<p>A safe work method statement is a document detailing how a particular task or activity will be carried out. It should detail the possible dangers/risks associated with a particular part of the project and the methods of control to be established, to show how the work will be managed safely. The safe work method statements should include the following:</p> <ul style="list-style-type: none"> ● Organisation’s letterhead showing the name and registered office address of the organisation ● A description of the work to be undertaken ● Description of the range of works methods which the work can entail ● The potential hazards associated with the work and the safety controls that will be in place to minimize these hazards ● Identification of safety and health legislation, codes or standards applicable to the work and where these are kept ● The names and qualifications of those who will supervise the work, inspect and approve work areas, work methods, protective measures, plant, equipment and power tools ● Identification of the plant and equipment that will most likely be used on site, e.g. ladders, scaffolds, grinders, fire extinguishers etc. ● Details of the inspection and maintenance checks that will be or have been carried out on the equipment listed ● Signature of a senior management representative of the organisation and the date signed.
Safety audit	<p>Safety audit means an arrangement for –</p> <p>(a) Collecting, assessing and verifying information on the efficiency, effectiveness and reliability of a safety management system (SMS); and</p> <p>(b) Considering improvements to the system</p>
Safety inspections	<p>A structured inspection of the workplace is to check for obvious hazards and that appropriate safe work practices and risk controls are in place. Safety inspections are undertaken by competent persons using a relevant inspection checklist.</p>
Safety plan	<p>It is a document setting out the specific safety and health</p>

Term	Definition
	<p>resources, responsibilities and procedures or practices for a construction project in accordance with 14 elements of the F&IU (Safety Management) Regulation. The safety plan must include:</p> <ul style="list-style-type: none"> • the names, positions and health and safety responsibilities of all persons at the workplace whose positions or roles involve specific health and safety responsibilities in connection with the construction project • the arrangements in place for managing any work safety and health incidents • any site-specific health and safety rules and the arrangements for ensuring that all persons at the workplace are informed of these rules, and • the arrangements to collect and assess, monitor and review the SMS.
Safety supervisor	Refers to a person employed as a safety supervisor in an industrial undertaking under the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations (Chapter 59Z)
Surprise Safety Inspection System (SSIS)	The Surprise Safety Inspection System (SSIS) is implemented in District Term Contracts. Surprise inspections under the SSIS are conducted by Senior Clerk of Works (SCW) twice a year for each DTC. The SSIS is focused on critical safety activities, currently on scaffolding.
Target	A detailed performance requirement, quantified wherever practicable pertaining to the organisation, that arises from safety and health objectives and that needs to be met in order to achieve those objectives

3.2 General Audit Criteria for Accredited Safety Auditors

Term	General Audit Criteria
Arrangement	Auditor should verify the adequacy of auditee's arrangement for health and safety issues.
Appropriate steps / measures	Auditor is reminded to comment on the existing procedures, arrangements and appropriate steps/measures (if any) and give

Term	General Audit Criteria
	recommendations where appropriate to help auditee to make continuous improvement.
Audit follow-up	In order to fulfill the Legal Requirements and improve the effectiveness of safety audits ASA should advise the auditee to prepare an action plan for the improvements if any after each audit. ASA needs to carry out the independent verification to ensure that the auditee has undertaken corrective actions and that these actions effectively address the audit findings. The result of this verification must be commented on and stipulated in the audit reports.
Clarification for audit report	Audit reports that need clarification because some of the audit questions may either require further elaboration or additional supporting evidence to support the answers. Auditors are reminded NOT to erase the previous note; a new Clarified Notes should be entered after the previous Notes .
Internal safety audit	<p>Internal safety audit has been used as one of the monitoring tools for assessing the effectiveness and thoroughness of the inspections. The internal audit should be a planned audit according to a written procedure in safety plan and conducted only by competent, trained personnel with independence as far as practicable.</p> <p>The following situations are not desirable and unacceptable, as it will defeat the purpose of monitoring.</p> <ul style="list-style-type: none"> - Internal safety audit was conducted by contractor’s safety officer or project manager who has actually participated in the job. - The findings and recommendations of the audit report mainly focused on the physical conditions rather than the safety management system, in particular, the assessment of the effectiveness and thoroughness of inspection. <p>If an internal audit report provided does not fulfill the requirement on <u>competence, independence, planned and coverage</u>, the answer should be “No”.</p> <ul style="list-style-type: none"> • Competence - the person responsible for the internal audit should be properly trained such as with a certificate for safety auditing or equivalent; • Independence - the person responsible for the internal audit

Term	General Audit Criteria
	<p>should not be involved in the project. They could be assigned from head office, team member from other project or outside consultant</p> <ul style="list-style-type: none"> Planned and Coverage - according to a written procedure in safety plan and the audit system adopted for internal safety audit should include the assessment of the safety management system and the actual implementation on site.
N/A	<p>Auditor should NOT put down ‘N/A’ for processes or items which exist on site but are not active during the audit. For example, roadwork or confined space which may not be observed at the time of audit but will be foreseeable in future or existed in the past on site. Auditor should comment on the efficiency and reliability of the safe system of work and/or process control of these items or processes in the corresponding audit questions. However, ‘N/A’ can be put down to those audit questions specifically for checking specific physical items such as guarding of a machine which is not found in the site at the time of safety audit. Whenever auditee claims that related equipment or structure is under construction, rectification, maintenance or otherwise not in use, reasonable arrangements such as displaying prohibition notice, fencing off the related item, etc. have to made to warrant a non-applicable decision.</p>
Procedure	<p>Auditor should verify the adequacy of auditee’s procedures for health and safety issues.</p>
Safety audit question response	<p>Auditors must not simply put down a ‘Yes’, ‘No’ or ‘N/A’, but should base the answer on the general principles in auditing that are highlighted by the three key works, namely “Effectiveness”, “Efficiency” and “Reliability” during the auditing processes in the collection of information, the assessment and verification of information. Auditors are required to assess the compliance of safety management system and site works in accordance with audit criteria with justification and evidence, give appropriate recommendation for improvement of the existing safety management system site works in the safety report.</p>
Safety control measures stipulated in	<p>Auditors are required to cover those safety and health related issues required in the contract specifications during audits as</p>

Term	General Audit Criteria
the contract specification	<p>follow:</p> <ul style="list-style-type: none"> ● Before the audits, auditors should consult the HA project team to obtain information on OSH related contract specification. ● Auditors should add the information in their audit plans as the audit criteria for their audits. An Information from HA project team' section should be added in the audit plan and nil return is required. ● During the physical inspection of the audit, Auditors should check the OSH contract specification as specified in the audit plan. Photos should be taken to support whether suitable safety control measures are implemented accordingly. ● Scores should be deducted from the relevant questions if deficiencies are identified. Recommendations should be made.
Safety training is not equivalent to control measure	<p>The main purposes of providing safety training are to make workers aware of the safety and health at work and to build their competence in performing the necessary safety practices. Safety training alone belongs to lower level under the hierarchy of safety control and should not be considered as evidence of a control measure in abating the high risk processes. Auditee should come up with control measures based on the risk assessment.</p>
Site audit findings from Housing Authority and inspection reports from Labour Department	<p>The Safety Audit Management Office will forward the findings related to OSH to corresponding Auditors for their follow-up in the next safety audit under HASAS. Auditors are reminded that these follow-up actions should be one of the priority areas that require extra attention and close examination. Auditors are also required to verify and comment on the follow-up actions of the contractors in the audit report or inspection report.</p>
Statutory inspection form(s)	<p>Name and designation of the person responsible for regular inspection should be clearly stated in the statutory inspection form such as Form 1 for Weekly Inspection of Lifting Appliances, Form 4 for Weekly inspection for Excavation and Form 5 for Fortnightly Inspection of Scaffold. As this is a mandatory requirement, the form should be properly filled in with the name, designation, and signature with date of the inspection and date of signing the certificate respectively,</p>

Term	General Audit Criteria
	otherwise the answer should be “No”.
<p>Weekly inspection checklist and safety supervisor daily inspection – Form 3A</p>	<p>Auditor is required to assess and comment on the quality of the inspection checklist records. The following items show some of the main points that auditor need to pay particular attention to:</p> <ul style="list-style-type: none"> ● Coverage of the inspection checklist or report should be adequate to cater for all activities on site; ● The location, area, date for non-compliance spotted, the priority of rectification action, the person responsible for rectification and so on should be clearly stated and recorded; ● Non-compliance identified in the checklist/form should be reflected and followed up in section/report for corrective actions; ● Non-compliance that may cause imminent danger such as no guardrail for floor edge/working platform or floor opening not covered and so on should require a prompt remedial action rather than allowance of rectification a couple of days after the inspection; and ● Repeating of the same non-compliance in Form 3A reflects problems in the efficiency, effectiveness and reliability of inspection program on site.

Audit Criteria

1. Integrating safety and health improvement efforts with strategic and financial planning.
2. Demonstrate safety and health is an organisation priority.

Question 1.1.3

Weighting: 3

Does the policy commit the organisation to full compliance with all relevant occupational safety and health legislation and to provide adequate resources to implement the policy?

Legal Requirements

The contractor should ensure that policy includes a commitment to achieve a high level of occupational safety and health performance, in compliance with legal requirements as the minimum.

The contractor should ensure that policy includes a commitment to provide adequate and appropriate resources to implement the policy. (*Code of practice on safety management, Section 5.1.1*)

Audit Criteria

1. Safety policy states management's commitment to meet legal obligations for occupational safety and health as minimum.
2. Safety policy states employees' commitment to look after their own safety and health and of the people they work with and to co-operate with management's initiatives for safety and health.
3. Safety policy states management's commitment to meet legal obligation for occupational safety and health, appropriate resources to implement OSH activities.
4. Resources have been allocated to safety training.
5. Adequate financial resources have been allocated.

Auditor Guidance

1. Interview with management to verify that the adequacy of financial resources will be acceptable.

Question 1.1.4

Weighting: 3

Does the policy set targets for safety and health performance, including a commitment to progressive improvement?

Legal Requirements

An effective safety policy sets a clear-direction for the organisation to follow. It contributes to all aspects of business performance as part of a demonstrable commitment to continuous improvement. (*Code of practice on safety management, Section 5.1.1*)

Audit Criteria

1. Safety plan includes procedure and performance indicators which are able to assess safety and health performance.
2. Regular performance reports with chart are available, at least annually, to indicate the performance of the safety management system.
3. Continuous evaluation of the performance of the safety management system against its policies, objectives and targets.
4. If the commitment to progressive improvement is not stated in the policy, the answer should be “No”.
5. The target should be clear, specific, realistic, achievable and measurable. For example, a target can be an accident rate in a certain number of accidents per thousand workers in year XXXX and the contractor has committed to improve progressively. The auditee can compare the actual rate with the target by the end of the year. The target is subject to review annually and the auditee should take necessary measures if the comparison shows there is room for improvement.
6. Specific targets set as safety performance indicators should be better than that of the client - Housing Authority’s target set each year.
7. A target which merely states to achieve zero accident without evidence to show that it is realistic and achievable will not be accepted and the answer should be “No”.

Sub-section 1.2 Communications and Implementation of the Policy

Question 1.2.1 **Weighting:** 3

Does the policy sign by the chief executive/managing/project director?

Legal Requirements

The organisation’s most senior management should define, document and endorse its safety policy. (*Code of practice on safety management, Section 5.1.1*)

Audit Criteria

1. The safety policy is signed by the most senior management in site level and is dated.
2. The safety policy statement should be site specific. Corporate safety policy statement is not acceptable.

3. The safety policy statement should be posted on prominent area such as site office.

Question 1.2.2**Weighting: 3**

Does the policy place the management of occupational safety and health as one of the prime responsibilities of line management, from the most senior executive to the first-line supervisory level and identify key senior personnel for overall co-ordination and implementation of the policy?

Legal Requirements

The contractor should ensure that policy includes a commitment to make the management of safety and health one of the prime responsibilities of managers at all levels, from the most senior executives down to the front line supervisory staff. (*Code of practice on safety management, Section 5.1.1*)

It is important to realize that the Safety Management Regulation places the responsibility for safety and health on the proprietor or contractor. Many of the duties arising from that responsibility may however be delegated to managers and supervisors. The written policy statement should show clearly how these duties are allocated. (*Code of Practice on Safety Management, Section 5.1.2*)

Audit Criteria

1. Safety policy acknowledges management's primary responsibility for safety and health in the workplace.
2. A senior manager has responsibility for the overall management of the safety management system.

Question 1.2.3**Weighting: 3**

Does the policy include the commitment to ensure its understanding, implementation and maintenance at all levels?

Legal Requirements

The contractor should ensure that policy includes a commitment to ensure its understanding, implementation and maintenance at all levels in the organisation. (*Code of practice on safety management, Section 5.1.2*)

Audit Criteria

1. The safety policy sets out management and employee commitments.
2. The safety policy is part of induction training for staff and contractors.

3. The safety policy is displayed in the workplace such as site office.

Question 1.2.4 **Weighting: 3**
Does the policy include the commitment to ensure that employees at all levels have received appropriate training and are competent to carry out their duties and responsibilities?

Legal Requirements

The contractor should ensure that policy includes a commitment to ensure that employees at all levels have received appropriate training and are competent to carry out their duties and responsibilities. (*Code of practice on safety management, Section 5.1.1*)

Audit Criteria

1. Commit to allow employees at all levels to receive appropriate training to ensure they are competent to carry out their duties and responsibilities.
2. There are sufficient resources to allow employees at all levels to attend the training that is necessary for them.

Sub-section 1.3 Reviewing of the Policy

Question 1.3.1 **Weighting: 3**
Does the policy include the commitment to ensure periodic review of the policy?

Legal Requirements

An effective safety management system should have a self-regulating and self-improving mechanism built in. (*Code of practice on safety management, Section 5.1.2*)

Audit Criteria

1. Safety policy includes a process for periodic policy review at least annually.
2. Safety policy should be updated and reviewed when necessary such as if there is any change in safety requirements in contract provision, changes in safety standards, corporate safety strategy, etc.
3. Safety policy should be reviewed at least annually.

Question 1.3.2 **Weighting: 3**
Does the policy include the commitment to ensure periodic review of the organisation's safety management system and make performance information available to staff?

Legal Requirements

This is effective by reviewing the safety policy from time to time by way of (a) performance measurement and (b) safety audits or safety reviews. *(Code of practice on safety management, Section 5.1.2)*

The contractor shall bring the policy statement and any revision of it to the notice of all the workers. The contractor shall cause the safety policy to be reviewed as soon as is practicable after the contractor alters the policy statement. Such alterations include changes to the core elements. A review may also be prompted by changes of particulars due to internal or external factors such as changes in technology, legislation or standards. *(Code of Practice on Safety Management Section, 5.1.2)*

Audit Criteria

1. There is a procedure and performance indicators in place to assess safety and health performance.
2. Performance indicators balance negative indicators (injury cases & rates, number of prosecutions, convictions, and legal notices) with positive indicators (safety audit results, safety competition entries, safety awards, frequency of inspections).
3. Performance indicators are reviewed on a regular basis, at least annually, to indicate the performance of the system and to make sure the safety management system is running effectively and performance is being improved.
4. Safety and health performance shall be reported to staff at least annually.

Section 2

Safety Organisation

Sub-section 2.1

Organisation Safety Structure

Question 2.1.1

Weighting: 3

Is there an organisation safety chart showing the names and positions with responsibility and communication lines for safety management?

Legal Requirements

Whilst the overall responsibility for safety and health rests with the top management, all individuals at every level will have to accept certain amount of responsibility for carrying out the policy. Organisation should lay down direct and vertical relationships between different levels within the company and provide an effective and efficient organisational structure for ensuring the achievement of safety and health objectives. *(Code of practice on safety management, Section 5.2.1)*

Audit Criteria

1. The safety organisation should be project specific. If it is modified from the corporate organisation, it should be stated so in the chapter on “Safety Organisation” in the safety plan and the project team should be well aware of it.
2. Safety organisation chart is developed with assignment of safety responsibility of each grade or position in the organisation. The assignment of safety responsibility to particular person or position or group of people or committee will not only depend on the job that they will carry out but also the duties that they will perform. Part of it is derived from risk assessment and part of it is assigned according to line of accountability and responsibility. Site personnel should know their job duties with safety responsibility once they are employed with written job duty list or through briefing.
3. All positions which can impact safety and health have appropriate safety and health responsibility and communication lines identified in the chart.

Question 2.1.2

Weighting: 3

Does the organisation chart adequately include the appropriate construction teams/sub-contractors?

Legal Requirements

The contractor should ensure that every person in the line organisation (include construction teams/sub-contractors) has an important safety and health role and that the person should be held accountable for safety and health matters. (*Code of practice on safety management, Section 5.2.1*)

Audit Criteria

1. The organisation chart should include the management in-charge of safety and health, construction teams such as plant & engineering department etc.. It is subjected to review and update in accordance with the construction progress.
2. The organisation chart should include sub-contractors. It is subjected to review and update in accordance with the construction progress. Contractor under tender requirement is restrict the tiers of subcontracting for works or trades involving significant hazards.

Question 2.1.3

Weighting: 3

Is a director accountable for leading occupational safety and health and is this clearly shown on the organisation safety chart?

Legal Requirements

A relevant person at the top management level should be designated to take up the final responsibility and accountability. (*Code of practice on safety management, Section 5.2.3*)

Audit Criteria

1. A director/a relevant person at the top management level has been given responsibility for the overall management of the safety management system.

Question 2.1.4

Weighting: 3

Have the senior management's (including project director, project manager and the site agent) occupational safety and health responsibilities clearly been defined?

Legal Requirements

Senior management

- To provide a safe and health working environment.
- To provide adequate resources (including financial resources), information and training.
- To provide a system of monitoring compliance with the safety policy.
- To ensure that relevant safety and health laws are complied with.
- To maintain contact with in-house safety advisors or safety officers, outside safety consultants, government departments, the Occupational Safety and Health Council and other professional bodies regarding safety and health matters.
- To provide and maintain a system responding to safety initiatives from safety advisors/safety officers/persons in charge of the safety office, safety supervisors or workers, and to the safety advice from government officers.
- To provide an effective, efficient and on-going safety and health promotion programme.
- To establish a system to identify, assess and eliminate hazards and control risks at work.
- To ensure that workplace safety rules, procedures and methods are developed, maintained and revised.

(*Code of practice on safety management, Section 5.2.4*)

Audit Criteria

1. Position description lists appropriate legal safety and health responsibilities.

Question 2.1.5

Weighting: 3

Have the site supervisory staff's (including site engineer, foreman, and supervisor),

sub-contractors' and workers' occupational safety and health responsibilities clearly been defined?

Legal Requirements

Site supervisory staff

- To assist the proprietor or contractor in the implementation of the safety policy, measures and procedures.
- To assist the proprietor or contractor in the identification of hazards, and the evaluation and control of risks.
- To supervise workers to ensure safe and correct working procedures.
- To ensure effective consultation on safety and health matters.
- To investigate work accidents and incidents.
- To participate in induction and on-going safety training programmes for workers.
- To respond to safety initiatives of safety advisors/safety officers/ persons in charge of the safety office, safety supervisors or workers and to the safety advice from government officers.
- To communicate effectively the hazards to workers and keep abreast of current safety and health legislation and information.
- To submit periodically to senior management statistics and reports concerning safety and health performance, unless the task is taken up by the safety office.

(Code of practice on safety management, Section 5.2.4)

Audit Criteria

1. Site supervisory staff's role should comply with Code of Practice defined above.
2. Sub-contractors' and workers' occupational safety and health responsibilities should be clearly defined.

Question 2.1.6

Weighting: 3

Have the occupational safety and health personnel's responsibilities including safety officer, safety supervisor and safety representative been clearly defined?

Legal Requirements

An in-house safety advisor, safety officer or person in charge of the safety office should have the responsibility to assist the top management and senior management in promoting the safety and health of workers in the relevant industrial undertaking. His main duties should include the following:

- To assist in the identification of hazards and evaluation of risks at work.
- To advise senior management or line management as to the measures to be taken to

eliminate or control hazards.

- To assist in resolving shop floor safety and health issues.
- To conduct safety and health inspections to check safety performance and recommend corrective action to senior management or line management.
- To investigate occupational accidents and incidents and recommend remedial measures to prevent recurrence.
- To be well informed about workplace safety performance.
- To consult with senior management, line management and workers about changes in the workplace which would likely affect the safety and health at work of workers.
- To report safety performance regularly to the top and senior management and, where appropriate, to the safety committee.

The responsibility of a safety supervisor or an assistant to the person in charge of the safety office should be to assist the top management, senior management and the in-house safety advisor, safety officer or person in charge of the safety office in promoting the safety and health of workers in the relevant industrial undertaking. His main duties should include the following:

- To assist the in-house safety advisor, safety officer or person in charge of the safety office in carrying out his duties.
- To supervise workers' observance of safety standards.
- To advise the senior management or line management as to the observance by workers of safety standards.
- To promote the safe carrying out of work in the workplace.
- To report regularly to the in-house safety advisor, safety officer or person in charge of the safety office on safety and health performance in the workplace.

(Code of practice on safety management, Section 5.2.4)

Audit Criteria

1. Position descriptions list appropriate safety and health responsibilities.

Question 2.1.7

Weighting: 6

Have sufficient and competent safety officer(s), safety supervisor(s) and safety representative(s) been appointed and engaged for the site?

Audit Criteria

1. The contractor shall appoint sufficient number of safety officer and safety supervisor in accordance with the requirement stated in the contract specification.
2. The safety Supervisor(s) shall be accredited under the Hong Kong Safety and Health Certification Scheme managed by OSHC.

3. At least one safety supervisor shall be employed if the total number of workers employed for lift maintenance contract is 20 or more.
4. The safety representatives should have successfully completed a safety supervisor training or equivalent. The safety supervisor training should be a training comparable to the construction safety supervisor training programme (course duration 43 hours) organised by the Occupational Safety and Health Council or Construction Industry Council (course duration is 42/43 hours). Acceptance of training provided by other organisations is subject to verification that the following aspects are attained. The aspects are:
 - (a) course content,
 - (b) mode of delivery (classroom delivery, handouts),
 - (c) course assessment (exam, practical, attendance),
 - (d) trainer qualification,
 - (e) quality assurance.
5. There should be at least one safety representative from different activities/ trade of subcontractors.
6. The safety representatives should have successfully completed a safety supervisor training.
7. Auditor should ask for appointment letters and training certificates of the safety representative.
8. The answer should be “No” if any of the above was not fulfilled.

Question 2.1.8

Weighting: 6

Are there appropriate steps taken for keeping and updating risk assessments, safety plans and registers of competent persons and examiners required under the relevant legislation?

Audit Criteria

1. A location or area is assigned for keeping the relevant safety records, which demonstrates a good documental control.
2. A procedure which covers control of safety and health documents is in place.

Auditor Guidance

1. Auditor should verify that an appointment system of competent persons should be in place.

(b) Non-management needs include:

- (i) an overview of safety and health principles;
- (ii) detailed knowledge of the safety and health arrangements relevant to an individual's job; and
- (iii) communication and problem-solving skills to encourage effective participation in safety and health activities.

(3) Individual training needs

Individual needs are generally identified through performance appraisal. They may also arise in situations where an individual has not received formal job training or instruction as part of his induction training. Training needs vary over time, and assessments should cover:

- (a) the induction courses for new starters, including part-time, temporary and imported workers;
- (b) the performance of long-term workers (especially those who may be involved in critical emergency procedures);
- (c) job changes, and situations involving staff promotion or someone standing in for someone else;
- (d) the introduction of new equipment or technology; and
- (e) the follow-up actions after accident / incident investigations.

(Code of practice on safety management, Section 5.3.2)

Audit Criteria

1. The safety training should be project specific. If the arrangement is modified from the corporate one, it should be stated in the chapter on “Safety Training” in the safety plan and the project team should be well aware of it.
2. The main objective of safety training is to enable site personnel have safety awareness, with correct safety attitude and be competent to perform their duty safely. Since majority of the posts and works are generic for M&I contracts, the site personnel training need analysis in OSH perspective should have already been done at corporate level or is based on the duties and responsibilities assigned.
3. Auditor should comment on the training need analysis and training plan.
4. Training needs should cover organisational, job-related and individual training needs.
5. The safety training plan should include at least the following items otherwise the answer should be “No”.
 - (a) provision of training schedule (with tentative date)

- (b) location of training
 - (c) training provider
 - (d) the targeted trainees
 - (e) specification of the courses
 - (f) type of refresher course to be provided.
6. Verification of the safety training programme that has been identified and implemented is necessary.

Question 3.1.2 **Weighting: 6**

Have all workers received basic mandatory safety training?

Legal Requirements

The contractor should let his workers know:

- (a) the organisation's safety policy and the philosophy underlying it; and
- (b) the structure and systems for carrying out the policy. Moreover, he should also let them know which parts of the systems are relevant to them, what the major risks are and how they are controlled.

(Code of practice on safety management, Section 5.3.2)

Audit Criteria

- 1. Verification is necessary for workers received basic mandatory training-valid Green Card through sample checking of workers met on site.

Question 3.1.3 **Weighting: 6**

Have all employees received specific safety training?

Legal Requirements

Individual needs are generally identified through performance appraisal. They may also arise in situations where an individual has not received formal job training or instruction as part of his induction training. Training needs vary over time, and assessments should cover:

- (a) the performance of long-term workers (especially those who may be involved in critical emergency procedures);
- (b) job changes, and situations involving staff promotion or someone standing in for someone else;
- (c) the introduction of new equipment or technology; and
- (d) the follow-up actions after accident / incident investigations. *(Code of practice on safety management, Section 5.3.2)*

Audit Criteria

1. Verification is necessary for workers received site specific safety training through sample checking of workers met on site.
2. Checking training records of the site specific safety training course for verification.
3. The induction training shall cover contents to alert persons new to the Site to know specific hazards related to the Site or works nature and activities in operation, and necessary precautionary measures. This training should be carried out on the working day of any such employee commencing work on the Site. Thereafter, he/she shall be given refresher training at intervals of about 6 months depending on the amount of changes to the site condition. The course shall be conducted by Safety Officer(s).
4. For BW contractors, typical incident cases for M&I works provided by HD shall be delivered to workers through site-specific induction training.
5. Monthly safety training with duration of approximately one hour, conducted by the safety officer should be held at least once a month to discuss specific accident cases and study their causes and preventive measures. Workers of related trades (including workers of subcontractors) should participate.
6. For Lift Maintenance Contracts, monthly safety training / monthly safety briefing by the safety officer/safety supervisor should be conducted at least once a month to discuss specific accident cases and study their causes and preventive measures.
7. For Lift Maintenance Contracts, silver card training (A10) should be provided to lift maintenance technicians.

Question 3.1.4

Weighting: 6

Have all workers received tool-box training related to the tasks?

Audit Criteria

1. Verification is necessary to ensure workers have received tool box talk training through sample checking by a specific trade or group of workers met on site and/or foremen who delivered the tool box talks.
2. Checking tool box talk programme and training records.
3. The site personnel responsible for conducting tool box talk is required to attend
(A) OSHC : Occupational Safety and Health Trainer Course (18 hours); OR
(B) OSHC : Occupational Safety and Health Training Techniques (4 hours); OR
(C) CIC : Effective Site Safety Training and Instructing Techniques Course (14 hours); OR
(D) CIC : Safety Training Techniques Course (4 hours).

The course should be provided by the Occupational Safety and Health Council or equivalent course provided by Construction Industry Council. Acceptance of training provided by other organisations is subject to verification that equivalent course contents and quality are attained.

Question 3.1.5	Weighting:	6
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Have all managers received safety management training?

Legal Requirements

- (a) Management needs include:
- (i) leadership skills;
 - (ii) communication skills;
 - (iii) techniques of safety management;
 - (iv) training, instruction, coaching and problem-solving skills relevant to safety and health;
 - (v) understanding of risks from a manager’s perspective;
 - (vi) knowledge of relevant legislation and appropriate methods of control including risk management; and
 - (vii) knowledge of the organisation’s planning, measuring, and auditing or reviewing arrangements.

Some managers in key positions like those who devise and develop the safety management system, investigate accidents or incidents, take part in safety audits or safety reviews and implement emergency procedures, may have particular needs. (*Code of practice on safety management*, Section 5.3.2)

Audit Criteria

1. Verification is necessary for managers (project manager, contract manager, site agent, or similar rank or above stationed on site) to receive safety management training through sample checking of these personnel met on site.
2. Site management staff should attend a training comparable to the 27-hr “Safety Training Course for Site Management Staff” provided by the Occupational Safety and Health Council or Construction Industry Council or equivalent course by other training providers covering safety legislation, elements in safety management and its concepts, safety inspection, accident investigation, risk assessment, work safe behavior, safety climate index, safe design and CDM, etc..
3. Upon completion of the 27-hr “Safety Training Course for Site Management Staff” course for 5 years, site management staff should attend and complete a revalidation course to revalidate his / her certificate before continuing to engage in his/ her role.

Question 3.1.6 **Weighting: 6**
Have all employees responsible for carrying out high risk activities received relevant silver card training?

Audit Criteria

1. The high risk activities include the following high risk trades identified for Silver Card Training,
 - i. Painter and Decorator;
 - ii. Carpenter;
 - iii. Demolition Worker (Building);
 - iv. Plumber;
 - v. Bar Bender and Fixer;
 - vi. Plasterer and Tiler;
 - vii. Bamboo Scaffolder and Metal Scaffolder;
 - viii. Curtain Wall Installer;
 - ix. Lift Mechanic;
 - x. Tower Crane Worker (Erecting, Dismantling, Telescoping & Climbing);
 - xi. Construction Materials Rigger/ Construction Materials Rigger and Signaller;
 - xii. Tunnel Worker; and
 - xiii. Concretor.
2. The monthly safety report submitted to Housing Department should be considered.
3. Verification is necessary for sampled workers met on site.

Question 3.1.7 **Weighting 6**
Have all newcomer employees received relevant training?

Audit Criteria

1. The safety induction courses for all site personnel and visitors including new starters, part-time, temporary and imported workers should be given.
2. Safety training is particularly important even when experienced and competent workers who first come to the site. These workers may not be familiar with the system and aware of the risks that they may be exposed to. Arrangement such as induction training for newcomers should be in place to reinforce their knowledge and competence.

Question 3.1.8 **Weighting: 3**
Is there an arrangement to monitor and assess the effectiveness of safety training?

Legal Requirements

It is necessary to measure the effectiveness of training. Pre-testing determines the needs for the programme; post-testing evaluates how much has been learned. It is important to assess whether the training programme has effectively corrected the previously identified unsafe behaviour. It is also of vital importance to obtain feedback on the training programme. (*Code of practice on safety management*, Section 5.3.5)

Audit Criteria

1. There should be means of selection and evaluation of training providers such as criteria for selection (e.g. recognition, reputation, costing, availability, evaluation of quality of training). If the arrangement is modified from the corporate one, it should be stated so and the project team should be well aware of it.
2. The knowledge & competence of employees who attend training are assessed, such as feedback on the training is conducted to assess the effectiveness of the training.
3. There should also be means of evaluation of effectiveness of safety training in respect of acquisition of knowledge and competence in carrying out the respective safety duties. The evaluation is generally done through supervision and monitored by safety inspection.

Question 3.1.9

Weighting: 3

Are proper safety training course records maintained, such as training date and time, location, duration, contents, trainers, attendees and test?

Legal Requirements

Monitoring involves keeping track of who has been trained in what. Accurate records should be maintained for all safety and health training activities. Such records should, as far as reasonably practicable, include the following data:

- (a) Training date and time;
- (b) Training location;
- (c) Length of training;
- (d) Subject of training;
- (e) Contents of training;
- (f) Trainers and their expertise;
- (g) Attendees; and
- (h) Test results, if any.

(*Code of practice on safety management*, Section 5.3.6)

Audit Criteria

1. Auditor should comment on the quality of the recording system.
2. The summary of safety training record should include at least the group or trade of workers receiving the training, date of training offered, number of classes conducted, etc.

Section 4 In-house Safety Rules

Sub-section 4.1 In-house Safety Rules to Provide Instruction

Question 4.1.1 **Weighting: 6**

Has a survey of overall prevailing activities been conducted to identify the need for written occupational safety and health rules?

Legal Requirements

The ultimate objective of any safety management system is to prevent injury and ill health in the workplace. To accomplish this it is necessary for a contractor to devise in-house safety rules. In-house safety rules cover general rules, work rules, safety work permits and procedures. (*Code of practice on safety management, Section 5.4*)

In devising in-house safety rules, the contractor is encouraged to have prior consultation with his workers, where appropriate. If there is a safety committee, the details of the safety rules can be discussed in the safety committee. (*Code of practice on safety management, Section 5.4.3*)

Audit Criteria

1. The in-house safety rules should be project specific. If these rules are modified from the corporate one, it should be stated so in the chapter on “In-house Safety Rules” in the safety plan and the project team should be well aware of it.
2. In-house safety rules are developed based on risk assessment. Due to the hierarchy of control for accident prevention, the control measures developed are generally a combination of various control programmes such as elimination, substitution, engineering control, administration control, and personal protection program. Majority of the work activities for M&I contracts are typical and the generic risk assessment done at corporate level will generally be used as reference for the development of in-house safety rules of the project including safety instruction or work instruction (WI), safety operation procedures (SOP), permit-to-work system, etc..
3. Auditor should check the auditee using the task-hazard inventory to formally identify what in-house safety rules are needed.

4. Specialized safety rules should be identified from critical tasks based on risk assessment.
5. There should be consultation with safety committee on the development of the in-house safety rules on the applicability and suitability through discussion and endorsement.

Question 4.1.2

Weighting: 3

Have in-house safety rules been prepared for specific work activities in written method statement or permit to work?

Legal Requirements

General safety rules include clear instructions to personnel (including probationers and new comers) in each of the following general areas:

- (a) safe operation of plant, machinery and equipment;
- (b) maintenance of plant, machinery and equipment;
- (c) proper and safe procedures for each production process, in the form of method statements;
- (d) rules and instructions on various risk control systems including the permit-to-work system;
- (e) provision, use and maintenance of personal protective equipment;
- (f) rules for the provision, use and maintenance of safe access and egress and for traffic and plant movement;
- (g) fire precautionary measures;
- (h) safe handling and movement of materials;
- (i) safety procedures for chemical processes and for the handling, transporting and storage of chemicals;
- (j) safety procedures for emergency;
- (k) duties and procedures for reporting hazards;
- (l) duties and procedures for reporting incidents, accidents and ill-health; and
- (m) good housekeeping of the workplace.

(Code of Practice on Safety Management Section 5.4.1)

There should be a system for the identification and establishment of safety in-house safety rules, work rules, safety work permits and procedures. Proprietors and contractors of relevant industrial undertakings should refer to the following:

- (a) relevant legislation dealing with safety and health at work, which sets the minimum standards to follow;
- (b) codes of practice and guidance materials issued by the Labour Department on safety

- and health at work;
 - (c) international standards; and
 - (d) the best trade practice and trade performance.
- (Code of practice on safety management, Section 5.4.2)

Audit Criteria

1. Auditor should study the site safety plan to verify if there is a system to identify specific work activities on the need of written safe work method statement and/or permit-to-work systems.
2. Specialized work rules, safety work permits and procedures are developed with reference to legal requirements, codes of practice and best trade practice.
3. Prior consultation with engineering staff and operating personnel to ensure they are accurate and provide practical instructions on how to actually carry out job duties safely.
4. It is necessary for construction projects to have general safety rules and specific safety rules to cater for various working conditions. The purpose of the general safety rules is to remind site personnel of the general safety issues that should be followed such as wearing safety helmets, safety shoes, prohibition of smoking, no horseplay, etc. The general safety rules should be regarded as the basic measures/practices to be followed by all site personnel including site staff and workers.
5. Auditor should comment on the coverage of the general rules as specified in item (a) to (m) in the Code of Practice on Safety Management Section 5.4.1 above. Risk assessment may not be necessary for developing these general rules.

Question 4.1.3

Weighting: 6

Are the general safety rules brought to the attention of all employees?

Legal Requirements

Work rules and procedures should be documented and communicated to all appropriate personnel. It may be that not all workers will need to know all of the detailed in-house rules but the contractor should ensure that every worker clearly instructed as to what rules they should follow. (Code of practice on safety management, Section 5.4.3)

Audit Criteria

1. Written procedures are required to ensure that workers know how the safety rules operate.
2. Workers are clearly instructed as to what rules they should follow.
3. General safety rules are displayed.

Question 4.1.4 **Weighting: 6**
Are specific safety rules posted in the vicinity of the activities where they apply?

Audit Criteria

The rules in this question refer to specific safety rules. Those engaged in hazardous activities are required to follow the related safety rules that will enable them work safely and prevent the happening of accident. The typical activities that require specific safety rules are welding, lifting operation, woodworking, etc.

1. A copy of sample safety rules displayed or photo showing such should be produced as evidence.
2. Auditor should sample the safety rules and commend on its content.
3. If only the general safety rules are available, the answer should be “No”.
4. If specific safety rules are available but not posted out, the answer should be “No”.
5. For lift maintenance works, the practice of carrying a handbook provided by the companies will be acceptable as fulfilling the audit criteria.

Question 4.1.5 **Weighting: 3**
Are there appropriate steps taken for monitoring the compliance of these safety rules?

Legal Requirements

To ensure compliance with these in-house rules, the contractor should exercise due diligence in the supervision of his workers. (*Code of practice on safety management*, Section 5.4.4)

Audit Criteria

1. Safety rules in this question include general safety rules and specific safety rules to cater for various working conditions. There should be arrangement in place to ensure that workers carry out the work in accordance with the safety rules.
2. The compliance with in-house safety rules is generally monitored by safety inspection.
3. In addition to safety inspections carried out by safety supervisors and safety officer in monitoring the safety management system, other forms of monitoring the compliance with these safety rules by special assigned personnel such as sub-agent, block foreman, or frontline supervisor should be encouraged. This should be distinguished from their reminder given when either an unsafe act or unsafe condition is observed or just a friendly reminder on safety issue during their normal

supervision duty which is part of their work.

Question 4.1.6 **Weighting: 3**
Is there a disciplinary arrangement for ensuring the compliance of safety rules?

Legal Requirements

There should be a written disciplinary policy addressing violation of rules with details of punitive actions like verbal warnings, written reprimands, suspensions, demotions and, where necessary, termination. Recognition should, on the other hand, be given to workers following the rules to reinforce good behaviour. (*Code of practice on safety management*, Section 5.4.4)

Audit Criteria

1. A written disciplinary system for enforcing safety and health rules.

Question 4.1.7 **Weighting: 6**
Are all the rules documented and regularly reviewed?

Audit Criteria

1. Check the rule version, in particular those posted on site to verify the rules had been regularly reviewed to assess their on-going effectiveness.
2. Apart from the regular review, the rules should also be reviewed or updated if an accident happened/ a suspension notice or improvement notice received from Labour Department/ a safety alert received from the Estate Management Division of Housing Department. Otherwise, the answer to this question should be “No”.
3. For BW contractors, the contractor should review the in-house safety rules based on the incident cases which shared in HASAS (M&I) review seminars.

Section 5 Safety Committee
Sub-section 5.1 Identify, Recommend and Review Measures

Question 5.1.1 **Weighting: 3**
Are the terms of reference, membership, frequency, agenda and distribution of minutes of the safety committee clearly defined?

Legal Requirements

The proprietor or contractor required by section 10 of the Safety Management Regulation to establish a safety committee shall ensure that the safety committee is provided with a written statement setting out the rules governing its membership

[Section 11(1)(b) of the Safety Management Regulation]. (*Code of practice on safety management*, Section 5.10.4)

A contractor required by section 10 of the Safety Management Regulation to establish a safety committee shall ensure that the safety committee is also provided with a written statement setting out rules governing its terms of reference and meeting procedures [Section 11(1)(b) of the Safety Management Regulation]. (*Code of practice on safety management*, Section 5.10.5)

The safety committee's programme should be arranged well in advance and notices of the dates of meetings published to let all members know. Reports and relevant materials should also be circulated to all members in advance [Section 11(1)(d) of the Safety Management Regulation]. (*Code of practice on safety management*, Section 5.10.5)

Audit Criteria

1. Safety committee is a platform for collection of feedback and suggestions on OSH issues, announcement of OSH practices and discussion on OSH problems. It is encouraged that safety plan and control measures should be discussed and endorsed by safety committee. Safety message can also disseminate through safety committee.
2. The safety committee should be project specific. If the committee arrangement is modified from the corporate one, it should be stated so in the chapter on "Safety Committee" in the safety plan and the project team should be well aware of it.
3. The following points are reference for safety committee of M&I projects: establish safety committee with due consideration of the term of reference.
 - (a) has quorum of not less than 60% of members for valid meeting
 - (b) appointment term not less than 2 years and maximum 6 years
 - (c) formal appointment letters required
 - (d) list of committee members posted at site office
 - (e) a copy of meeting minutes posted at site office(s)
4. A standard meeting agenda for reference includes:
 - (a) follow up previous outstanding meeting items,
 - (b) report on SMS development,
 - (c) report on safety inspections (including in-house and external),
 - (d) report on incident/accident if any,
 - (e) report on results of risk assessment and control measures (including in-house rules developed)
 - (f) report on safety training and safety promotion

- (g) report on safety audit/safety review and follow-up
 - (h) report on clients advice and feedback from public;
 - (i) report on contractors/sub-contractors and suppliers
 - (j) report on message from headquarters
5. A simple meeting minutes include a record of
- (a) summary of discussed item
 - (b) conclusion
 - (c) action parties
 - (d) proposed completion date
6. Legal and contractual requirements for establishing safety committee are met.

Question 5.1.2

Weighting: 6

Does the committee meet regularly and discuss all the appropriate occupational safety and health matters?

Legal Requirements

In general, the frequency of meetings of a safety committee depends upon the volume of work to be handled and the complexity and nature of hazards in the workplace. Nevertheless, in any case, a contractor shall ensure that a safety committee meets at least once every three months [Section 11(1) of the Safety Management Regulation].

Monthly meetings are usually found to be satisfactory. If sub-committees are formed for particular tasks, it will normally be necessary for them to meet more often because their aim is to produce a specified result within a time limit.

(Code of Practice on Safety Management Section 5.10.5)

A safety committee should carry out the following functions for the purposes of identifying, recommending and keeping under review measures to improve the safety and health of workers in a relevant industrial undertaking:

- (a) monitoring of the safety policy – determining whether it is adequate and how well it is being implemented;
- (b) on-going evaluation of hazards and arrangements to implement safety measures;
- (c) establishment of arrangements to deal promptly and effectively with dangerous working conditions, including those coming to light in disputes arising from workers refusing to work on the grounds of imminent danger;
- (d) discussion and establishment of a mechanism to resolve disputes when workers refuse work on the grounds of imminent danger;
- (e) assistance in the development of safe working procedures and safe systems of work;

- (f) vetting of accident/incident/ill-health statistics to identify trends and monitor safety performance, and submission of reports on its findings to the top management with recommendations;
 - (g) examination of safety audit reports and submission of reports on its observations to the top management with recommendations;
 - (h) scrutiny of safety performance reports submitted by the safety office and giving of direction on appropriate actions;
 - (i) monitoring of the adequacy and effectiveness of safety training;
 - (j) monitoring of the adequacy of safety and health communications and publicity in the workplace;
 - (k) organizing of safety promotion activities such as safety competitions, exhibitions, safety incentive schemes, and safety suggestion schemes; and
 - (l) provision of links with external sources regarding safety and health.
- (Code of practice on safety management, Section 5.10.2)*

Only matters relating to safety and health at work of the workers in the relevant industrial undertakings shall be discussed at the meeting of the safety committee [Section 11(2) of the Safety Management Regulation].

(Code of practice on safety management, Section 5.10.5)

Audit Criteria

1. Safety committee meeting should be held monthly and verification is necessary through both verification of meeting minutes and interview of committee members.
2. Auditor should comment on the appropriateness of OSH matters discussed in the committee meeting.

Question 5.1.3

Weighting: 6

Does the safety committee have the active participation of senior management of the organisation?

Legal Requirements

Management membership should come from as many levels as practicable, with senior management well represented and a careful mix of line management and functional management. The aim is to ensure that the committee –

- (a) is given adequate authority to consider views and recommendations, and make decisions; and
- (b) is provided with the necessary expertise to formulate practicable policies and strategies.

(Code of practice on safety management, Section 5.10.4)

Audit Criteria

1. The chairman of the safety committee should be the top person in charge of the workplace.
2. Auditor should comment on the senior management such as Project Manager and Site Agent in leading the committee to manage and improve site safety and health.
3. Senior management should actively participate safety committee meeting.

Question 5.1.4

Weighting: 6

Does the committee foster effective, two-way communication between management and sub-contractors/employees?

Legal Requirements

A safety committee should have a wide representation adequately covering the interests of management and all workers, yet its size should be kept as reasonably compact as possible. The number of members representing workers in the relevant industrial undertaking shall not be less than half the members of the committee [Section 11(1)(a) of the Safety Management Regulation]. Members of the safety committee can be nominated or elected. (*Code of practice on safety management*, Section 5.10.4)

Audit Criteria

1. Open communication between employees, supervisors and management is an important factor. To be effective, the safety committee meeting should require that management and staff at all levels to provide, observe, and supervise safe working practices and procedures. The senior management responsible for coordinating and monitoring health and safety should chair the meeting, and ensure that employees have been well represented at the meetings.
2. A two-way flow of information between the workforce and the safety and health committee should be established. The committee needs to be seen as an effective means of improving safety and health in the workplace, and employee representatives should be in a position to raise issues suggested by other employees in the workplace.
3. It is a good practice to have the names of the safety committee members and the representatives of sub-contractors from different trades posted on the notice board. Hence, workers will know to whom their opinions pertaining to safety and health should be forwarded. The representatives of sub-contractors from different trades are subject to review in accordance with the progress.

Question 5.1.5

Weighting: 6

Does the committee have representatives from all parts of every area of responsibility?

Legal Requirements

A safety committee should have a wide representation adequately covering the interests of management and all workers, yet its size should be kept as reasonably compact as possible. The number of members representing workers in the relevant industrial undertaking shall not be less than half the members of the committee [Section 11(1)(a) of the Safety Management Regulation]. Members of the safety committee can be nominated or elected.

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Management membership should come from as many levels as practicable, with senior management well represented and a careful mix of line management and functional management. The aim is to ensure that the committee –

- (a) is given adequate authority to consider views and recommendations, and make decisions; and
- (b) is provided with the necessary expertise to formulate practicable policies and strategies.

Supervisors are the key men in regard to safety as well as production and their active cooperation is therefore essential. It is most important that the supervisors should be kept continuously informed of the safety committee's work. They should therefore have a representative on the safety committee.

In undertakings where safety officers or advisers are employed, they should be made ex-officio members of the safety committee. Other specialists, such as project engineers, chemists, organisation and methods personnel and training officers may also be asked to attend meetings on an ad hoc basis when issues on which they have expertise are to be discussed.

(Code of practice on safety management, Section 5.10.4)

Audit Criteria

1. Auditor should comment on the composition of the representatives of the safety committee.

Question 5.1.6 **Weighting: 6**
Does the committee monitor, record, and recommend action on occupational safety and health performance?

Legal Requirements

Monitoring arrangement should be set up by the safety committee to follow through the implementation of its recommendations. (*Code of practice on safety management*, Section 5.10.3)

The safety committee's programme should be arranged well in advance and notices of the dates of meetings published to let all members know. Reports and relevant materials should also be circulated to all members in advance. (*Code of practice on safety management*, Section 5.10.5)

The proprietor or contractor of a relevant industrial undertaking shall ensure that proper records on safety committee meetings are kept to provide a progress report on decisions made, recommendations put forward and actions taken. These records shall be –

- (a) kept for not less than 5 years after the date of the meeting to which the record concerned relates; and
- (b) made available for inspection upon request by an occupational safety officer.

[Section 11(d) of the Safety Management Regulation]

Audit Criteria

- 1. Arrangements for safety and health consultation and issue resolution in the site have been documented.

Question 5.1.7 **Weighting: 6**
Have prompt actions been taken according to the recommendations of the committee?

Legal Requirements

The contractor shall implement, so far as is reasonably practicable, any measures recommended by the safety committee in relation to matters of safety and health at work of the workers [Section 10(b) of the Safety Management Regulation]. A mechanism should be established whereby decisions and actions recommended by the safety committee can be effectively communicated to those persons responsible for their implementation. (*Code of practice on safety management*, Section 5.10.3)

Audit Criteria

1. The agenda and minutes of the safety committee meetings are circulated in the site so everyone has the chance to raise issues and to know what is going on.
2. Safety committee plays an active role in managing and improving site safety and health.

Section 6 Programme for Inspection of Hazardous Conditions

Sub-section 6.1 Identify Hazardous Conditions and Rectification

Question 6.1.1 **Weighting: 3**

Has a comprehensive inspection checklist and inspection programme been developed and stipulated in the safety plan?

Legal Requirements

The inspection programme should satisfy any specific legal requirements and reflect the undertaking's risk priorities. Suitable schedules and performance standards for the frequency and contents of inspection can help. The schedules can be supplemented with inspection forms or checklists, both to ensure consistency in approach and to provide records for follow-up action. (*Code of practice on safety management*, Section 5.5.3)

Audit Criteria

1. The safety inspection programme should be project specific. If the programme is modified from the corporate one, it should be stated so in the chapter on "Programme for Inspection of Hazardous Conditions- Safety Inspection Programme" in the safety plan and the project team should be well aware of it.
2. Prior to work inspection should be one of the inspection programmes stipulated in the safety plan. The prior to work inspection could be carried out in different levels such as by operative, technician, mechanic and engineer.
3. Principal contractors and sub-contractors should appoint the person-in charge based on the following principles:
 - (a) If the machine or the tool is manned by a single operator, then the operator will be the one in charge. If the equipment is used by a group of workers, one person should be appointed to take charge of the equipment.
 - (b) If the general equipment is temporarily used mainly by sub-contractor workers, sub-contractors should select someone to be responsible. If the equipment is used by workers from different sub-contractors, the sub-contractor for installation and for operation should jointly assign a person to take charge.
 - (c) Competent persons should be assigned to carry out inspections on hazardous

workplace such as confined spaces, excavations, scaffolds.

4. Safety inspection is a monitoring function under SMS. Hence, routine advisory to subordinates' unsafe acts or unsafe conditions is considered to be supervision under the General Duties provision but not safety inspection. The routine advisory should be recorded and reported for monitoring and review.
5. Inspection checklists, forms and schedule are available.

Question 6.1.2**Weighting: 3**

Are there appropriate arrangements to ensure that senior site management actively participated by joining in the safety inspection of their areas of responsibility at regular intervals?

Legal Requirements

The persons carrying out the inspections should have the appropriate safety training and experience so that they are competent to identify the relevant hazards and evaluate the associated risks. (*Code of practice on safety management*, Section 5.5.3)

Audit Criteria

1. Safety inspections carried out by senior management serves as supervision and assurance for the safe operation of site works.
2. Arrangement of senior management such as project manager and site agent to participate in the regular inspection should be stipulated in the safety plan.
3. Safety inspection should be done either by special assigned personnel such as safety supervisor or anyone trained (at least completed a one-day (8 hours) safety inspection training course organized by OSHC or equivalent) to take up the monitoring role.

Question 6.1.3**Weighting: 3**

Are there appropriate arrangements to ensure that the site inspections check the level of compliance with safety standards and procedures?

Legal Requirements

A suitable inspection programme should take all risks into account. It should be proportional to the hazard profile of the relevant industrial undertaking. An inspection should concentrate on areas where it is likely to produce the greatest benefit and lead to the greatest control of risk. Key risk control systems and related workplace precautions should therefore be monitored in greater detail or more often (or both) than low-risk systems or management arrangements. For example, low risks may be dealt with by general inspections every month or two covering a wide range of workplace precautions

such as the condition of premises, floors, passages, stairs, lighting, welfare facilities and first aid. Higher risks need more frequent and detailed inspections, perhaps weekly or even, in extreme cases, daily or before use (for example, pre-use check on plant and machinery).

A properly thought-out approach to inspection will include:

Programme for Inspection of Hazardous Conditions

- (a) a well-designed inspection form to help plan and initiate remedial action by requiring those doing the inspection to rank any deficiencies in order of importance;
- (b) summary lists of remedial action with names and deadlines to track progress on implementing improvements;
- (c) periodic analysis of inspection forms to identify common features or trends which might reveal underlying weaknesses in the system; and
- (d) information to aid judgments about any changes required in the frequency or nature of the inspection programme.

(Code of practice on safety management, Section 5.5.3)

Audit Criteria

1. Check includes site inspection, maintenance of plant and equipment and tests of the work environment.
2. Checklists are drawn up to monitor the hazards identified in the risk assessments.
3. Safety inspection should be done either by special assigned personnel such as safety supervisor or anyone trained (at least completed a one-day (8 hours) safety inspection training course or 27-hr “Safety Training Course for Site Management Staff” provided by the Occupational Safety and Health Council or Construction Industry Council or equivalent) to take up the monitoring role.
4. Identified problems are recorded and appropriate corrective action is developed.

Question 6.1.4

Weighting: 6

Do safety officers and safety supervisors carry out safety inspections at regular intervals?

Audit Criteria

1. Auditor should comment on the quality of reports compiled by safety officers and safety supervisors such as the proper filling in of monthly reports Form 2A and weekly reports Form 3A.
2. Verification is necessary especially when inspection is carried out on holiday.

Auditor is required to assess and comment on the quality of inspection checklist records. The following items show some of the main points that auditor needs to pay particular attention:

1. Coverage of the inspection checklist or report should be adequate to cater for all activities on site;
2. The location, area, date for non-conformity spotted, the priority of rectification action, the person responsible for rectification, etc. should be clearly stated and recorded.
3. Non-conformity identified in the checklist/form should be reflected and follow up in section/report for corrective actions;
4. Non-conformity that may cause imminent danger such as no guardrail for floor edge/working platform or floor opening not covered etc. should require a prompt remedial action rather than allowance of rectification a couple of days after the inspection.
5. Repeating of the same non-conformity on site should not be acceptable as it reflects problems on the effectiveness and thoroughness of inspection and the monitoring system on site.

Question 6.1.5

Weighting: 6

Are there appropriate actions taken as a result of the safety inspection findings?

Legal Requirements

The results of inspections should be brought to the attention of the senior management. Information from safety inspections should be evaluated promptly to identify immediate risks and to ensure that appropriate remedial action is taken without delay. Any corrective action should be implemented as quickly as reasonably practicable. The inspection system should have a way of checking that remedial action is taken and monitored by the senior management. (*Code of practice on safety management*, Section 5.5.4)

Audit Criteria

1. Corrective action reports show that safety problems are resolved in a timely manner.
 2. Inspection reports are provided to relevant managers and supervisors for prompt follow-up action.
 3. Person to follow up the non-conformance items should be identified and target date for completion should be specified.
-

Question 6.1.6

Weighting: 6

Are there appropriate steps taken to collate and analyse the results of safety inspections?

Legal Requirements

A contractor should keep full records of each inspection with details of both positive and negative findings. Such reports should be analysed to identify repeated substandard situations and their underlying causes. Records of inspections should be kept for a period of not less than 3 years. (*Code of practice on safety management*, Section 5.5.4)

Audit Criteria

1. Inspection records are kept.
2. Trend analysis of safety inspection results should be done at least half yearly to provide reference for preventive safety programme.
3. Consolidated safety inspection results and trend analysis should be reported in monthly safety committee meeting.

Question 6.1.7

Weighting: 6

Has internal safety audit been conducted to ensure continuous improvement to the safety management system?

Audit Criteria

1. Internal safety audit should be conducted to assess the effectiveness and thoroughness of the safety management system. If an internal audit report provided does not fulfill the requirement on competence, independence and coverage, the answer should be “No”. There is an arrangement for internal audit and yet if the first internal safety audit is not due when the first audit is conducted, the answer should be “N/A”.
2. Internal safety audits should be conducted not less than once in each six months period beginning with the day on which the undertaking comes into existence. The internal safety audit shall be conducted by a registered safety auditor.
3. The scope of the safety audit should describe the extent and boundaries of the audit in terms of physical locations, organisational activities and other parameters. If the internal safety audit does not cover the concerned contract/ work site, the answer should be “No”.
4. If the internal safety auditor is an employee of the contractor, the contractor should only require him/ her to carry out work relating to conducting the safety audit.

identification of job hazards, assessment of risks, development, implementation and maintenance of safety procedures and risk control measures and review. The programme should aim at:

- (a) identifying new hazards;
- (b) evaluating the risks associated with the hazards;
- (c) analyzing the effects or the potential effects resulting from these risks, and
- (d) developing and implementing means to eliminate the risks or to reduce them to a tolerable level.

(Code of practice on safety management, Section 5.11.1)

Audit Criteria

1. There is a procedure which sets out how the risk assessment process operates on site.
2. The purpose of risk assessment is to identify potential risky operations or activities. It helps to prioritize the high risk items with relevant control measures. Since majority of the work activities for M&I contracts are typical and generic risk assessment is usually done at corporate level, and thus can be used as reference to develop project specific job hazard analysis arrangement.
3. Health assurance program (HAP) is health risk assessment taken to protect site personnel from occupational health hazards. (HAP in Element 12 covers health risks in 4 perspectives, namely (a) Substances Hazardous to Health; (b) Sprains, Strains and Pains (related to manual handling); (c) Noise; and (d) Adverse working condition such as heat stress issue and cold working environment; and welfare facilities.) The risk assessment for Display Screen Equipment (DSE) should be covered by sub-section 14.2.4 Occupational safety and health in offices.
4. The methodology of risk assessment should be formulated in project safety plan.

Question 7.1.3

Weighing: 9

Does the risk assessment and evaluation cover a systematic examination of the likelihood and consequences to people, environment and assets, and is it properly recorded?

Legal Requirements

The risk associated with a hazard is a reflection of the likelihood that the hazard will cause harm and the severity of that harm. The two elements of risk, i.e. likelihood and severity, are independent of each other. The vast majority of hazards are relatively straightforward and requiring only a simple method of risk rating. The method incorporates a judgment as to whether or not a risk is tolerable. *(Code of practice on*

safety management, Section 5.11.4)

Audit Criteria

1. Identified hazards are assessed to determine their likely impact and appropriate risk controls are developed.
2. Risk assessment sheets only consist of activities, potential hazard, control measures and actions, without consideration of likelihood and consequence are considered inadequate and the answer should be “No”.
3. A proper risk assessment should be written down on an assessment sheet with risk rating and appropriate risk control measures for controlling hazards.
4. Auditor should comment on the content of the risk assessment report. A copy of risk assessment report should be submitted as evidence for verification.
5. A master list of all risk assessment reports should be submitted as an evidence for verification.

Question 7.1.4

Weighing: 9

Are risk assessments carried out and conducted by competent persons and are records maintained?

Legal Requirements

The contractor should appoint a competent person to carry out risk assessment. A competent person is a person who is –

- (a) appointed by the contractor to ensure that the duty is carried out; and
- (b) by reason of substantial training and practical experience competent to perform the duty.

(Code of practice on safety management, Section 4.1.1(4))

The contractor should ensure that persons responsible for the analysis of hazards, evaluation of risks, and determination of the means of eliminating or reducing any risks are competent and given the necessary support so that they can perform their duties effectively.

(Code of practice on safety management, Section 5.11.1)

Audit Criteria

1. The coverage and the applicability of the safety measures for hazardous activities are subject to challenge if safety officer is the only one carrying out the risk assessment. The frequent missing out of commonly observed high-risk activities reflected that the current practice of some contractors needs improvement.

2. Unless the safety officer is competent and fully familiar with all activities, the existing arrangement of risk assessment needs to be reviewed, e.g. by setting up a risk assessment team made up of engineer, project manager, site agent etc. who are knowledgeable on the construction activities. Otherwise, the answer should be “NO”.
3. Qualified Engineer (QE) should participate in risk assessment team when conducting risk assessment related to specific work such as temporary works and slope works, etc. Otherwise, the answer should be “No”.
4. The risk assessment is conducted by competent persons with sufficient training (not less than a two-day, 12 hours, risk assessment course organized by OSHC or equivalent). It is normally conducted by a team of site personnel.
5. Persons who have attended 27-hr “Safety Training Course for Site Management Staff” training course and Registered Safety Officer are considered as trained personnel.

Question 7.1.5

Weighing: 9

Are the recommended risk control measures appropriate for the identified hazards and risk evaluation?

Legal Requirements

Risk assessment and risk control should

- (a) be part of element 6 programme for inspection of hazardous conditions;
- (b) be a major component in the element 8 personal protection programme; and
- (c) be an essential part of the element 12 health assurance programme.

(Code of practice on safety management, Section 5.11.1)

Audit Criteria

1. Safe work practices are developed using the information acquired during the risk assessment process. Apart from generic risk assessments, task-specific risk assessments are required for all high risk activities.
2. The critical items or parts identified during risk assessment are for reference in development of safety inspection programme. The relevant specific in-house safety rules, safety training, emergency preparedness and personal protection programme should be developed with due consideration of the results.
3. The need of task specific personal protective equipment should be identified as part of risk assessment. Auditor should verify whether identified personal protective equipment is suitable for the risk control measure. If not, the answer should be “No”.

Question 7.1.6

Weighting: 9

Are there appropriate steps taken to ensure the implementation of the recommended control measures?

Legal Requirements

For safety procedures and risk control measures to be implemented effectively and efficiently, they should be as far as practicable developed at the workplace with the participation of all levels of staff. Feedback from people implementing the safety procedures and risk control measures should be encouraged so that improvement to the procedures and measures can be made.

Maintaining safety procedures and risk control measures requires scheduled inspections and maintenance. It also requires the enforcement of discipline to ensure that people do not tamper with safety procedures and risk control measures (e.g. by removing machine guards).

(Code of practice on safety management, Section 5.11.6)

Audit Criteria

1. Everyone in the site knows about the hazards they face and the applicable risk control measures.
2. Physical verification is necessary to assess whether critical risk control measures stated in risk assessment are strictly implemented on site.

Question 7.1.7

Weighting: 6

Is there an arrangement to review and update the risk assessment?

Legal Requirements

Whatever safety procedures and risk control measures are used, they should be reviewed if there is reason to suspect that they are no longer effective, or if there has been a significant change in the matters to which they relate.

Examples are:

- (1) When information is obtained about a previously unknown design or manufacturing fault, or about a previously unidentified hazard.
- (2) When the design is revised or modified.
- (3) When the system of work associated with the plant is changed.
- (4) When the plant is moved.
- (5) When there is a change to the workplace environment.

(Code of practice on safety management, Section 5.11.7)

Audit Criteria

1. Unless there is a substantial change in the work process or a related accident, generic risk assessments for non-high risk activities do not need to be reviewed quarterly. Apart from generic risk assessments, task-specific risk assessments are required for all high risk activities. These specific risk assessments should be reviewed according to the project progress or as arranged in the safety plan.
2. Apart from the regular review, the risk assessment should also be reviewed or updated if an accident happened / a suspension notice or improvement notice received from Labour Department / a safety alert received from the Estate Management Division of Housing Department. Otherwise, the answer to this question should be “No” if no review or updating.
3. For BW contractors, the contractor should review the risk assessment based on the incident cases which shared in HASAS (M&I) review seminars.

Sub-section 7.2 Safety Procedures, Method Statements and Specialised Permits

Question 7.2.1

Weighting: 6

Are control measures such as safe working procedures/method statements/permit to work developed based on the results of risk assessment?

Legal Requirements

Safety procedures and risk control measures are procedures and measures to be put in place to reduce risk to a tolerable level. When deciding on safety procedures and risk control measures, the list below should be considered, in the order given. Safety procedures and risk control measures lower down the list should only be used if it can be shown that using a procedure and/or measure higher up the list is not reasonably practicable.

List of safety procedures and risk control measures

- (1) Procedures and measures to eliminate hazards at source: for example, using a non-hazardous substance instead of a hazardous one.
- (2) Procedures and measures to reduce hazards at source: for example, replacing a noisy machine with a quieter one.
- (3) Procedures and measures to remove workers from the hazard: for example, paint spraying by unattended robots.
- (4) Procedures and measures to contain hazards by enclosure: for example, installing

sound proofing enclosure for a noisy machine.

- (5) Procedures and measures to reduce worker exposure: for example, reducing exposure to noise by reducing the hours of work.
- (6) Procedures and measures to ensure the proper use of personal protective equipment as the last resort; for example, using hearing protectors for workers operating noisy machines.

(Code of practice on safety management, Section 5.11.5)

Audit Criteria

1. Auditor should verify with site management whether auditee has developed the safe working procedures/method statements/permit to work, etc. based on the results of the risk assessment.
2. The safe working procedures/ method statements should lay out a simple working procedure and sequence of operation for operatives involved in the task or operation.
3. A master list of all safe working procedures/ method statements should be submitted as evidence for verification.

Question 7.2.2

Weighting: 6

Is there a written specification of the control measures for each hazard, which includes work sequences, plant and equipment, protective clothing/equipment and training?

Audit Criteria

1. Auditor should verify the appropriateness of the work sequences and written control measures for major hazards. The safe working procedure/ method statements should be the results of risk assessment carried out for the task or operation. The critical control measures should be covered.
2. The required plant, equipment, personal protective equipment and safety training for the task or operation should be identified.

Question 7.2.3

Weighting: 6

Is there a written specification for managers, supervisors or the personnel responsible for ensuring the implementation of the control measures for each hazard?

Audit Criteria

1. Auditor should verify the safety responsibilities have been allocated to relevant staff.
2. Auditor should interview site personnel such as site supervisory staff, workers, etc.

to verify if they understand their role and responsibilities of the task or operation.

Question 7.2.4 **Weighting: 6**
Have the developed safe working procedures/method statements/permit to work been communicated to the relevant personnel?

Audit Criteria

1. Auditor should interview site personnel such as site supervisory staff, workers, etc. to verify if they understand the developed safe working procedures/ method statements/ permit to work.
2. Proof of communication for safety instructions and working procedures is needed such as induction training, specific training, refresher training and toolbox talk, etc.
3. On-site verification is necessary to assess whether critical risk control measures stated in risk assessment reports are strictly implemented on site.

Question 7.2.5 **Weighting: 6**
Is there an arrangement to review and update the safe working procedures/method statements/permit to work?

Audit Criteria

1. Auditor should verify safe working procedures/method statements/permit to work have been reviewed to assess their on-going effectiveness. All the working procedures should be reviewed if there has been a significant change in the matters to which they are related.
2. Apart from regular review, the safe working procedures/method statements/permit to work should be also reviewed if there was an accident happened or a suspension notice received from Labour Department. Otherwise, the answer should be “No”.

Section 8 Personal Protection Programme

Sub-section 8.1 Provision of Suitable Personal Protective Equipment

Question 8.1.1 **Weighting: 3**
Have all requirements for the provision of protective clothing/equipment been identified in the safety plan?

Legal Requirements

Personal protective equipment (PPE) includes the following:

Gloves, safety footwear, safety helmets, high visibility waistcoats, aprons, protective clothing for adverse weather conditions, eye protectors, hearing protectors, life-jackets,

respirators, breathing apparatus including those used underwater, and safety harness. (*Code of practice on safety management*, Section 5.6.2)

Audit Criteria

1. The personal protection programme (PPP) should be project specific. If the programme is modified from the corporate one, it should be stated so in the chapter on “Personal Protection Programme” in the safety plan and the project team should be well aware of it.
2. The project safety plan should specify the requirements for PPE. All requirement and contractual requirement for each PPE should be identified in the project safety plan.
3. A list of PPE standards should be submitted for verification. Auditor should verify the appropriateness of the listed requirements and PPE standards recommended. If not, the answer should be “No”.

Question 8.1.2

Weighting: 3

Is there an arrangement for the selection and procurement of appropriate protective clothing/equipment?

Legal Requirements

The contractor should determine what type of PPE is required, taking into consideration the legal requirements for specific situations, the intended use of the PPE, the manufacturer’s product standards, the design of the PPE (in line with the principle of ergonomics?), acceptability of PPE to its wearer and user, and, if used in conjunction with other PPE, the question of compatibility, etc. Certain respiratory protective equipment may impose significant physiological burdens to the users. The proprietor or contractor should ensure that the users are medically fit for using the PPE. (*Code of practice on safety management*, Section 5.6.2)

Audit Criteria

1. Arrangement includes the provision of safety information, written specifications, and related data.
2. Auditor should verify if the PPE used on site are conforming to suitable standards .If not, the answer should be “No”.
3. The identification and selection of PPE to be used in M&I contracts can take reference to corporate safety plan with due consideration of their applicability and suitability.
4. Contractor should provide each of the operatives and site supervisory staff (also

- includes all visitors) with safety helmets with ventilation vents and Y-type chin straps.
5. The Y-type chin strap shall be supplied by the same manufacturer of the safety helmet used and have a clear identification label, the manufacturer name, model number, and a proof that the safety helmet with the chin strap comply with BS EN397 or other current international and national standards recognized by Labour Department. If the manufacturer of safety helmet does not produce Y-type chin strap, then the manufacturer of safety helmet shall produce test certificate and test report issued by a BSI / CSA / or an approved third party accredited laboratory for compatible Y-type chin straps to demonstrate compliance with BS EN397.
 6. Provide each of operatives and ensure that each of them wear on site the following items:
 - Reflective vest (for operatives and site supervisory staff involved in lifting operation, roadworks outside site and controlling vehicular traffic);
 - Safety boots (except for bamboo scaffolders, plasterers and tilers.

Question 8.1.3

Weighting: 6

Has a sufficient stock of carefully selected and appropriate protective clothing/equipment been ensured?

Legal Requirements

The programme to provide PPE should include, but is not necessary limited to, the following: ...

- (3) Steps to ensure adequate supply of PPE, including replacement supply and spare parts. ...

(Code of practice on safety management, Section 5.6.2)

Audit Criteria

1. Sufficient stock of PPE is provided.
2. Auditor should verify the inventory management system for PPE, whether personal issue or job specific.
3. There are adequate and secure facilities provided for employees to store their personal protective clothing / equipment.

Question 8.1.4

Weighting: 6

Has an effective system for the issuance and recording of protective clothing / equipment been established?

Audit Criteria

1. Auditor should verify that there is an appropriate issuing facility to ensure all the PPE, e.g. safety harness and safety goggles, on the site with cleaning and maintenance capability.

Question 8.1.5

Weighting: 6

Has an effective system for the inspection of protective clothing / equipment and their replacement been established?

Audit Criteria

1. System includes inspection of items upon receipt, handling, storage and control of received PPE items, as well as recording of issuance and use of PPE.
2. Special attention shall be addressed to the guidelines in the inspection before use, maintenance procedures, proper storage techniques in accordance with the manufacturer's recommendations and instructions.

Question 8.1.6

Weighting: 6

Are there procedures to ensure the proper use of protective clothing/equipment and the provision of training and instruction?

Legal Requirements

The programme to provide PPE should include, but is not necessary limited to, the following: ...

- (5) Steps (including supervision) to ensure that workers make proper use of PPE.
- (6) Adequate training, information and instruction to ensure that workers make safe and proper use of PPE and can maintain it properly.

Maintenance should include, where appropriate, cleaning, disinfection, examination, replacement, repair and testing. The responsibility for carrying out maintenance should be clearly laid down, together with the details of the procedures to be followed and their frequency. Where appropriate, records of tests and examinations should also be kept.

Training, information and instruction should include:

- (a) an explanation of the risks present and why PPE is needed;
 - (b) the operation, performance and limitations of the PPE;
 - (c) instructions on the selection, use and storage of PPE;
 - (d) factors affecting the protection provided by the PPE;
 - (e) recognizing defects in the PPE and arrangements for reporting loss or defects;
- and

- (f) hand-on practice in putting on, wearing, removing, inspection, testing and maintenance of PPE. ...

(Code of practice on safety management, Section 5.6.2)

Audit Criteria

1. Auditor should verify there is procedure(s) to instruct, train and practice in use of PPEs.
2. Training should refer to the manufacturer's instruction and the importance of following them.
3. Ensure proper use of PPE through routine supervision and through monitoring via safety inspection.

Question 8.1.7

Weighting: 6

Are there appropriate steps taken to monitor the personal protective equipment brought into site including by sub-contractors or workers?

Legal Requirements

This includes the steps to monitor the effectiveness of the PPE during use by observing the actual protection provided by the PPE. The results of monitoring would be very useful in providing information for reviewing the selection of the PPE. *(Code of practice on safety management, Section 5.6.2)*

Audit Criteria

1. Auditor should verify there is procedure(s) to monitor PPEs in use.

Section 9

Accident / Incident Investigation

Sub-section 9.1

Develop Prompt Arrangement to Prevent Recurrence

Question 9.1.1

Weighting: 6

Is there a detailed procedure to ensure that all accidents, incidents and dangerous occurrences are promptly reported and recorded?

Legal Requirements

1. Report of accidents resulting in death or incapacity – Regulation 17, F&IU Regulations, Chapter 59A.
2. Reports of dangerous occurrences – Regulation 18, F&IU Regulations, Chapter 59A.
3. Employees' Compensation Regulations, Chapter 282A.

Audit Criteria

1. The accident/incident investigation should be project specific. If the investigation arrangement is modified from the corporate one, it should be stated so in the chapter on “Accident/Incident Investigation” in the safety plan and the project team should be well aware of it.
2. All accidents/ incidents and dangerous occurrence refer to ALL cases should be reported and recorded regardless of the level of severity.
3. Auditor should check the document such as the safety plan to find out whether a procedure is in place that can meet the criteria of prompt reporting and recording of accident and dangerous occurrence (including time frame). The detailed procedure should be able to ensure that all accidents and dangerous occurrences are promptly reported and recorded.
4. Auditors need to comment on “prompt” reporting and recording. It should be within a reasonable period of time. Incidents such as a serious accident should be immediately reported to site agent/project manager etc..
5. A reporting system should be developed with help of flowchart for easy understanding and communication. It should be displayed on site.
6. Auditor should also interview site personnel such as workers, foreman, etc. to verify the effectiveness of the procedure.
7. The answer should be “No” if there is any late reporting case(s) for accident, incident and dangerous occurrence.
8. There should be no “N/A” even though there is no accident. Auditor should verify the accident reporting procedures as well as verify with site personnel to ensure they understand the procedure. The answer should be “No” if there is no detailed procedure or the verification confirms procedure not effective.

Question 9.1.2

Weighting: 6

Is there a detailed procedure to ensure that all accidents, incidents and dangerous occurrences are promptly investigated?

Audit Criteria

1. All accidents/incidents and dangerous occurrence refer to ALL cases no matter it is serious or not.
2. Auditor should check the document such as the safety plan to find out whether a procedure is in place that can meet the criteria of prompt investigation of accident and dangerous occurrence (including time frame). The detailed procedure should be able to ensure all accidents and dangerous occurrences are promptly investigated.
3. Auditors need to comment on “prompt” investigation. It should be done within a

reasonable period of time. Incidents such as a serious accident should be immediately investigated by a team consists of Registered Safety Officer.

4. Prompt investigation with pledge in time frame should be laid down.
5. Auditor should also interview site personnel such as workers, foreman, etc. to verify the effectiveness of the procedure.
6. There should be no “N/A” even though there is no accident. Auditor should verify the accident reporting procedures and check with the relevant site personnel such as project manager/site agent (or personnel who is responsible for carrying out the investigation) to ensure they understand the procedure.
7. The answer should be “No” if there is (a) no detailed procedure; (b) not ALL accidents/dangerous occurrences investigated promptly; (c) the verification confirms procedure not effective.
8. Auditors may need to advise auditee whose safety plans committed only to prompt investigation of serious cases. This is considered generally a higher standard than the normal trade practice.

Question 9.1.3

Weighting: 3

Does the person responsible for accident /incident investigation and reporting receive formal training?

Legal Requirements

Investigations should be led by someone with the status and knowledge to make authoritative recommendations. Usually, this will be a line manager or a safety officer. However, if events have serious or potentially serious consequences, a safety and health consultant/advisor, a medical or nursing advisor, technical staff or equipment suppliers may be called in to provide assistance, and senior managers should be involved from the very beginning. Adequate training in relevant techniques should also be provided. (*Code of practice on safety management*, Section 5.7.1)

Audit Criteria

1. Auditor should verify the auditee has provided competent and well trained staff with clearly defined responsibilities for accident/incident investigation and reporting.
2. Auditee should assign trained personnel (at least completed a one-day (8 hours) accident investigation training course organized by OSHC or equivalent) to carry out accident/incident investigation.
3. Persons who have attended 27-hr “Safety Training Course for Site Management Staff” training course and Registered Safety Officer are considered as trained

personnel.

4. Simple incident can be done by individual but serious one should be done by a team consists of Registered Safety Officer.

Question 9.1.4**Weighting: 6**

Does the accident/incident investigation report cover at least the circumstance, causes of accident and recommendations for preventing the recurrence of accident/incident?

Legal Requirements

- (a) Details of the injured person, including age, sex, experience, training, etc.;
- (b) A description of the circumstances, including the place, time, and conditions at the scene;
- (c) The direct causes of injuries, ill health or other losses;
- (d) The underlying causes like failures in workplace precautions, safety procedures, risk control systems or management arrangements; and
- (e) Details of the outcome, including in particular:
 - (i) the nature of the outcome – examples are injuries, ill health, damage to property, process disruptions and creation of hazards;
 - (ii) the severity of the harm caused, including the seriousness of injuries, ill health and losses;
 - (iii) the immediate management response to the situation and its effectiveness. This involves the consideration of the following questions:
 - Has the situation been dealt with promptly?
 - Have the continuing risks been dealt with promptly and adequately?
 - Has the first-aid response been adequate?
 - Have emergency procedures been followed properly?
 - (iv) Recommendations to prevent the recurrence of the accident or incident.

(Code of practice on safety management, Section 5.7.2)

Audit Criteria

1. Auditor is required to comment on the whole accident report. If the number of accidents is too large, auditor can get the overall summary of the causes of the accidents before deciding which accident reports are sampled to be commented on. Generally, serious accidents such as fatal or dangerous occurrence (DO) should be the priority. Accidents that occur frequently should also be looked into. The comment could be purely based on the information of the accident report. Where necessary, verification with knowledgeable person will help in producing a

- desirable and acceptable recommendation.
2. A copy of the selected accident report(s) with related information (if any) should be submitted as evidence verification.
 3. If the recommendations on the report could not prevent the recurrence of similar accidents/incidents, the answer should be “No”. The answer could be “N/A” if there is no accident/ incident occurred.
 4. Even though the persons in-charge are generally considered competent based on their title/training certificate obtained, auditor still can comment on their competency based on the audit findings ending up with “non-conformity”.
 5. All accident/incident reports should be endorsed by Project in-charge. Relevant remedy action with responsible action party should be addressed with tentative rectified date.
 6. Standard accident/incident reporting forms (including mandatory Form 2 and DO Form) as well as statement of facts from witness should be developed serving as supporting evidence.

Question 9.1.5 **Weighting:** 6
Have prompt actions been taken on the basis of the results of the investigations?

Legal Requirements

The contractor should ensure that there is a mechanism for implementing, with priorities, the aforesaid recommendations to prevent recurrence of accidents/incidents. (*Code of practice on safety management*, Section 5.7.3)

Audit Criteria

1. Auditor should check the document such as the safety plan to find out whether there is a procedure that can meet the criteria for taking prompt actions on the basis of the results of the investigation.
2. Auditors need to comment on “prompt action”. It should be implemented within a reasonable period of time, and immediately in case of serious accident.
3. Auditor should also interview site personnel such as workers, foreman, etc. to verify the effectiveness of the procedure.
4. The answer could be “N/A” if there is no accident/ incident occurred.

Question 9.1.6 **Weighting:** 3
Is there an arrangement for ensuring the results of investigation and actions taken are notified to employees and, where appropriate, to clients, sub-contractors and suppliers?

Audit Criteria

1. After investigation, a report should be issued which details the cause of the accident or dangerous occurrences and sets out the measures to prevent recurrence. A standard form should be completed to enable them to prepare an up-to-date database on site accident statistics.
2. Safety officer should prepare a monthly report of all accidents involving dangerous occurrences, death or personal injury irrespective of severity or damages to properties in or adjacent to the site. The monthly report should be discussed in the site safety committee meeting.
3. A copy of accident report should be sent to the supervisors to keep them informed about the accident records of their departments.
4. The accident report will be released and posted on the bulletin board to draw the attention of employees on the following:
 - (a) no-injury records
 - (b) unusual accidents
 - (c) frequent causes of accidents
 - (d) charts showing reductions in accidents
 - (e) simple tables comparing departmental records
5. The agenda for the site safety meetings where employee/sub-contractor representatives are presented should also include discussion on the causes of accidents and the preventive measures.
6. Injured person or related personnel involved in the accident/incident should be informed of the result of investigation so that they can learn to prevent similar accident through morning briefing.
7. Brief facts of accident in form of “Safety Alert” should be published, posted/circulated within project sites as reminder and promotion.
8. Accident/incident cases, investigation results and trends should be reported to safety committee monthly for endorsement of accident prevention programme (if any).
9. There should be no ‘N/A’ even though there is no accident. Auditor should verify that the arrangement for ensuring the results of investigations and actions taken are notified to relevant parties as well as verify with site personnel to ensure that they understand the procedure. The answer should be ‘No’ if there is no detailed procedure or the verification confirms that the procedure is not effective.

Question 9.1.7

Weighting: 6

Is there an arrangement to analyse common causes and trends in accident/ incident

data as an aid to accident prevention?

Legal Requirements

It is essential that a proprietor or contractor of a relevant industrial undertaking should perform statistical analysis based on the information collected from the investigation of accidents and incidents. The analysis will enable the management to identify common causes, features and trends which may not be apparent from the investigation of an individual event. This in turn provides valuable information for the management to review the safety plan and formulate corresponding action programmes.

A safety officer or line manager will be able to assist the proprietor or contractor in statistical analysis. However, in highly specialized areas involving, for example, complicated health issues, the proprietor or contractor may seek advice from professionals, like occupational health experts, on the setting up of a data base, and on the analysis and interpretation of the information. (*Code of practice on safety management*, Section 5.7.4)

Audit Criteria

1. Maintaining accident statistics and performing trend analysis serve the purposes of identifying trends and developing action plans to prevent recurrences. The arrangement should include:
 - (a) The establishment of classifications of accident to group similar data for analysis.
 - (b) The application of statistical tools such as Occupational Injury Disease Surveillance System (OIDSS of OSHC) is recommended. Purely showing the trend of frequency and incident rate are not acceptable, as they did not serve the purpose.
 - (c) Examples are the use of histogram or bar chart to show that the frequency of a particular type of accident is increasing or decreasing in a period of time helps to identify the seriousness and to produce a control strategy.
 - (d) Use the analysis to provide objective support and justification for budget requests, training programs, or other management safety initiatives.
2. Trend analysis of accident/incident with causations should be done not less than half yearly as feedback for formulation of accident prevention programme.
3. There should be no “N/A” even though there is no accident. Auditor should verify that the arrangement for accident data analysis as well as verification with site personnel to ensure that they understand the procedure. The answer should be “No” if there is no detailed procedure or the verification confirms procedure not effective.

(Code of practice on safety management, Section 5.8.2)

Audit Criteria

1. Emergency preparedness is the speedy response to an incident that will result in serious consequence either fatalities, damages to plant and equipment and serious threats to environment or public and may raise public concern. It aims at reduction or confinement of loss with soon recovery for normal operation. It is normally developed based on risk assessment.
2. The emergency preparedness should be project specific. If the arrangement is modified from the corporate one, it should be stated so in the chapter on “Emergency Preparedness” in the safety plan and the project team should be well aware of it.
3. Auditor should verify the development of emergency plan is corresponding to the potential risks of the auditee.
4. Since majority of the work activities for M&I contracts are typical and generic risk assessment done at corporate level can be used as reference to develop project specific emergency preparedness. The potential emergency situations normally refer to those activities or conditions that will pose serious threat or arouse public attention. Typical situations identified are fire, electric shock and hazardous chemical spills, depending on the activities involved. As a start, the basic emergency plan should be at least include fire and incident/accident.

Question 10.1.2

Weighting: 3

Is there an emergency plan for an effective and prompt response to emergency situations that may affect the safety of the site?

Legal Requirements

Formulate safety plan and emergency plans with documented procedures on communication, traffic arrangements, evacuation route, safe shelters, first aid facilities and back up services. (*Guide on safety at work in times of inclement weather*, Labour Department and OSHC)

Audit Criteria

1. Auditor should verify the development of the plans on emergency situations.
2. An emergency situation means a situation requiring emergency assistance of fire services / police / ambulance etc. It includes:
 - An accident which results in death or serious injury;
 - A fire breaking out which requires rescue crews from Fire Services

- Department to effect control;
- A flood that cause or threatens life on site;
 - A leakage of dangerous goods or chemicals;
 - Any other accident/ incident which creates a dangerous situation.
3. Evacuation plans to be drawn for all areas. The procedures are to be reviewed and revised periodically, especially when the work-site configuration is altered or change in some way.
 4. Emergency procedures shall be prepared for all identified emergency situations.

Question 10.1.3 **Weighting: 6**
Are emergency services' locations, telephone numbers and designated personnel listed and displayed prominently?

Audit Criteria

1. Auditor should verify the development of emergency plan including the necessary interface with emergency services (both internal and external).
2. For lift maintenance works, the practice of carrying a handbook with this information will be acceptable as fulfilling the audit criteria.

Question 10.1.4 **Weighting: 6**
Are qualified first aiders, first aid facilities and equipment adequate and maintained to legal and contractual requirements?

Audit Criteria

1. Auditor should verify the emergency medical treatment and first aid.

Question 10.1.5 **Weighting: 6**
Have an emergency team established to respond to emergency situations and emergency team members been suitably trained on emergency evacuation, fire prevention and fighting etc.?

Audit Criteria

1. Auditor should verify the emergency team's personnel roles, lines of authority and communication corresponding to emergency situations of auditee.
2. Auditor should verify and comment on the training of emergency team members.
3. Participation of emergency drill should not be considered as formal training for emergency team member.

Question 10.1.6 **Weighting: 3**
Is there a programme of drills and exercise for all emergency situations?

Audit Criteria

1. A fire drill (half yearly) and an accident drill (half yearly) should be conducted.
2. Emergency drill for other identified emergency situation(s) should be conducted at least annually.
3. Auditor should comment on the adequacy of the programme to cover all emergency situations specified in Q10.1.2.

Question 10.1.7 **Weighting: 6**
Have the drills and exercises for all emergency situations been conducted and evaluation reports prepared in accordance with the programme?

Audit Criteria

1. A fire drill (half yearly) and an accident drill (half yearly) should be conducted.
2. Emergency drill for other identified emergency situation(s) should be conducted at least annually.
3. Check records of drills and verify with workers or staff on site.
4. Comment on the effectiveness of the drills is necessary.
5. Weaknesses uncovered during drills of the emergency are quickly corrected.

Section 11 Safety Promotion

Sub-section 11.1 Promotion, Development And Maintenance of OSH Awareness

Question 11.1.1 **Weighting: 3**
Is there a plan for safety award/incentive schemes, poster displays, safety statistics displays, etc. to extend over the life of the project?

Audit Criteria

Safety promotion is a continuous programme that reinforces the safety awareness and safety attitude of site staff; which helps to develop safety culture. The safety promotion should be project specific. If the arrangement is modified from the corporate one, it should be stated so in the chapter on “Safety Promotion” in the safety plan and the project team should be well aware of it.

1. Various safety promotion programmes can be developed and implemented according to the resources. Safety promotion programmes that require less resources include (not exhaustive):
 - Posting up of safety posters

- Safety quizzes on site bulletin that may make reference to OSHC safe quiz book or encourage participation to safety quiz on Construction Industry Committee Safety Bulletin published by OSHC.
 - OSHC video broadcasting
 - Safety Worker/Staff award
2. Relevant safety posters, leaflets and publication should be available for display or distribution on site.
 3. Annual safety promotion programmes should be planned and passed in safety committee.

Question 11.1.2

Weighting: 6

Is a “P” & “N” Caring programme used to strengthen work safety for new entrants of the construction industry and newcomers to the construction site?

Guidelines on The Implementation of “P” and “N” Caring Programme, Construction Industry Council

Main contractor shall observe the measures and arrangement below when implementing the “P” and “N” Caring Programme.

- (a) Probationer and newcomer have different work experience and needs such that they are identified with the “P” and “N” labels for providing care to meet their needs.
- (b) As a “P” worker (i.e. probationer) generally has less than half year of construction work experience, main contractor shall assign a mentor (also known as supervisor) to strengthen the care for them. The proposed ratio of mentor to probationer can be 1:4. Main contractor shall provide a “P” worker with basic induction safety training, as well as safety training in relation to the site environment and the code of practice. Meanwhile, the caring period of a “P” worker shall be no less than 3 to 6 months.
- (c) As a “N” worker (i.e. newcomer of a construction site) generally possesses some knowledge of the construction industry, main contractor shall specifically strengthen the safety training in relation to that site environment and the code of practice. The caring period of a “N” worker shall be no less than 2 weeks to 1 month.
- (d) Before taking the “Safety Induction Training in Construction Site”, a worker must declare his/her construction work experience for identification purposes. Upon completing safety training, the worker will be given a “P” or “N” label with issue date, name and phone number of the mentor (applicable to “P” worker only) for affixing to the prominent position of the safety helmet.
- (e) During the caring period, safety personnel of the main contractor, site supervisor and person-in-charge of the subcontractor will be responsible for assessing the new worker, and the “P” worker will also be assessed by their mentor.

- (f) Upon expiration of the caring period, all new workers are required to meet the person-in-charge of the construction site and their mentor for assessment. The assessment includes safety knowledge, safety performance, safety awareness and safety behavior. The assessment will take the following safety items into consideration, including:-
 - i. if the worker uses appropriate personal protective equipment (PPE) at work;
 - ii. if the worker complies with relevant safety regulations at work; and
 - iii. if the worker has done any acts which endanger himself/herself or others.
- (g) If a worker has not violated any of the abovementioned safety items during the caring period, the “P” or “N” label can be removed by the safety personnel of the main contractor on the expiry date of the caring period.
- (h) If a worker has violated any of the abovementioned safety items for three times or more during the caring period, that worker has to attend safety training to enhance his/her safety awareness, and his/her care period will be extended for 7 working days to 2 weeks (applicable to “N” worker) or for 1 month to 3 months (applicable to “P” worker).
- (i) If a “P” or “N” worker has not violated any of the abovementioned safety items during the extension period, the “P” or “N” label can be removed by the safety personnel of the main contractor on the expiry date of the caring period. Otherwise, main contractor shall consider taking appropriate actions such as strengthening safety training and supervision, and closely monitor safety performance of that particular worker.

On the day of reporting duty, all new workers must attend the “Safety Induction Training in Construction Site”. The content includes fundamentals of construction site safety, method statements, and the safety issues to be addressed in construction site (Refer to guidelines for details).

Apart from the above, main contractor shall also consider arranging onsite tour and training for new workers on a regular basis (Refer to guidelines for details).

Main contractor shall arrange trade-related safety training according to the work category of workers. The Form 2 (attached in the guidelines) is a sample of safety training attendance record for easy reference.

Audit Criteria

1. Auditor should verify the implementation of the programme.
2. On-site verification is necessary for sampled workers met on site.
3. A register of “P” and “N” worker should be maintained and updated regularly. The register should at least include the name of workers, the date of worker commencing

work on site, the working experience of workers and status of workers (“P” and “N”).

Question 11.1.3 **Weighting: 6**
Have safety contest awards or recognition for good safety performance of individual and sub-contractors been conducted regularly?

Legal Requirements

Safety promotion programmes should have clearly defined objectives. They require very careful thought and consideration if the maximum benefit is to be obtained. The proprietor or contractor should develop, as part of a safety promotion programme, a procedure to recognize and acknowledge good safety performance either by individuals, teams, sections, departments or the organisation. He should appoint a coordinator for the programme to ensure its smooth implementation. (*Code of practice on safety management*, Section 5.12.1)

Audit Criteria

1. “Safety Worker/Staff & Sub-contractor” Award promotion programme should be conducted monthly.
2. The award should have some forms of recognition of the safety performance of the staff either in cash coupon, trophy, certificate, or the like.
3. A simple presentation ceremony of the award is also accepted as part of the safety promotion programme. It can be held before the monthly safety committee meeting, during morning briefing, or on similar occasions.
4. There should be a venue, an event or an occasion that specified in the safety plan to present the safety contest awards or recognition for good safety performance of individual and sub-contractor.

Question 11.1.4 **Weighting: 6**
Are up-to-date accident statistics, safety signs and posters displayed?

Audit Criteria

1. Auditor should verify the correctness of accident statistics, the appropriateness of safety signs and posters displayed.
2. The content of the safety posters, safety quiz and video will depend on the concern of safety arising from progress of work activities, frequently observed non-conformity; incidents or accidents happened on site or other projects, etc. Safety quiz should be encouraged.

Question 11.1.5 **Weighting: 6**
Does the organisation publish a bulletin or newsletter which includes material related to occupational safety and health of the organisation?

Audit Criteria

1. Auditor should verify and comment the published bulletin or newsletter did cover the occupational safety and health issues.
2. Auditor should comment on the quality of the published bulletin or newsletter. A photo-copy of other resources is not acceptable.

Question 11.1.6 **Weighting: 3**
Are workers provided with appropriate masks with high protection level and high breathability?

Audit Criteria

1. It is strenuous for workers to wear a mask for extended periods of time. Therefore, apart from the protection level of face masks, their breathability and comfortability also matters to users. Delta P (i.e. Differential Pressure) is the measurement value of mask breathability, which reflects its airflow resistance. The higher the value of Delta P, the higher the air flow resistance of a mask.
2. The masks provided to workers shall comply with the following requirement:
 - High protection level such as ASTM Level 3 or equivalent;
 - Low Delta P ($\Delta P \leq 3$).
3. Purchasing record such as receipt should be submitted as documentary evidence.
4. Verification is necessary for sampled workers met on site. The answer should be “Yes” if at least 90% of random sampled workers are provided with appropriate masks. Otherwise, the answer should be “N/A” since this is not a compulsory item.

Question 11.1.7 **Weighting: 3**
Has Rapid Demountable Platform been used for working at external wall?

Audit Criteria

1. Rapid Demountable Platform (RDP) - RDP provides another rapid and safe option for working at height. RDP is designed to provide a safer option of working platform for using in external wall renovation, maintenance, Alternation and Addition (RMAA) works
2. The approved method statement, risk assessment and calculation shall be submitted

- as documentary evidence.
3. The answer should be “Yes” if RDP has been used to provide a safe working platform for working at external wall within audit period. Otherwise, the answer should be “N/A” since this is not a compulsory item. Auditor should collect sufficient photo and documentary record as supporting evidence.
 4. This question is not applicable for lift maintenance contract, civil engineering improvement works contract, slope maintenance term contract and term contract for monitoring and maintenance of ground anchors and horizontal drains, the answer should be “N/A”.

Question 11.1.8 **Weighting:** 3
Has virtual reality training kit been adopted as part of safety training for this project?

Audit Criteria

1. Virtual Reality (VR) Training Kit for safety training - Provide VR safety training to workers as a part of tool-box training. The VR training shall be attended by workers who are working on the site and engaged in activities relevant to the topic of that training. In providing the VR safety training, first priority should be given to high-risk activities, such as lifting operation, working at height.
2. The answer should be “Yes” if VR safety trainings have been provided to at least half of the workers within the audit period (Reference should be made to GF 527). Otherwise, the answer should be “N/A” since this is not a compulsory item. Auditor should collect sufficient photo and documentary record as supporting evidence.

Question 11.1.9 **Weighting:** 3
Has “Smart Safety Helmet” been used to enhance site safety for this project?

Audit Criteria

1. “Smart Safety Helmet” - “Smart Safety Helmet” is a sensors-embedded helmet that can help monitor the user’s health, safety, and location on site. The helmet should be able to monitor user’s body temperature, heart rate, real-time location and provide fall detection.
2. The answer should be “Yes” if all workers for a particular group such as workers working in lift shaft are provided with “Smart Safety Helmet” for monitoring purpose. Otherwise, the answer should be “N/A” since this is not a compulsory item. Auditor should collect sufficient photo and documentary record as supporting evidence.

Sub-section 11.2 Promotion of Safety and Health Caring Culture

Question 11.2.1 **Weighting: 3**

Have activities for health promotion been organised to promote a proactive safety and health caring culture?

Audit Criteria

1. The auditee should organise a series of health promotional activities which at least include a body check programme and two optional activities in relation to health promotion.
2. The body check programme should at least include measuring Body mass index (BMI) and blood pressure. It is not necessary for contractor to record the corresponding measurements. The body checking is not compulsory to be conducted by contractor's staff and it is acceptable for contractor to set up a self-checking health station for workers. However, relevant usage records such as log book or photo record should be kept as evidence.
3. At least two types of following optional activities should be conducted:
 - a. Heat stroke preventive activity;
 - b. Smoking cessation activity;
 - c. Health talk/ workshop;
 - d. Distributing healthy food/ products such as "Fruit Day".
4. The health promotional activities should be conducted at least quarterly.
5. At least half of the workers in a project should participate in the activities and the number of participants for each activity should not be less than 20.
6. There should be an arrangement in assessing and evaluating the effectiveness of the event organised. A questionnaire should be designed to collect feedback from participants as the feedbacks are essential for reviewing the events.
7. Auditor should verify if the health promotional activities were organized regularly and sufficient workers were involved in those activities. The answer should be "No" if the activities do not fulfill the requirement on coverage and frequency.
8. This question is not applicable for lift maintenance contract, civil engineering improvement works contract, slope maintenance term contract and term contract for monitoring and maintenance of ground anchors and horizontal drains, the answer should be "N/A".

Question 11.2.2 **Weighting: 3**

Has a representative been appointed to promote a proactive safety and health

caring culture?

Audit Criteria

1. At least one of following activities should be conducted:
 - a. “Good Deeds” Programme;
 - b. Regular gathering with caring ambassador.
2. The “Good Deeds” promotion aims at a tactic linking positive personal achievement with caring culture among peers on site. For example, an election for voting the most supporting person who actively care other person in the project could be organised.
3. The appointed representative(s) should encourage workers positively through active caring by a “top-down” approach. Regular meeting/ gathering with workers should be organized. During the meeting/ gathering, the appointed representative(s) should actively care workers as well to share safety and health information to workers. For example, auditee can appoint a front line supervisor as a caring ambassador for the project. The caring ambassador is required to communicate with workers during meeting/ gathering on a regular basis.
4. The activities should be conducted at least quarterly.
5. At least half of the workers in a project should participate in the activities and the number of participants for each activity should not be less than 20.
6. There should be an arrangement in assessing and evaluating the effectiveness of the event organised. A questionnaire should be designed to collect feedback from participants as the feedbacks are essential for reviewing the activities.
7. Auditor should verify if the caring ambassador promotional activities were organized regularly and sufficient workers were involved in those activities. The answer should be “No” if the activities do not fulfill the requirement on coverage and frequency.
8. This question is not applicable for lift maintenance contract, civil engineering improvement works contract, slope maintenance term contract and term contract for monitoring and maintenance of ground anchors and horizontal drains, the answer should be “N/A”.

Question 11.2.3

Weighting: 3

Has a “Caring Tree” promotional activity been conducted in daily basis to promote a proactive safety and health caring culture?

Audit Criteria

1. There should be a designated place such as a notice board for posting message from

- workers' family members.
2. The messages should include positive caring words, such as family's wishes like “平安回家”. Date and worker's name should be included for identification. Irrelevant messages or photos should not be posted.
 3. Workers are required to post those messages before commencement of work and take it back after work every day.
 4. At least half of the workers in a project should participate in the caring tree promotional activity and the number of participants for the activity should not be less than 20.
 5. There should be an arrangement in assessing and evaluating the effectiveness of the event. A questionnaire should be designed to collect feedback from participants as the feedbacks are essential for reviewing the activities.
 6. Auditor should verify if the “Caring Tree” promotional activity was organized regularly and sufficient workers were involved in the activity. Otherwise, the answer should be “N/A” since this is not a compulsory item. Auditor should collect sufficient photo or training record as evidence.
 7. This question is not applicable for lift maintenance contract, civil engineering improvement works contract, slope maintenance term contract and term contract for monitoring and maintenance of ground anchors and horizontal drains, the answer should be “N/A”.

Question 11.2.4

Weighting: 3

Has a promotional activity involving participation of workers' family members been conducted?

Audit Criteria

1. Auditor should verify if additional activities with family members' involvement, such as “Family Fun Day” were organised to encourage the participation of workers' family members.
2. Major construction industry event which organised by the government/ OSHC/ CIC would also be considered. For example, Construction Safety Week Carnival and Fun day of the Construction Industry Safety Award Scheme Award Presentation Ceremony. Both construction practitioners and their family members should take part in the event.
3. The family caring activities should be conducted at least half yearly.
4. At least 20 workers who participated with their family member(s) and at least one site management staff should be involved in the event.
5. There should be an arrangement in assessing and evaluating the effectiveness of the

event. A questionnaire should be designed to collect feedback from participants as the feedbacks are essential for reviewing the activities.

6. The answer should be “Yes” if auditee organized activities which fulfil the requirement on coverage and frequency. Otherwise, the answer should be “N/A” since this is not a compulsory item. Auditor should collect sufficient photo or training record as evidence.
7. This question is not applicable for lift maintenance contract, civil engineering improvement works contract, slope maintenance term contract and term contract for monitoring and maintenance of ground anchors and horizontal drains, the answer should be “N/A”.

Question 11.2.5

Weighting: 3

Has a promotional activity in relation to physical fitness promotion been organised to promote a proactive safety and health caring culture?

Audit Criteria

1. Auditor should verify if at least one of the following additional activities in relation to physical fitness promotion is organised.
 - (a) “Eight brocade” course or other equivalent fitness course
 - (b) Daily pre-work exercise
2. The physical fitness promotional activities should be conducted at least quarterly.
3. The fitness course should be provided by qualified trainer.
4. Daily Pre-work Exercise & Safety (PES) meeting would also be considered. Auditee should arrange and hold the PES meeting of about 10 to 15 minutes. The PES meeting shall be led by front-line supervisor or above, who has attended the training course on Safe Working Cycle of OSHC or CIC or other equivalent course. 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.
5. At least half of workers in a project should participate in the activities and the number of participants for the activity should not be less than 20.
6. There should be an arrangement in assessing and evaluating the effectiveness of the event organised. A questionnaire should be designed to collect feedback from participants as the feedbacks are essential for reviewing the activities.
7. The answer should be “Yes” if auditee organized activities which fulfil the requirement on coverage and frequency. Otherwise, the answer should be “N/A” since this is not a compulsory item. Auditor should collect sufficient photo or

training record as evidence.

8. This question is not applicable for lift maintenance contract, civil engineering improvement works contract, slope maintenance term contract and term contract for monitoring and maintenance of ground anchors and horizontal drains, the answer should be “N/A”.

Question 11.2.6

Weighting: 3

Has a promotional activity in other aspect(s) been organised to promote a proactive safety and health caring culture?

Audit Criteria

1. Auditor should verify if additional activities in other aspect(s) were organised such as safety climate index survey. The activities should serve the purpose in promoting a proactive safety and health caring culture in the project.
2. For safety climate index survey, auditee should conduct the survey half yearly and identify aspects which need further improvement. More than half workers should be included in the survey. Auditee could refer to the guidebook “Construction Industry Safety Climate Index Software” of OSHC for detail. Auditor should collect and comment the SCI survey report and improvement action plan.
3. For other activities, at least half of the workers in a project should participate in the activities and the activities should be conducted at least quarterly.
4. The promotional activities specified in question 11.2.1-11.2.5 should not be considered in this question.
5. The answer should be “Yes” if auditee organised any promotional activity which is not included in question 11.2.1-11.2.5. Otherwise, the answer should be “N/A” since this is not a compulsory item.
6. This question is not applicable for lift maintenance contract, civil engineering improvement works contract, slope maintenance term contract and term contract for monitoring and maintenance of ground anchors and horizontal drains, the answer should be “N/A”.

Section 12 Health Assurance Programme

Sub-section 12.1 Assessment and Control of Substances Hazardous to Health

Question 12.1.1

Weighting: 3

Have all substances hazardous to health which are used, or likely to be encountered, been identified and assessed?

Legal Requirements

Hazardous chemicals which

- if inhaled can cause asthma, bronchitis or cancer;
- if swallowed can cause poisoning; and
- if spilt onto the skin or splashed into the eyes can cause dermatitis or severe irritation.

(Code of practice on safety management, Section 5.14.1(1))

Audit Criteria

1. The health assurance programme (HAP) is health risk assessment taken to protect site personnel from occupational health hazards. The process of HAP involves the risk assessment of potential risky operations or activities. It helps to prioritize the high risk items with relevant control measures. Since majority of the work activities for M & I contracts are typical and generic health risk assessment is usually done at corporate level can be used as reference to develop project specific HAP.
2. Auditor to verify auditee did conduct identification step which involve systematic consideration of the factors producing exposure of a person to substances hazardous to health.
3. Health risks assessment should include the following elements:
 - consideration of the nature and properties of the substances, the possible health effects, the likelihood of exposure and the consequence of excessive exposures;
 - consideration of the factors contributing to the exposures such as work processes, duration and engineering controls and systems for controlling potential exposures;
 - determination of the extent and potential exposures;
 - comparison to the occupational exposure limits (OELs) of the substances where available; and
 - conclusion on the health risks, the adequacy of existing control measures and the necessary remedial measures.

Question 12.1.2

Weighting: 3

Are there appropriate measures taken to control the risks of health hazardous substances used or encountered in the work been introduced?

Legal Requirements

When risks have been analyzed and assessed, decisions about the precautions against occupational health hazards can be made. All final decisions about safety procedures and risk control methods should take into account the relevant legal requirements which

establish minimum standards for risk prevention or control.

The following is a summary of the safety procedures and risk control measures in descending order of priority:

- (1) Elimination of risks by substituting the hazardous substances or processes with non-hazardous or less hazardous ones.
- (2) Combat of risks at source by means of engineering controls. Examples are:
 - (a) to separate the operator from the risk of exposure to a known hazardous substance by enclosing the process; and
 - (b) to design process machinery and work activities in such a way as to minimize the release of, or to contain, airborne hazards.
- (3) Minimization of risk by means of:
 - (a) administrative control measures, such as a permit-to-work system; and
 - (b) personal protective equipment as a last resort.

(Code of practice on safety management, Section 5.14.3)

There should be a critical appraisal of all routine and non-routine business activities. In the simplest cases, hazards can be identified by observation and by reference to the relevant information include:

- (a) legislation and supporting codes of practice;
- (b) information and advice from suppliers of equipment, chemicals and other materials used at work;
- (c) international standards;
- (d) industry or trade association guidance;
- (e) the personal knowledge and experience of managers and workers;
- (f) accident, ill health and incident data;
- (g) expert advice and opinion; and
- (h) findings of research.

In more complex cases, measurements such as air sampling may be necessary to identify the presence of health hazards. The assistance of occupational hygienists, occupational physicians and occupational health nurses should be enlisted if necessary. In the most complex cases, special hazard analysis techniques such as hazard and operability studies and fault tree analysis should be used. Specialist advice is needed in choosing and applying the most appropriate method.

(Code of practice on safety management, Section 5.14.1)

A system such as pre-employment and medical examination programme should be implemented for monitoring the exposure of workers to substances which are hazardous to health. The primary objective of health surveillance is to detect adverse health effects

at an early stage, thereby enabling further harm to be prevented. In addition, the results of health surveillance can provide a means of:

- (a) checking the effectiveness of control measures;
- (b) providing feedback on the accuracy of the risk assessment; and
- (c) identifying and protecting individuals from increased risk.

The contractor should arrange health surveillance and medical checks for workers, such as those working with carcinogenic substances, with asbestos, in compressed air, or underground in accordance with relevant legal requirements. If a worker is found to be suffering from an occupational disease, the proprietor or contractor should take steps to prevent him from further exposure to the substance or agent causing the disease by, for example, transferring him to another job in the industrial undertaking. He should review the health protection programme to identify the deficiencies and take measures to rectify them.

(Code of Practice on Safety Management Section 5.14.6)

Audit Criteria

1. Auditor should verify the risk control measures followed the hierarchy of control. i.e. elimination of risk, combat of risks and minimization of risk.
2. Pre-employment examination and medical examination would be confined to those trades that are required to have examinations under the law. Auditor should verify there is such a system existed if required.

Question 12.1.3

Weighting: 3

Have procedures been established to ensure that control measures are implemented and that all equipment is properly maintained?

Audit Criteria

1. Auditor should verify there are procedures to ensure that control measures stated in health risk assessment are properly implemented and all equipment are properly maintained. If no such procedures were developed, the answer should be “No”.
2. Exposures should be measured by using suitable sampling strategies, methodologies, equipment and procedures to obtain correct and accurate results.

Sub-section 12.2 Sprains, Strains and Pains

Question 12.2.1

Weighting: 3

Have risk assessments for all manual handling operations been carried out by competent person?

Legal Requirements

A responsible person is required to appoint competent persons to assist in the implementation of preventive and protective measures if 10 or more employees are normally employed to carry out hazardous manual handling operations on the premises.

- (a) Make a preliminary risk assessment of a manual handling operation before it is first undertaken at that workplace.
- (b) Perform a further risk assessment of a manual handling operation if (a) the preliminary assessment reveals that it may create safety and health risks and (b) where the operation is unavoidable.

(A Guide to Part VII of the Occupational Safety and Health Regulation (Manual Handling Operations), Section 4)

Audit Criteria

1. A manual handling operation takes place every time a load is moved or supported by a person's hands or arms, or by some other forms of bodily effort. It includes lifting, lowering, pushing, pulling and carrying the load. Typical manual handling operation, including but not limited to cement, drain cover, ropes and counterweights, etc., should be assessed.
2. Auditor should verify the competency of the person (Certificate of competence in manual handling operations issued by OSHC or other appropriate institutes or authorities) and appointed by contractor or employer that he had the ability to do the job properly. Competency includes proper training and experience.
3. Auditor should verify the quality of the manual handling operations risk assessment reports.

Question 12.2.2

Weighting: 3

Where materials must be handled manually, are workers properly selected to perform those tasks according to their respective capabilities?

Legal Requirements

In the allocation of work tasks, an employer should assess the capabilities of individual employees to perform the manual handling operations without causing safety and health risks to themselves and other persons. The tasks should be assigned only to employees who have been assessed to be capable of performing the jobs.

(A Guide to Part VII of the Occupational Safety and Health Regulation (Manual Handling Operations), Section 6)

Audit Criteria

1. Auditor should verify whether auditee had taken into consideration any report or concern raised by employee about his health which may not fit for manual handling operations on the day of work, such as physical injuries, symptoms of musculoskeletal disorders, e.g. aches and pains in the back, shoulders, arms, wrists or hands, pregnancy or health problems e.g. hernia, record of major injury or surgical operations.
2. Auditor should verify the proper trainings provided to employees.

Question 12.2.3

Weighting: 3

Are workers provided with appropriate personal protective clothing/equipment for manual handling operations and are they used properly?

Legal Requirements

When carrying out hazardous manual handling operations, employees should follow the safe system of work and work practices, and use any mechanical aid or device and protective equipment provided to them. They should also take reasonable care for the safety and health of other persons at the workplaces when such operations are being undertaken.

(A Guide to Part VII of the Occupational Safety and Health Regulation (Manual Handling Operations), Section 7)

Audit Criteria

1. Auditor should comment on the personal protective equipment provided to workers even when no operation was being carried out during the physical verification.

Sub-section 12.3 Noise

Question 12.3.1

Weighting: 3

Has noise assessment been carried out by a competent person to determine which machines, combinations of machines or work processes including ambient noise, are likely to expose workers to noise levels of 85 dBA or more?

Legal Requirements

The Regulation requires the proprietor to take certain basic steps where an employee is likely to be exposed to noise at or above the First Action Level. These, together with additional action, must also be taken where an employee is likely to be exposed to noise at or above the Second or Peak Action Level.

(A Guide to the Factories and Industrial Undertakings (Noise at Work) Regulation)

Auditor Criteria

1. Noise assessment should find out whether the noise exposure is likely to reach the ‘action levels’, and provide enough information about the noise in order to decide what action to take.
2. The noise assessment is done by a competent person (Certificate of Competence in Workplace Noise Assessment or equivalent courses specified in Guidance Notes on Appointment of Competent Persons for Noise Assessment at Workplaces) and appointed by the contractor or employer that he has the ability to do the job properly.
3. Auditor should verify the quality of the noise assessment reports.

Question 12.3.2

Weighting: 3

Where noise levels may lead to the risk of deafness, is there a system implemented to reduce the emission or exposure to noise by planning work, changing machinery or taking appropriate steps to reduce the need for people to work in high noise levels?

Legal Requirements

Reduce noise exposure as far as is practicable by means other than ear protectors.

The Regulation requires the proprietor to take certain basic steps where an employee is likely to be exposed to noise at or above the First Action Level. These, together with additional action, must also be taken where an employee is likely to be exposed to noise at or above the Second or Peak Action Level.

(A Guide to the Factories and Industrial Undertakings (Noise at Work) Regulation)

Auditor Criteria

1. Auditor should verify the existing of such a system and procedure and also comment on the effectiveness of noise reduction plan, changes or steps.
2. The hierarchy of control measures are:
 - Elimination of hazards
 - Substitution by alternative tools or machines – e.g. the use or replacement with Quality Powered Mechanical Equipment (QPME)
 - Engineering control measures – e.g., enclosure, isolation
 - Administrative measures – e.g., regular repair and maintenance, job rotation and appropriate rest breaks
 - Personal protective equipment

Question 12.3.3 **Weighting: 3**
Where noise levels may lead to the risk of deafness, or where noise may create a nuisance, are approved hearing protection selected and issued to employees ?

Legal Requirements

The Regulation requires the proprietor to take certain basic steps where an employee is likely to be exposed to noise at or above the First Action Level. These, together with additional action, must also be taken where an employee is likely to be exposed to noise at or above the Second or Peak Action Level.

Ear protectors

- Ensure as far as is practicable that suitable approved ear protectors are:
 - provided to employees who ask for them
 - provided to all exposed
 - properly maintained
 - used by all exposed
- Ensure all operatives within the specified distance wear suitable approved ear protectors
- Ensure as far as is practicable that all go into an ear protection zone wear suitable approved ear protectors

(A Guide to the Factories and Industrial Undertakings (Noise at Work) Regulation)

Audit Criteria

1. Auditor should verify the suitability of the approved type ear protectors.

Question 12.3.4 **Weighting: 3**
Is there an arrangement for identification of noisy operations/machines and marking out high noise level zones?

Legal Requirements

Provision of information to employees

- Provide adequate information, instruction and training about risks to hearing, what employees should do to minimize risk, and their obligations
- Mark ear protection zones with notices, as far as is practicable
- Specify the distance for noisy machine within which suitable approved ear protectors have to be worn

On construction sites and in places where it is not practicable to make ear protection zones, for example, where noisy machines are moved about frequently from time to time,

by attaching a warning label or sign to ensure that the operatives wear suitable approved ear protectors when they are within the ‘specified distance’.

(A Guide to the Factories and Industrial Undertakings (Noise at Work) Regulation)

Audit Criteria

1. Auditor should verify the arrangement.

Sub-section 12.4 Other Occupational Health

Question 12.4.1

Weighting: 3

Is a suitable assessment of the risk of heat stress or/ and cold weather to workers properly conducted?

Guidance

Identify risks that may affect site personnel, assess their likelihood of occurrence and their possible consequences taking into account all relevant factors, including –

- (a) the capability, skill, experience and age of persons doing the work;
- (b) the nature and location of construction operations;
- (c) the work practices;
- (d) the anticipated durations of working;
- (e) the type of plant, machinery and equipment to be used;
- (f) findings of inspection of the workplace and direct observation of similar construction works;
- (g) discussion with workers;
- (h) records of accidents and “near misses”;
literature and advice provided by equipment and material suppliers;
- (j) relevant legislations and related codes of practice, international standards and guidelines issued by industry organisations; and
- (k) relevant research findings.

(Guidelines on site safety measure for working in hot weather, Construction Industry Council)

Audit Criteria

1. Auditor should verify the risk assessment on heat stress (use of heat stress checklist published by Labour Department or Construction Industry Council) and cold weather.

Question 12.4.2

Weighting: 3

Are effective measures taken based on the results of heat stress or/ and cold weather risk assessment?

Guidance

The risks identified should be summarized in the form of list containing the following details to facilitate development of a safety plan –

- (a) the nature of the risks;
- (b) the locations where they will be encountered;
- (c) factors giving rise to the risks; and
- (d) personnel which will be affected.

(Guidelines on site safety measure for working in hot weather, Construction Industry Council)

Health guide for working in cold weather

- take heed of weather report and remind employees to wear appropriate warm clothing at work
- Reschedule outdoor work or work in remote areas to warmer periods in daytime
- Make arrangements for employees to rotate from outdoor to indoor or sheltered worksites within shift, where practicable
- Inform the workers of the necessary precautions to be taken
- Provide hot drinking water or other beverages for employees; and
- Provide employees working alone in remote areas with effective communication or other suitable measures for calling in case of emergency.

Audit Criteria

1. Measures should cover the assessment of workers working in or near heat-generating machinery and poor ventilated areas/working in cold weather.
2. Measures should cover provision of drinking water, provision of sheltered resting place. Outdoor workers should be provided with protection in adverse weather conditions, for example sunshades, sheds, caravans, tents and windbreaks. Protection against solar ultraviolet (UV) exposure is also important, for example by:
 - organising outdoor work so that workers carry out alternative tasks or work in shade during hot periods of the day
 - providing personal protective clothing and equipment, such as a wide brim hat, long sleeved and collared shirt, long pants, sunglasses and sunscreen, and hard hat attachments

3. Other measures like lower workload or shorter working times, clothing, etc.

Question 12.4.3 **Weighting: 3**
Is there adequate provision and proper maintenance of storage facilities for personal property, drinking water and eating & resting areas?

Legal Requirements

Occupational Safety And Health Regulation – Workplace to be provided with sanitary conveniences, etc.

The person responsible for a workplace must ensure that the workplace is provided with sufficient and suitable latrine and washing conveniences and, where persons of both sexes are or are intended to be employed, such conveniences shall afford proper separate accommodation for persons of each sex. Any latrine or washing convenience which does not comply with the provisions of the Buildings Ordinance (Cap 123) shall be deemed not to be sufficient and suitable for the purposes of this section.

Occupational Safety And Health Regulation – Employees to be provided with adequate supplies of drinking water

The person responsible for a workplace must ensure that sufficient potable water is provided at the workplace for the consumption by employees who are employed there.

Audit Criteria

1. Auditor should base on contractual obligations pertaining to the provision of toilet and washing facilities and the site situation should be taken into account when making recommendations.
2. Secure facilities at the work site for changing working clothes and separate changing facilities for male and female workers.
3. Auditor should base on contractual requirement on provision for eating and rest area facilities if any and site situation to make recommendation.
4. Auditor should verify the adequacy of provision of drinking water.

Section 13 Evaluation, Selection and Control of Sub-contractors

Sub-section 13.1 Evaluation and Selection Strategy

Question 13.1.1 **Weighting: 3**
Are evaluation and selection criteria defined to identify suitable bidders (potential sub-contractors) and specific occupational safety and health information provided in the specifications to the bidders?

Legal Requirements

- (a) Each sub-contractor wishing to qualify as a bidder should be asked to provide a safety policy which should be vetted to assess its adequacy.
- (b) The sub-contractor should also be required to submit details of his –
 - safety organisation;
 - safety track records;
 - working experience with clients demanding high safety standards;
 - safe systems of work/safety programmes in place;
 - current safety management system; and
 - training programmes and standards.These should also be vetted to assess adequacy.
- (c) Only when a sub-contractor passes the adequacy test mentioned in (a) and (b) above should he become a qualified bidder.

(Code of practice on safety management, Section 5.9.1)

Bidders should identify all the safety and health requirements in the specifications. To help them do this, a checklist of all the common safety and health problems which may arise from the work should be presented to them for reference before the bid is made. Where necessary and appropriate, an additional ‘on site’ briefing can be arranged for bidders who want to have a better understanding of the safety and health problems.

Some topics that should be included in the checklist are:

- Access to and egress from the places of work;
- Working at heights;
- Lifting appliances operation;
- Fire prevention;
- Electrical requirements;
- Underground and overhead services;
- Lighting requirements;
- Manual handling operation;
- Special hazards such as those inherent in working in confined spaces or working with asbestos, etc.;
- Occupational health risks from noise and toxic fumes, etc.;
- Storage of flammable substances and chemicals;
- Personal protective equipment;
- Emergency rescue/first-aid;
- Welfare amenities such as toilets and drinking water facilities; and
- Worker training requirements.

(Code of Practice on Safety Management Section 5.9.1)

Audit Criteria

1. Such arrangement will only enable sub-contractors with good safety performance are selected for the work. Since majority of the work activities for M&I contracts are typical, the evaluation, selection and control of sub-contractors are laid down at corporate level and can be used as reference to develop project specific policy.
2. The evaluation, selection and control of sub-contractor should be project specific. If the arrangement is modified from the corporate one, it should be stated so in the chapter on “Evaluation, Selection and Control of Sub-contractor” in the safety plan and the project team should be well aware of it.
3. Auditor should verify the contracts of auditee with sub-contractors on the provisions of specific OSH in specifications.

Question 13.1.2

Weighting: 3

Is there a procedure for the identification of suitable sub-contractors?

Legal Requirements

The contractor should select the sub-contractor who is able to identify all the safety and health hazards inherent in the work, can ensure that the most proper and adequate provisions will be made for the control of the risks, and has the best outline safety plan. (*Code of practice on safety management, Section 5.9.1*)

Audit Criteria

1. Auditor should verify the selection procedure and safety plans of sub-contractors.
2. If the erection ,addition, alteration or dismantling of bamboo scaffold is carried out by scaffolding companies with employees less than 50 persons, the companies shall be certified under OSH Star Enterprise – RMAA Safety Accreditation Scheme. If contractor is not able to identify this requirement in selection of scaffolding contractors, the answer should be “No”. Auditor may make reference to the contractor’s sub-contractor management plan (SMP).

Question 13.1.3

Weighting: 3

Is there a procedure set up to evaluate the safety performance of the sub-contractor?

Audit Criteria

1. Auditor should verify the procedure and evaluation forms.
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Sub-section 13.2 Control Strategy

Question 13.2.1 **Weighting: 3**

Is there an arrangement to ensure that the sub-contractors are aware of safety policy, safety plan, in-house rules and regulations, emergency plan etc.?

Legal Requirements

All safety rules and provisions should be laid down in detail in the contract for the sub-contractor to follow and implement. One of the provisions should be that the sub-contractor abides by all the provisions of the proprietor's or contractor's safety policy, including compliance with workplace safety rules. In case the sub-contractor further sub-contracts all or part of his work to other sub-sub-contractors, the sub-contractor should ensure that the sub-sub-contractors are fully aware of the safety policy and the safety rules.

The following special conditions should therefore be attached to the contract for the sub-contractor to follow:

- to inform any sub-sub-contractor of all safety requirements;
- to include observance of all safety requirements as a condition in any future sub-contract; and
- to require the sub-sub-contractor to do similarly if he in turn sub-contracts his work.

Another provision in the contract should require the sub-contractor to submit a detailed and comprehensive safety plan based on the outline safety plan, setting out how he and the sub-sub-contractors (if any) will implement the safety measures for controlling the risks during work in compliance with all the safety and health provisions stipulated in the contract. The sub-contractor should adhere to the safety plan in carrying out his obligations under the contract and should ensure that his own sub-sub-contractors (if any) receive copies of the safety plan and comply with its requirements as well.

In addition, a sub-contractor's participation in on-site safety committees should also be one of the contract conditions. (*Code of practice on safety management*, Section 5.9.2)

Audit Criteria

1. Auditor should verify the arrangements of auditee on control of the sub-contractors.

Question 13.2.2 **Weighting: 3**

Have sub-contractors participated in conducting a risk assessment and recommending a safe system of work before commencement?

Legal Requirements

The sub-contractor should be requested to conduct a risk assessment before work commences and recommend the necessary safety procedures and risk control measures. The system should spell out how the sub-contractor should organize and perform his work to reduce risks to workers' safety and health.

The sub-contractor should be required to submit the risk assessment report, together with the recommended safe system of work, to the proprietor or contractor for scrutiny and endorsement. (*Code of practice on safety management, Section 5.9.2*)

Audit Criteria

1. Auditor should verify the participation of sub-contractors in auditee's risk assessments and safe systems of work.

Question 13.2.3

Weighting: 3

Is sub-contractors' staff well in advance of the start of work and in regular progress meetings to discuss occupational safety and health aspects of the work under their contracts?

Legal Requirements

The sub-contractor should be required to attend a meeting to discuss the safety aspects of the work prior to the commencement of the contract. The sub-contractor should be required to attend regular progress meetings with all other parties, at which safety and health should be on the agenda. (*Code of practice on safety management, Section 5.9.2*)

Audit Criteria

1. Auditor should verify the meeting records and minutes.

Question 13.2.4

Weighting: 6

Are there appropriate steps taken to communicate and coordinate the occupational safety and health matters to sub-contractors?

Legal Requirements

The sub-contractor should be required to appoint a person or a team to co-ordinate all aspects of the contract, including safety and health matters on site. In addition, the sub-contractor should develop communication paths to pass on all relevant safety information to those at the shop floor level. (*Code of practice on safety management, Section 5.9.2*)

Audit Criteria

1. Arrangement to communicate and coordinate the occupational safety and health matters to sub-contractors should be stipulated in safety plan.

Question 13.2.5

Weighting: 6

Are there appropriate steps taken to ensure the compliance of occupational safety and health in-house rules and procedures by sub-contractors and their employees?

Legal Requirements

- The proprietor or contractor should inspect his sub-contractor's activities at regular intervals. The frequency of inspection should be commensurate with the hazards and complexity of the construction project. Generally, inspection at weekly intervals is desirable.
- The sub-contractor should be required to provide written method statements before carrying out any work with special hazards like demolition work, confined space work, asbestos work, work on electrical installations, falsework erection work, steel erection work and any other work involving disruptions or alterations to main services or other facilities. In the event that there is a need to deviate from the method statement, further progress of work should be withheld until a revised method statement has been drawn up and endorsed.
- The sub-contractor should be required to report all lost-time accidents and dangerous occurrences, including those of sub-sub-contractors.
- The sub-contractor's safety and health training programme should be regularly monitored to ensure effectiveness.

(Code of practice on safety management, Section 5.9.2)

Audit Criteria

1. Safety inspection carried out by senior management serves both as supervision and assurance for the safe operation of daily work. Such arrangement is considered more effective in follow up action of non-compliance as sub-contractors will observe the commitment from top management.

Question 13.2.6

Weighting: 6

Are there appropriate measures taken to ensure that the tools, plant, equipment, materials and substances used by sub-contractors and suppliers comply with relevant statutory requirements?

Audit Criteria

1. There should be written document submitted from sub-contractors regarding what they will bring into the site and there should be a system for compliance checking and monitoring in place. Otherwise, the answer should be “No”.
2. Document support and verification by interview of knowledgeable person are required in audit.

Question 13.2.7

Weighting: 3

Is there an arrangement to ensure that all necessary information about the hazards from, and safe use of the tools, plant, equipment, materials, substances, etc. supplied by sub-contractors and suppliers is available?

Audit Criteria

1. Auditor should verify the arrangement that auditee used.
2. Main contractor has the responsibility to manage the sub-contractors about their use of the tools, plant, equipment, materials, substances, etc.

HASAS(M&I) – PART B

Section 14 Management of Places of Work, Tasks, Operations, Powered Plant and Equipment

Sub-section 14.1 Management of Place of Work I

Part 14.1.1 Fire Risks

Question 14.1.1.1 **Weighting: 3**

Are there arrangements to ensure that adequate firefighting appliances are provided, and procedures in case of fire are established?

Legal Requirements

Under F & IU Ordinance -General Duties Provision –the Safe System of Work

1. Provision of fire fighting appliances is derived from risk assessment- identification of fire risk
2. Procedures to handle with outbreak of fire is derived from risk assessment based on the failure of series of control measures such as improper storage of combustible materials, not proper handling of naked-flame process, failure of fire detection system, etc.

Code of practice on safety management, Section 5.8.2

1. Development of emergency plan including arrangement for fire escape

Audit Criteria

1. Identification of activities with fire risk is covered by risk assessment.
2. Types of fire fighting appliances including fire hose reel, sprinklers, fire extinguishers, etc. and the quantity and location, etc. are derived according to fire risk.
3. Procedures to control outbreak of fire are derived from risk assessment
4. Suitable fire fighting appliances should be provided at construction site. For example, suitable portable powder fire extinguisher should be available at workplace in which electric arc welding is carried out. On the other hand, fire hose of housing estate could also be used for emergency response if appropriate.

Question 14.1.1.2 **Weighting: 6**

Are there appropriate fire extinguishers provided, particularly near places of high risk and are they regularly checked and maintained?

Legal Requirements

Construction Sites (Safety) Regulations (CSSR)

All fire-fighting appliances shall be maintained in good condition and free from obstruction

Occupational Safety & Health Regulation (OSHR)

All additional fire safety measures if required (such as fire extinguishers) shall be maintained in good condition and readily available for use.

Audit Criteria

1. Check maintenance record
2. Verification on site.

Question 14.1.1.3

Weighting: 6

Is there a safe means of escape from all sections of the site premises and are all fire exits and routes clearly marked?

Legal Requirements

CSSR

All means of escape shall be maintained in good condition and free from obstruction

OSHR

1. Illuminated exit sign bearing the word "EXIT" and the characters "出口" is installed at each exit from the workplace.
2. All means of escape shall be maintained in safe condition and free from obstruction

Code of practice on safety management, Section 5.8.2

1. Development of emergency plan including arrangement for fire escape

Audit Criteria

1. Check emergency layout plan in case of fire of fire exits and routes.
2. Verification on site.
3. The contractor of Lift Addition contract has to provide clearly marked fire exits and routes. Contractors of other contract types could use existing fire exits and routes of the housing estate.

Question 14.1.1.4

Weighting: 3

Have sufficient numbers of employees been trained in fire fighting techniques and in the use of the fire extinguishers provided?

Legal Requirements

1. Code of practice on safety management, Section 5.8.2
Development of emergency plan including arrangement for fire escape
2. Guidance notes on fire safety at workplaces

Audit Criteria

1. Check training record
2. Comment on the training-quality of training including content, trainer competence, duration, etc.
3. Registered safety officers and representatives from registered fire service installation contractors are acceptable trainers capable to conduct training in the use of fire extinguishers.
4. Verification with trained staff

Question 14.1.1.5	Weighting:	6
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Is there a mean of raising fire alarm and is it checked regularly?

Legal Requirements

- Code of practice on safety management, Section 5.8.2
1. Development of emergency plan including arrangement for fire escape

Audit Criteria

1. Check inspection record
2. Verification on site.

Question 14.1.1.6	Weighting:	6
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Is there planned fire drills and evacuation procedures, and are they conducted on a regular basis?

Legal Requirements

- Code of practice on safety management, Section 5.8.2
1. Development of emergency plan including arrangement for fire escape

Audit Criteria

1. An up-to-date emergency plan that is appropriate for the circumstances and state clearly the responsibilities of each party during a fire.
2. Check drill record (normal interval for construction project: quarterly to half yearly)

3. Verification on site.

Question 14.1.1.7 **Weighting: 3**
Is the fire drill and evacuation procedure brought to the attention of employees, sub-contractors, etc. who are new to the site?

Legal Requirements

Code of practice on safety management, Section 5.8.2

1. Development of emergency plan including arrangement for fire escape

Audit Criteria

1. Check induction training record.
2. Verification on site.

Question 14.1.1.8 **Weighting: 3**
Is someone (and a deputy as necessary) appointed to coordinate fire prevention, fire fighting and evacuation procedure?

Legal Requirements

Code of practice on safety management, Section 5.8.2

1. Development of emergency plan including arrangement for fire escape

Audit Criteria

1. Check emergency team record.
2. Verification on site.

Part 14.1.2 Work In Confined Spaces

Question 14.1.2.1 **Weighting: 3**
Have all requirements in regulations, codes of practice and safety information which apply to working in confined spaces been identified?

Legal Requirements

Code of practice on safety management, Section 5.13.2

A process hazard analysis similar to the risk assessment should be an organized with systematic effort to identify and analyze the significance of potential hazards associated with the carrying out of a specific process (confined space work) in the relevant industrial undertaking.

Audit Criteria

1. Factories and Industrial Undertakings (Confined Spaces) Regulations
2. Code of Practice for Safety and Health at Work in Confined Spaces
3. There may be information from engineering drawings, working plans or about relevant soil or geological conditions. Assessment of this information in conjunction with information on any processes that have already taken place or will take place in the course of work to be undertaken and which could affect the condition of the confined space.
4. Consider what measures can be taken to enable the work to be carried out without the need to enter the confined space. The measures might involve modifying the confined space itself to avoid the need for entry, or to enable the work to be undertaken from outside the confined space. In many cases it will involve modifying working practices.
5. Check for the existence of comprehensive review in process control program that all confined space work are identified (such as assessment practice with supply of list of job duties, layout plans of jobs, invitation of ad hoc members from frontline supervisors in assessment process, physical survey of anticipated work in contract for confined space work, etc.)

Question 14.1.2.2

Weighting: 3

Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control the risks of working in confined spaces on the site?

Audit Criteria

A safe system of work will depend on the nature of the confined space and the risk assessment. The main elements to consider in risk assessment when designing a safe system of work, and which may form the basis of a 'permit-to-work' are:

1. Supervision;
2. Competence for work in confined spaces;
3. Communications;
4. Testing/monitoring the atmosphere;
5. Gas purging;
6. Ventilation;
7. Removal of residues;
8. Isolation from gases, liquids and other flowing materials;
9. Isolation from mechanical and electrical equipment;

10. Selection and use of suitable equipment;
11. Personal protective equipment (PPE) and respiratory protective equipment;
12. Portable gas cylinders and internal combustion engines;
13. Gas supplied by pipes and hoses;
14. Access and egress;
15. Fire prevention;
16. Lighting;
17. Static electricity;
18. Smoking;
19. Emergencies and rescue; and
20. Limited working time.

Question 14.1.2.3

Weighting: 3

Has a risk assessment been conducted by a competent person before the work in confined space commenced?

Legal Requirements

Factories & Industrial Undertakings (Confined Spaces) Regulation

When work is to be undertaken in a confined space, a competent person (CP) shall be appointed to carry out an assessment of the working conditions in the confined space and make recommendations on measures to be taken in relation to safety and health of workers while working in that space.

Audit Criteria

1. Appoint a competent person to carry out a risk assessment to identify the hazards likely to be present in the confined space by auditee.
2. “competent person” means a person -
 - (a) who has attained the age of 18 years;
 - (b) who is either—
 - (i) a safety officer registered under the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations (Cap. 59 sub. leg. Z); or
 - (ii) a person who holds a certificate issued by a person whom the Commissioner has authorized to certify persons as being competent to prepare risk assessment reports; and
 - (c) who has at least one year’s relevant experience, after obtaining the registration or certification referred to in paragraph (b)(i) or (ii), in assessing risk to the safety and health of workers working in confined spaces.
3. All the significant findings of a risk assessment should be recorded by the competent

person in a risk assessment report, including the hazards identified, the necessary safety precautions to be taken, the type and the number of workers being affected, the period during which workers may remain safely in the confined space and the details of the competent person who has carried out the risk assessment.

4. Check for risk assessment report done by competent person for the confined space work before commencement.

Question 14.1.2.4 **Weighting: 6**
Have all processes which may create dangerous atmospheres in confined spaces been identified and tested by atmospheric testing equipment?

Audit Criteria

1. Testing to measure the oxygen content should be carried out before testing for concentration of flammable gases, followed by any further tests for toxic gases, vapours and dust. Additional tests may be required for the presence of contaminants in liquid or solid form when the risk assessment indicates that they may be present. It is important not to overlook the flammable properties of substances that also have toxic properties, even if they are only slightly toxic.
2. The atmosphere in a confined space can often be tested from the outside, without the need for entry, drawing samples through a long probe.
3. Testing equipment should be in good working order and where necessary calibrated and checked in accordance with the intervals and recommendations accompanying the equipment, or at other suitable intervals. Explosimeters will need to be calibrated for different gases or vapours.
4. Check for risk assessment report that dangerous atmosphere and deficiency of oxygen factors are considered and identified if any.

Question 14.1.2.5 **Weighting: 3**
Where relevant, are personnel responsible for atmospheric testing properly trained?

Audit Criteria

1. Before a person is allowed to carry out the duties as a competent person, he is required to attend an approved safety training course in connection with confined space work and holds a relevant certificate (sec. 2 of F&IU(Confined Spaces) Reg.).
2. Risk assessment report has identified dangerous atmosphere and deficiency of oxygen are considered and identified with the help of atmospheric testing equipment.
3. Check the equipment and training record.

Question 14.1.2.6 **Weighting: 3**
Where relevant, has a defined procedure and arrangement been established for entry to and work in confined spaces?

Audit Criteria

1. Purging with inert gas and ventilation may be necessary to reduce the risk of a fire or explosion inside or outside the space.
2. Blanking-off, clean out and lockout procedures should be established if necessary
3. Means of escape must be suitable for use by the individual who enters the confined space so that they can quickly escape in an emergency. Suitable means to prevent access should be in place when there is no need for anybody to work in the confined space.
4. The size of openings to confined spaces needs to be adequate. Openings allow safe access to confined spaces, and through divisions, partitions or obstructions within such spaces, need to be sufficiently large and free from obstruction to allow the passage of persons wearing the necessary protective clothing and equipment, and to allow adequate access for rescue purposes.
5. Hinged covers and doors should be secured in the open position. Suitable ladders may be needed to make entry and exit easier.

Question 14.1.2.7 **Weighting: 6**
Where relevant, is a permit-to-enter and a permit-to-work system in operation and have all persons involved been trained?

Audit Criteria

1. Entry into a confined space for work should be permitted only after the issuance of a valid certificate by the proprietor or contractor within which the confined space work is carried out.
2. The proprietor or contractor of the confined space work, after receiving a risk assessment report completed by the competent person, should then consider issuing a certificate. Such certificate should specify the location and types of work to be done, and should state: (a) that all necessary safety precautions in relation to the hazards identified in the risk assessment report have been taken (*sec.6(1)(a)(iii)A of F&IU(Confined Spaces)Reg.*); and (b) the period during which workers may remain safely in the confined space (*sec. 6(1)(a)(iii)B of F&IU(Confined Spaces)Reg.*)
3. The permit-to-work procedure is an extension of the safe system to work, not a

replacement for it. The use of a permit-to-work system does not, by itself, make the job safe. It supports the safe system, providing a ready means of recording findings and safety measures required to proceed with the entry. It also contains information, such as time limits on entry, results of the gas testing, and other information that may be required during an emergency and which, when the job is completed, can also provide historical information on original entry conditions.

4. Effective measures should be taken to ensure that no worker would enter the confined space during the period of time until completion. Permit-to-work certificate is being delivered to the proprietor or contractor for proper cancellation.
5. Before a person is allow to work in confined space as a certified worker, he is required to attend an approved safety training course in connection with confined space work and holds a relevant certificate.

Question 14.1.2.8**Weighting: 6****Where relevant, has an emergency rescue procedure been developed and communicated to all persons involved, and is rescue equipment available?****Legal Requirements**

Factories & Industrial Undertakings (Confined Spaces) Regulation

1. When work is taking place in a confined space, a sufficient number of persons, commensurate with the scale of the job, who know how to use the safety equipment and rescue equipment.

Audit Criteria

1. The standby person should keep the workers inside the confined space informed of any change in environmental conditions that would adversely affect their safety in the confined space. The arrangements for rescue and resuscitation should include consideration of: Rescue and resuscitation equipment, Raising the alarm and rescue, Safeguarding the rescuers, Fire safety Control of plant, First aid Public emergency services training.
2. All members of the rescue team should have been properly and adequately trained in the related emergency rescue procedures, including the detailed particulars of an emergency rescue plan and should have full knowledge of how to properly use all those rescue equipment.
3. Suitable and sufficient rescue equipment, including standby approved breathing apparatus, safety harness, life-lines, reviving apparatus and emergency lighting, and properly trained rescue personnel should be readily available for rescue purposes at all times when workers are working inside a confined space. Rescue equipment

provided should be appropriate in view of the likely emergencies identified in the risk assessment and be properly maintained. For the use of resuscitators, reference should be made to recognized international or national standard such as British Standard BS 6850:1987 Specification for Ventilatory Resuscitators or equivalent.

4. Where practicable, appropriate lifting equipment, e.g. rescue hoist or winch, split-leg tripod with a frame-mounted hoist and one-man access cradle should be available for rescue purposes.

Question 14.1.2.9

Weighting: 6

Where relevant, has the effectiveness of management of confined space been regularly monitored?

Audit Criteria

1. Drills for the rescue and emergency procedures should be conducted periodically for testing of the emergency response plan, and for practicing the procedures and use of rescue equipment.

Part 14.1.3 Working at Height

Question 14.1.3.1

Weighting: 6

Have all the requirements in the regulations, codes of practice and safety information which apply to working at height operations been identified?

Audit Criteria

1. Code of Practice for Bamboo Scaffolding Safety, Labour Department
2. Code of Practice for Metal Scaffolding Safety, Labour Department
3. A Guide to the Provisions for Safe Places of Work under Part VA of the Construction Sites (Safety) Regulations, Labour Department
4. Safety Measures for Use of Truss-out Bamboo Scaffold, Labour Department
5. Guidance Notes on Classification and Use of Safety Belts and their Anchorage Systems, Labour Department
6. Overview of Working at Height, Labour Department
7. Guidelines on the Design and Construction of Bamboo Scaffolds, Buildings Department
8. Guidelines on Work-Above-Ground Safely, Construction Industry Council
9. Guidelines on Planking Arrangement for Providing Working Platforms on Bamboo Scaffolds, Construction Industry Council
10. For District Term Contract, a scaffolding works monitoring plan should be included

in contract safety plan. The time frame, frequency, responsible person for inspecting scaffolding works should be defined. The arrangement in formulating a register of active scaffolding works should be addressed in safety plan. Besides, the register should be properly maintained.

Question 14.1.3.2 **Weighting: 6**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of working at a height on the site?

Audit Criteria

1. The auditor should verify the quality and coverage of risk assessments for working at height activities. Task-specific risk assessment should be prepared for all high risk activities such as truss-out scaffolding works.
2. Risk assessment for erection and dismantling of working platform and scaffolding should be prepared where applicable.
3. Risk assessment for erection and dismantling of truss-out scaffold should include handling of drying rack which obstruct the associated works.
4. Risk assessments should cover all the site activities which liable to fall from height such as working adjacent to floor edges and window openings.
5. The safe means of access and egress to work should be included in risk assessments and the control measures should be developed to prevent hazards from slipping and tripping.
6. Unless in very exceptional circumstances that working platforms or light-duty working platforms are impracticable to be used for work-above-ground below 2m, use of ladders for work-above-ground should be prohibited. Under such exceptional circumstances where ladders have to be used, task-specific risk assessment should be conducted and safe system of work, such as a permit-to-work system, should be formulated and implemented beforehand.

Question 14.1.3.3 **Weighting: 9**
Is a safe means of access (and egress) to the work area, taking into account the conditions on site such as gangways, stairs and ladders etc. provided?

Audit Criteria

1. If safe means of access and egress could not be identified or provided, the answer should be "No".
2. Ladders and other means of support used should possess international/ national

standards such as British Standard etc. with safe working load displayed.

3. Safe means of access (and egress) to truss-out scaffold of vacant flat shall be maintained at all times. If safe means of access (and egress) to truss-out scaffold are not readily available, the answer should be “No”.

Question 14.1.3.4 **Weighting: 9**
Has every worker been provided with a safe place of work such as provision of proper working platform, scaffold and light-duty working platform etc. for all activities?

Legal Requirement

The contractor responsible for any construction site shall take adequate steps to prevent any person on the site from falling from a height of 2 meters or more. (Construction Sites (Safety) Regulations 38B(1) and 38B(1A)).

Audit Criteria

1. Auditor should verify if proper work equipment are provided for all activities involving a possible fall from height.
2. If working platform/scaffold used did not comply with the relevant legal requirement or code of practice, the answer should be “No”.
3. Erecting bamboo scaffold should conform to one of the following:
 - i. Laying working platforms on every lift of a bamboo scaffold; or
 - ii. Erecting a suitable working platform at every working location on a lift where the entire scaffold is designed as closely spaced bamboo scaffold.
4. Proper working platform should be used for working at height involving a possible fall of 2m or more.
5. For working involving a possible fall of less than 2m, suitable light-duty working platform such as hop-up platform and step platform/ platform ladder should be used.
6. For working involving a possible fall of less than 2m but more than 900mm, light-duty working platform such as hop-up platform and step platform/ platform ladder should be provided with guard-rails and toe-boards.
7. Working on the access steps of a platform ladder is prohibited.
8. Locking device of moveable working platforms shall be properly used to ensure that the platforms are stable.

Question 14.1.3.5 **Weighting: 9**
Are all scaffolds and working platforms provided with sufficient supports such as standards and metal brackets?

Audit Criteria

1. For double-row bamboo scaffolding, the distance between two adjacent standards on the same scaffold plane should not be greater than 1.3m, while for between two adjacent transoms, the distance should not be greater than 0.75m. Furthermore, the distance between two ledgers should not be greater than 1.2m and the height of boarded lift for forming working platform should be between 1.9m to 2.1m.
2. For truss-out scaffolding, rakers, standards and parallel ledges must be supported by metal brackets fixed to the structural elements of a building. The horizontal spacing between the steel brackets should not be larger than 1.3m.
3. Each metal bracket support truss-out scaffolding must be fixed with three or more anchor bolts. All anchor bolts should be installed strictly in accordance with the manufacturer's recommendations. Sufficient embedment depth and spacing distance should be maintained. If anchor bolt(s) was not properly installed, the answer should be "No".
4. For truss-out scaffolding with height not exceeding 6m, 50 x 50 x 5mm Grade S275 equal angle with at least 3 nos. of 12mm diameter heavy duty anchor bolts, or suitable sizes subject to submission of justifications/ calculations by contractors.

Question 14.1.3.6

Weighting: 9

Are all scaffolds and working platforms provided with suitable bracings, rakers?

Audit Criteria

1. For every bamboo scaffold erected, there should be bracings provided all over it. Each bracing section should consist of two bamboo members that are tied in a "X" shape over the section of scaffold to be braced. The horizontal span of each "X" shape bracing section should not be greater than 9m.
2. When a bamboo scaffold having a height 7m or below, bamboo rakers should be provided and connected from the ground to the third lift or fourth lift of the scaffold. The angle of the rakers from ground should approximately be equal to 60°. For every 7m apart horizontally or less on the scaffold, there should be one such raker provided.
3. For metal scaffold, bracings should be provided in accordance with the approved design to stiffen the scaffold.
4. For independent tied metal scaffold, ledger bracing should be on alternate pairs of standards. Any pair of standards, which are ledger braced, should be made into a complete series of triangles. When the bay length is 1.5m or less, the ledger bracing may be fixed to every third pair of standards and longitudinal bracing should be

provided to all scaffolds in which the movement along the facade of the building/structure is not prevented by other means. The longitudinal bracing should be achieved by tubes set at between 35° and 55° to the horizontal, reaching from bottom to top of the scaffold. For example, individual tubes could be set in zig zag pattern, the top of a tube and the bottom of the next preferably being attached to the same transom.

Question 14.1.3.7 **Weighting: 9**
Are all scaffolds and working platforms provided with sufficient ties and putlogs to restrict movement?

Audit Criteria

1. When a double-row bamboo scaffold having a height greater than 7m, for every 4m or less rise and 7m or less apart horizontally, there should be ties to fasten the scaffold securely at the building/ structure façade.
2. For independent tied metal scaffold, the spacing of lines of ties should not exceed 8.5m, either horizontally or vertically. Ties which will not be removed during the use of a scaffold should be inserted and maintained at a frequency of one for every 40m² of the scaffold surface and should be reasonably evenly distributed over the scaffold face area, both horizontally and vertically.

Question 14.1.3.8 **Weighting: 9**
Has every worker been provided with a suitable fall-arresting system if provision of proper working platform is not practicable?

Audit Criteria

1. When the provision of guard-rails or coverings to prevent fall from openings is impracticable, provide fall arrest system comprising appropriate safety harness, independent lifelines and adequate, stable and sufficient anchor points so as to facilitate continuous anchorage of safety harness.
2. The anchorage point of fall-arresting system should be certified by a professional engineer. Referring to the “Guidance Notes on Classification and Use of Safety Belts and their Anchorage Systems” issued by Labour Department, eyebolt/fixed anchorage should be assessed by “Professional Engineer of the Structural Discipline” if the independent lifeline is connected.
3. If eyebolt/ fixed anchorage for fall protection purpose is certified by professional engineer other than “Structural Discipline” (for example, if statutory form – Form 6 and Form 7 certified by professional engineer but not in “Structural Discipline”

- being observed on-site) which will be considered as non-compliance.
4. The "Competent Person of Selection, Installation, Use, Inspection and Testing of Anchor Devices and Cast-in Anchors for Attachment of Personal Fall Protection Equipment for Truss-out Bamboo Scaffolds" (ACCP) is suitable to carry out inspections and tests on cast-in anchor and anchor devices used in works of truss-out scaffolds.
 5. The lanyard of the safety harness should not be anchored to the railings or any member of a temporary scaffolding or bamboo scaffolding, or to any section of water, gas and drainage pipes as these structures or device are not designed to withstand sudden shock load or impact force.
 6. If secure anchorage point is not provided, the answer should be "No". The concern of safe use PPE should be reflected in question 14.1.3.14.

Question 14.1.3.9

Weighting: 6

Have competent persons with adequate training and experience been appointed to carry out inspections, erecting, maintenance and dismantling of scaffolds/ working platforms?

Audit Criteria

1. Competent Person - means a person appointed by the contractor by reason of his/her substantial training and practical experience, competent to perform the duty.
2. Substantial training of a competent person in respect of bamboo scaffolding works - refers to a person who has satisfactorily completed a formal training in bamboo scaffolding work such as an apprenticeship in the trade of bamboo scaffolder under section 28 of Apprenticeship Ordinance (Cap.47) or the 1-year full-time training course in bamboo scaffolding of CIC/ other similar courses or has satisfactorily passed the trade test for bamboo scaffolder of the CIC.
3. Practical experience of a competent person in respect of bamboo scaffolding works refers to experience of 10 years or more in bamboo scaffolding work.
4. Substantial Training and practical experience of a competent person in respect of metal scaffolding refer to a person-
 - (i) who has satisfactorily completed a formal training in metal scaffolding works organised by CIC or other similar metal training courses/ programmes and possesses an experience of 4 years or more in metal scaffolding works; or
 - (ii) who has at least possessed a higher certificate in civil/structural engineering or other similar disciplines and has satisfactorily completed a metal scaffolding training course/programme organized by the CIC or other similar metal scaffolding training courses/programmes and possesses an experience

- of 1 year or more in metal scaffolding works; or
- (iii) who has satisfactorily passed the trade test on metal scaffolding of the CIC and possesses an experience of 4 years or more in metal scaffolding works.
5. Scaffold has been inspected by a competent person before being taken into use for the first time and at regular intervals not exceeding 14 days immediately preceding each use.
 6. The scaffolding work shall be done by trained workmen under the immediate supervision of a competent person. The competent person who immediately supervises workmen carrying out scaffolding works shall not actively engage himself or herself in such work.
 7. Auditor should verify the attendance of the competent person concerned by checking the logbook at the security post.

Auditor Guidance

1. Auditor has to obtain the followings evidence:
 - (a) Check the appointment letter for the competent person to carry out regular inspections of scaffolds and supervision required.
 - (b) Verify records (Form 5) to prove that the competent person has carried out inspections/supervisions.
2. Scenarios
 - (a) If the scaffold work has not started yet, auditor should check item no.1.
 - (b) If the scaffold work is in progress, Auditor should check item no.1 and 2.
 - (c) If no scaffold work is anticipated or all scaffold work had been completed, the answer should be "N/A".

Question 14.1.3.10

Weighting: 9

Are inspections carried out at appropriate intervals to scaffolds including working platforms/anchors and results entered in the prescribed forms?

Audit Criteria

1. Auditor has to obtain the following evidence:
 - Inspection records (Construction Sites (Safety) Regulations Form 5) to prove the competent person has conducted the inspections in 14 day interval with his designation and signature.
2. Name and designation of the person responsible for regular inspection should be clearly stated in the statutory inspection form. As this is a mandatory requirement, the form should be properly filled in name and designation otherwise the answer should be "No".

Question 14.1.3.11 **Weighting: 9**

Are special scaffolds properly designed and certified by a professional engineer?

Audit Criteria

1. A “Professional Engineer” means an engineer of structural or civil discipline. He should be a corporate member under the constitution of the Hong Kong Institution of Engineers or equivalent and should have adequate training and experience, and be able to justify how and why the scaffold have adequate training and experience, and be able to justify how and why the scaffold he designed can safely resist the imposed loads in accordance with recognized engineering principles.
2. For a bamboo scaffold greater than 15m in height, it should be designed and approved by a professional engineer.
3. Documents such as scaffolding plan, method statement, design drawings and specifications of the scaffold, etc. should be made available.

Question 14.1.3.12 **Weighting: 9**

Are all floor edges and stairways provided with suitable guard-rails and toe-boards?

Audit Criteria

1. The height of a toe-board or other similar barrier shall be not less than 200mm and securely fixed.
2. The height of a top guard-rail above any place of work at a floor edge or on a stairway shall be not less than 900mm and not more than 1150mm.
3. The height of an intermediate guard-rail above any place of work at a floor edge or on a stairway shall be not less than 450mm and not more than 600mm.
4. Temporarily removed guard-rails, toe-boards and barriers shall be replaced or erected as soon as practicable after the expiration of the time when the removal was necessary to allow the access of persons or the movement of materials or other purposes of the work concerned.

Question 14.1.3.13 **Weighting: 9**

Are all floor openings, lift shaft openings and stairwell openings provided with suitable guard-rails and toe-boards or are they properly covered?

Legal requirement

1. Every covering provided for an opening shall be-
 - (i) so constructed as to prevent the fall of persons, materials and particles; and

- (ii) clearly and boldly marked as to show its purpose or be securely fixed in position.
(Schedule 3, Construction Sites (Safety) Regulations)

Audit Criteria

1. Cover all floor openings or provide railings around floor openings and voids to prevent people falling from height as follows:
 - (a) Cover all floor openings with solid and sound material constructed and securely fixed in position to prevent the fall of persons, materials and articles. These covers shall be clearly and boldly marked to show its purpose; or
 - (b) Provide rigid guard-rails and toe boards around floor openings with, including but not limited to, the following:
 - Secure top railings at a height of 900mm to 1150mm;
 - Secure middle railings at a height of 450mm to 600mm;
 - Secure toe boards of 200mm high above the surface of the slab where no permanent upstand exists;
 - Brightly coloured safety nets onto the railings and toe boards; and
 - At floor opening with considerable risk or safety concerns, provide safety nets of sufficient size and strength covering the floor openings to catch falling persons and objects. The safety nets shall be clear of any debris
2. Full height temporary protective barriers to lift shaft openings should be installed during the course of construction. Otherwise, the answer of this question should be "No".

The performance specification is provided as follow:

- (a) Function as protection against fall of persons and falling objects through lift shaft openings from the respective floor levels;
- (b) Be locked when no access of person or material and no work inside lift shaft;
- (c) Be self-closing and readily openable from the inside of lift shafts at any time without the need of separate key operations. Such self-closing operation shall impose minimal momentum without affecting the stability of a person's foothold.
- (d) Height of steel gates: minimum 2100 mm high;
- (e) Mesh size for steel gates: maximum 50 x 50 mm;
- (f) Dismantle and clear away the steel gates properly and safely when they are not required anymore;
- (g) Ensure that no part of the temporary steel gates shall obstruct the installation of the permanent lift doors and architraves;
- (h) Ensure that other permanent works such as wall and floor finishes and tiles, where affected by this temporary installation, shall be completed to contractual requirements upon dismantling of the temporary steel gates.

- (i) Maintain the steel gates to operate in a proper, efficient and safe manner until the permanent cover is completed.

Question 14.1.3.14

Weighting: 9

Are all other places included edges, working platforms, gangways, etc. provided with proper guard-rails and toe-boards?

Audit Criteria

1. The height of a toe-board or other similar barrier shall be not less than 200mm and securely fixed.
2. The height of a top guard-rail above any place of work at a floor edge or on a stairway shall be not less than 900mm and not more than 1150mm.
3. The height of an intermediate guard-rail above any place of work at a floor edge or on a stairway shall be not less than 450mm and not more than 600mm.
4. Temporarily removed guard-rails, toe-boards and barriers shall be replaced or erected as soon as practicable after the expiration of the time when removal of them are necessary for the access of persons or the movement of materials or other purposes of the work concerned.
5. These all other places exclude those covered in question 14.1.3.12.

Question 14.1.3.15

Weighting: 9

Are workers carrying out work at height activities provided with appropriate personal protective equipment and are they used properly?

Audit Criteria

1. Suitable personal protective should be provided. Protective equipment include safety harness, lanyard, safety helmet with Y-type chin strap, etc.
2. If there is no issuance record of personal protective equipment for workers, the answer should be “No”.
3. Special attention shall be addressed to the guidelines in the inspection before use, maintenance procedures, proper storage techniques in accordance with the manufacturer’s recommendations and instructions.
4. According to Guidance Notes on Classification and Use of Safety Belt and their Anchorage Systems issued by Labour Department, two lanyards should not be hooked together.
5. The answer may be “N/A” if no working at height activity was carried out during physical verification provided that auditor had verified the provision of personal protective equipment to the workers.

Part 14.1.4 Housekeeping

Question 14.1.4.1 **Weighting: 6**
Are there procedures addressing the housekeeping properly maintained on site?

Legal Requirements

Construction Site (Safety) Regulations

1. Necessary precautions shall be taken to protect workmen employed on site from falling or flying debris.
2. Platforms, gangways, floors, or other places used as passageways on a construction site shall be kept clear of any loose materials which are not required for immediate use.
3. Materials kept or stored on a construction site shall not be insecurely stacked in a place where they may be dangerous to workmen at the site.
4. Materials kept or stored on a construction site shall not be stacked in such a way as to overload and render unsafe any floor or other part of a building or structure on the site.
5. No timber or other material with projecting nails or sharp objects shall be used or left on a construction site if such nails or objects are a source of danger to workmen employed there.

Audit Criteria

1. The 5S programme or other similar management tools should be adopted to assist the implementation of good housekeeping such as:
 - (a) The step of tidying up after work assists to maintain a safe environment when workers return to work the next day. All workers must tidy up his own work area after he finishes his work for that day such as properly disposal of wastes, sorting out the unused materials for future use, putting tools in designed area, keep the passageways clear.
 - (b) In addition to the tidying up after work, weekly tidying up should be conducted on the last working day of the week by all workers and be in charge by foremen from contractor and sub-contractors.
 - (c) Contractor should assist in determining the location and the methods for storing the materials, equipment and tools; set aside storage stations for wastes; provide containers for different wastes; make site arrangements for the removal of wastes.
 - (d) Rewards should be given to those workers who have done a good housekeeping

work.

2. Auditor should focus on the hazards related to housekeeping:
 - (a) Is the observed evidence of hazards (trip, slips and striking against objects, collapse or falling objects) is likely to cause injuries to site workers?
 - (b) If creating a temporary obstruction is unavoidable, e.g. for loading and unloading, does contractor have a system of warning people about the hazard, or ideally prevent access?
 - (c) Does the observed evidence suggest a breach of the legal requirements?
3. Daily and weekly tidying up arrangements.
4. Determine the locations and methods for storing the materials (dangerous substances), equipment and tools and waste.
5. A system for warning people about hazard, or preventing access should be provided if a temporary obstruction is unavoidable.
6. Site arrangements for the removal of waste.
7. Auditor when assessing the audit question could recommend the following improvement actions:
 - Many trip and slip hazards can be eliminated at the design and fitting out stages.
 - Regular maintenance is important in preventing and fixing hazards.
 - Conduct a housekeeping risk assessment.

Question 14.1.4.2

Weighting: 9

Are all entrances, passages and stairs kept clear at all times?

Audit Criteria

1. Auditor should focus on the hazards related to housekeeping:
 - (a) Is the observed evidence of hazards (trip, slips and striking against objects, collapse or falling objects) is likely to cause injuries to site workers?
 - (b) If creating a temporary obstruction is unavoidable, e.g. for loading and unloading, does contractor have a system of warning people about the hazard, or ideally prevent access?
 - (c) Does the observed evidence suggest a breach of the legal requirements?
2. Entrance, passages and stairs should be kept clear and free from obstructions. Passage means designated walkways to and from the place of work, but does not cover walkways of work areas. Stairs means general access between levels and does not cover the temporary stairs provided for working platform. Entrance means site entrance.
3. Auditor when assessing the audit question could recommend the following improvement actions:

- People may trip over, or strike against objects, so it is important to keep entrance, passages and stairs clear of obstructions.

Question 14.1.4.3 **Weighting: 9**
Are there appropriate measures taken to ensure good housekeeping and proper waste disposal?

Legal Requirement

Platforms, gangways, floors, or other places used as passageways on a construction site shall be kept clear of any loose materials which are not required for immediate use. (Construction Sites (Safety) Regulations 52(1) and 52(1A))

Audit Criteria

1. ASA should focus on the hazards related to housekeeping:
 - (a) Is the observed evidence of hazards (trip, slips and striking against objects, collapse or falling objects) is likely to cause injuries to site workers?
 - (b) If creating a temporary obstruction is unavoidable, e.g. for loading and unloading, does contractor have a system of warning people about the hazard, or ideally prevent access?
 - (c) Does the observed evidence suggest a breach of the legal requirements?
2. The question covers working areas where construction works are carried out but does not cover the places mentioned in question 14.1.4.2. Working areas should be kept as clear as possible of unnecessary materials and waste.
3. Auditor when assessing the audit question could recommend the following improvement actions:
 - People may trip over, or strike against objects, so it is important to keep work areas clear of obstructions and loose materials.
 - The floors of work areas should be kept dry and in a non-slippery condition.
 - Designated areas for waste collection.

Question 14.1.4.4 **Weighting: 9**
Are there appropriate measures taken to ensure no timber or other material with projecting nails or other sharp objects are used or left on the site?

Legal Requirements

No timber or other material with projecting nails or sharp objects shall be used or left on a construction site if such nails or objects are a source of danger to workmen employed there. (Construction Sites (Safety) Regulations 51(1) & 51(2))

Audit Criteria

1. Auditor should focus on the hazards related to housekeeping:
 - (a) Is the observed evidence of hazards (trip, slips and striking against objects, collapse or falling objects) is likely to cause injuries to site workers?
 - (b) If creating a temporary obstruction is unavoidable, e.g. for loading and unloading, does contractor have a system of warning people about the hazard, or ideally prevent access?
 - (c) Does the observed evidence suggest a breach of the legal requirements?
2. Work areas should be kept as clear as possible of unnecessary materials and waste.
3. Projecting or sharp objects must be adequately protected.
4. For trolleys used in public estate, the front edge must be adequately protected.
5. Auditor when assessing the audit question could recommend the following improvement actions:
 - Rebar caps, or mushroom caps with larger heads can be used to protect workers from cuts and scratches.
 - Nails or sharp objects protruding from lumber or boards must be removed.

Question 14.1.4.5

Weighting: 9

Are materials and equipment stored and stacked safely?

Legal Requirement

Materials kept or stored on a construction site shall not be insecurely stacked in a place where they may be dangerous to workmen at the site. Materials kept or stored on a construction site shall not be stacked in such a way as to overload and render unsafe any floor or other part of a building or structure on the site. (Construction Sites (Safety) Regulations 52(2)(a) & 52(2)(b))

Audit Criteria

1. ASA should focus on the hazards related to housekeeping:
 - (a) Is the observed evidence of hazards (trip, slips and striking against objects, collapse or falling objects) is likely to cause injuries to site workers?
 - (b) If creating a temporary obstruction is unavoidable, e.g. for loading and unloading, does contractor have a system of warning people about the hazard, or ideally prevent access?
 - (c) Does the observed evidence suggest a breach of the legal requirements?
2. ASA when assessing the audit question could recommend the following improvement actions:

- Bagged or sacked material should be stacked or piled not more than ten bags/sacks high and should be cross piled on skids to prevent the materials from falling, rolling, overturning or breaking;
- Skids of brick blocks or other such material should be stockpiled in such a manner as to prevent tipping or collapsing
- Provide proper storage of steel reinforcement and keep clear of ground surface by suitable timber battens;
- Storage of large panel formwork in a secure manner and fenced off with warning notices in both Chinese and English;
- Materials must be properly stored, stacked or piled away from power lines and so as to prevent tipping/spilling;
- Tools must not be left on the floor, or in any location where they can be easily dislodged.

Question 14.1.4.6 **Weighting:** 6

Do regular workplace inspections include housekeeping?

Audit Criteria

1. Items in safety inspection checklist should cover housekeeping.
2. Attention should be on hazards caused by slipping and tripping, etc.

Question 14.1.4.7 **Weighting:** 9

Are there appropriate measures taken to warn and prevent the general public and other workers from entering or trespassing?

Audit Criteria

1. Construction activity must not present a risk to members of the public, especially to children.
2. Where members of the public and other workers are in the vicinity of construction work, suitable and safe routes must be provided to ensure that the safety of them is not put at risk by the construction work activity.
3. The area underneath vacant flat refurbishment works should be properly fenced off.
4. Auditor when assessing the audit question could recommend the following improvement actions:
 - Other warning devices such as warning notice, mirror, warning light and signaller should be provided if necessary.
 - Suitably constructed fencing must be used to secure sites.
 - Consideration must also be given to persons with disabilities.

Question 14.1.4.8	Weighting: 9
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Is suitable and adequate lighting provided to all places where lighting is necessary to secure workers' safety?

Audit Criteria

Legal Requirement

Suitable and adequate lighting necessary to secure workmen's safety shall be provided. (Construction Sites (Safety) Regulations 50)

Auditor Criteria

1. Auditor when assessing the audit question could recommend the following improvement actions:
Adequate lighting must be provided to persons accessing and working in darkened areas to prevent workers from slipping, tripping, falling or being hit by protruding objects;
 - Provide lighting on hoarding or external fencing for public safety;
 - Install all lighting systems in such a way as to ensure even distribution and absence of glare;
 - Provide emergency lighting to escape route and workplaces where necessary.
 - For vacant flat refurbishment works, at least three light sources shall be maintained in a vacant flat.

Question 14.1.4.9	Weighting: 9
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Are suitable safety boots properly worn by all workers?

Audit Criteria

1. Safety boots shall be provided to all site personnel except for bamboo scaffolders, plasterers and tilers.
2. Auditor should verify whether all site personnel properly wear suitable safety shoes.

Part 14.1.5 Protection Against Falling Objects

Question 14.1.5.1	Weighting: 6
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Is there a procedure to ensure that the risk of materials falling from height and injuries arising out of such risks are substantially reduced?

Audit Criteria

1. The intent of this question is to ensure that there is an order/way (planned) to ensure that the risk of being injured by falling objects is reduced. This includes identifying activities that will create a risk of falling in a survey and then develop the appropriate control measures, etc.
2. It is recommended to cover the activities in the survey of risk assessment and develop appropriate control measures to prevent falling objects.
3. High risk activities including (a) external wall furnishing (including mosaic/ tile repairing), (b) metal grille repair, (c) window repair (including window hinge replacement) and (d) spalling works. Risk assessments report for the mentioned site activities must be collected and assessed for every safety audit. If contractor could not produce relevant risk assessment reports for mentioned site activities, no scores should be given. If the established control measures were not observed during physical assessment, relevant audit findings and recommendations should be reflected in Q14.1.5.6.

Question 14.1.5.2

Weighting: 9

Are there appropriate measures taken to provide adequate protection such as nylon mesh, catch-fan and lift shaft gate to guard against falling objects?

Audit Criteria

1. The intent of the question is to ensure the protection against falling objects in cases where the objects are likely to fall from height. Examples of the arrangements are measures such as provision of protective fans and/or nets with the purpose of retaining objects falling from height (e.g. superstructure construction, slope protection works etc.)
2. At least a sloping catch-fan at not more than 15m vertical intervals to give a minimum horizontal projection coverage of 1,500mm should be provided. The sloping catch-fan should consist of timber boarding and a layer of galvanized metal sheeting, both adequate thickness to capture and retain falling objects.
3. On the face of the scaffold, suitable protective screen of fire retardant material should be provided to confine falling objects. If tarpaulin is being used as protective screen, its fire retardant characteristic should meet the requirements of BS 5867-2: 2008 (Type B performance requirements) or other equivalent national/ international standards or provisions.
4. Full height temporary protective barriers to lift shaft openings as protection against fall of persons and falling objects should be installed during the course of construction. Otherwise, the answer of this question should be "No". (Details of performance specification should refer to Question 14.1.3.11)

5. For external wall spalling works, protective screen should be placed underneath the working area to prevent falling debris from further rebound

Question 14.1.5.3 **Weighting: 9**
Is there a system for monitoring the frequency of inspections to these arrangements to ensure that there are no gaps, holes or accumulated debris?

Audit Criteria

1. The intent of the question is for the protection against falling objects for condition where the objects are likely to fall from height. Examples of the arrangements are measures such as provision of protective fans and/or nets in retention of objects falling from height (e.g. superstructure construction, slope protection works etc.) In addition, full height temporary protective barriers to lift shaft openings should be installed during the course of construction.
2. Regular inspection to those arrangements mentioned such as protective fans and/or nets, full height temporary protective barriers to lift shaft openings should be carried out to ensure that they are functioning properly (no gaps, holes or accumulated debris, etc.) There should also be a system to monitor the frequency of the regular inspections and on its effectiveness. It can be a mechanism that the site engineer/ site agent counterchecks the inspection records to monitor the implementation of such arrangements.
3. Ensure all voids/ openings on scaffold were completely covered by tarpaulin or other protection prior to work.

Question 14.1.5.4 **Weighting: 9**
Where relevant, are there covered walkways and adequate fencing to protect workers and pedestrians?

Audit Criteria

1. When considering control measures to contain or catch falling objects, identify the types of objects that could fall, as well as the fall gradient and distance, to ensure that any protective equipment or structures are strong enough to withstand the impact forces of the falling object. Examples of these control measures include:
 - erecting a covered pedestrian walkway
 - erecting a catch platform with vertical sheeting or perimeter screening
2. Auditor should verify the provision and adequacy of the covered walkways and fencing. Risk assessment results should be taken into consideration for provision of

- covered walkways and adequate fencing to protect workers and pedestrians
3. The need to exclude other personnel from scaffolding areas when scaffolding work is in progress should be considered.

Question 14.1.5.5 **Weighting: 9**
Are all working platforms and floor edges provided with guard-rails and toe-boards to prevent materials from falling from height?

Audit Criteria

1. On-site verification is necessary.

Question 14.1.5.6 **Weighting: 9**
Are there appropriate measures taken to prevent materials from falling from height in stacking/storage area?

Audit Criteria

1. It is recommended to cover the activities in the survey of risk assessment and develop appropriate control measures with consideration on the ground, environmental conditions and safe work practices to prevent falling objects.
2. The stacking/storage area must be well organized with appropriate stacking/storage systems to ensure the material is not:
 - insecurely stacked in a place;
 - stacked in such a way as to overload and render unsafe any floor or other part of a building or structure on the site;
 - stored loose or light material on roofs and open floors from blowing away in the wind.

Question 14.1.5.7 **Weighting: 9**
Are there appropriate measures taken to prevent materials, hand tools etc. from falling from height during work activities?

Audit Criteria

1. Working platforms, staircases and floor edges provided with guard-rail and toe-boards with wire mesh filling between them.
2. Closely boarded working platform.
3. Adequate measures and arrangements to avoid objects from falling down from height during the process of cutting, transferring or during lifting and lowering.
4. Control measures that can be implemented to manage the risk of falling objects

when undertaking construction work include:

- securing and properly bracing structures;
 - securing loose material such as plywood, iron sheets and off-cuts against the wind;
 - erecting perimeter containment screens;
 - not stacking materials close to un-meshed guardrails and perimeter edges;
 - enclosing areas over for working at height activities;
 - using toe-boards on edge protection;
 - using tool straps;
 - erecting catch platforms and/or nets;
 - closure of the adjoining area to form an exclusion zone;
 - establishing traffic management devices including road diversions or traffic detours;
 - using traffic controllers to direct pedestrians or other traffic.
6. Auditor should verify whether the auditee has arrangement in place e.g. provide tools strap etc. to prevent falling objects. If there is no arrangement in place, the answer should be "No".
 7. Auditee should demonstrate the established arrangements could effectively prevent materials / hand tools / hand-held power tools etc. from falling from height.

Question 14.1.5.8

Weighting: 9

Are suitable safety helmets properly worn by all workers?

Audit Criteria

1. Auditor should verify whether all workers properly wear suitable safety helmets with Y-type chin straps. If the Y-type chin strap cannot fix the safety helmet onto worker's head securely, the answer should be "No".
2. The standard of safety helmet and expiry date of safety helmet should be checked.
3. Chin strap is an integral part rather than an accessory of a safety helmet for better head protection to the workers. The proper use of chin strap is important to keep the helmet in place to prevent it from dropping off and thus enhances the protection against impact on the workers' heads, in particular during a fall from height. A safety helmet without a chin strap will not be regarded as a suitable safety helmet.
4. Contractor should provide each of operatives and site supervisory staff (also includes all visitors) with safety helmets with ventilation vents and Y-type chin straps and ensure that each of them wears the safety helmet on-site.

Sub-section 14.2 Management of Place of Work II

Part 14.2.1 Overhead and Underground Services

Question 14.2.1.1 **Weighting: 3**
Has all possible information about underground services and overhead power lines from utility undertakers and from the owners or occupiers of adjacent sites been obtained?

Legal Requirements

Construction Site (Safety) Regulations

1. Effective measures shall be taken to prevent workmen from being endangered by live electric cables or apparatus.
2. Adequate and suitably placed barriers or other means shall be provided to prevent electrically charged overhead cable or apparatus being a source of danger to workmen.

Code of Practice on Working near Electricity Supply Lines, EMSD

1. “Electricity supply line” means an electric line or any cable used in conjunction with such a line for the purpose of transmitting control signals, which is owned by an electricity supplier.
2. “Overhead electricity line” means an electricity supply line located at or above ground level.
3. “Underground electricity cable” (U/G cable) means an electricity supply line located below ground level.

Gas Safety (Gas Supply) Regulations, Chapter 51B

23A Works in the vicinity of gas pipes

- (1) No person shall carry out, or permit to be carried out, any works in the vicinity of a gas pipe unless he or the person carrying out the works has, before commencing the works, taken all reasonable steps to ascertain the location and position of the gas pipe.
- (2) A person who carries out, or permits to be carried out, any works in the vicinity of a gas pipe shall ensure that all reasonable measures are taken to protect the gas pipe from damage arising out of the works that would be likely to prejudice safety.

Code of Practice on Avoiding Danger from Gas Pipes, EMSD

“Gas” means-

- (a) town gas;
- (b) liquefied petroleum gas (LPG);

- (c) natural gas; or
- (d) any mixture of such gases,
whether in the form of a liquid or vapour.

"Gas pipe" means -

- (a) an installation pipe;
- (b) a service pipe; or
- (c) a gas main.

For the purposes of Part V of the Gas Safety (Gas Supply) Regulations, "gas pipe" does not include "an installation pipe" and therefore this code of practice only covers works in the vicinity of service pipes and gas mains.

Audit Criteria

1. The term 'service(s)' means all underground pipes, cables and equipment associated with the electricity, gas, water (including piped sewage) and telecommunications industries. It also includes other pipelines which transport a range of petrochemical and other fluids. It does not include underground structures such as railway tunnels etc.
2. Up-to-date, readable plans, which show the recorded line and depth (where known) of all their known services buried in the proposed work area are provided, along with any other relevant information.
3. In connection with electrical supply and gas pipes, auditor should assess all audit questions in this part of overhead and underground power lines according to the "Electrical Supply Lines (Protection) Regulation (Cap. 406)", "Code of Practice on Working near Electrical Supply Lines" and "Code of Practice on Avoiding Danger from Gas Pipes" published by EMSD.
4. The suspension of in-house electric cable lines at the entrance or around the site would be dealt with under Electrical Works (Section 14.5.5). Auditor should also comment on sufficient arrangement of barriers, goal posts and signs, etc. where applicable to those cables.

Question 14.2.1.2

Weighting: 3

Have risk assessment been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of working in the vicinity of underground/ overhead utilities?

Audit Criteria

1. Risk assessments should consider how the work is to be carried out; ensuring local

circumstances are taken into account.

2. The following hazards should be considered during preparation of risk assessment for working in the vicinity of underground/ overhead utilities.
 - (a) Fire and explosion
 - (b) Electric shock
 - (c) Flooding
 - (d) Damaging underground/ overhead utilities

Question 14.2.1.3

Weighting: 6

Where relevant, are there appropriate measures taken to ensure that barriers, goal posts, signs, etc. are provided and properly maintained in position of overhead power lines?

Audit Criteria

1. Steps should cover precautions near live overhead lines, work beneath power lines and passage beneath power lines.
2. If work beneath live overhead power lines cannot be avoided, barriers, goal posts and warning notices should be provided. Ground-level barriers can be constructed using:
 - (a) posts and rail fences;
 - (b) a high-tensile wire fence earthed at both ends (this should have warning flags or flicker tape on the wire so that it is clearly visible);
 - (c) large steel drums, brightly painted, filled with rubble and placed at frequent intervals;
 - (d) an earth bank at least 1 m high and marked by posts;
 - (e) timber baulks which act as wheel stops.
3. Auditor should verify the steps have been implemented. If no working near overhead power lines are anticipated, the answer should be “N/A”.

Question 14.2.1.4

Weighting: 3

Where relevant, have all workers in the vicinity of underground or overhead utilities been provided with sufficient information and instruction?

Audit Criteria

1. Before excavation work commences, workers should receive proper safe work procedures and adequate supervision. For working near underground cable, a site briefing given by competent person should be arranged to ensure that workers engaged in excavation works aware of the risks and control measures.

2. Instruction should cover hand-digging when nearing the assumed line of the cable.
3. Where it is necessary to work beneath live overhead cables additional precautions and instructions will be required to prevent the upward movement of ladders, scaffold poles, crane jibs, excavation buckets.
4. Auditee should keep a copy of cable alignment record and competent person written report on site and make available the relevant document for inspection (if applicable). The cable alignment record/ competent person written report should be posted on the barrier or railing on the site. If the record/ report is not readily available on site, the answer should be “No”.
5. For locating underground gas pipes, contractor must ensure that the information obtained is passed to the person actually carrying out the works and that he understands what safety precautions are required. Pipe locators should only be used by experienced people who have received specific training on how to use them. They are used to check the accuracy of the record plans provided by the gas supply company, and trial holes are dug to confirm the positions of gas pipes.

Question 14.2.1.5

Weighting: 6

Has proper excavation method been adopted to prevent damaging underground utilities during excavation works?

Code of practice on Working near Electricity Supply Lines, EMSD

As the position of excavation by mechanical excavators and hand-held power tools cannot be precisely controlled in practice, adequate minimum safe working distance shall be maintained between any U/G cable and the point where the equipment is used:

(a) Hand-held power tools - 500mm in any direction from any U/G, except when breaking out paved concrete surface where a horizontal safe working distance of 250mm is required;

(b) Mechanical excavators and others- 1m in any direction, for U/G cables of voltage below 132 kV and 3m for voltage 132kV or above.

Code of Practice on Avoiding Danger from Gas Pipes, EMSD

1. After a pipe locating device has been used and the location of the gas pipe established, the Competent Person shall determine the number of trial holes based on the gas pipe alignment and the number of underground services. Trial holes shall only be dug by hand tools to expose and confirm the position of any buried gas pipes.
2. In many situations, it will be necessary to use hand-held power tools to break out paved surfaces to facilitate excavation of trial holes. As the position of excavation by hand-held power tools cannot be precisely controlled in practice, hand-held

power tools shall not be used directly over the marked position of a gas pipe. A minimum horizontal clearance of 1m shall be maintained from the side of any gas pipe to the point where the equipment is used. Furthermore, great care must be exercised and use of such tools shall be limited to a depth of 150mm in footpaths and 300mm in roads. Putting a mark or a stopper on the tool may help visualize and control the depth of penetration.

3. Hand-held power tools shall not be used directly over the marked position of a gas pipe unless:
 - (a) the pipe has already be found at that position by careful hand digging and it is at a safe depth (at least 300mm) below the surface to be broken out; or
 - (b) physical means have been used to prevent the tool striking it.

Audit Criteria

1. Auditor should verify whether proper excavation method was adopted as well as verification with site personnel to ensure that they understand the procedure.
2. Maintain adequate safety clearance from underground electricity cables or gas pipes during excavation.

Question 14.2.1.6

Weighting: 6

Where relevant, have those pipes and cables which are still live or potentially hazardous been marked and supported?

Audit Criteria

1. Before work begins, underground cables must be located, identified and clearly marked. The position of the cable in or near the proposed work area should be pinpointed as accurately as possible by means of a locating device, using plans, and other information as a guide to the possible location of services and to help interpret the signal.
2. After locating the underground electricity cables or gas pipes, mark the alignment and depth on the road surface clearly.
3. The following approaches shall be adopted until the identity of the gas pipe has been positively confirmed:
 - (a) Water pipes may look very like gas pipes and shall be treated as live gas pipes if uncovered.
 - (b) Some electricity cables are also yellow in colour and may be mistaken for PE gas pipes. It must be treated as being live and potentially hazardous until proved otherwise.
 - (c) Occasionally gas pipes may run in ducts, making them difficult to identify.

Whenever there is doubt as to the identity of an exposed service (gas, water or electric), it must be treated as being live and potentially hazardous until proved otherwise.

(d) New PE gas pipes may be inserted into reserved old metallic pipes.

4. Underground utilities uncovered in an excavation need to be suitably supported and protected.
5. Gas pipe shall never be used as handholds or footholds for climbing out of excavations.

Question 14.2.1.7

Weighting: 6

Have competent persons with adequate training and experience been appointed to undertake underground utilities investigation and proper detection equipment been provided?

Audit Criteria

1. Appoint a competent person (approved by the Director of Electrical and Mechanical Services) to identify the alignment and depths of underground electrically cables/gas pipes; the contractor and/or person who actually carries out the works is responsible for ensuring where electricity cables/gas pipes are located before works begin.
2. Before excavations are carried out near utility services by means of mechanical plant, carry out full and adequate preliminary investigations to locate utility service by means of hand-dug trial holes.
3. The excavation trial hole shall be supervised by the competent person personally on site until target cable is exposed or the excavation work of trial cable is completed.
4. Upon completion of active cable detection/pipe locating, the competent person shall prepare a proper record for submission to the working party appointing him. Auditor should collect investigation report during the audit.
5. Upon completion of passive cable detection, the competent person shall prepare a proper record form. This form should include the following details:
 - (a) name and approval number of competent person;
 - (b) name of the site contractor or other working party;
 - (c) location, date and time for which the work on locating the U/G cable alignment was carried out;
 - (d) U/G cable alignment (for each U/G cable or for each group of cables) based on common reference points (e.g. lamp pole, traffic light post or hydrant, etc.)
 - (e) brand name, model number, serial number, calibration record and mode of

- operation of the U/G cable detection device used for the detection;
 - (f) proposed trial hole locations; and
 - (g) photos showing site markings for cable alignment and proposed trial hole locations.
6. Upon completion of active cable detection, the competent person shall prepare a proper record for submission to the working party appointing him. The record should include the following details:
- (a) name and approval number of competent person;
 - (b) name of the site contractor or other working party;
 - (c) location, date and time for which the active detection was carried out;
 - (d) the cable layout plan detailing the alignment of each U/G cable based on common reference points (e.g. lamp pole, traffic light post, or hydrant, etc.) and any cable sections in shallow depth;
 - (e) depth profile of each U/G cable (i.e. cable depth corresponding to each measurement point along the cable alignment);
 - (f) voltage level of each U/G cable;
 - (g) electricity supplier's advice, such as advice sought from the electricity supplier upon detecting major deviations of cable alignment on site from electricity supplier's cable plans, if any;
 - (h) photos showing the toroidal active detection and site markings for cable alignment and depth; and
 - (i) brand name, model number, serial number, calibration record and the adopted frequency of the U/G cable detection device used for the detection.
7. Upon completion of pipe locating, the Competent Person shall issue a note in writing with respect to the existence of any underground gas pipes and related gas installations at the works site or its vicinity. This written record shall be regarded as an "underground gas pipes survey record".
8. People who use a locator should have received thorough training in its use and limitations. Locating devices should always be used in accordance with the manufacturer's instructions, regularly checked and maintained in good working order.
9. Pipe locating devices of radio frequency detection or transmitter/receiver types are suitable for metallic gas pipes and polyethylene (PE) gas pipes furnished with metallic tracer wire. Although no PE gas pipe shall be permitted to be laid unless an approved means for position tracing of that pipe is provided following the issue of this Code of Practice on Avoiding Danger from Gas Pipes in July 1997, a few PE gas pipes might not bear any metallic tracer elements prior to issue of this code of practice. Extra care shall be taken in excavation near PE gas pipes. As a result it

is especially important to use plans and safe digging practices.

10. The goal of calibration is to minimise any measurement uncertainty by ensuring the accuracy of test equipment. The detection equipment should be calibrated at least annually (or according to the manufactures' guidance).

Question 14.2.1.8

Weighting: 3

Where relevant, have emergency procedures in relation to utilities services been established and communicated to the work-force?

Audit Criteria

1. Buried service suffers damage during the excavation or subsequent work; the owner/operator must be informed. In the case of electricity cables, gas pipes, other pipelines or high-pressure water mains, arrangements should be made to keep people well clear of the area until it has been repaired or otherwise made safe by the owner/operator.
2. If a gas leak is suspected, repairs should not be attempted. Evacuate everyone from the immediate vicinity of the escape. If the service connection to a building or the adjacent main has been damaged, warn the occupants to leave the building, and any adjoining building, until it is safe for them to return.
3. If a gas pipe suffers damage, however slight, the gas pipe owner/operator shall be informed immediately and arrangements shall be made to keep people well clear of the area until it has been repaired or otherwise made safe.

Part 14.2.2 Flammable Liquids and Gases

Question 14.2.2.1

Weighting: 3

Have all relevant requirements in regulations and codes of practice that apply to use, storage or transport of flammable liquids and gases been identified?

Legal Requirements

1. Factories & Industrial Undertakings (Dangerous Substances) Regulation
2. Dangerous Goods Ordinance (DG Ordinance)
3. Dangerous Goods (Control) Regulation
4. Dangerous Goods (Application and Exemption) Regulation
5. Gas Safety (Gas Supply) Regulations - Storage of LPG
6. Code of Practice for Control of Dangerous Goods on Land, Fire Services Department

7. Chemical Safety in the Workplace - Guidance Notes on Safe Use of Flammable Liquids, Labour Department

Audit Criteria

1. Flammable substances includes solvents and all types of mixtures and solutions such as oil based paints, white spirit, thinners, coating formulations which contain volatile flammable solvents and petroleum based adhesives.
2. Auditor should verify the requirements for the storage of flammable liquids, gases and vehicle fuels including storage in open air and storage inside a building.
3. Flammable liquids should be stored in a flammable liquid cabinet in a storeroom.

Question 14.2.2.2

Weighting: 3

Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action for the use and storage of flammable liquids such as petrol, thinner, diesel, LPG and acetylene gases or other materials and substances which could pose a high fire risk?

Audit Criteria

1. Combustible materials need to be stored in suitable stores outside buildings under construction, especially volatile flammable materials such as LPG. If combustible materials are stored inside buildings, they need to be kept in an area where the safety of people (on and adjacent to the site) is not threatened in the case of a fire. For example, do not put paint stores next to emergency exits or under any means of escape, e.g. steps/staircases.
2. Locate external stores in open air, in a well-ventilated area that is shaded from the sun. LPG cylinders and tanks should be stored away from construction activities and ignition sources.
3. Petrol-driven equipment should be installed in designated safe areas that are outside and well ventilated. Petrol cans should not be stored or used inside the structure or on escape routes.
4. Store oxygen cylinders separately from cylinders of flammable gases such as LPG and acetylene.
5. Auditor should verify the correctness and coverage of risk assessments of auditee in providing suitable storage of flammable liquids and gases.

Question 14.2.2.3

Weighting: 3

Are there procedures in safety plan regarding the storage and handling of flammable liquids and gases?

Audit Criteria

1. Auditor should verify what kinds of arrangements actually done on site with reference to the safety plan such as there are responsible persons for receiving those flammable liquids or gases with record and have it stored at the appropriate location; there is system to control how it is dispatched to workers or parties who need to use these flammable liquids or gases, etc.

Question 14.2.2.4 **Weighting: 6**
Where stored flammable liquids and gases exceed the exempted quantities, have the appropriate licenses been obtained?

Audit Criteria

1. Class 2 DG (Flammable Gases, etc.) exceeding 450 litres in aggregate in industrial premises shall be stored in a separated fire-resisting room constructed in accordance with the requirements of the Dangerous Goods Ordinance.
2. Class 3 DG (Flammable Liquids) exceeding 150 litres in aggregate in industrial premises shall be stored in a separated fire-resisting room constructed in accordance with the requirements of the Dangerous Goods Ordinance.
3. Valid DG licenses should be obtained if any stored flammable liquid and gas such as diesels, thinner, LPG for fork-lift truck, oxygen & acetylene cylinders etc. exceed the exempted quantities. Otherwise the answer should be "No".
4. If it is less than the exempted quantity, the answer should be "N/A".

Question 14.2.2.5 **Weighting: 6**
Where the stored flammable liquids and gases do not exceed the exempted quantities, have these been properly stored?

Audit Criteria

1. Flammable gases / substances not exceeding in the exempted quantity and aggregate exempted quantity accordingly shall be stored in suitable closed containers and the containers shall be kept in a metal cupboard or bin. The metal cupboard or bin shall be situated in a position where it is least likely that the flammable gases / substances will catch fire.
2. Every container, storeroom, cupboard and bin used for storing inflammable substances shall be clearly and boldly marked as 'Inflammable Substance 易燃物品'.

Question 14.2.2.6 **Weighting: 6**
Are there "No Smoking" signs displayed in all locations containing readily combustible or flammable materials?

Audit Criteria

1. Steps shall be taken to ensure that smoking or the use of naked lights is prohibited on site where flammable liquid or any mixture containing any such liquid or any substance or thing likely to pose fire risk is used.
2. Auditor should verify the implementation of non-smoking policy on site.

Part 14.2.3 Roadworks

Question 14.2.3.1 **Weighting: 3**
Is there an approved Temporary Traffic Management Scheme (TTMS) which includes a layout plan for lighting, signing and guarding equipment in place for the safe operation of roadworks and work near moving traffic?

Audit Criteria

1. Traffic flows should be assessed at the design and planning stage, and before beginning temporary traffic management works, to ensure flows are appropriate for the system of work employed.
2. Planning for road works includes not only how the works are to be carried out but also how the works are to be lit, signed and guarded. It is essential that proper and adequate lanterns, traffic signs and guarding equipment are available for the various stages of the works in accordance with the Code of Practice for the Lighting, Signing and Guarding of Road Works

Question 14.2.3.2 **Weighting: 3**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of roadworks?

Audit Criteria

The following hazards should be considered and it is not exhaustive:

1. Collisions between moving vehicles, collisions between pedestrians and moving vehicles, or the impact of a vehicle with stationary plant, vehicles or equipment can lead to physical injuries and damage or a loss of containment of chemicals.
2. Activities at site access and egress, unloading and storage areas, traffic and pedestrian routes.

3. The use of thermoplastic substances and bituminous materials in hot form.

Question 14.2.3.3 **Weighting: 6**
Are there appropriate measures taken to ensure a safety clearance between the works area and any part of the trafficked carriageway?

Audit Criteria

1. For expressways and roads with speed limit of 80 km/h or above, the lateral safety clearance between the works area and any part of the trafficked carriageway shall not be less than 1.2 m. Where it is impractical to provide such safety clearance, the lateral safety clearance shall be as wide as practicable with an absolute minimum of 0.5 m. Also, measures to temporarily reduce the speed of traffic passing the site to 70 km/h shall be put in place. For roads other than expressways and with speed limit of 70 km/h or below, the lateral safety clearance shall not be less than 0.5m. The above are the minimum lateral clearance requirements. Where it is reasonably practicable to provide additional clearance by closing the traffic lane adjacent to the road works, this should be done.
2. For situation where the required closure of part or whole of the adjacent lane to provide the lateral clearance is restrained by site conditions, the available options could include :
 - (a) Closing the road for the road works and diverting its traffic to other route if practicable ;
 - (b) By setting up guide island, imposing speed limit reduction temporarily or other means, reducing the speed of the oncoming and passing traffic to a safe limit that the traffic will not pose any hazard to the road works personnel.

Question 14.2.3.4 **Weighting: 6**
Do all road warning signs comply with the requirements of the code of practice for Lighting, Signing and Guarding of Roadworks?

Audit Criteria

1. Ensure that adequate number of traffic signs, cones, barriers, lighting and publicity signs are provided. Cones shall be provided on carriageway to delineate the boundaries of all roadworks, while barriers should be provided for the protection of pedestrians/work zones.

Question 14.2.3.5 **Weighting: 6**
Are there appropriate measures taken for ensuring the safety of other road users,

especially pedestrians?

Audit Criteria

1. Access should be planned to eliminate dangerous movements of site traffic. All necessary signage and barriers are to be put in place to protect pedestrians at the site entrance and at access and egress points.
2. Works area should not be left unattended without adequate signing, lighting and guarding. Steps to be taken to ensure that only authorized persons are allowed into any parts of the site.
3. Barriers with detachable horizontal members made of hard objects should not be used on high speed roads.
4. Adequate separation should be provided between the works area and the public access.

Question 14.2.3.6

Weighting: 6

Are workers carrying out roadworks provided with appropriate personal protective clothing/equipment, including high visibility clothing and are they used properly?

Audit Criteria

1. Provision and use of proper PPE should be included site safety rules.

Question 14.2.3.7

Weighting: 3

Where relevant, have workers been instructed on the hazards involved in the use of thermoplastic substances and bituminous materials supplied and used in hot form?

Audit Criteria

1. Site induction training and/or briefing should cover specific reference to traffic diversion, hazardous substances used, the use of relevant PPE and emergency procedures (if any), etc.

Question 14.2.3.8

Weighting: 6

Are there appropriate measures taken to control the movement and parking of vehicles and plants in or beyond the boundary of roadworks?

Audit Criteria

1. Vehicles should be fitted with amber flashing beacons, and/or multiple sequence

- warning sign.
2. Vehicles fitted with automatic reverse warning indicator.

Part 14.2.4 Occupational Safety and Health in Offices

Question 14.2.4.1 **Weighting: 3**
Have all relevant requirements in regulations and code of practices and safety information that apply to site offices been identified?

Audi Criteria

1. Occupational Safety and Health Regulation
2. Occupational safety and Health (Display Screen Equipment) Regulation
3. Code of Practice for Working with Display Screen Equipment

Question 14.2.4.2 **Weighting: 3**
Have risk assessments been conducted for display screen equipment to identify any foreseeable hazards, assess their risks, and recommend action for office in the site?

Audit Criteria

1. The Workstation Risk Assessment Checklist at the Annex of The Occupational Safety and Health (Display Screen Equipment) Regulation may be used in performing risk assessments of workstations.
2. An employee would be a “user” if he, by the nature of his work, e.g. data processing, telecommunications, computer graphic design, etc., is required to use display screen equipment almost every day,
 - (a) continuously for at least 4 hours during a day; OR
 - (b) cumulatively for at least 6 hours during a day.Breaks not exceeding 10 minutes in an hour away from the display screen equipment shall not be regarded as breaking the continuity of use of the display screen equipment.
3. DSE assessment applies to “DSE users” only.
4. As for risk assessment on Display Screen Equipment (DSE) at work station, it requires competent person with sufficient training (6 hours in two half-day Certificate of Competency in Display Screen Equipment Assessment course organized by OSHC or equivalent).
 5. Registered safety officer is considered as a competent person to conduct DSE risk assessment.

Question 14.2.4.3 **Weighting: 6**
Are all steps, stairs and floors in the office maintained in good condition and free from trip hazards?

Audit Criteria

1. Slip and trip hazards around the office workplace such as uneven floors, trailing cables, slippery floor due to spillages, etc.
2. Floors need to be checked for loose finishes, holes and cracks, worn rugs and mats etc.

Question 14.2.4.4 **Weighting: 6**
Is all electrical equipment properly installed and maintained?

Audit Criteria

1. The ends of flexible cables should always have the outer sheath of the cable firmly clamped to prevent the wires (particularly the earth) from pulling out of the terminals.
2. Use proper connectors or cable couplers to join cables. Do not use strip connector blocks covered by insulating tape.
3. Protect light bulbs and other equipment which could easily be damaged.
4. All electrical equipment and installations in office should be properly maintained. An appropriate system of visual inspection and, where necessary, tested by competent person.

Question 14.2.4.5 **Weighting: 6**
Are inspections of the office buildings carried out regularly?

Audit Criteria

1. Auditor should verify the safety inspection also covered the office area.

Part 14.2.5 Lift Maintenance Works

Question 14.2.5.1 **Weighting: 3**
Have all the requirements in the regulations, codes of practice and guidance which apply to lift maintenance works been identified?

Audit Criteria

1. Construction Sites (Safety) Regulations, Chapter 59I

2. Lifts and Escalators Ordinance, Chapter 618
3. Code of Practice on Building Works for Lifts and Escalators, Buildings Department
4. Code of Practice for Lift Works and Escalator Works, Electrical & Mechanical Services Department
5. Code of Practice for Safety at Work (Lift and Escalator), Labour Department
6. Guidelines of Safety of Lift Shaft Works Volume 3, Construction Industry Council

Question 14.2.5.2 **Weighting: 3**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of lift maintenance works on the site?

Audit Criteria

1. The auditor should verify the coverage of the risk assessments.
2. The risk assessment report should at least cover all the general maintenance activities which include but not limited to cleaning, lubrication, visual inspection, survey, repairing/replacing of existing component and retrieval of lost item etc.
3. If the hazards related to the lift maintenance work were not sufficiently identified, the answer should be “No”. The following hazards should be considered during preparation of risk assessments.
 - (a) Fall of person
 - (b) Striking against object
 - (c) Falling objects
 - (d) Electrocutation
 - (e) Contact with/ trapping by moving parts
 - (f) Failure of lifting appliance or lifting gear
 - (g) Scald/ burn
 - (h) Fire
4. If the written control measures were not appropriate to the identified hazards and risk evaluation, the answer should be “NO”.

Question 14.2.5.3 **Weighting: 3**
Have standards required of safe working procedure of lift maintenance work been established?

Audit Criteria

1. Site specific safe working procedure of lift maintenance work should be in place.
2. The answer should be “No” if there is no detailed working procedure or the

verification confirms procedures are not communicated to the relevant workers.

3. Procedures required should cover:
 - Work inside lift pit
 - Work inside lift shaft
 - Work on lift car top
 - Work inside lift machine room
 - Work at public area
 - Safe release of trapped passengers

Question 14.2.5.4 **Weighting: 6**
Have standards required of safe working procedures of lift maintenance work been communicated to all persons engaged in lift maintenance work and strictly implemented?

Audit Criteria

1. Auditor should verify if the arrangement for ensuring the developed standards are implemented on site as well as verification with site personnel to ensure that they understand the safe working procedures.
2. All persons engaged in lift maintenance work should know the developed standards of safe operation and their own responsibilities.
3. Auditor should verify the implementation of the written measures for each hazards specified in the safe working procedures

Question 14.2.5.5 **Weighting: 6**
Are there appropriate safety signs and barriers to warn and prevent the unauthorized personnel from entering or trespassing?

Audit Criteria

1. Suitable safety signs and barriers should be displayed/erected at workplaces.
2. Warning notices should be placed near lift shaft openings at prominent locations to remind all site personnel to take all necessary safety precautions.

EMSD Code of Practice for Lift Works and Escalator Works

1. Section 4.27.4 Whenever a landing door of a lift is unlocked or opened with the lift car not at the level of that landing, suitable safety precautions must be taken and the landing door should not be allowed to remain open any longer than is absolutely necessary for working. In any case, effective precautions shall be provided to prevent people from moving close to a landing entrance which is kept open or unlocked. This

may take the form of any of the following –

- (a) a barrier comprising a top guard-rail of not less than 900 mm and not more than 1 150 mm high with a mid-rail of not less than 450 mm and not more than 600 mm high, and toe-board being fixed across the landing entrance threshold; or
- (b) a mesh or solid enclosure of at least 1 m high being erected at an appropriate distance from the landing threshold.

If a landing door has to be removed, a solid full height hoarding with an access door should be constructed and maintained at opening to a lift shaft before removal of a landing door,

CIC Guideline on Safety of Lift Shaft Works (volume 3)

- 1. Section 8.2.1(g) Work inside Lift Pit - Suitable barriers with warning signs should be erected in front of the landing doors of the lowest floor and inside the lift car to prevent any person from getting close to the working area, falling into the lift pit or entering the lift car.
- 2. Section 8.3.1(b) Work inside Lift Shaft - Suitable entrance protection should be provided for guarding of openings in lift shaft. Barriers with warning notices should be erected in front of the landing doors. Landing doors should not be allowed to remain open any longer than necessary

Question 14.2.5.6

Weighting: 6

Are there appropriate safety devices such as car stopping device, emergency stop button, landing door interlock being verified for their effectiveness and activated to avoid unintended lift car movement?

Audit Criteria

- 1. Auditor should assess the arrangement for verifying the effectiveness of landing door interlock at working floor and car top emergency stop button / emergency stop button located inside lift shaft near the landing door at the lowest floor before entering car top / lift pit.
- 2. Activate the car top emergency stop button immediate before entering car top. Activate emergency stop button located inside lift shaft near the landing door at the lowest floor immediate before entering lift pit.
- 3. Depress the emergency stop button located at lift pit immediate after entering the lift pit.
- 4. The bypass of landing door interlock protection should be operated by the landing door bridging control station. The use of jumper for short-circuiting the landing door interlock should be prevented unless no landing door bridging control station

is installed in the control panel.

5. Verification with site personnel is necessary.

EMSD Code of Practice for Lift Works and Escalator Works

1. Working on the top of a lift car

Section 4.29.2 If any person needs to enter or leave the top of a lift car, suitable precautions such as the following shall be taken to ensure that the lift car will be stationary –

- (i) depress the car stopping device located at the car top; or
- (ii) switch off the main power supply to the lift.

Before any person entering the top of a lift car, the car stopping device located at the car top shall be depressed and the stopping function shall be verified, unless the main power supply to the lift is switched off and the lift car is stationary.

2. Working in a lift pit

Section 4.30.5 If any person needs to enter or leave the lift pit through the landing door at the lowest floor, suitable precautions such as the following shall be taken to ensure that the lift car will be stationary –

- (i) depress the emergency button located near the landing door at the lowest floor;
- (ii) depress the car stopping device located at the car top; or
- (iii) switch off the main power supply to the lift.

Before any person entering the lift pit, emergency button located near the landing door at the lowest floor or the car stopping device located at the car top shall be depressed and the stopping function shall be verified, unless the main power supply to the lift is switched off and the lift car is stationary.

Section 4.30.6 The emergency stop button located at the lift pit shall be depressed immediately after entering the pit.

LD Code of Practice for Safety at Work (Lift and Escalator)

1. Section 9.2.1 A car stopping device should be positioned within 1 m of the landing threshold and capable of being operated from the landing. The normal lift control circuit should be positively isolated before any worker attempts to gain access to the car top from the landing.
2. Section 9.2.5 Positive means should be provided to interrupt the normal control circuit for preventing car movement when the car landing doors are kept in an opening position for the purpose of the lift work.
3. Section 9.3.1 Before entering a lift pit, the stopping devices of the lift should be tested for their effectiveness.

British Standard Code of Practice for Safe Working on Lifts BS 7255:2012

1. Trained lift personnel entering the pit should prove the effectiveness of both:
 - a) the landing door electrical interlock circuit;
 - b) all stopping devices installed in the pit for use as stop switches.

CIC Guideline on Safety of Lift Shaft Works (volume 3)

1. Section 8.3.1(h) Safety devices in the lift shaft including the lift pit and the car top control station should be functioning properly. Especially, the effectiveness of those stopping device and manual control mode switch should be checked before the commencement of any work
2. Section 8.4.1 The Lift Contractor should ensure the following safety measures are in place before and during execution of work, as appropriate, on a lift car top:
 - (a) Control of the lift car should be made by using of the car top control station where inspection operation mode should be used to allow the car to travel at a speed of not more than 0.63 meter/second;
 - (b) Functionalities of the car top stopping device, the car top Inspection / Operation Switch, and the car top control movements in down and then up directions should be checked before carrying out any work on the car top;
 - (k) Whenever the car is stationary, the stopping device should be actuated

Question 14.2.5.7

Weighting: 6

Is there appropriate door blocking device placed to mechanically hold the landing door in the open position?

Audit Criteria

1. Proper door blocking device should be used to hold the landing door when landing doors are required to remain open.

CIC Guideline on Safety of Lift Shaft Works (volume 3)

1. Section 8.3.1 (k) For checking the position of the lift car, the landing doors should be opened not more than a clearance of 90 mm in width;
2. Section 8.3.1 (l) When landing doors are required to remain open, a proper door blocking device should be fitted in place to mechanically hold the doors in the open position.

Question 14.2.5.8 **Weighting: 6**
Are the inspection operation mode with locking system and communication system used to travel the lift car during working on lift car top?

Audit Criteria

1. The lift should only be operated at inspection mode during working on lift car top.
2. The key of the switch lock should not be kept by any one of the Lift Workers on the car top.
3. Auditor should check for appropriate communication protocol established and followed by the workers when working on car top and lift shaft.

CIC Guideline on Safety of Lift Shaft Works (volume 3)

1. Section 8.4.1 (a) Control of the lift car should be made by using of the car top control station where inspection operation mode should be used to allow the car to travel at a speed of not more than 0.63 meter/second.
2. Section 8.4.1 (c) Whilst Lift Workers are on the car top of a lift, the lift should only be operated at inspection mode and under no circumstances should the Inspection / Operation Switch be restored to “normal”. A switch lock or similar device should be installed to ensure the safety of the Lift Workers. Adequate steps should be taken to ensure that the switch lock or similar device is properly used. The key of the switch lock should not be kept by any one of the Lift Workers on the car top. If it is not reasonably practicable to do so during Lift Maintenance and Repair Works, proper arrangements should be in place to avoid improper use of the switch lock or similar device.
3. Section 8.4.1 (j) Communication protocol should be established and followed for Lift Workers working on the car top. All Lift Workers on the car top should understand the plan and procedures for the car movement in the works.

Question 14.2.5.9 **Weighting: 6**
Have sufficient lift workers been assigned to perform lift maintenance works?

Audit Criteria

1. Auditor should verify the arrangement for manpower as well as verification with site personnel to confirm that they understand the arrangement.

EMSD Code of Practice for Lift Works and Escalator Works

1. Section 4.11 Work to be carried out by two or more lift workers
Registered lift contractor or registered escalator contractor must ensure that the

following lift works (other than for stairlifts and vertical lifting platforms) are carried out by two or more lift workers as required –

- (a) Releasing passengers trapped in lift car which stopped outside the unlocking zone
- (b) Manually releasing the brake of the traction machine of an electric lift, or operating the manual emergency lowering or ascending device of a hydraulic lift
- (c) Works in the lift pit
- (d) Maintenance of the counterweight assembly
- (e) Carrying out maintenance works, while the lift is in motion, which cannot be performed by the worker who is controlling the motion of the lift
- (f) Lubricating wire ropes
- (g) Inspecting the conditions of the car top sheave
- (h) Manual measurement of the braking distance of an electric traction lift
- (i) Disassembling and checking the machine brake
- (j) Testing the electrical safety device of the landing door or car door lock
- (k) Maintenance of anti-rebound device and switch
- (l) Maintenance of buffer
- (m) Maintenance of safety gear mechanism, speed reducing elements for ascending car over speed protection means and unintended car movement protection means installed at bottom of lift car
- (n) Maintenance of electric safety chain at lift pit
- (o) Maintenance of safety gear, pawl, clamping devices, anti-creep device, hand pump, rupture valve, one way restrictor, manual lowering valve and hose/pipe work of a hydraulic lift

CIC Guideline on Safety of Lift Shaft Works (volume 3)

1. Section 8.1.1(i) General Precautions - Employ sufficient number of Lift Workers who are competent to carry out the works;
2. Section 9.2.17 Sufficient number of lift workers should be assigned for performing the rope replacement work. At least 4 numbers of lift workers should normally be required for replacement of main hoisting ropes.

Question 14.2.5.10

Weighting: 6

Are the permit-to-work systems implemented in accordance with safety working procedures/ method statements?

Audit Criteria

1. Auditor should verify whether the permit-to-work systems are strictly implemented on site.
2. If no site activity requiring permit-to-work is anticipated within audit period, the answer could be “N/A”.

CIC Guideline on Safety of Lift Shaft Works (volume 3)

1. Section 10.1 The Lift Contractor should develop and implement a permit-to-work system for controlling hazardous trade processes during Lift Works. As regards lift shaft works, each permit should specify its length of validity in terms of shift and the type of trade workers who are required to work inside the lift shaft.
2. Section 10.2 The following are some examples of hazardous trade processes:
 - (a) When other trade worker(s) is/are required to work inside the lift shaft where Lift worker(s) is/are engaging in lift works
 - (b) When lift worker(s) is/are required to work below a guided-SWP or a platform lift
 - (c) Hot work or electric arc welding is conducted inside or near a lift shaft
 - (d) Lift alteration works inside lift shaft
 - (e) Demolition of lift
 - (f) Rope replacement work
 - (g) Hoisting of a lift car or heavy parts; and
 - (h) Paint spraying process with the use of flammable liquids
3. Section 10.3 A permit-to-work should be in writing with the following details:
 - (i) Work to be undertaken;
 - (ii) Procedures involved;
 - (iii) Precautions needed;
 - (iv) Emergency procedures to be in place;
 - (v) Persons authorized to undertake the work
 - (vi) Timescale of the work to be undertaken
 - (vii) Restrictions on the workplace or equipment

Sub-section 14.3 Management of Tasks and Operations I

Part 14.3.1 Demolition

Question 14.3.1.1

Weighting: 3

Have all the requirements in all regulations, codes of practice and safety information which apply to demolition work been identified?

Audit Criteria

1. This question is not only applicable to all demolition contracts that required permission from Office of the Building Authority, but also the renovation, refurbishment, alteration and additional works etc. that involve demolition of original structural elements of a building such as walls, slabs, etc. Auditor should verify whether all the requirements in all regulations, codes of practice and guidance that may be applicable to the demolition work involved have been identified.

Question 14.3.1.2 **Weighting: 3**
Has a survey been carried out to identify the structural arrangement and condition prior to demolition?

Audit Criteria

1. The structural survey should consider the age of the structure, its previous use; the type of construction nearby buildings or structures, the weight of removed material or machinery on floors above ground level.
2. The method statement for the demolition should identify the sequence required to prevent accidental collapse of the structure.
3. Demolition sequence should start from the top of the structure to be demolished when hand tools, such as jackhammers, sledge hammers, and picks are used.

Question 14.3.1.3 **Weighting: 3**
Has a method statement in English and Chinese detailing the sequence and method of demolition, taking into account survey information and risk assessment, been produced?

Audit Criteria

1. A written method statement has been prepared and agreed with the Architect/Engineer.
2. Consult the utility companies and disconnect or divert all services.
3. Existing floors planned to be used are not overloaded. Otherwise, shoring should be installed to support the floors.
4. The demolition procedure is prepared and is appropriate for the demolition method to be used. The procedure should be specific for the site and sequential.
5. When removing entire wall sections using manual demolition methods that incorporate hand tools, such as jackhammers, sledge hammers, and picks, avoid weakening the wall by:
 - never taking down multiple rows of brick at once or starting at the bottom of

the wall

- removing the top course of bricks using a hammer and chisel
- finishing an entire row before starting the next

Question 14.3.1.4 **Weighting: 3**

Is there a “Specialist Contractor” appointed to carry out the demolition of a building?

Audit Criteria

1. The new construction site safety enhancement measures have specified in tender document, when sub-letting part of the demolition works, contractor is required to engage no more than one tier of sub-contractor who must be on the Housing Authority List of Demolition Contractors and/or the Buildings Department List of Registered Specialist Contractors (Demolition Works). Otherwise, the answer of this question should be “No”.

Question 14.3.1.5 **Weighting: 3**

Is there a “Competent Person” appointed to supervise the demolition of a building?

Audit Criteria

1. Verify that a competent person is in charge of the operation.

Question 14.3.1.6 **Weighting: 3**

Have all demolition workers including plant operators been trained?

Audit Criteria

1. Verify the workers’ and operators’ training record.
2. Plant operators/workers for demolition works should receive trade specific training.

Question 14.3.1.7 **Weighting: 3**

Have all demolition workers been instructed on the requirements of the method statement?

Audit Criteria

1. Verify that the training and briefing contents have covered the method statement.
-

Question 14.3.1.8 **Weighting: 6**
Have all reasonable steps to protect members of the public likely to be in the vicinity of the demolition work been taken?

Audit Criteria

1. Provision of warning notices.
2. Adequate protection including steel hoarding and covered walkway with lighting and safe access for the public.

Question 14.3.1.9 **Weighting: 6**
Have all materials and processes likely to create health hazards, e.g. noise and dust, been identified by risk assessment and have all necessary precautions been taken?

Audit Criteria

The following hazards should be considered and it is not exhaustive:

1. During demolition and dismantling, workers can be injured by falling from edges, or through openings, or fragile surfaces or partially demolished floors.
2. Workers and passers-by can be injured by the premature and uncontrolled collapse of structures, and by flying debris.
3. Uncontrolled collapse.
4. Gas, electricity, water and telecommunications services need to be isolated or disconnected before demolition work begins
5. Effective traffic management systems are essential on site; to avoid workers being struck by vehicles while turning, slewing, or reversing.
6. Hazardous materials that need to be considered include dust, asbestos and respirable crystalline silica (RCS).
7. Fire risk where hot work (using any tools that generate spark, flame or heat) is carried out.
8. Noise and vibration.

Question 14.3.1.10 **Weighting: 6**
Is flame-retardant sheeting installed to cover the building to be demolished?

Audit Criteria

1. Site is properly enclosed. Scaffold with flame-retardant screen and catch-fan.

Part 14.3.2 Excavations

Question 14.3.2.1 **Weighting: 3**
Have all the requirements in regulations, codes of practice and safety information which apply to excavations been identified?

Audit Criteria

1. Relevant information on: ground conditions; underground structures or water courses; and the location of existing services. This information should be used to during the planning and preparation for excavation work.
2. Construction Sites (Safety) Regulations
3. Code of practice on Safe Use of Excavator, Labour Department

Question 14.3.2.2 **Weighting: 3**
Is there a risk assessment to assess if the selected excavation plant is suitable for the work to be carried out?

Audit Criteria

1. Plant and vehicles driven too close to the edge of an excavation site, particularly while reversing, may cause the sides to collapse.
2. Excavators, loaders and combined excavator loaders may be used as cranes in connection with work directly associated with an excavation. These machines should be fitted with check valves or other device to prevent the gravity fall of the load, in the event of hydraulic failure.
3. Chains or slings for lifting must not be placed around or on the teeth of the bucket. Lifting gear may only be attached to a purpose made point on the machine.

Question 14.3.2.3 **Weighting: 3**
Has a risk assessment been conducted for the excavation work and for the support of the excavation and all associated protection?

Audit Criteria

1. Undertake a risk assessment and develop, implement and maintain a system of work that ensures safety for work in or near an excavation.
2. Hazards commonly associated with excavation work which should be considered by risk assessment are:
 - (a) fall or dislodgement of earth and rock;
 - (b) the instability of the excavation or any adjoining structure;

- (c) the inrush or seepage of water;
- (d) unplanned contact with utility services;
- (e) the placement of excavated material;
- (f) falls into excavations;
- (g) the movement and positioning of heavy plant and equipment affecting the excavation;
- (h) ground vibration affecting the excavation ;
- (i) vehicle movement;
- (j) excessive noise from the operation of machinery and plant;
- (k) manual handling injuries.

Question 14.3.2.4 **Weighting: 6**
Is the excavation adequately shored in accordance with the design of the temporary support systems?

Audit Criteria

1. Before digging any trench pit, or other excavations, a plan and/or a method statement will be required to decide what temporary support systems and safety precautions to be taken.
2. Make sure the equipment and precautions needed (trench sheets, props, baulks, etc) are available on site before work starts.
3. Check that excavations do not undermine scaffold footings, buried services or the foundations of nearby buildings or walls. Decide if extra support for the structure is needed before start. Surveys of the foundations and the advice of a structural engineer may be required.
4. When removing the shoring supports, the support system should be extracted/dismantled in the reverse order of its installation. Persons working inside the excavation should work inside the protection of the ground support.
5. Battering the excavation sides to a safe angle of repose may also make the excavation safer.

Question 14.3.2.5 **Weighting: 6**
Are there appropriate measures taken to prevent the fall of persons and drowning in excavation?

Audit Criteria

1. Suitable guard rails and toe-boards erected immediately next to the supported excavation side; or

2. Using support system itself, e.g. trench box extensions or trench sheets higher than the trench depth.
3. During excavation work, where excavation is likely to collect or retain water, the excavation should be covered or fenced off. Provision of rescue means such as lifebuoys should be considered.

Question 14.3.2.6 **Weighting:** 6

Are there appropriate measures taken to prevent materials or plant from being stacked or worked too close to edges of excavation?

Audit Criteria

1. Plant and vehicles close to the sides of excavations can make extra loadings to the sides of excavations more likely to collapse.
2. Loose materials may fall from spoil heaps into the excavation. Edge protection should include toe-boards or other means, such as projecting trench sheets or box sides to protect against falling materials.

Question 14.3.2.7 **Weighting:** 6

Are safe means of access and egress provided to the excavation?

Audit Criteria

1. Where there is reason to apprehend danger to persons employed therein from rising water or from an eruption of water or material, adequate means are provided, so far as practicable, to enable such persons to reach positions of safety in the event of emergency
2. Provision of a safe means of movement between different levels of the excavation. Use of intermediate platforms for deep excavation.
3. Where ladders are used for access, the ladder should be secured at both top and bottom to prevent displacement and must be set up at an angle of 1:4 (75 degree). A safe and adequate sized landing place when stepping off the ladder and stiles of the ladder should be provided and extended at least one metre above the landing place.

Question 14.3.2.8 **Weighting:** 6

Where applicable, are there appropriate control measures taken to protect workers against airborne and soil contaminants?

Audit Criteria

1. Where there is a risk of inhalation of harmful airborne substances such as silica dust or contact harmful soil contaminants such as asbestos, a safe system of work including monitoring of airborne contaminants and soil samples should be conducted and specific measures for protection, handling and removing should be taken.

Question 14.3.2.9

Weighting: 3

Have competent persons with relevant training and experience been appointed to carry out regular inspections and examinations?

Audit Criteria

1. Auditor has to obtain the following evidence:
 - (a) Training and experience records of the competent person i.e. qualification in engineering and acceptable experience.
 - (b) Appointment letter for the competent person to carry out regular inspections of all excavations.
2. Scenarios:
 - (a) If the excavation work has not started, Auditor should check item 1(a) & 1(b).
 - (b) If the excavation work is in progress, Auditor should check item 1(a) & 1(b).
 - (c) If no excavation work is anticipated or all excavation work has been completed, the answer should be “N/A”.

Question 14.3.2.10

Weighting: 6

Are inspections and examinations carried out at appropriate intervals and are the results entered in the prescribed form?

Audit Criteria

Auditor has to obtain the following evidence:

1. Training, experience records and appointment letter as per Question 14.3.2.9.
2. Updated and proper inspection records (Form 4) bearing the designation and signature of the competent person to prove that the competent person has conducted the inspections in a 7-day interval as necessary.
3. Name and designation of the person responsible for regular inspection should be clearly stated on the statutory inspection form. As this is a mandatory requirement, the form should be properly filled in with the name and designation; otherwise the answer should be “No”.

Part 14.3.3 Lifting Operations

Question 14.3.3.1 **Weighting: 6**
Have all the requirements in regulations, codes of practice and safety information which apply to lifting operations been identified?

Audit Criteria

1. Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations, lifting appliances and gear manufacturers' manual and certificates, etc.
2. Code of Practice for Safe Use of Mobile Cranes, Labour Department
3. The objective of obtaining safety information is to ensure that every lifting operation involving lifting equipment can be properly planned by a competent person.

Question 14.3.3.2 **Weighting: 6**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of lifting operations?

Audit Criteria

1. Specific risk assessments should be carried out for all high-risk lifting operations.

Question 14.3.3.3 **Weighting: 6**
Is there a lifting plan in place, which covers the transportation, erection and dismantling, operation, communication, guarding of dangerous parts, inspection, testing and examination and maintenance, to ensure that lifting operations are carried out safely?

Audit Criteria

1. The lifting plan is a set of plans which is created for use in any lifting operations. All lifting operations shall be accompanied by a lifting plan supported by a risk assessment, a safe work procedure and/or method statement. Frequent or routine lifting operations may only require a basic lifting plan. Non-routine or complex lifts however, requires additional planning and engineering design efforts to ensure that the lifting is conducted safely.
2. The lifting plan will need to identify the resources required, the procedures and the responsibilities so that any lifting operation is carried out safely.

3. The lifting plan shall include but not limited to following:
 - Personnel required;
 - Personnel's roles, responsibilities and competencies;
 - Nature, weight and dimension of loads;
 - Selection of appropriate lifting equipment and lifting gear;
 - Application of the correct lifting methods;
 - Position of personnel and lifting equipment;
 - Assessment of the need for tag lines;
 - Means of communication.

Question 14.3.3.4

Weighting: 9

Are there appropriate measures taken to ensure that all lifting appliances and associated lifting gear are suitable for the operations?

Audit Criteria

1. Thorough planning of the operations, along with the selection, provision and use of suitable lifting appliance(s) and associated lifting gear.
2. The position and movement of lifting appliances are safe and suitable.
3. Check for any ramps, slopes, gates, archways, buildings, trees or overhead lines that would present an obstacle or danger, and make sure that refuelling or other service vehicles can gain access without causing a hazard.
4. The method of determining the weight of the load to be hoisted. This information can be obtained from shipping papers, design plans, catalogue data, manufacturer's specifications, and other dependable sources. When such information is not available, it is necessary to calculate the load weight.
5. All types of crane, except those with maximum safe working load of 1 tonne or less or those operate with a grab or by electromagnetic means, shall be fitted with an automatic safe load indicator.
6. The outrigger beams should be marked or painted in a manner to indicate the fully extended position.
7. Motion limit devices should be fitted to limit hoisting, derricking, travelling, slewing or any other crane motion.
8. If safety latch is provided on the lifting hook, maintain a safe working condition of safety latch to prevent displacement of the sling.
9. Where a sling is employed, the sling should not be allowed to damage the load, nor should the sling itself be damaged.

Question 14.3.3.5 **Weighting: 9**
Are there appropriate measures taken to ensure that all lifting operations are carried out safely?

Audit Criteria

1. Comply with the following measures in lifting operations:
Ensure all workers to leave the danger zone of lifting operation before the load being lifted is started to be lifted above 300-500mm off the level where it is originally placed, but the crane operator is an exception if it is not feasible to have remote control of mobile crane by the crane operator;
2. If it is not reasonably practicable to fence off the lifting zones due to space constraint, etc. the taking of effective measures such as appointment of sufficient watch-out personnel to ensure no unauthorized entry into the zones.
3. If outriggers are provided, the beams should be fully extended as far as practicable. The jacks should be suitably extended so that all the crane tyres are clear of the ground. Use of partially extended outriggers should be avoided as far as practicable because the stability of the crane may be greatly reduced.
4. The mat or timber blocking should be at least 3 times larger in area than the float (unless a smaller area is specified by the manufacturer) and completely support the float. For timber blocking, it should be tightly spaced and level to guarantee a right angle (90 degrees) between the cylinder and the float of the outrigger.
5. Proper rigging methods should be established. Consideration should be given to the effect of increasing tension on the sling with increasing sling angle to the vertical or with increasing choker angle to the vertical.
6. Loose materials such as stones, bricks, tiles, slates or other objects have to be lifted in a receptacle of adequate strength. Where a receptacle is used for raising or lowering stones, bricks, tiles, slates or other objects, the owner of the lifting appliance or lifting gear shall cause the receptacle to be enclosed or to be so constructed or designed as to prevent the accidental fall of any such objects.
7. Long bars should be securely tied up before a sling is being applied and a tag line or control rope should be provided to prevent the swing or rotation.

Question 14.3.3.6 **Weighting: 9**
Are all non-standard lifting operations such as tandem lifting carried out safely?

Audit Criteria

1. Where more than one lifting appliance is used to raise or lower one load, each lifting appliance shall be so arranged and fixed that it is at no time loaded beyond its safe

- working load or rendered unstable.
2. A competent person shall be specially appointed to supervise the operation of using more than one lifting appliance to raise or lower one load.
 3. Apply permit-to-work system for multiple lifting appliances.

Question 14.3.3.7

Weighting: 6

Are all operators, signallers, riggers and responsible persons engaged on lifting operations trained for the work and competent to carry out their tasks?

Audit Criteria

1. An operator should be appointed as the following :
 - A power-driven lifting appliance (other than a crane) shall only be operated by a person who has attained the age of 18 years.
 - A power-driven lifting appliance (other than a crane) shall only be operated by a person who is trained and competent to operate it.
 - A crane shall only be operated by a person who holds a valid certificate issued by the CIC or by any other person specified by the Commissioner for Labour
 - A crane shall only be operated by a person who is competent to operate it by virtue of his experience.
2. A signaller shall be appointed and stationed to give effective signals to the operator of a lifting appliance to ensure its safe working.
3. A signaller shall have attained the age of 18 years unless he is undergoing training under the supervision of a competent person.
4. The signaller shall also have completed A12 Silver Card and Signaller for Hoisting Operations at Construction Sites Course or A12S Safety Training Course for Construction Workers of Specified Trade – Rigger and Signaller provided by CIC. Acceptance of training provided by other organisation is subject to verification based on course contents.
5. Steps shall be taken to ensure that no load is left suspended from a lifting appliance unless a competent person is in charge of the lifting appliance during the period of suspension.
6. The riggers have received A12 Silver Card training on general safe lifting operations, and are capable of selecting lifting gears suitable for the loads and liaise with the signaller for directing the movement of the crane safely.
7. The responsible person is appointed by the contractor and is responsible for the control of the overall tower crane lifting operation and for the proper implementation of a site safety management system.

Question 14.3.3.8 **Weighting: 6**
Have competent persons with training and experience been appointed to carry out regular inspections, examinations, thorough examinations and tests?

Audit Criteria

1. Auditor should refer to the definition of competent examiners and competent person in the Code of Practice for Safe Use of Mobile Cranes.
2. Auditor has to obtain the following evidence:
 - (a) Training and experience records of the competent person i.e. qualification in engineering and acceptable experience.
 - (b) Appointment letter for the competent person to carry out regular inspections of all lifting appliances.

Question 14.3.3.9 **Weighting: 6**
Are inspections, examinations, thorough examinations and tests carried out at appropriate intervals and are the results entered in the prescribed form?

Audit Criteria

Auditor has to obtain the following evidence:

1. Training, experience records and appointment letter as per Question 14.3.3.8.
2. Updated and proper inspection records (Form 1) bearing the designation and signature of the competent person to prove that the competent person has conducted the inspections in a 7-day interval as necessary.
3. Examinations and tests record produced by RPE.
4. Preliminary certificate will not be accepted as a proof on certification of safe operation. Auditee is advised to obtain the RPE certificate as soon as possible. Name and designation of the person responsible for regular inspection should be clearly stated on the statutory inspection form. As this is a mandatory requirement, the form should be properly filled in with the name and designation otherwise the answer should be “No”.

Question 14.3.3.10 **Weighting: 6**
Are all faults discovered during the examinations and inspections reported?

Audit Criteria

1. A well-planned program of regular inspection carried out by an experienced person. All lifting appliances and gear in continuous service should be checked daily during normal operation and inspected on a weekly basis. A record of each rope should

include date of installation, size, construction, length, extent of service and any defects found.

Part 14.3.4 Falsework/Temporary Works

Question 14.3.4.1 **Weighting: 3**

Have all the requirements in regulations, codes of practice and safety information which apply to falsework/temporary works been identified?

Audit Criteria

1. Temporary works cover all temporary works of every kind required in or about the execution, completion or maintenance of works and includes all temporary to support either existing structure or permanent works during construction. In this section, temporary works mainly refer to falsework which is used to support and framing used to define the shape of concrete until it is self-supporting.
2. Guidance Notes : Safety at Work (Falsework - Prevention of Collapse), Labour Department
3. The competent engineer should prepare a set of instructions in the form of drawings and specifications specifying the framing, construction details (especially for connections), methods and sequences of erection, standard of materials and workmanship, and method statement for dismantling. Safe access and egress for workmen should also be clearly shown.
4. The design of any temporary works shall be checked and certified by an engineer who is independent from the contractor and not associated with the design of the temporary works.
5. The independent checking engineer shall be a professionally qualified engineer and a member of the Hong Kong Institution of Engineers or the UK Institution of Civil Engineers or equivalent, whom the contractor considers to have suitable experience and is acceptable to the Engineer.

Question 14.3.4.2 **Weighting: 3**

Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of falsework/temporary works?

Audit Criteria

1. Specific and comprehensive risk assessment should be conducted for the erection, alteration and dismantling of falsework/temporary works.

2. The falsework collapsing under load. Concrete pouring by crane, skip, barrow, dumper or pumping produces impact forces.
3. The works under construction should be suspended when any undue movement of the falsework occurs.
4. Falls from height.
5. Risks to the health and safety of others who may be working on, or passing by, the construction activity. Risks could arise, for example, from falling materials, wind-blown plywood or scaffold boards, noise and dust.

Question 14.3.4.3

Weighting: 3

Is there a procedure/method statement for erection and dismantling of falsework/temporary works?

Audit Criteria

1. The design of any Falsework/Temporary Works shall be checked and certified by an engineer independent of the Contractor and not associated with the design of the Temporary Works. The design so certified shall be referred to as the certified design.
2. The methods for erecting and for dismantling the falsework should be included in the drawings in a clear and understandable form. Such a method statement should at least include:-
 - (a) details of the methods in each stage of erection/ dismantling;
 - (b) sequence of erection / dismantling;
 - (c) plant and equipment to be used;
 - (d) details of working platforms and access routes; and
 - (e) details of anchorage if any.
3. Specific safety procedures e.g. permit-to-work/load should be established.
4. Feed-back information from the site during progress of work, such as change of site conditions and problems associated with methods of erection, use or dismantling should be reported to the competent engineer or the falsework coordinator if appointed.
5. Amended drawings or specifications if required should be issued to meet the prevailing circumstances.
6. The design, construction, use, alteration and dismantling of falsework shall comply with BS 5975 or other equivalent national / international standards or provisions. The falsework shall be designed by professional engineer. If the falsework may cause any effect on the permanent structure or as instructed by the CM, a Qualified Engineer shall be arranged to cross-check the design and certify completion of such works.

Question 14.3.4.4 **Weighting: 3**
Is someone appointed with clear duties and responsibilities to co-ordinate and implement the temporary works procedures in relation to standard solutions and to fully designed falsework/temporary works system?

Audit Criteria

1. Appoint a competent construction supervisor to supervise the construction of falsework. The supervisor should have sufficient technical knowledge and management skills, and be able to read and understand the drawings and specifications for the falsework.
2. Contractor should appoint a competent person structural quality coordinator as temporary works co-ordinator (TWC) with responsibility for the co-ordination of all activities related to the temporary works.
3. Site management personnel and workmen should be trained to fully understand the contents of the drawings and specifications for the falsework, especially the sequence of erection which should be strictly adhered to.
4. All works, especially interface works between different trades should be continuously supervised by competent site management personnel.
5. Appoint a competent dismantling supervisor to supervise the dismantling work. The supervisor should have sufficient technical knowledge and management skills, and be able to read and understand the method statement for dismantling the falsework.
6. The supervisor should have a set of drawings showing the method statement for dismantling the falsework. The method of safe removal, lowering and transportation of dismantled materials by suitable means, including safe working platforms and safe access should be specified.
7. The workmen should be trained to fully understand the contents of the method statement, especially the sequence of dismantling which should be strictly adhered to.

Question 14.3.4.5 **Weighting: 3**
Where relevant, has a permit to load certificate been prepared for a fully designed falsework / temporary works before loading?

Audit Criteria

1. Once complete, all falsework should be inspected and certified as ready for use (a written permit-to-load procedure, e.g. DEI-F26 – Examination of Work before Covering Up, is strongly recommended).
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2. The sequence of placing permanent works such as wet concrete should comply with the competent engineer's intentions expressed in the drawings and specifications.
3. Concrete pouring by crane, skip, barrow, dumper or pumping produces impact forces. The free fall should not exceed 0.5 m unless otherwise permitted by the competent engineer. Heaping of wet concrete within a small area should be avoided, e.g. in an area of one square metre, the height of the heap above the formwork surface should not exceed three times the depth of the slab unless otherwise shown in the drawings. Unless otherwise permitted by the competent engineer, equipment for concrete pumping should not be fastened to the falsework.

Question 14.3.4.6

Weighting: 6

Are safe means of access and safe working platforms provided for falsework / temporary works workers, including those who have to check the installations?

Audit Criteria

1. Falsework is defined as any temporary structure used to support a permanent structure while it is not self-supporting, either in new construction or refurbishment. Contractor conducting activities within falsework structures should observe the following:
 - (a) To prevent the falsework collapsed under load;
 - (b) To ensure those constructing and dismantling the falsework can carry out their work safely, in particular to prevent fall from height; and
 - (c) To eliminate risks to the health and safety of others who may be working on, or passing by, the construction activity. Risks could arise, for example, from falling materials, wind-blown plywood or scaffold boards, noise and dust.
2. The framing of falsework should give a robust and stable structure, especially for falsework near vehicular traffic. The structure should be designed and constructed so that it is not unreasonably susceptible to effects of impacts or vibrations. Damage to small areas of a structure should not lead to collapse of major parts of the structure. To avoid accidents, adequate headroom, lighting, warning signs and signals, and impact protection measures should be provided.
3. The false work should be constructed according to the approved design drawing. Verification is necessary through physical inspection and interview with relevant workers.

Question 14.3.4.7 **Weighting: 6**
Are inspections carried out at appropriate intervals and are the results entered in the record?

Audit Criteria

1. The frequency of subsequent inspections will depend on the nature of the falsework / temporary works. They should be carried out frequently enough to enable any faults to be rectified promptly.

Part 14.3.5 Structural Steel Erection / Dismantling Works

Question 14.3.5.1 **Weighting: 3**
Where work involves the erection/dismantling of steel structures, has a method statement been developed based on consultation with the designer of the structure?

Audit Criteria

1. Structural steel is defined as steel shaped for use in construction. In this section, structural steel mainly refers to shaped steel used to support temporary or permanent works during construction such as I-beam erected for excavation and lateral support works (ELS).
2. Sufficient information should be provided by designers so that the contractor is aware of the precautions which need to be taken to ensure the stability of the steelwork.
3. Contractor should provide method statement of the proposed erection/dismantling method and submit to the designer for acceptance.

Question 14.3.5.2 **Weighting: 3**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of steel structure erection/dismantling?

Audit Criteria

1. The erection/dismantling of steel structures and building frames involves work at heights and exposed positions.
 2. The time spent at individual work points is often relatively short; access scaffolding is frequently not used.
 3. The movement of structural steelwork by cranes.
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4. Collapse of structures.
5. Structural steel columns blow down by the wind.

Question 14.3.5.3 **Weighting: 6**
Have safe means of access and safe working platforms been provided where high level work is necessary?

Audit Criteria

1. Working platforms designed to be attached at ground level, raised with the components and removed by crane after use.
2. Ladders fixed to stanchions before erection should be used for vertical access.
3. Provision of horizontal access between points of structural frames by means of permanent staircases and walkways complete with guard-rails.
4. Mobile scaffold towers and mobile hydraulic extending platforms can be used with great improved safety.

Question 14.3.5.4 **Weighting: 6**
Are temporary supports provided to steel structures during erection/ dismantling works?

Audit Criteria

1. Substantive support shall be provided to support the steel structure to be erected/ dismantled and its adjoining structures from accidental detaching, collapsing or failure during such works.
2. Temporary supports should be provided in accordance with the approved method statement and design drawings.

Question 14.3.5.5 **Weighting: 6**
Is there clear access for all mobile access equipment, cranes, etc.?

Audit Criteria

1. Construction of ground-floor concrete slabs access roads to provide a cleaner and safer site.

Question 14.3.5.6 **Weighting: 6**
Are there suitable storage areas for structural steel components?

Audit Criteria

1. The layout of the storage area for steelwork and materials needs to be arranged so that vehicles and cranes can move about without risk of collision.

Question 14.3.5.7 **Weighting: 6**
Have all the personnel involved in the tasks been trained and provided with appropriate protective clothing/equipment and are they used properly?

Audit Criteria

1. Auditor should comment on the training records and the proper use of PPE on site.

Part 14.3.6 Welding/Cutting Operations and Equipment

Question 14.3.6.1 **Weighting: 3**
Have all the requirements in regulations, codes of practice and safety information for safe welding and cutting been identified?

Audit Criteria

1. Factories And Industrial Undertakings (Gas Welding And Flame Cutting) Regulation
2. Code of Practice: Safety and Health at Work for Gas Welding and Flame Cutting, Labour Department
3. Code of Practice: Safety and Health at Work for Manual Electric Arc Welding, Labour Department
4. Keep the quantity of gas cylinders in storage to a practical minimum and in compliance with the requirements under the Dangerous Goods Ordinance (Chapter 295).
5. A gas installation may be used in which each gas is supplied from several cylinders connected in a manifold or from a bulk supply through pressure regulator with pressure gauge, associated piping and gas hose to the blowpipe. Such gas installation and associated piping should comply with relevant legislation, such as the Dangerous Goods Ordinance (Chapter 295) and Gas Safety Ordinance (Chapter 51).

Question 14.3.6.2 **Weighting: 3**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of welding/cutting operations and equipment?

Audit Criteria

1. The main hazards of gas welding are from fire and explosion. These are caused by careless handling of a lighted blowpipe resulting in burns to the user or others; using the blowpipe too close to combustible material; cutting up or repairing tanks or drums which contain or may have contained flammable materials; gas leaking from hoses, valves and other equipment; misuse of oxygen; backfires and flashbacks.
2. The main hazards of welding on metals may lead to a build-up of dangerous fumes requiring exhaust ventilation.
3. Other hazards include electric shock, radiation and burns.

Question 14.3.6.3

Weighting: 3

Are all personnel involved in electric arc welding or/ and gas welding operations competent?

Audit Criteria

1. The general welder shall have at least attained the level of intermediate tradesman and registered as Registered Semi-skilled Worker under the Construction Workers Registration Ordinance.
2. The general welder undertaking flame cutting and gas welding work shall have attained the training qualification of a gas welding safety training course approved by Labour Department and holds a valid training certificate.

Question 14.3.6.4

Weighting: 6

Are there appropriate steps taken to facilitate routine inspection and maintenance of the gas installation and associated piping?

Audit Criteria

1. Gas hoses should be easily inspected and should not be easily damaged by other activities in the workplace, such as being run over or struck by heavy equipment.
2. Gas hoses should not be coiled around the gas cylinder or the pressure regulator.

Question 14.3.6.5

Weighting: 6

Are gas welding/cutting cylinders stored as per regulations/guidance?

Audit Criteria

1. If the oxygen & acetylene cylinders used on site have exceeded the exempted quantities and a valid DG license was not obtained, the answer should be “No”.
2. If the cylinders used on site do not exceed the exempted quantities, Auditor should

verify whether cylinders are stored as per Code of Practice for Safety and Health at Work for Gas Welding and Flame Cutting etc.

3. Auditors should comment on the storage condition and visual evidence should be provided for verification.

Question 14.3.6.6 **Weighting: 6**
Are safety devices provided in gas supply system to prevent fire and explosion?

Audit Criteria

1. The use of safety devices to prevent fire and explosion, including flashback arrester, non-return valve, pressure relief device, vent and purge device.

Question 14.3.6.7 **Weighting: 6**
Have purpose-built trolleys /carriers been provided for moving cylinders?

Audit Criteria

1. Moving cylinders in suitable trolleys which they are secured upright.

Question 14.3.6.8 **Weighting: 6**
Are all welding operatives provided with appropriate personal protective clothing/equipment and are they used properly?

Audit Criteria

1. Suitable personal protective equipment should be selected appropriate to the hazards encountered, and should be properly used and maintained.
2. PPE includes eye protection, skin and body protection. If local ventilation cannot be arranged, welder should be provided with respiratory protection and a supply of fresh air.
3. Auditor should comment on the personal protective equipment provided to welding operatives even when no operation was being carried out during the physical verification.
4. If there is no issue record of personal protective equipment for the welding operatives, the answer should be “No”.
5. The answer may be “N/A” if no activity was carried out during physical verification provided that the auditor had verified the provision of personal protective equipment to the operatives.

Question 14.3.6.9 **Weighting: 6**
For electric arc welding, are there appropriate measures taken to protect people from electrocution hazard?

Audit Criteria

1. The workpiece should be well earthed, and all equipment should be earthed and insulated.
2. Welding machines having a maximum current output exceeding 30A single phase or half the maximum demand of an installation in any one phase is directly connected to the mains on a 3-phase supply.
3. Turn off the welding machine when left unattended.
4. Use welding machine for enclosed type, and ensure that terminals of the welding machine are properly protected to avoid accidental contact.
5. The welding machine should be equipped with a voltage reducing device to automatically reduce the out voltage at no-load condition

Question 14.3.6.10 **Weighting: 6**
Are welding operations adequately screened or isolated from other workers/passers-by?

Audit Criteria

1. The work area should be screened off with sturdy opaque or translucent materials.
2. The auditee should provide and erect fire retardant screen to prevent spread of sparks generated from the welding or flame cutting operation onto other area. Sufficient welding protection (i.e. welding curtain/blanket to ANSI/FM 4950 or equivalent) to prevent any sparks or objects from dropping out of the protective zone should be provided.

Question 14.3.6.11 **Weighting: 6**
Is the workplace suitable for carrying out welding works?

Audit Criteria

1. Remove any combustible/ flammable materials from the work area. No welding operation should be conducted in an environment having a flammable atmosphere or having flammable materials in the vicinity.
2. Ensure that adjacent areas, which may be affected by the heat, sparks and slag generated by the welding operation, are free from combustible/ flammable materials and fire hazards.

3. Ventilate the indoor workplace using air blowers and exhaust fans to remove poisonous fumes and gases that are given off during welding.

Part 14.3.7 Site Traffic

Question 14.3.7.1 **Weighting: 3**
Have all the requirements in regulations, codes of practice and safety information for site traffic control been identified?

Audit Criteria

1. Site traffic control relies upon a combination of physical features such as the selection of appropriate vehicles to carry out the necessary work in the conditions that prevail, road layout and marking, signs and signals and other considerations such as systems, procedures and training.
2. Traffic routes should be determined and can be classified as either access/through routes to site for deliveries, shuttle routes between buildings for on-site activities, or emergency access routes for fire engines, ambulances etc.

Question 14.3.7.2 **Weighting: 3**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of site traffic?

Audit Criteria

1. Site congestion and poor traffic layout.
2. Lack of proper roadways combined with uneven ground and debris.
3. Careful planning and consideration of site traffic control issues can result in a reduction in the likelihood of collisions between vehicles and/or equipment.
4. If delivering of materials to and from jobsite within housing estate is necessary, the contractor should manage his vehicles for both occupational safety and public safety. Site traffic arrangements should be specified in the safety plan.

Question 14.3.7.3 **Weighting: 6**
Are there appropriate measures taken to control traffic flow in the site?

Audit Criteria

1. Speed limits should be required and clearly displayed (at least displayed at the site entrance); they should be reduced for adverse site conditions and for areas near work in progress;

2. Traffic lights can be used to control flow at busy junctions, in narrow locations and at entry and exit locations to the site;
3. One-way systems should be considered where necessary to reduce the likelihood of collision, reduce congestion and improve traffic movement;
4. Traffic calming devices such as speed humps, rumble strips, width restrictors etc can be incorporated into road design to encourage a reduction in speed. (Such devices are not appropriate in areas where fork-lift trucks routinely operate since they introduce additional hazards for this type of vehicle).

Question 14.3.7.4 **Weighting: 6**
Are there appropriate measures taken to protect hazardous installations, routes approaching overhead structure or overhand power lines and excavations or openings in the site?

Audit Criteria

1. Physical barriers should be incorporated into road design to protect vulnerable and hazardous installations such as storage tanks, pipe-work systems, buildings or pedestrian access areas;
2. Erecting warning barriers of the goalpost type for overhead structure or power lines;
3. Barriers, fixed stops and banksmen to prevent vehicles from getting too near the edge of excavations and openings.

Question 14.3.7.5 **Weighting: 6**
Have site roads been properly demarcated and separated from locations where people have to work?

Audit Criteria

1. Entrances and exits – provide separate entry and exit gateways for pedestrians and vehicles;
2. Walkways – provide firm, level, well-drained pedestrian walkways that take a direct route where possible;
3. Crossings – where walkways cross roadways, provide a clearly signed and lit crossing point where drivers and pedestrians can see each other clearly.

Question 14.3.7.6 **Weighting: 6**
Are there appropriate measures taken for minimizing vehicle movements in the site?

Audit Criteria

1. The term ‘vehicles’ includes: cars, vans, lorries, low-loaders and mobile plant such as excavators, lift trucks and site dumpers etc.
2. Provide car and van parking for the workforce and visitors away from the work area if possible;
3. Control entry to the work area; and
4. Plan storage areas so that delivery vehicles do not have to cross the site.

Question 14.3.7.7 **Weighting: 6**
Is there a designated and sufficient location for vehicles to reverse, so as to avoid driving backwards?

Audit Criteria

1. The need for vehicles to reverse should be avoided where possible as reversing is a major cause of fatal accidents.
2. One-way systems can reduce the risk, especially in storage areas.

Question 14.3.7.8 **Weighting: 6**
Are there facilities to clean and remove mud from vehicles at site exit?

Audit Criteria

1. Auditor should verify the effectiveness of these facilities provided.

Part 14.3.8 Asbestos

Question 14.3.8.1 **Weighting: 3**
Is the work with asbestos or asbestos-based materials carried out by a specialist contractor with a duly prepared method statement?

Audit Criteria

1. The contractor is required to appoint a registered asbestos contractor and a registered asbestos consultant from the Registers of Asbestos Professionals under Environmental Protection Department.
2. The manager of the registered asbestos contractor and the registered asbestos consultant is required to attend the Asbestos Management Course (with a course duration of 33 hours including theory and practical examination) provided by the Occupational Safety and Health Council.
3. Acceptance of training by other organisations is subject to verification that the following aspects are attained. The aspects are i) course content, ii) mode of

- delivery (classroom delivery, handouts), iii) course assessment (exam, practical, attendance), iv) trainer qualification, v) quality assurance.
4. Asbestos Professionals under Environmental Protection Department. The supervisor is required to attend the Safe Handling of Asbestos Course (with normal course duration of 24 hours including theory and practical examination).
 5. The workers involved in the asbestos works are required to attend the General Safety in Handling of Asbestos Course (with course duration of 6 hours including examination).
 6. The course should be provided by the Occupational Safety and Health Council. Acceptance of training by other organisations is subject to verification that the following aspects are attained. The aspects are i) course content, ii) mode of delivery (classroom delivery, handouts), iii) course assessment (exam, practical, attendance), iv) trainer qualification, v) quality assurance.

Question 14.3.8.2

Weighting: 3

Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of asbestos?

Audit Criteria

1. Take account of other risks as well as asbestos, e.g. work at height, and take the precautions necessary to do the job safely.
2. Look at building plans, previous asbestos surveys and any other relevant documents to identify asbestos hazards.

Question 14.3.8.3

Weighting: 3

Has the safe system of work been regularly monitored to ensure that dust levels are kept to a minimum and below statutory control limits?

Audit Criteria

1. Local exhaust ventilation should draw the airborne material away from the workman's breathing zone and entrain asbestos dust. It should be kept in use during the performance of asbestos work and for such time after the cessation of the work as is necessary to keep the air clear of asbestos fibres.
2. Local exhaust ventilation system should be inspected weekly and thoroughly examined and tested at intervals of not more than six months.
3. HEPA Filter-equipped Appliances — air extraction equipment and vacuum cleaner should be inspected at least weekly to ensure that there is no leakage and that the performance meets the manufacturer's specifications.

4. The air monitoring is carried out by a laboratory that is accredited for the relevant asbestos test by the Hong Kong Laboratory Accreditation Scheme (HOKLAS) managed by the Industry Department or by a scheme with which HOKLAS has a mutual recognition agreement.

Question 14.3.8.4

Weighting: 6

Are all employees likely to be exposed to risk provided with approved respiratory protective equipment and protective clothing and are they used properly?

Audit Criteria

1. The area is clearly demarcated and identified by notices indicating that it is a protective equipment zone, that entry into it is limited to persons authorized by the proprietor and that any person who enters the area must wear suitable approved respiratory protective equipment and suitable protective clothing.
2. Provide adequate and suitable protective clothing for use by any workman who is exposed to asbestos unless no asbestos likely to be deposited on the body or personal clothing of the workman.
3. The protective clothing is either disposed of as asbestos waste within the meaning of the Waste Disposal Ordinance (Cap. 354) and the Waste Disposal (Chemical Waste)(General) Regulation (Cap. 354 sub. Leg.), or adequately cleaned at suitable intervals.
4. Non-disposable RPE should be checked and cleaned before and after each use. Repairs to RPE must be performed only by competent persons using parts specifically designed for the RPE.

Question 14.3.8.5

Weighting: 3

Have all employees been instructed about the health risks of exposure to asbestos, the precautions to be taken and how to fit and maintain respirators and other equipment?

Audit Criteria

1. Training and instruction should be provided prior to commencement of the work with asbestos, and before a workman is engaged in work with asbestos.
2. Proper fit of the RPE and face-seal (a close seal between the face and facepiece of the RPE) for individual workman who is required to wear RPE, such as by providing several brands of the appropriate type of RPE in various sizes and performing test to ensure fitness of the RPE to individual workman.
3. Instruct all workmen to refrain from eating, drinking or smoking in asbestos work

area or the washing and changing facilities; and from taking food, drink or cigarettes into such areas. Sufficient notices should be put up in prominent places in and around asbestos work area to warn workmen of the prohibition of eating, drinking and smoking.

Question 14.3.8.6

Weighting: 3

Has a procedure been established to ensure that employees exposed to dust will be medically examined?

Audit Criteria

1. Persons working with asbestos have undergone a chest X-ray (radiographic examination of the chest) within the 4 months immediately preceding the commencement of such employment and are certified by a registered medical practitioner to be fit to do such work.
2. A health register is held in the approved form for every person employed in working with asbestos.

Question 14.3.8.7

Weighting: 6

Are there appropriate steps taken to prevent or reduce the spread of asbestos from the asbestos work area to other areas of the workplace to the lowest level reasonably practicable?

Audit Criteria

1. Suppression of dust at source achievable as appropriate by wetting, by processing the asbestos component with dust suppressing materials or compounds, or by the application of vacuum/extraction techniques at the work-face.
2. Total enclosure – the dust-producing part of the process is localized and totally enclosed. The enclosure should incorporate a dust extraction system which is capable of removing the dust generated in the course of the process. The dust extraction system should incorporate HEPA filter.
3. Partial enclosure — used together with dust extraction when total enclosure is not practicable. As with totally enclosed system, dust extraction used in association with hoods or partial enclosures must be capable of removing the dust that is generated in the course of the process and the air filtration (by HEPA filter) must be effective and reliable.

Question 14.3.8.8

Weighting: 6

Have cleansing units been provided with showers and storage for clothing?

Audit Criteria

1. Adequate and suitable washing and changing facilities must be provided.
2. The facilities provided for the storage of personal protective clothing, of personal clothing and of respiratory protective equipment shall be separated from each other and indicated in both English and Chinese.
3. Showers should be provided in the ratio of one for every six workmen as a minimum and size of the shower room should be at least 1m square and 2m headroom for every shower provided.

Question 14.3.8.9

Weighting: 6

Have procedures been established and followed for the temporary storage and subsequent disposal of materials?

Audit Criteria

1. Practices for treating asbestos waste (including the requirements for the heavy duty plastic bags and the metal drums) covered in the Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste issued by the Secretary for Planning, Environment and Lands should be followed.
2. Where any asbestos is required to be put in a container, that container shall have a clear and visible label affixed to it.

Sub-section 14.4 Management of Tasks and Operations II

Part 14.4.1 Piling and Foundations

Question 14.4.1.1

Weighting: 3

Have all the requirements in regulations, codes of practice and safety information for piling and foundations work been identified?

Audit Criteria

1. In this section, foundations mainly refer to the foundations transfer the loads at a point far below the superstructure or substructure into earth.
2. This section covers sheet piling works for excavation and lateral support works.
3. Construction Sites (Safety) Regulations
4. Safety Guide for Interlocking of Steel Sheet Piles, Labour Department
5. Guidelines on Fabrication of Reinforcement Cages of Bored Piles, Construction Industry Council

6. Carrying of persons by means of lifting appliance.
7. Borehole should be treated as a confined space.
8. Fabrication of metal cage design plan and drawing
Sufficient information that plant and processes can be used and carried out in a stable environment.

Question 14.4.1.2 **Weighting:** 3

Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of working over water or adjacent to water?

Audit Criteria

1. Toppling of reverse circulation drilling system
2. Exposure to dangerous substances, noise or vibration – fluids used by processes and those in the ground as contaminants or services.
3. Manual handling.
4. Interactions with heavy plant – this may be in circulation around the site or in the process itself, may be struck by or trapped by the machinery.
5. Poor access to the workplace – working in confined spaces or in poor conditions underfoot.
6. Workplace stability – excavations or near temporarily unstable structures or machinery.
7. Falls from height.
8. Falling objects or debris.
9. Revolving spindle and other moving dangerous parts of drilling rig.
10. Collapse of metal cages and cage lifting safety.

Question 14.4.1.3 **Weighting** 3

Has a method statement with risk assessment been produced for piling work and loading test process?

Audit Criteria

1. Written method statement setting out the precautions relevant to the type of piling employed.
 2. Written method statement of erection and dismantling of reverse circulation drilling system
 3. Written method statement of fabrication of metal cage
-

Question 14.4.1.4 **Weighting** **6**
Are there appropriate measures taken to ensure that all piling and foundation works are carried out safely?

Audit Criteria

1. A robust mechanical integrity program shall be put in place to ensure the bored piling plant, equipment and all parts thereof are properly maintained.
2. Where an excavator is used for sheet pile extraction operation, ensuring that the excavator is by design suitable for the purpose and only the manufacturer's designated lifting point on the excavator is used for lifting sheet piles.
3. Ensure that the lifting appliance and the lifting gear used in connection with sheet pile extraction work have been certified in safe working order through tests and thorough examinations by a competent examiner and regular inspections by a competent person before they are put into operation.
4. Ensure that an extracted sheet pile is securely suspended or supported before detaching from the attachments/ lifting gear of the lifting appliance.
5. Ensure that a metal member which is to be cut off is securely suspended or supported before detaching from the structure or temporary works.

Question 14.4.1.5 **Weighting:** **6**
Have adequate means been provided for properly supporting all machines and materials used?

Audit Criteria

1. A selected working platform should be designed, which is adequate to support all the machines and materials which will be used during ground treatment. This is a particularly onerous requirement for the large crawler cranes used in dynamic compaction. The effect of sloping ground should be considered. Inspection and maintenance procedures should be built into the design. Dynamic compaction will inevitably cause disruption of the working platform and continuous remedial work is required.
2. Piles or sheet piling stored on the ground shall be adequately supported by blocking. Pipe piles should be stacked in well supported and braced racks or frames, unless other provision is made to prevent their movement.

Question 14.4.1.6 **Weighting:** **6**
Has a suitable plant or equipment been used and have procedures been provided for the safe operation of workers?

Audit Criteria

1. Design adequate working platform for access by plant and workers.
2. If the RCD working platform of piling machine is permanently attached as an integral part of the machine, then the working platform will be required to be examined as part of the piling machine.
3. Otherwise, the RCD working platform will be treated as a scaffold i.e. the RCD working platform should be inspected in accordance with the requirements of Regulation 38F of the CSSR. Re-inspection of the RCD working platform may not be necessary after each relocation, provided that its structure and components have not been damaged and/or altered in any way from the original design.
4. For crane used for raising or lowering workers, the requirements of F&IU (Lifting Appliance and Gear) Regulations Reg. 18B Carrying of persons by means of lifting appliances must be followed.
5. A sheet pile threader is a mechanical device designed for interlocking sheet piles such that no worker is required to work at height.
6. If a worker is required to climb on the driving lead, the operator of the equipment will apply all brakes and necessary safety switches to ensure no uncontrolled motion of the equipment.

Question 14.4.1.7

Weighting: 6

Are there appropriate measures taken to prevent any tilting and settlement caused to nearby structures?

Audit Criteria

1. Design should take into account the stability of the neighbouring buildings, and ensure excavations are stable in temporary conditions or parameters are known, so that adequate temporary shoring can be designed.

Question 14.4.1.8

Weighting: 6

If work involves the fabrication of reinforcement cages and interlocking steel pile sheets, have special precautions and monitoring been taken to prevent collapse or displacement of cages and piles during lifting?

Audit Criteria

1. During hoisting, tag lines or similar devices shall be used where necessary to control rotation of the load.
2. Piles or sheet piling shall be adequately supported during placing or removal.
3. Secure all shackles with steel wire or other means.

4. Use a pile line attached directly to the casing or pile. Safety lugs must be welded to steel piles to prevent the pile line from slipping.
5. Check pile tops, handling holes, and splices of casings for damage from driving.
6. No worker shall be in an area where piles or sheet-piling are being hoisted, placed, removed or withdrawn unless the worker is directly engaged in the operation.
7. Level concrete floor slabs provided to ensure the stability of fabrication metal cage process.
8. Safety checklist established and used to monitor the processes.

Part 14.4.2 Ground Investigation

Question 14.4.2.1 **Weighting: 3**
Have all the requirements in regulations, codes of practice and safety information for ground investigation been identified?

Audit Criteria

1. Ground investigation (GI) describes the subsurface investigation which aims to identify geotechnical and geo-environmental properties of the ground, including groundwater and any adverse ground conditions.
2. Related safety regulations and code of practice.
3. Guide to Site Investigation (GEO guide 2)

Question 14.4.2.2 **Weighting: 3**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of ground investigation?

Audit Criteria

1. The construction process may expose site workers to particular risks from ground related hazards associated with:
 - (a) Excavations;
 - (b) Contamination;
 - (c) Dust;
 - (d) Temporary works instability;
 - (e) Loading and unloading materials;
 - (f) Excavated material stacking;
 - (g) Machine instability; and
 - (h) Overhead and underground services.

2. In addition it would take into account:
 - (a) The nature of the site;
 - (b) The controlling depth and spatial extent of substructure works that will be required;
 - (c) The likely construction process e.g. cranes handling heavy loads will require a temporary platform that needs design information; and
 - (d) The need for temporary works e.g. parameters to ensure the stability of temporary excavations.

Question 14.4.2.3	Weighting	3
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Have safety rules and operation procedures been produced for ground investigation work?

Audit Criteria

1. A working platform should be designed and checked/certified by professionally qualified engineer which is adequate to support all the machines which will be used during ground treatment.
2. All overhead services need to be identified. Where necessary these should be diverted or an exclusion zone defined so that machines do not come near them.
3. The location and depth of local buried services should be identified. Where necessary these should be diverted or protected.
4. Protective screens should be provided to shield the flying debris.
5. Situations in which workers have to work close to machines should be minimized
6. Maintenance of the stability of the building may require temporary supports such as scaffolding or props during the construction activity.

Question 14.4.2.4	Weighting	6
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Are there appropriate measures taken to ensure that all ground investigation works are carried out safely?

Audit Criteria

1. The drilling rig should be examined by a Registered Professional Engineer before operation and a copy of valid certificate should be displayed on the drilling rig.
2. A crane should be used for mobilization of the drilling rig and winch should be avoided for self-pulling the drilling rig whenever possible. Specific risk assessment and safety precautionary measures should be implemented when self-pulling work is unavoidable.
3. The drilling rig should be lowered down before mobilization. When lowering the

mast, a signaller should coordinate the speed of the lowering mast and ensure that the two backstays are not obstructed. If workers need to hold the backstays, their bodies and hands must be kept away from the end of backstays and end-hole for a distance of at least 20cm.

4. The drilling rig should rest on levelled and firm ground surface. If the ground condition is rough, uneven and loose, an excavator should be arranged for levelling and compaction before loading down the drilling rig.
5. A drain outlet near the drill rod location should be excavated and relevant drain outlet facilities (including water pump and drain water hose, etc.) should be arranged to ensure that the dry, clean and firm ground surface is maintained.
6. Machinery guard should be installed in front of a drilling rod and should be used during operation.
7. The drilling rig should be powered off immediately when the machinery guard is damaged. The engine should be powered off during the repair of the drilling rig or the water pump.
8. When lifting and extending or dismantling the drill rod or casing, control panel should be operated by the drill operator, whereas the drilling assistant should be responsible for the assembling and disassembling of drill rod/casing.
9. Avoid holding the end of casing by a single hand and fingers should not be placed under the casing. Instead, the casing should be carried by both hands.
10. Only when a lifting load is completely stationary, then installation/dismantling of drill rod/casing can be taken by hand tools (e.g. plier and chain plier, etc.). Use plier to loosen and chain plier to take out the drill rod/casing. The drill operator should ensure that the worker has fixed the hand tool in position and kept his body away from the machinery before re-operating the drilling rig.
11. The drilling rig working area should be barricaded and no entry is allowed except authorized persons.
12. Casing rack should be kept at least 1m away from the location of the drill rod to provide sufficient working space.
13. For sloping ground, drill rod should not be propped on the ground for adjusting the drilling rig. When it is seated on an even and levelled surface, the following conditions should be observed for adjustment of drilling rig:-
 - i. When the drill rod is propped on the ground, the base of the drilling rig should not be propped up for more than 200mm from the ground. (The vertical angle of the drill rod should not be exceed 30°)
 - ii. The drill operator with a valid license should supervise the whole process of drilling rig mobilization. The stacking height of sample boxes should not exceed 1.5m.

Question 14.4.2.5	Weighting	3
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Have arrangements been produced for safe operation of machinery?

Audit Criteria

1. The safe operation of machinery depends in part on the suitability of the ground support.
2. Machinery exhaust fumes and noise can be hazardous, especially in enclosed or confined spaces, e.g., in basements. The effects of fumes and noise should be given careful consideration and, if possible, alternative techniques adopted. In some cases, electrical equipment or power packs for hydraulic equipment located away from the confined space can be used.

Question 14.4.2.6	Weighting:	6
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Have safety checklists been developed and used for monitoring the safe operation of ground investigation?

Audit Criteria

1. Safety checklist should cover the operative's items in order to monitor the safe operation of ground investigation.

Part 14.4.3 Work on Slopes

Question 14.4.3.1	Weighting:	3
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Have all the requirements in regulations, codes of practice and safety information for work on slopes been identified?

Audit Criteria

1. Construction Sites (Safety) Regulations
 2. Code of Practice for Metal Scaffolding Safety, Labour Department
 3. Guideline on Safe Access for Slope Maintenance (GEO Report No.136), CEDD
 4. Layman's Guide to Slope Maintenance, CEDD
 5. Guide to Slope Maintenance (Geoguide5), CEDD
 6. Slope Maintenance (MWTG06), Housing Authority
 7. Code of Practice on Monitoring and Maintenance of Water-Carrying Services Affecting Slopes
 8. Code of Practice for the Lighting, Signing and Guarding of Road Works
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Question 14.4.3.2 **Weighting: 3**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of working on slopes?

Audit criteria

1. A risk assessment with particular regard to the condition of the slope and nearby work environment should be conducted by safety officer and engineer with relevant experience on slope works.
2. The assessment should be conducted before work commencement and reviewed during the course of work.
3. The common causes of accidents on slopes are due to fall of persons from height, erection & dismantling of scaffolding/ working platform , working under inclement weather, sudden landslide or earth movement and improper use of mechanical equipment.

Question 14.4.3.3 **Weighting: 6**
Are there appropriate measures taken to prevent sudden landslide and earth movement?

Audit criteria

1. Crest channels should be provided and kept clear of debris to divert storm water runoff and ground seepage. All open cut slope face including temporary cut slope should be protected with tarpaulin sheet or other impervious membrane against inclement weather.
2. For any unstable slope with imminent risk of sudden collapse, adequate measures should be taken to prevent any personnel from accessing dangerous area(s) on the slope.
3. If emergency work has to be carried out on the slope, an experience supervisor/geotechnical engineer should be assigned to identify any possible sudden danger.
4. Suitable alarm system(s), such as emergency contact list, evacuation plan, should be readily accessible by all site personnel in case there is any sign of undue earth movement.

Question 14.4.3.4 **Weighting: 3**
Is competent person(s) assigned to supervise the implementation programme and examination of the slope works, including any structure erected?

Audit criteria

1. A competent person preferably with sound geotechnical engineering background and experience should be appointed on site for overall supervision of the implementation programme.
2. The slope, including any structure erected, should be examined by a competent person as and when the site conditions warrant and in regular basis.
3. Further examinations should be carried out where there is indication of sign of distress on slope.

Question 14.4.3.5

Weighting: 6

Are suitable means of access and egress and working platform provided for the slope works?

Audit criteria

1. Provision of a safe mean of access and egress between different levels of slope. Suitable stairway with handrails should be provided.
2. The temporary platform for carrying plant and equipment should be designed to withstand the anticipated load.
3. Auditor should verify if the access and platform provided are suitable for the slope works.

Question 14.4.3.6

Weighting: 6

Are there appropriate measures taken to ensure that the ground on which excavators or other mechanical equipment sit is stable?

Audit criteria

1. Measures are taken the ground is compacted and can withstand the weight.
2. The lifting appliances are stationed on level ground.

Question 14.4.3.7

Weighting: 6

Are there appropriate measures taken to protect workers against falling of displacement objects or earth or rock materials?

Audit criteria

1. Suitable temporary protection measures, e.g., barrier at the toe of slope, should be considered for preventing workers from being endangered by falling or displacement of earth or rock materials.
2. Materials are not stacked close to the edge of a slope.

3. Place load or move plant not too close to the edge of a slope to avoid inducing excessive stress onto the slope.

Question 14.4.3.8 **Weighting: 6**
Are all plants and machines well maintained and operated by competent operators?

Audit criteria

1. All plants and machines are well maintained and operated by operators who have been properly trained and are competent to carry out works on slopes.

Part 14.4.4 Machinery Guarding

Question 14.4.4.1 **Weighting: 3**
Have all the requirements in regulations, codes of practice and safety information for machinery guarding been identified?

Audit Criteria

1. Machinery in this part does not cover woodworking machinery, abrasive wheels, portable and hand tools
2. No personnel shall be permitted to clean any dangerous part of the machinery while the machinery is in motion by the aid of any mechanical power.
 - A contractor responsible for a construction site shall ensure that no young person is permitted to clean any dangerous part of any machinery or plant in the construction site while the machinery or plant is in motion by the aid of any mechanical power. (Chapter 59I, Reg. 46)
 - "young person" means a person who has attained the age of 15 years but not the age of 18 years. (Chapter 57, Section 2)
3. Every flywheel and moving part of a prime mover, every part of the transmission machinery and every dangerous part of the other machinery shall be effectively guarded by one or more of the following methods :
 - an automatic guard;
 - a fixed guard;
 - an interlocking guard;
 - a trip guard;
 - a two-hand control device.

Question 14.4.4.2 **Weighting: 3**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the dangerous part of machinery?

Audit Criteria

1. Identify machinery with dangerous parts.
2. Risks may be caused by:
 - failure to fit adequate guards on machines, leading to accidents caused by entanglement, shearing, crushing, trapping or cutting;
 - failure to fit adequate controls, or the wrong type of controls, so that equipment cannot be turned off quickly and safely, or starts accidentally;
 - failure to maintain guards, safety devices, controls, etc. which renders the machines or equipment unsafe;
 - failure to provide the right information, instruction and training for those using the equipment.

Question 14.4.4.3 **Weighting 6**
Have all the dangerous parts of machines and equipment that could cause injury been effectively guarded?

Audit Criteria

1. Use fixed guards wherever possible, properly fastened in place with screws or nuts and bolts which can only be removed by using tools.
2. If employees need regular access to parts of the machine and a fixed guard is not possible, use an interlocked guard for those parts. This will ensure that the machine cannot start before the guard is closed and will stop if the guard is opened while the machine is operating;
3. Consider the best materials for guards – plastic may be easy to see through, but can be easily scratched or damaged. If wire mesh or similar materials are used, make sure the holes are not large enough to allow access to the danger area. As well as preventing such access, a guard may also be used to prevent harmful fluids, dust etc. from escaping.

Question 14.4.4.4 **Weighting: 3**
Have regular maintenance and preventive checks, and inspections of the guarding of machinery been conducted?

Audit Criteria

1. Daily inspection and checking of all machinery guarding before starting work.
2. Inspections should be carried out by a competent person at regular intervals to make sure the equipment is safe to operate. The intervals between inspections will depend on the type of equipment, how often it is used and environmental conditions. Inspections should always be carried out before the equipment is used for the first time or after major repairs.
3. Keep a record of inspections made as this can provide useful information for maintenance workers when planning maintenance activities.

Question 14.4.4.5

Weighting: 6

Are there appropriate steps taken such as lockout procedures and checklists to ensure the maintenance work is carried out safely?

Audit Criteria

1. Safe work practice such as:
 - where possible, shut down or ideally disconnect the equipment or remove the fuels or keys before carrying out maintenance work particularly where access to dangerous parts will be needed;
 - isolate equipment and pipelines containing flammable fluid, gas, steam or hazardous material. Isolating valves should be locked off, where possible, particularly if access to dangerous parts will be needed;
 - support parts of equipment which could fall;
 - allow moving equipment to stop; allow components which operate at high temperatures time to cool unless to stop those machineries is not practicable;
 - to prevent fire and explosions, thoroughly clean vessels that have contained flammable solids, liquids, gases or dusts and check them before hot work is carried out.

Question 14.4.4.6

Weighting 3

Have employees been instructed and trained to use and maintain equipment safely?

Audit Criteria

1. Provide employees with all necessary information, e.g. manufacturer's instructions, operating manuals, training courses and check they understand them.
2. Instruct them on how to avoid risks.
3. Specific safety rules, operating instructions, etc., should be assessed.

Sub-section 14.5 Management of Powered Plant and Equipment

Part 14.5.1 Mobile Crane

Question 14.5.1.1 **Weighting: 6**
Have all the requirements in regulations, codes of practice and safety information for mobile crane been identified?

Audit Criteria

1. Code of Practice for Safe Use of Mobile Cranes, Labour Department.
2. Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations.
3. Mobile crane is provided with the correct operator's manual as well as load charts, safety decals, maintenance, inspection, and instructional decals, crane signal charts, and other safety information provided by the manufacturer.
4. The Code of Practice on Wind Effects in Hong Kong 2004, Buildings Department

Question 14.5.1.2 **Weighting: 6**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the mobile crane?

Audit Criteria

The following may need to be considered in risk assessment.

1. Injuries and death of workers exposed to mobile crane tip-over, boom collapse, and uncontrolled hoisted loads.
2. Critical lifts include the following situations:
 - The weight of the hoisted load approaches the crane's maximum capacity (70% to 90%).
 - Two or more cranes simultaneously lift the same load.
 - Personnel are being hoisted.
 - Nonstandard or specially modified crane configurations are used.
 - Special hazards are associated with the lift, such as
 - the crane is located inside an industrial plant;
 - loads are lifted close to powerlines; and
 - high winds or other environmental conditions are present.
 - Working near trench
3. Most mobile crane upsets (tip-overs) are attributed to operators exceeding the crane's operational capacity, and also are the result of swinging the boom or making a lift

without the outriggers fully extended.

Question 14.5.1.3 **Weighting: 6**
Is there a lifting plan in place, which covers all factors affecting mobile crane stability in the site?

Audit Criteria

1. Critical lifting plan should be in writing. A thorough understanding of the relationship between the crane design and the dynamic effects of traveling and moving with hoisted loads is crucial to the development of these plans.
2. To prevent crane tip-over, the critical lifting plan should be based on the operational limitations specified by the crane load chart, measured (as opposed to calculated) effect on the crane and hoisted load, and consideration of the effects of ground conditions and dynamic forces on the crane's stability.
3. Procedures to be followed in case of emergency situation.

Question 14.5.1.4 **Weighting: 6**
Have standards for safe operation of mobile crane been established ?

Audit Criteria

1. Required standards include:
 - Lifting plan.
 - Cranes must be located on solid, stable ground capable of supporting the weight of the crane plus the suspended load.
 - The arrangements for fixing and anchoring the lifting appliance are adequate to ensure its safety.
 - Outriggers must be fully extended. Cribbing blocks placed under outrigger pads are firmly supported and of adequate size.
 - The actual hoisted load includes the weights of the lifted materials, hook block, slings, and other lifting accessories. However, additional loads may be imposed on the crane by factors present in the work environment.
 - Workers are not located within the swing radius or under a suspended load at any time.
 - Specifications for communication during the lift. All parties involved in the lift, including crane operator(s), riggers, signal persons, and supervisors must have a thorough understanding of how communication will take place.
 - Mobile crane safety features:
 - jib/boom angle indicator

- automatic safe load indicator (BS7262 or equivalent)
- safe working load charts
- motion limit devices
- overload cut-out device
- spirit level for leveling the outriggers
- carpenter's level
- rear view mirrors of each at least 625 sq. cm at both sides
- a suitable fire extinguisher
- warning notices in English and Chinese on the sides and rear of the crane
- Safe distance of work while working near excavation or slope
- Working near or beneath overhead power lines
- Crane for carrying persons
- Proper fencing off of all lifting zones (e.g. providing fencing or barricade) with suitable warning notices displayed.

If it is not reasonably practicable to fence off the lifting zones due to space constraint, etc. the taking of effective measures such as appointment of sufficient watch-out personnel to ensure no unauthorized entry into the zones.

Question 14.5.1.5 **Weighting: 9**
Have developed standards for safe operation of mobile crane been communicated to all persons engaged in crane lifting operation and strictly implemented?

Audit Criteria

1. Auditor should verify if the arrangement for ensuring the developed standards are implemented on site as well as verification with site personnel to ensure that they understand the safe working procedures.
2. All operatives should know the developed standards of safe operation and their own responsibilities.

Question 14.5.1.6 **Weighting: 9**
Are there appropriate measures taken to ensure that mobile crane are operated with proper setup?

Audit Criteria

1. Mobile crane should only be operated on uniform, level and firm ground with sufficient load bearing capacity to withstand maximum in-service loadings of the crane.
2. In order to avoid the collapse of the supporting surface and overturning of the crane,

- the loading should be distributed over a sufficiently large area. Steel plates or adequate strength, suitable mats or suitable timber blocking should be used.
3. Sitting the crane on solid ground and using suitable mat or timber blocking with area of at least 3 times of the outrigger's float for complete and secure support of the float.
 4. If outriggers are provided, the beams should be fully extended as far as practicable.

Question 14.5.1.7 **Weighting: 9**
Has a detailed working procedure formulated for erection, dismantling and substantial repair of mobile crane and is it strictly followed?

Audit Criteria

1. A step-by-step working procedure should be formulated for erection, dismantling and substantial repair of mobile crane such as rope replacement work.
2. It is essential that crane manufacturer's instructions should be strictly adhered to.
3. The erection or dismantling operation shall be supervised by a competent person who have been adequately trained and have experience of erecting/ dismantling the particular type of crane.
4. For jib assembly, sections should be assembled in a correct manner and sequence as specified in the manufacturer's instructions and procedure, and that the bracing pattern continuity is maintained throughout the jib length.
5. Lowering the crane boom to its horizontal position or completely to the ground for changing the wire rope as necessary.
6. Prohibiting the replacement of wire rope by means of welding ends of the used and new wire ropes unless it is recommended by the manufacturer and the work is done by relevant specialists.
7. If erection, dismantling and substantial repair of mobile crane are not anticipated, the answer could be "N/A".

Question 14.5.1.8 **Weighting: 6**
Are the engaged personnel competent to examine, test and operate the mobile crane safely in lifting operations?

Audit Criteria

1. Competent Examiner:
 - i. The Competent Examiner shall be a registered professional engineer registered under the Engineers Registration Ordinance within the discipline of Mechanical Engineering, Marine & Naval Architecture or a relevant discipline

- specified by the Commissioner for Labour;
- ii. The Competent Examiner shall be competent to carry out testing and examination of mobile crane as required by the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations and the BS7121.
2. Mobile Crane Operator:
 - i. The mobile crane operator(s) shall hold qualifications and possess relevant experience as specified in the Code of Practice for Safe Use of mobile Cranes issued by Labour Department;
 - ii. The mobile crane operator(s) shall be competent to operate the mobile cranes in accordance with Code of Practice for Safe Use of Mobile Cranes issued by Labour Department;
 - iii. Proper training of crane operators in the mandatory use of load charts is important for safe hoisting operations. Crane operators need to know and understand how to use load charts provided by the crane manufacturer. Automatic Safe Load Indicator (ASLI) device is an important safety feature on modern cranes.
 3. Slinger (Construction Materials Rigger):
 - i. The slinger(s) shall possess relevant experience as specified in the Code of Practice for Safe Use of Mobile Cranes issued by Labour Department;
 - ii. The slinger(s) shall be competent to attach and detach the load to and from the mobile crane, and to use the lifting gear correctly in accordance with the operation plan;
 - iii. The slingers should work in pair inside the lifting zone.
 4. Signaller:
 - i. The signaller(s) shall possess relevant experience as specified in the Code of Practice for Safe Use of Mobile Cranes issued by Labour Department;
 - ii. The signaller(s) shall be competent to carry out duties in accordance with the Code of Practice for Safe Use of Mobile Cranes issued by Labour Department;
 - iii. The signaller role can be taken up by a slinger who possesses relevant experience in carrying out the duties.
 - iv. The signaller shall also have completed A12 Silver Card and Signaller for Hoisting Operations at Construction Sites Course or A12S Safety Training Course for Construction Workers of Specified Trade - Rigger and Signaller provided by the CIC.
 5. Erection or dismantling operation of mobile crane should be supervised by a competent person.

Question 14.5.1.9

Weighting: 9

Has an inspection and maintenance system for mobile crane been established and is it used?

Audit Criteria

1. Updated inspection records and examination records should be submitted as documentary evidence.
2. Weekly inspection shall be carried out by a competent person whilst test and examination shall be carried out by a competent examiner in accordance with Code of Practice for Safe Use of Mobile Crane.
3. The crane should not be used unless it has been thoroughly examined by a competent examiner at least once in the preceding 12 months & during the preceding 4 years it has been tested and thoroughly examined by a competent examiner.
4. Permit to work for maintenance to make the crane safe for maintenance or repair work and notify all affected persons that the crane is out of service.
5. Provision of a log-book for competent examiner/competent person to enter the details of testing, examination, inspection, maintenance/repair works.
6. Mobile crane weekly inspection report and statutory forms such as LALG Form 1, 3, 5 should be completed in proposed timeframe in accordance with the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations, Cap. 59J.

Question 14.5.1.10

Weighting: 9

Have safety checklists been developed and used for monitoring the safe operation of mobile crane?

Audit Criteria

1. Pre-use checklist should cover major safety items which include but not limited to outriggers, jib, oil hoses, hook, safety latch, control lever, automatic safe load indicator, emergency stop button, cut-off device, etc.
 2. Safety inspection checklist should cover checking items in order to monitor the safe operation of mobile crane.
 3. Prior to commencement of daily work, pre-use safety inspection should be conducted by operator.
 4. Pre-use checklist should cover major safety items which include but not limited to outriggers, jib, oil hoses, hook, safety latch, control lever, automatic safe load indicator, emergency stop button, cut-off device, etc.
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Part 14.5.2 Gondola (Suspended Working Platform)

Question 14.5.2.1 **Weighting: 6**
Have all the requirements in regulations, codes of practice and safety information for gondola been identified?

Audit Criteria

1. Factories and Industrial Undertakings (Suspended Working Platforms) Regulation
2. Code of Practice for Safe Use and Operation of Suspended Working Platforms, Labour Department
3. Code of Practice on Wind Effects in Hong Kong 2004, Buildings Department
4. Overview of Work-at-Height, Labour Department

Question 14.5.2.2 **Weighting: 6**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the gondola?

Audit Criteria

1. Auditor should verify the quality and coverage of risk assessments for gondola operation. The following safety factors should be considered during preparation of risk assessment for gondola operation.
 - (a) Gondola come off the haul/suspension rope;
 - (b) Fall from gondola;
 - (c) Strong wind;
 - (d) Falling objects;
 - (e) Safe means of egress and access;
 - (f) Stability of roof rig;
 - (g) Safety devices malfunctions;
 - (h) Gondola overloading;
 - (i) Gondola upward / downward tilting.
2. The hazards and corresponding control measures for operating gondola near obstruction such as protective canopy/ covered walkway should be addressed in the risk assessment.
3. Risk assessments for installation and dismantling of gondola should be prepared.

Question 14.5.2.3

Weighting: 9

Have all gondolas been installed based on all factors affecting gondola stability in the site?

Audit Criteria

1. Selection of a suitable gondola for the type of the job and the working environment.
2. Method of installation and means of securing the stability of the suspended working platform.
3. The details of anchorage and support of a gondola that may affect the structural integrity of the building should be submitted to the relevant authority for approval. The maximum total suspended load and the maximum rope tension of a permanent suspended working platform should be calculated and the details submitted to the architect or professional engineer in charge of the building or structure for approval.
4. The gondola should be of sound construction and adequately supported. If the gondola installed the gondola does not comply with regulations or Code of Practice, the answer should be “No”.
5. Contractor should install the gondola according to the approved drawing. Any deviation from the approved drawing should be considered as non-conformance for this question.
6. When roof fixings of a temporary suspended working platform are relied upon as the sole means of achieving stability, they should be capable of providing a factor of safety of at least 3 against uplift. Where a roof is insufficiently strong to provide this factor of safety, counterweights should be added to provide an overall factor of safety against overturning of at least 3. The roof fixing should be approved by a professional engineer.
7. Emergency stop device should be located at each operator control station and other places where emergency stop may be required.
8. It is not recommended to bolt working platforms of two or more gondolas together to provide a longer working range except under the written permission and authorization of the manufacturer.
9. Enclosure for electrical equipment which are exposed to open air should be protected from ingress of water or solid foreign objects by having an IP rating of not less than 54.
10. The suspension and safety rope should at all times be kept vertical during the raising, lowering or suspension of the working platform. (Code of Practice for Safe Use and Operation of Suspended Working Platforms, Section 5.6.5) To ensure no slacking of the ropes above the safety devices especially when the gondola begins to ascend from the ground, contractor should attach suitable weights to the end of the safety

- ropes for gondola with Registered Professional Engineer's Approval.
11. When a wire rope is fixed to a jib or outrigger arm, the rope termination should be attached to the outrigger or jib with a shackle or other suitable means. Where a wire rope is attached to a working platform, the rope termination should be attached to a structural load bearing portion of the working platform with a shackle or other suitable means. U-bolt grips should not be used. (Section 5.7.7, Code of Practice for Safe Use and Operation of Suspended Working Platforms)
 12. Suspended working platform with shelters such as bamboo/wooden members attached without proper design and prior approval from the manufacturer, certification by competent examiner and approved by Housing Department should be considered as non-compliance.

Question 14.5.2.4 **Weighting: 6**
Are all gondola provided with enhanced safety devices to facilitate automatic leveling?

Audit Criteria

1. An installation with test on automatic anti-tilting device should be provided to avoid any excessive upward or downward tilting to serve the following purposes:
 - preventing the working platform from further tilting before it has tilted to an angle of 14° in case of a slow or rapid slippage of the corresponding suspension rope caused by the failure of the climber or winch.
 - ensure that the maximum inclination of 1:4 (i.e. 14 degrees to the horizontal) is not exceeded when each end of the working platform is lowered or rising.
2. Auditor should verify the effectiveness of the automatic safety device by tiling test. The answer could be "N/A" if no gondola is installed and operated during on-site verification.
3. For contract which the adoption of enhanced safety device is a contractual requirement, the answer should be "Yes" if suitable anti-tilting protective devices are provided to all gondola used on site. Otherwise, the answer should be "No".
4. For contract which the adoption of enhanced safety device is not a contractual requirement, the answer should be "Yes" if suitable anti-tilting protective devices are provided to all gondola used on site. Otherwise, the answer should be "N/A".

Question 14.5.2.5 **Weighting: 6**
Have standards required for the safe operation of gondola been established?

Audit Criteria

1. Every person working on the suspended working platform should receive suitable training and possess a certificate of training.
2. Provision of personal protective equipment and communication system between the person on the working platform and the person in charge of the operation.
3. Termination of the use of the suspended working platform during unsafe condition.
4. Emergency preparedness including the recovery procedure of the plant and the personnel staying on the working platform.
5. The personnel on the working platform are wearing and using proper personal protective equipment, such as a safety harness and a helmet with chin strap.
6. Properly take care of hand tool and equipment.
7. Working platform is not so loaded with building materials that may affect worker's foothold and handhold, and endanger the stability of the working platform.
8. All wire ropes shall be inspected prior to commencement of daily work.
9. Every person carried on a suspended working platform should be provided with a suitable safety belt, an independent lifeline or suitable anchorage and fitting. Each safety belt, lifeline, anchorage and fitting should be of such a design, so constructed and properly maintained as to prevent serious injury in the event of a fall of any person using it (regulation 15 of the SWPR). Reference should be made to the Guidance Notes on Classification and Use of Safety Belts and their Anchorage Systems. (Code of Practice for Safe Use and Operation of Suspended Working Platforms, Section 6.3.1)
10. All loose items of suspended working platform are securable to fixed structures so that during the typhoon conditions, the items will not be disintegrated or damaged.
11. Every gondola should be marked clearly and legibly on its working platform :
 - the safe working load applicable to the suspended working platform;
 - the maximum number of persons that may be carried at any one time; and
 - an appropriate mark to distinguish it from other similar gondolas.
12. Accumulation of debris / materials on working platform are strictly prohibited. Overloading may lead serious consequences including fall from height / falling objects. Auditors should pay attention during on-site assessment. Site management /operator interview should include the arrangements in prevention of SWP overload.

Question 14.5.2.6

Weighting: 9

Have developed standards for safe operation of gondola been communicated to all persons engaged in gondola operations and strictly implemented?

Audit Criteria

1. Auditor should verify if the arrangement for ensuring the developed standards are implemented on site as well as verification with site personnel to ensure that they understand the safe working procedure.
2. All operatives should know the developed standards of safe operation and their own responsibilities.
3. The gondola safety poster provided by Housing Department shall be posted in vicinity of the workplace.

Question 14.5.2.7

Weighting: 6

Are the engaged personnel competent to examine, test and operate the gondola safely?

Audit Criteria

1. Testing and thorough examination of the suspended working platform by a competent examiner.
2. Weekly inspection of the suspended working platform by a competent person. A competent person for erection, repositioning and dismantling of the gondola should be appointed.
3. Every person operating the suspended working platform or working thereon should:
 - be at least 18 years old;
 - be fit, agile and not height phobic;
 - have undergone training that is either recognized by the Commissioner or provided by the manufacturer of the suspended working platform or its local agent; and
 - has obtained a certificate in respect of such training from the person who provided the training.

Question 14.5.2.8

Weighting: 9

Has an inspection and maintenance system for gondola been established and is it used?

Audit Criteria

1. Updated inspection records and examination records should be verified.
2. Every gondola should be inspected in the immediately preceding 7 days before its use by a competent person. (SWP-F1)
3. Provision of periodic maintenance of the gondola, including on-site maintenance.
4. Provision of operation and maintenance manual and certificates of thorough examination of Suspended Working Platform (SWP-F2) and certificate of load test

- and thorough examination of suspended working platform (SWP-F3) of the gondola.
5. After exposure to weather conditions likely to have affected the stability of the suspended working platform, the suspended working platform should be load tested and thoroughly examined by a competent person and examiner as soon as practicable thereafter and before the suspended working platform is used again.

Question 14.5.2.9 **Weighting: 9**
Have safety checklists been developed and used for monitoring the safe operation of gondola?

Audit Criteria

1. Safety checklist should cover checking items in order to monitor the safe operation of gondola.
2. Prior to commencement of daily work, pre-use safety inspection should be conducted. Pre-use safety checklist should cover the major safety item which include but not limited to roof fixing, suspension ropes, safety ropes, climbers and independent lifeline, emergency stop button, brake, titling device, manual descend facility and control panel, etc.

Part 14.5.3 Compressed Air Tools

Question 14.5.3.1 **Weighting: 3**
Have all the requirements in regulations, codes of practice and safety information in respect to compressed air work been identified?

Audit Criteria

1. Boilers And Pressure Vessels Regulations
2. Code of Practice for Owners of Boilers and Pressure Vessels, Labour Department
3. A Guide to the Construction, Installation, Operation and Maintenance of Air Receivers, Labour Department

Question 14.5.3.2 **Weighting: 3**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of compressed air tools?

Audit Criteria

1. The major hazard associated with compressors is over-pressurisation, which may

arise from:

- (a) a blocked outlet or some other restriction to flow;
 - (b) failure of automatic controls combined with low air consumption;
 - (c) compressor malfunction, e.g. overspeeding;
 - (d) an external fire near the pressure system; and
 - (e) overheating and the build-up of carbonaceous deposits, both of which can lead to fires or explosions. Although they are rare, fires and explosions can also occur as a result of oil or oil vapour being ignited in the pressure system.
2. Dirty or 'wet' air can cause a system to fail e.g. by causing fine particles of debris to agglomerate, blocking safety related valves.
 3. Awareness of headline dangers of air compression use, e.g. orificial bodily entry, skin penetration, explosions and optical damage caused by particles
 4. Compressor noise is one of the most common noise problems associated with the workplace and is potentially damaging.
 5. Both blow guns and hand held tools are usually connected to a length of flexible hose which during the course of its life will be subject to mechanical damage and considerable flexing. This damage and/or flexing particularly at connection points can cause the hose to rupture. This can lead to sudden discharges of compressed air and may cause unsupported lengths of hose to 'whip' and 'snake' dangerously.

Question 14.5.3.3	Weighting:	6
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Are the air compressor and all compressed air tools regularly inspected?

Audit Criteria

1. Daily inspection and checking of all air compressors and tools before starting work.
2. The efficient safe running of a compressed air system relies on cleanliness, filtration, cooling and lubrication. The best way of achieving these four conditions is to operate the plant in accordance with the operator's manual and to draw up and follow a written schedule of maintenance work which can be revised in the light of experience.
3. The written schedule should identify areas for attention, how often attention should be given and the responsibilities of those who carry out and supervise the work.

Question 14.5.3.4	Weighting:	3
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Has the air receiver been examined at statutory intervals by a competent person and is a record kept for the examination?

Audit Criteria

1. The Boilers And Pressure Vessels Regulations set out the duties of users and owners of air receivers.

Question 14.5.3.5 **Weighting: 6**
Have the appropriate valves and gauges been set and maintained?

Audit Criteria

1. A receiver should be clearly marked, in a conspicuous position, with its safe working pressure and other relevant information required by the Regulations. The details should be clearly visible on the vessel or a plate attached to it.
2. A receiver should be readily distinguishable. This can be achieved by painting on identification markings or by affixing a manufacturer's plate, giving the name of the manufacturer, serial number etc.
3. The drain valve, safety valve, examination holes and manholes need to be accessible.
4. The scale of any gauges needs to be clearly visible.

Question 14.5.3.6 **Weighting: 6**
Are compressed air line joints fitted with whip check or other devices to prevent accidental dislodge?

Audit Criteria

1. Tubes and hoses used to connect cylinders to their control valves are available in a variety of colours to make fault finding and maintenance easier. They should be neatly run and adequately secured. If the failure of a flexible hose would be hazardous it should be further restrained or shielded.
2. Coupling a portable tool to the outlet point is usually achieved by use of a quick-acting connector. The connector should be designed so that when disconnected it automatically seals the air pressure on the upstream side and slowly vents the air pressure on the downstream side.
3. Alternatively, a plug with a controlled venting action should be used. These safety features prevent inadvertent tool operation and uncontrolled whipping of the hose when its inlet end is uncoupled from the socket. Another way of reducing 'whipping' or 'snaking' is to fit emergency shut-off valves, hose rupture valves or air fuses as close as practicable to the connector. The valves will close or reduce flow to a very low level in the event of excessive air-flow conditions caused by a failure of the hose.

Audit Criteria

1. Site verification is required.

Question 14.5.4.5 **Weighting: 6**
Are appropriate signages / notices displayed in areas where electricity is used?

Audit Criteria

1. Adequate “Danger” notices/signs are provided to indicate that the switchboard is live. Warning signs and locks, as appropriate, shall be provided on doors of switch rooms to guard against unauthorized entry.
2. If more than one switchboard is located on a site, markings must be provided to distinguish one switchboard from another.
3. Mandatory notice in the Chinese and English languages, regarding the treatment of persons receiving electric shock shall be displayed in all parts of the premises where electricity is generated, transformed and on every temporary distribution box. If it is not practicable, then legible notices with reduced sizes should be displayed whilst some notices of original size should be displayed elsewhere on the site.

Question 14.5.4.6 **Weighting: 9**
Are temporary distribution boards securely mounted on supports and provided with suitable main switches and kept locked?

Audit Criteria

1. Construction supply switchboards are robust, weatherproof and lockable.
2. No illegal connections/extensions, however temporary, are allowed. Keep the doors of switchboard locked.

Question 14.5.4.7 **Weighting: 9**
For electrical supply system used on site such as distribution board, are these of a weatherproof type or contained in an appropriate weatherproof enclosure?

Audit Criteria

1. Temporary switch boxes and socket outlets are of splash-proof type with a protection class of IP54 or above.
2. For in-flat maintenance service of estate works order, use of domestic outlets is acceptable.

Question 14.5.4.8 **Weighting: 9**
Have appropriate electrical installation including earth leakage protection devices been installed and maintained properly for the electrical supply system?

Audit Criteria

1. The switchboards and distribution circuits shall be equipped with suitable protection devices such as Miniature Circuit Breaker (MCB) and Residual Current Device (RCD) to protect against over current and earth leakage respectively.
2. The switchboards and devices are regularly checked and maintained by Registered Electrical Workers.
3. MCB must be able to be locked in the “open” position to ensure that they cannot be accidentally closed if isolated by a licensed electrician.
4. Protect every single phase sub circuit and final sub circuits supply hand held or portable equipment with a core balance earth leakage device.
5. Verify the logbook of the record results of regular inspection and testing on the electrical installations.

Question 14.5.4.9 **Weighting: 9**
Are reduced voltage systems used for portable and hand-held tools and temporary site lighting?

Audit Criteria

1. The requirement of reduced voltage systems should be applicable to Lift Installation contracts under HASAS(M&I) unless it is specified in the contract specification.
 2. Portable electrical tools are tools that are not part of a fixed installation, but are intended to be connected to a fixed installation, or a generator, by means of a flexible cable and either a plug and socket, or a spur box, or similar means. This includes tools that are either hand-held or hand-operated while connected to the supply, intended to be moved while connected to the supply, or likely to be moved while connected to the supply.
 3. Portable and hand-held tools and temporary site lighting operate off the 110V supply.
 4. Auditor should verify the electrical supply requirement according to the contract specification.
 5. All insulated or double insulated tools to BS 2754 give extra protection against electric shock.
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Question 14.5.4.10 **Weighting: 9**
Is an appropriate earthing conductor provided for connecting the main earthing terminal of the electrical supply system to an effective earth electrode and is the effectiveness of the earthing system regularly checked and recorded?

Audit Criteria

1. Earthing systems are recommended for all transportable plant operating at any voltage above 110V and supplied with flexible cables.
2. Periodic maintenance, inspection, trip and calibration tests should be carried out by a qualified electrician.

Question 14.5.4.11 **Weighting: 9**
Where a generator is installed, is there any switch provided to isolate electricity supply from the generator?

Audit Criteria

1. Provision of Isolation switch.
2. Protection by a core balance earth leakage device with a rated tripping current not exceeding 30 mA
3. Generators are operated only by authorized persons who should be adequately trained. Training should include emergency and shutdown procedures.

Question 14.5.4.12 **Weighting: 9**
Where generator is installed, is it appropriately earthed and are exhaust fumes discharged in a direction so as not to cause harm or nuisance?

Audit Criteria

1. The generator is properly earthed and the impedance of the earthing electrode and connection is periodically checked by a Registered Electrical Worker.
2. The exhaust pipe of the generator is not directed to people and work areas.

Question 14.5.4.13 **Weighting: 9**
Are the electrical installations and supply system readily accessible for repair and maintenance works to be carried out?

Audit Criteria

1. Adequate access, lighting and working space must be provided for repair and

4. Testing and inspections include:
- (a) Visual inspection;
 - (b) Continuity of final circuit conductors;
 - (c) Continuity of protective conductors;
 - (d) Earth electrode resistance;
 - (e) Insulation resistance;
 - (f) Polarity;
 - (g) Earth fault loop impedance;
 - (h) Operation of residual current devices and fault voltage operated protective devices.

Question 14.5.5.4 **Weighting: 6**
For electric tools used in damp environments or exposed to weather, are these of a weatherproof type or contained in an appropriate weatherproof enclosure?

Audit Criteria

1. Plugs and cable couplers are of splash-proof type with a protection class of IP54 or above.

Question 14.5.5.5 **Weighting: 6**
Are tough rubber workshop cables/ armoured cables used as trailing cables and weather proof connections kept in good condition?

Audit Criteria

1. Cables on ground are only permitted for short periods of time. Additional protection is required and clearly marked so as not to constitute a tripping hazard.
2. Tough Rubber Sheathing (TRS) resistant to wear and abrasion (not used near solvents or oils).

Question 14.5.5.6 **Weighting: 6**
Are portable tools and equipment connected to the electrical supply system with approved type of connectors, and provided with appropriate protection against earth leakage and suitably located means of cutting off the electricity supply when necessary?

Audit Criteria

1. All electrical connections must be proper plugs and sockets. Makeshift connections and taped joints are not permitted.

2. Check for BS2769 (Kite Mark) or double insulated Mark (BS 2754).
3. Check that the tool is fitted with correct plug; type and size, and also that the plug is undamaged.
4. Check that trailing lead is not cut or frayed.
5. Check that the nameplate is secure with details of type, voltage, frequency, current, speed and other details depending on manufacturer.
6. Check that the “earth pin” on three-prong plugs is not cut off or bent back.

Question 14.5.5.7 **Weighting: 6**

Are there any appropriate means to prevent unexpected restarting of motors where such restarting might cause damage, and for motors designed for automatic restarting, is an appropriate notice displayed to warn about the possibility of automatic starting?

Audit Criteria

1. Adequate precautions must be taken to prevent any danger when work is taking place near equipment that has been made electrically dead, especially to prevent it from becoming live again.
2. Check for the provision of such arrangement if necessary.

Question 14.5.5.8 **Weighting: 6**

Are all live parts of apparatus, equipment and tools appropriate to prevent accidental personal contact either by design and construction of the apparatus or by the manner of its installation?

Audit Criteria

1. ‘Permit-to-work’ systems are essential to ensure safe working and freedom from hazards, where high voltage electrical supplies, cables and equipment exist, particularly in installation, maintenance or construction work.
2. Provisions for the physical locking off of switches etc.
3. BS2769 (Kite Mark) or double insulated Mark (BS 2754) for portable tools.
4. Prohibits the placing of switches in the neutral side of a circuit.

Part 14.5.6 Hand-held Power Tools

Question 14.5.6.1 **Weighting: 3**

Have all the requirements in regulations, codes of practice and safety information for hand-held power tools been identified?

Audit Criteria

1. Construction Sites (Safety) Regulations
2. Factories And Industrial Undertakings (Abrasive Wheels) Regulations
3. Factories And Industrial Undertakings (Cartridge-Operated Fixing Tools) Regulations
4. Adequate information relating to the safe and proper use of powered portable tools must be provided.
5. Hand-held power tools refer to all power tools whether powered electrically, by internal combustion engines, hydraulically or by compressed air. Therefore, all portable electric tools such as portable circular saw are covered in this sub-section.
6. This sub-section should not be “N/A” if a portable electric tool is spotted during physical verification.

Question 14.5.6.2

Weighting: 3

Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the hand-held power tools?

Audit Criteria

1. Eye injuries, noise and vibration, and dust.
2. Contact of revolving parts of the tools.
3. Use in atmosphere containing flammable vapours, flammable gases or explosive dust.
4. Curve cutting with portable circular saw is prohibited. If portable circular saw would be used at site, the prohibition should be addressed in the risk assessment.
5. Control measures in prevention in hand-held power tools falling from height should be addressed in risk assessment report.

Question 14.5.6.3

Weighting: 6

Are there appropriate steps taken for the regular inspection and maintain a maintenance system for hand-held power tools and is a record maintained?

Audit Criteria

1. There is a procedure for the inspecting and repair/replacement of hand-held power tools to ensure the compliance of safety regulations and standards.
 2. The inspection record should cover the major safety items such as chuck, hammer/drill bit and tool strap, etc. Otherwise, the answer should be ‘No’.
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Question 14.5.6.4 **Weighting: 3**
Have all operators been instructed and trained in the proper care and use of hand-held power tools?

Audit Criteria

1. All operatives know the safety regulations bearing on their activities, and their own responsibilities.
2. Safety instructions including in-house safety rules should be provided to all operators.

Question 14.5.6.5 **Weighting: 3**
Have all operators who use specific hand-held power tools such as cartridge-operated fixing tools and chainsaw been trained/certified as appropriate?

Audit Criteria

1. All operators of these specific hand-held power tools are trained and hold the appropriate certificates as required by law, or have completed special trainings by tools suppliers, etc. and are aware of hazards (identified in risk assessment) associated with their operation.

Question 14.5.6.6 **Weighting: 6**
Have safety checklists been developed and used for monitoring the safe operation of hand-held power tools?

Audit Criteria

1. Specific tools are issued to and used only by authorized persons only.
2. Safety checklist should cover the operative's items in order to monitor the safe operation of hand-held power tools.
3. Pre-use safety checklist should cover the major safety items such as chuck, hammer/drill bit and tool strap, etc. Otherwise, the answer should be 'No'.

Question 14.5.6.7 **Weighting: 6**
Are all operators of hand-held power tools provided with appropriate personal protective clothing/equipment and are they used properly?

Audit Criteria

1. Auditor should comment on the personal protective equipment provided to

operators even when no operation was being carried out during the physical verification.

2. If there is no issue record of personal protective equipment for the operators, the answer should be “No”.
3. The answer may be “N/A” if no activity was carried out during physical verification provided that the auditor had verified the provision of personal protective equipment to the operators.

Part 14.5.7 Hand Tools

Question 14.5.7.1 **Weighting: 3**
Have all the requirements in regulations, codes of practice and safety information for hand tools been identified?

Audit Criteria

1. Hand tools refer tools operated manually without electricity or other power source.
2. Construction Sites (Safety) Regulations
3. Working Safely with Hand Tools, Labour Department

Question 14.5.7.2 **Weighting: 3**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of hand tools?

Audit Criteria

1. Accidents with hand tools always arise from human failure – not knowing the right tool for the job, ignorance of safety precautions, or failure to maintain tools and to keep them properly.
2. Control measures in prevention in hand tools falling from height should be identified in risk assessment report and implemented on-site.

Question 14.5.7.3 **Weighting: 3**
Is there an arrangement to select, use and maintenance hand tools and a record maintained?

Audit Criteria

1. There are many different types of hand tool for different kinds of work, such as shovels, axes, crowbars, chisels, screwdrivers, hammers and wrenches. Proper select, use and maintenance should be ensured.

2. Use only tools of good-quality steel – tools made of inferior steel chip and may even shatter when struck, tool heads mushroom, tool jaws open out and cutting tools lose their edge.
3. Handles should have a smooth finish, should be easy to grasp and should have no sharp edges or corners.
4. Tools should be firmly fixed and should be regularly checked for splits and cracks.
5. Tools should be kept free of grease and dirt, and moving and adjustable parts should be well oiled.
6. Damaged tools should be repaired or replaced.

Question 14.5.7.4	Weighting:	6
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Are hand tools properly stored in safe working conditions?

Audit Criteria

1. Hand tools should be properly stored in boxes, racks, holders or pocket belts and should not be left so that they can fall, roll or be tripped over; cutting edges should be sheathed.
2. Carry tools in tool holders and not in the pockets of worker clothing.

Question 14.5.7.5	Weighting:	6
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Are the used hand tools fit for the tasks?

Audit Criteria

1. A good quality hand tool should be designed to fit the tasks.
2. For work on or near electrical apparatus only properly insulated tools should be used.
3. Use spark resistant tools where highly flammable vapours may be present.
4. Select the correct weight, size and tool for the job. Avoid static load at the shoulder or arm due to the continuous holding of a tool at a raised position or the gripping of a heavy tool.
5. Use the correct size spanner. Never use a hammer or extension handle on a spanner for tightening up nuts.
6. Hand tools should be equipped with suitable tool straps.
7. Workers should use hand tools with hand straps and should put them in the waist gear or tool box or fix to personal protective gear when they are not in use.

Part 14.5.8 Woodworking Machines

Question 14.5.8.1 **Weighting: 3**
Have all the requirements in regulations, codes of practice and safety information for woodworking machines been identified?

Audit Criteria

1. Woodworking machines include circular saw, band saws, grooving machines, planing machines, chain sawing machines, mortising machines, tenoning machines, vertical spindle moulding machines, multi-cutter moulding machines, trenching machines, boring machines, automatic and semi-automatic lathes.
2. Factories And Industrial Undertakings (Woodworking Machinery) Regulations
3. A Guide to the Factories and Industrial Undertakings (Woodworking Machinery) Regulations, Labour Department.

Question 14.5.8.2 **Weighting: 3**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the dangerous part of woodworking machines?

Audit Criteria

1. Woodworking machine cutters can inflict very serious injuries and it is essential that their guarding is strictly observed.

Question 14.5.8.3 **Weighting: 6**
Are all cutters of woodworking machines effectively guarded?

Audit Criteria

1. ‘Cutter’ includes saw blades, chain cutters, knives, boring tools, detachable cutters and solid cutters.
2. Cutters must be guarded to the greatest practicable extent, in regard to the work being done.
3. Guards must be of substantial construction, properly secured and adjusted, and constantly in position while cutters are in motion.
4. No adjustment may be made to any guard while cutters are in motion, unless safe means (i.e. mechanical adjusters) are provided.

5. Please note that portable, hand-held machines are covered in this question.
6. Keep the circular saw cutters sharp at all times, and properly adjust the riving knife and top guard.
7. Use a push stick to prevent the hand from coming into contact with the cutter of a circular saw, planing machine or vertical spindle moulding machine.

Question 14.5.8.4 **Weighting: 6**
Have emergency switch or dead man switch been provided to all the woodworking machines?

Audit Criteria

1. A woodworking machine shall be provided with an efficient stopping and starting appliance, and the control of this appliance shall be in such a position as to be readily and conveniently operated by the person operating the machine.
2. Every woodworking machine is provided with a readily accessible emergency stop button.

Question 14.5.8.5 **Weighting: 6**
Are the produced wood chips and dust regularly removed and properly stored?

Audit Criteria

1. Exhaust extraction equipment should be provided for circular saws and planners to convey chips and particles from cutters into a suitable receptacle.
2. Remove sawdust regularly to minimize fire hazard.

Question 14.5.8.6 **Weighting: 6**
Are woodworking machines installed and operated in suitable location and suitable fire extinguishers provided in vicinity of work area?

Audit Criteria

1. Sufficient clear and unobstructed space should be provided around machine to allow work without risk of injury.
2. Floors should be level, in good condition, free of loose material and not slippery.
3. Adequate natural or artificial lighting (No illumination will be considered adequate which provides less than 160 lux of light of working area) must be provided for the work being done on each machine. Where artificial light is provided it must be positioned, or shaded, to prevent glare affecting the operator.
4. The location must be away from any source of ignition and smoking should be

prohibited.

5. Provide suitable fire extinguishers adjacent to the work location.

Question 14.5.8.7 **Weighting: 3**
Have all employees working with woodworking machinery been trained and instructed on the hazards, the operating procedures and the necessary precautions for safe use?

Audit Criteria

1. No person should be employed on a woodworking machine, unless he has been trained and instructed in its operation.
2. No person under 16 years of age shall be employed on any woodworking machine.
3. Operator must be familiar with the type of machine and with manufacturer's operating instructions.

Question 14.5.8.8 **Weighting: 6**
Are all employees working with woodworking machines provided with appropriate personal protective equipment including hearing protectors and are they used properly?

Audit Criteria

1. Auditor should comment on the personal protective equipment such as ear protectors, dust mask, etc. provided to workers involved in woodworking even when no operation was being carried out during the physical verification.
2. If there is no issue record of personal protective equipment for woodworkers, the answer should be "No".
3. The answer may be "N/A" if no activity was carried out during physical verification provided that the auditor had verified the provision of personal protective equipment to the workers.

Question 14.5.8.9 **Weighting: 6**
Have safety checklists been developed and used for monitoring the safe operation of woodworking machinery?

Audit Criteria

1. Safety checklist should cover the operative's items in order to monitor the safe operation of woodworking machinery.
2. Pre-use safety checklist should be prepared and used.

Part 14.5.9 Abrasive Wheels

Question 14.5.9.1 **Weighting: 3**
Have all the requirements in all regulation, code of practices and safety information in the use of abrasive wheels been identified?

Audit Criteria

1. Factories And Industrial Undertakings (Abrasive Wheels) Regulations
2. Safety in the Use of Abrasive Wheels, Labour Department

Question 14.5.9.2 **Weighting: 3**
Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the abrasive wheels?

Audit Criteria

1. The risk of breakage is inherent in every abrasive wheel. If the number of breakages is to be kept low, the initial care exercised in the design, manufacturing and testing by abrasive wheel and machine makers must be coupled with the adoption of safety measures by the users..
2. Eye injuries.
3. Noise hazard.
4. Angle grinder should not be used on wood cutting works.

Question 14.5.9.3 **Weighting: 3**
Have all users of abrasive wheels been trained and instructed on the hazards and precautions on safe use?

Audit Criteria

1. Training through specific safety training, tool-box talks etc.

Question 14.5.9.4 **Weighting: 3**
Have all abrasive wheels mounters been trained in accordance with the requirements of the Factories and Industrial Undertakings (Abrasive Wheels) Regulations, and have they been assessed as competent and been given written authority to carry out their duty?

Audit Criteria

1. An abrasive wheel shall not be mounted except by a person who has been appointed in writing for that purpose by the proprietor of an industrial undertaking and is competent to carry out the task by reason of training and practical experience.

Question 14.5.9.5

Weighting: 6

Are all grinding/cutting machines and abrasive wheels selected for their suitability and are they marked with the maximum working speed?

Audit Criteria

1. The maximum speed of the spindle should be marked on every grinding/cutting machine so that it is easy to compare the speed marked on the wheel with the speed of the machine spindle. Where the spindle can be operated at more than one specific speed, each speed must be shown, and if the speed is infinitely variable within a specified range, the notice must show the maximum and minimum speeds.
2. The maximum permissible speed in revolutions per minute (rpm) and metres per second (m/s) specified by manufacturers should be marked on every abrasive wheel larger than 55 mm in diameter, or on the blotter or identification label which is sometimes attached to it. Since it is not practicable to mark smaller wheels, the maximum permissible speed in rpm of wheels 55 mm in diameter or less should be stated in a notice posted in a position where it can easily be read.
3. Angle grinder shall not be used on woodworking works.

Question 14.5.9.6

Weighting: 6

Are all angle grinders operated in accordance with the manufacturers' instruction?

Audit Criteria

1. All angle grinders used on site shall be maintained in good working order.
2. Angle grinder shall not be used on woodworking works.
3. Angle grinder used must be equipped with an auxiliary handle. Angle grinder without auxiliary handle shall not be used for any types of work.

Question 14.5.9.7

Weighting: 6

Are all angle grinders equipped with enhanced safety features including double-action switch, electric brake and kick-back detection device?

Audit Criteria

1. Angle grinders used shall have the following safety features:
 - Double-action switch to prevent accidental start-up and stop the grinder when released;
 - Electric brake to stop the abrasive, grinding or cut-off wheel in three seconds or less;
 - Kick back detection to shut down the grinder automatically when rotation of wheel is suddenly forced to stop.

Question 14.5.9.8 **Weighting:** 6

Are all abrasive wheels adequately guarded?

Audit Criteria

1. A guard has two main functions: firstly to contain the wheel parts in the event of a burst; and secondly to prevent, as far as possible, the operator from coming into contact with the wheel. A guard also has the secondary functions of protecting the wheels against inadvertent damage and preventing an oversize wheel from being fitted.
2. The aim of a guard is to enclose the wheel to the greatest possible extent, and to keep the opening as small as possible, consistent with the nature of the work. To compensate for the increased exposure caused by wheel wear, either an adjustable visor is provided or the guard is constructed so that it can be adjusted manually as the wheel wears down.
3. Guards for portable machines should be so designed that in the event of a wheel bursting or breaking, the guard remains attached to the machine.

Question 14.5.9.9 **Weighting:** 6

Has the statutory warning notice in respect of use of abrasive wheel been posted?

Audit Criteria

1. Statutory warning notice shall be posted.

Question 14.5.9.10 **Weighting:** 6

Are all abrasive wheels properly examined, handled and stored?

Audit Criteria

1. Wheels should be carefully unpacked, cleaned with a brush and examined for possible damage in transit. In unpacking, the careless use of a tool may cause damage to the wheel. The soundness of wheels can be further checked by tapping

them with a light, non-metallic implement. This is known as the ‘ring’ test. Wheels must be dry and free from sawdust for the ring test otherwise the sound will be deadened. It should also be noted that organic bonded wheels do not emit the same clear metallic ring as inorganic bonded wheels. Heavy wheels should be supported on a clean hard floor for the ring test while light wheels should be suspended from their hole on a finger or small pin. If the wheel sounds dead, for example due to cracking, it should not be used.

2. Handle wheels carefully to prevent dropping or bumping. Do not roll abrasive wheels. Where this is unavoidable because of the large size of the wheel, a soft, resilient floor surface is essential. Use trucks or suitable conveyors which will provide proper support for transporting wheels which cannot be carried by hand.
3. Suitable racks, bins or compartmented drawers should be provided to accommodate the various types of wheels used.

Question 14.5.9.11

Weighting: 6

Are all abrasive wheel users provided with appropriate personal protective equipment and are they used properly?

Audit Criteria

1. Auditor should comment on the personal protective equipment provided to the users even when no operation was being carried out during the physical verification.
2. If there is no issue record of personal protective equipment for all users, the answer should be “No”.
3. The answer may be “N/A” if no activity was carried out during physical verification provided that the auditor had verified the provision of personal protective equipment to the users.

Question 14.5.9.12

Weighting: 6

Have safety checklists been developed and used for monitoring the safe operation of abrasive wheels?

Audit Criteria

1. Safety checklist should cover the operative’s items in order to monitor the safe operation of grinding/cutting machines.
 2. Pre-use safety checklist should be prepared and used. Pre-use safety checklist should cover the major safety item which include but not limited to protective guard, disc, handle, etc.
-

Part 14.5.10 Substances Hazardous to Health

Question 14.5.10.1 **Weighting: 3**

Is there a register of hazardous substances which indicates the chemical and physical properties, health hazard information, precautions for use and safe handling information of individual hazardous substances on the site?

Audit Criteria

1. Auditor should verify the register of hazardous substances.

Question 14.5.10.2 **Weighting: 3**

Have workers who have to use these substances been adequately trained and instructed?

Audit Criteria

1. Auditor should verify the training records.

Question 14.5.10.3 **Weighting: 6**

Are all hazardous substances in workplace labelled correctly?

Audit Criteria

1. On-site verification is necessary.

Question 14.5.10.4 **Weighting: 6**

Are all hazardous substances in the workplace stored correctly?

Audit Criteria

1. Hazardous substances mean all substances hazardous to health. Auditor should verify whether all these substances are stored correctly and comment on the storage condition.
2. Visual evidence should be provided for verification.

Question 14.5.10.5 **Weighting: 6**

Are workers handling substances hazardous to health provided with appropriate personal protective equipment and are they used properly?

Audit Criteria

1. Auditor should comment on the personal protective equipment provided to workers handling substances hazardous to health even when no operation was being carried out during the physical verification.
2. If there is no issue record of personal protective equipment for the workers, the answer should be "No".
3. The answer may be "N/A" if no activity was carried out during physical verification provided that the auditor had verified the provision of personal protective equipment to the workers.

Part 14.5.11 Loadshifting Machineries and Site Vehicles

Question 14.5.11.1

Weighting: 3

Have all the requirements in regulations, code of practice and safety information for loadshifting machineries and site vehicles been identified?

Audit Criteria

1. When a vehicle is constantly moving on or around a site, the factors which create hazards and cause accident may be more difficult to anticipate and eliminate. Therefore, restricting the movement of site traffic to fixed routes and access points will be a good practice for applying rules and procedures in plant operation.
2. The Factories and Industrial Undertakings (Loadshifting Machinery) Regulation applies to fork-lift trucks used in industrial undertakings and bulldozers, loaders, excavators, trucks and lorries used on construction sites. In the second phase, the Regulation was extended to cover compactors, dumpers, graders, locomotives and scrapers used on construction sites.
3. Road Traffic (Traffic Control) Regulation (Cap. 374 sub. leg.)
4. Code of Practice on Safe use of Excavators, Labour Department
5. Guidance Notes on Safe Use of Loadshifting Machines for Earth Moving Operations on Construction sites, Labour Department
6. Guidance Notes for Safe Use of Fork-lift Trucks, Labour Department
7. Guidelines on Safety of Site Vehicles, Construction Industry Council

Question 14.5.11.2

Weighting: 3

Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of loadshifting machineries and site vehicles ?

Audit Criteria

1. People being struck by or run over by a vehicle.
2. People being struck by something falling from a vehicle.
3. People falling from vehicles.
4. Vehicles overturning
5. Vehicles are particularly dangerous when they are reversing, because it can be difficult for drivers to see what is going on behind them.

Question 14.5.11.3

Weighting: 3

Have all drivers of loadshifting machineries and site vehicles been licensed?

Audit Criteria

1. Operator of a loadshifting machinery has attained the age of 18 years; and holds a valid certificate applicable to the type of loadshifting machine to which that machine belongs.
2. Vehicles used off-site must comply with current vehicle licensing regulations.
3. A valid driving licence issued under the Road Traffic Ordinance (Cap 374) of the class to which the truck or lorry belongs.
4. Licensing systems can be a useful way of controlling the work activities of contractors and sub-contractors. Licences to operate on site are issued for certain periods, and are only renewed if contractors have behaved satisfactorily.

Question 14.5.11.4

Weighting: 3

Have standards for safe operation of loadshifting machineries and site vehicles safety been established?

Audit Criteria

1. Give the contractor appropriate health and safety information on the work to be carried out, so that the work can be done safely. For example, the information should be about:
 - (a) the arranged transport and use of fuel and other flammable materials;
 - (b) the routes to be used;
 - (c) the vehicles and equipment on site;
 - (d) specific hazards; and
 - (e) other people on site, including other contractors, visiting drivers.
2. Print site rules, directions, maps and approach information (for example, narrow routes, weak bridges and so on) on the back of order forms and invoices, allowing visiting drivers to know what to expect before arriving on site.

3. Site rules may include:
- (a) restrictions on the type or size of vehicle the site can handle safely;
 - (b) restrictions on the times when goods should be delivered or collected;
 - (c) safe approach routes to the site, especially if nearby one-way systems, low or weak bridges, narrow roads, awkward access and other features could cause problems for visiting vehicles;
 - (d) a site plan or sketch showing parking, reception location, the route to take through the site, and where loading or unloading areas are;
 - (e) where visiting vehicles should park on arrival, where drivers should report to and any other instructions for the driver;
 - (f) procedures that visiting drivers need to follow – for example, wearing high-visibility vests, limits on using mobile phones, restrictions on reversing or conditions for reversing such as using a banksman;
 - (g) what to do if a load appears to have shifted dangerously in transit;
 - (h) the point at which the visiting driver will give permission for their vehicle to be unloaded, and how everyone will clearly understand this handover (before this time, site staff should keep clear of the vehicle, and during unloading the driver should keep clear of the vehicle);
 - (i) information about general loading and unloading procedures, including who will have overall responsibility, the types of vehicle and machinery available, the weights or volumes equipment can lift and storage areas;
 - (j) loading and unloading safety procedures, such as where drivers should wait during delivery, times or places at which deliveries have been banned, safety and personal protective equipment that must be used;
 - (k) what visiting drivers or site staff should do if they are not satisfied with safety arrangements for the delivery or collection (for example, who to report concerns to); and
 - (l) contact details for the other people involved in case there are problems.

Question 14.5.11.5

Weighting: 6

Have developed standards for safe operation of loadshifting machineries and site vehicles been communicated to all persons engaged in operations and strictly implemented?

Audit Criteria

1. Auditor should verify if the arrangement for ensuring the developed standards are implemented on site as well as verification with site personnel to ensure that they understand the safe working procedures.

2. All operatives should know the developed standards of safe operation and their own responsibilities.

Question 14.5.11.6 **Weighting: 6**
Has excavator used on site been provided with adequate safety features in accordance with the risk assessment?

Audit Criteria

1. Proper and safe means of access and egress.
2. Sufficient aids of visibility such as mirrors, ultrasonic devices, CCTV devices etc. to eliminate blind spots around excavators.
3. Fitted with illumination lights.
4. Fitted with an operator's protective structure, such as a falling object protective structure (FOPS), a roll-over protective structure (ROPS), or a tip-over protective structure (TOPS) according to the risks of an application.
5. Excavator fitted with RPOS and TOPS should provide operator restraint system and an emergency exit – door opens in another direction.
6. Warning signs affixed on machine to alert users of potential hazards at different locations of the machine.

Question 14.5.11.7 **Weighting: 3**
Have safe operation procedures been established when using an excavator for lifting operations?

Audit Criteria

1. Designated lifting point should be available from the original manufacturer on its bucket, arm or boom for attaching of lifting gear.
2. Testing, thorough examination and inspection of the excavator and lifting gear
3. Excavator should be positioned on solid and level ground. Excavator with outriggers should be extended.
4. Excavator with safe working load of more than 1 tonne should be fitted with an automatic safe load indicator; hydraulic excavator should be fitted with check valves in the hydraulic lifting cylinder or other suitable device, to prevent a gravity fall of the load.

Question 14.5.11.8 **Weighting: 6**
Has an inspection and maintenance system for loadshifting machineries and site vehicles been established and is it used?

Audit Criteria

1. Updated inspection records and examination records should be verified.
2. All vehicles are properly maintained and safe to operate;
3. Undertake regular maintenance and vehicle checks in accordance with the manufacturer's recommendations;
4. Operate an effective system for reporting, and taking any required action on, any defects that occur.

Question 14.5.11.9

Weighting: 6

Have safety checklists been developed and used for monitoring the safe operation of loadshifting machineries and site vehicles?

Audit Criteria

1. Safety checklist should cover situations of bad driving or ignorance during work with special hazards such as near excavations or power lines, carrying unauthorized passengers, poor maintenance of vehicles, overloading or improper stacking or securing of loads.
2. Pre-use safety checklist should be prepared and used.

Part 14.5.12 Power-operated Elevating Work Platform

Question 14.5.12.1

Weighting: 3

Have all the requirements in regulations, codes of practice and safety information for power-operated elevating work platforms been identified?

Audit Criteria

1. Guidance Notes on Safe Use of Power-operated Elevating Work Platforms, Labour Department
2. Construction Sites (Safety) Regulations
3. Regulation 45 of the Construction Sites (Safety) Regulations requires that only a trained and competent workman over 18 years of age is allowed to operate mechanical equipment inside a construction site. No person under 18 years of age is allowed to give signals to the operator of the equipment.
4. If the power-operated elevating work platform is to be driven on a public road or private road, its owner has to apply for vehicle registration or a movement permit from the Transport Department.
5. All operations near to highways are adequately signed with the appropriate notices

as specified in the Code of Practice for the Lighting, Signing and Guarding of Road Works.

6. A power-operated elevating work platform must have visible permanent markings or notices to indicate the following information:
 - (a) manufacturer's name;
 - (b) machine model;
 - (c) serial number;
 - (d) year of manufacture;
 - (e) safe working load;
 - (f) number of persons that can be carried by it; and
 - (g) maximum reaching height and radius.

Question 14.5.12.2

Weighting: 3

Have risk assessments been conducted to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the power-operated elevating work platform?

Audit Criteria

1. The working environment, the ground condition and the limitations of the type of mobile elevating work platform should be considered.
2. Other hazards including unauthorized operation, the width and the gradients of the slope, ineffective maintenance, overloading or misuse should also be properly assessed and documented.
3. A power-operated elevating work platform should not be operated when weather condition is likely to endanger its stability or cause danger to the person carried thereon.
4. For the scissor type power-operated elevating work platform, a suitable safety device such as captive chock within the scissor mechanism should be used to prevent trapping of persons during maintenance.
5. Where stability is dependent on the correct use of outriggers, the lifting mechanisms must be interlocked to the outriggers.
6. A power-operated elevating work platform should be provided with safe means of access to and egress from the platform.
7. Where a power-operated elevating work platform is required to work in the vicinity of any public utilities including overhead electricity lines, gas pipes or other public utilities, the person responsible for the machine operation should take precautions to prevent any operator or worker from being endangered by it
8. Fell from the platform. It is strongly recommended that a safety harness is worn by

- workers working from a power-operated elevating work platform. It should be attached to a secure anchorage point within the platform.
9. In areas of very high public access, a risk assessment may indicate that additional controls (e.g. barrier tape, barriers, extra manning) are required.
 10. Wind speeds exceed the manufacturer's recommendations, or there is a risk of unplanned movements or platform overturn.
 11. Collision with obstructions or other vehicle.
 12. Risk of entrapment as a result of inquisitive people getting too close or underneath. Scissor lifts particularly are hazardous.
 13. Additional interlocks or guards may be necessary to prevent the operation of or any tampering with ground level controls by unauthorized persons.
 14. While the EWP is travelling, ensuring that a safe distance is kept from nearby obstacles such as fixed pipes underneath the ceiling.

Question 14.5.12.3

Weighting: 3

Have standards for safe operation of power-operated elevating work platform been established?

Audit Criteria

1. The safe working load specified by the manufacturer must not be exceeded. SWL should be specified for all conditions of height and reach.
2. Steps, ladders, hop-ups or boxes must never be used on the platform to gain extra reach or height.
3. Power-operated elevating work platforms are often fitted with outriggers or stabilizers and these must always be deployed and used as recommended by the manufacturer.
4. Ground is firm and will support loading.
5. Travel with the platform occupied or boom extended should only be undertaken when this mode of operation is within the machine's specified capabilities.
6. A signaller or responsible person is employed if necessary.
7. Warning and safety devices including reversing alarm and CCTV device, flashing lights and horns are provided.
8. A power-operated elevating work platform must have visible permanent markings or notices to indicate the following information: -
 - manufacturer's name;
 - machine model;
 - serial number;
 - year of manufacture;

- safe working load;
 - number of persons that can be carried by it; and
 - maximum reaching height and radius.
9. Must not be used in wind speeds exceeding that specified by the manufacturer.
 10. Power-operated elevating work platform must not be used as jacks, props, ties or supports, primarily for the transfer of goods or materials and as a crane or lifting appliance.
 11. Operator protective frame should be provided for power-operated elevating work platform in order to provide secondary protection for operators in the event of contact with an overhead obstacle in certain applications.

Question 14.5.12.4

Weighting: 6

Have developed standards for safe operation of power-operated elevating work platform been communicated to all people engaged in power-operated elevating work platform operations and strictly implemented?

Audit Criteria

1. Auditor should verify if the arrangement for ensuring the developed standards are implemented on site as well as verification with site personnel to ensure that they understand the safe working procedures.
2. All operatives should know the developed standards of safe operation and their own responsibilities.

Question 14.5.12.5

Weighting: 3

Are the engaged personnel competent to examine, test and operate the power-operated elevating work platform safely?

Audit Criteria

1. Any person assigned to perform inspection, test, maintenance and repair of a power-operated elevating work platform should be suitably trained and competent for such work.
2. A competent mechanic or the operator, if authorized and competent, should conduct the weekly inspection.
3. The person responsible for the machine operation should ensure that all records of examinations, tests, inspections, maintenance and repairs of the power-operated elevating work platform are documented and properly kept.
4. The operator of a power-operated elevating work platform should:
 - be at least 18 years of age;

- have reasonable degree of both physical and mental fitness;
- have undergone training for the relevant model of power-operated elevating work platform;
- have adequate authorization to operate the power-operated elevating work platform by the person responsible for the operation of the machine.

Question 14.5.12.6

Weighting: 6

Has an inspection and maintenance system for power-operated elevating work platform been established and is it used?

Audit Criteria

1. Updated inspection records and examination records should be submitted as documentary evidence.
2. A power-operated elevating work platform should be regularly inspected, tested, and properly maintained in accordance with the manufacturer's instructions in order to ensure that it is in safe working condition at all times.
3. Periodic servicing/inspection should be carried out on certain components or mechanisms according to the manufacturer's operation and maintenance manuals.
4. The power-operated elevating work platform should be thoroughly examined and tested by a competent examiner before use or after undergoing substantial repair. It should be further examined thoroughly by a competent examiner on a regular basis as recommended by the manufacturer but not less than once per year.
5. The maintenance logbooks or records (for the period of use on site) should be readily available for reference and examination.
6. Maintenance within the stack of a scissor lifts should not take place unless scotches or chocks are used to prevent any hazard arising from hydraulic failure.

Question 14.5.12.7

Weighting: 6

Have safety checklists been developed and used for monitoring the safe operation of power-operated elevating work platform?

Audit Criteria

1. Safety checklist should cover checking items in order to monitor the safe operation of power-operated elevating work platform.
2. As an alternative to using a safety checklist, a logbook could be kept for each power-operated elevating work platform to cover the items of operation, before use, and after use. The logbook should contain a list of checking items.
3. SOSS Form 3A could alternatively be used as a record of field inspection when

power-operated elevating work platform is in operation. However, a list of checking items should be prepared and be readily available during inspection.

HASAS(M&I) - PART C

Lift and Escalator Addition and Modernization Works

Housing Authority Lift and Escalator Installation Safety Auditing System (HALEISAS) version 1.3

The followings apply to Building Services (BS) contracts, ie Lift Addition and Lift Modernization

Part C1: Process control programme – safe systems of work

1. Process safety information
2. Process Hazard Analysis (PHA) /Risk Assessment
3. Development of safe methods
4. Implementing the system
5. Monitoring the system

Part C2: Site verification checklist used on site for checking and verification of *Part C1*.

6. Working at height
7. Protection against falling objects
8. Housekeeping
9. Lifting operations
10. Welding/cutting operations and equipment
11. Abrasive wheels
12. Portable tools
13. Electrical works
14. Dangerous substances
15. Manual handling and mechanical material handling
16. Noise
17. Demolition of lift
18. Miscellaneous

Module	<i>Housing Authority Safety Auditing System (Maintenance and Improvement)</i>
PART C1	Process Control Programme
Section 1	Process Safety Information

Question 1.1 **Weighting:** **3**
Is there a written safety policy with commitment prepared?

Audit Criteria

1. The safety policy should be project specific. If the policy is modified from the corporate policy, it should be stated so in the chapter on “Safety Policy” in the safety plan and the project team should be well aware of it.
2. The safety policy contains a general organisation commitment to a workplace free from injury & illness.
3. Safety policy states management’s commitment to meet legal obligations for occupational safety and health as minimum.
4. Safety policy states employees’ commitment to look after the safety and health of themselves and the people they work with and to co-operate with management’s initiatives for safety and health.
5. If the commitment to progressive improvement is not stated in the policy, the answer should be “No”.
6. The safety policy is signed by the most senior management assigned for the project and is dated.
7. Safety policy acknowledges management’s primary responsibility for safety and health in the workplace.
8. Regular review of safety policy should be endorsed by safety committee and disseminated to the relevant site personnel through posting on notice board or briefing.

Question 1.2 **Weighting:** **3**
Is there a safety plan containing procedures to identify tasks involving high or known risks that safe systems of work are required?

Audit Criteria

1. There is a project specific safety plan
2. The safety plan should contain procedures to identify tasks involving high or known risks that safe systems of work are required.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 6.1 Prior to the commencement of any lift installation work, the Main Contractor should liaise with the Lift Installation Contractor and prepare a lift installation safety plan with details on the risk assessments and method statements for the lift installation processes and the safety provisions to be adopted on site to ensure site safety of all lift installation procedures.

CIC safety guideline (volume 3)

Section 6.1 Before the commencement of a contract for Lift Works, the Lift Contractor should provide a safety plan for Lift Works. The safety plan should include the details of Lift Works, its method statement and its risk assessment to ensure that the safety of Lift Workers and other occupants of the building are well covered. General and specific safety measures for the Lift Works shall also be specified.

Question 1.3

Weighting: 3

Is there a complete and accurate process information addressing the hazards of the tasks that may be encountered in different stages or aspects such as design, technologies, materials and equipment?

Audit Criteria

1. The safety plan should contain a consideration on aspects such as design, technologies, materials and equipment.
2. Lift shaft platform is designed by RSE.
3. Lift shaft platform drawings should be available.
4. The safety plan should address the following exceptionally high risk conditions such as:
 - i. lift shaft used as rubbish chute
 - ii. material hoists or for material transportation by lifting appliances
 - iii. lift shaft protection and safe means of access

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 6.2 The lift installation safety plan should contain chapters to outline:

- (a) the type of lift to be erected. In case of a machine-room-less lift or a jump lift, copies of lift configurations should be attached to the plan;
- (b) the plant and equipment of the lift installation works: the use of bamboo or metal

- scaffold, guided-SWP, platform lift or, in case of jump lift installation, the use of a heavy-duty lift appliance;
- (c) the positions of floor openings in a lift machine room, structural links in the ceiling of a lift shaft and structural anchors and eye bolts for the uses of a guided-SWP, a trimmed scaffold and independent lifelines;
 - (d) the type of a heavy-duty lifting appliance to hoist up lift shaft platforms and machine components of a jump lift to upper level of a lift shaft;
 - (e) if a guided-SWP or a platform lift is used, the provision of lift shaft fencing in addition to lift shaft protection cages specified in Figure 5 of Volume 1 of the Guidelines;
 - (f) the administration of permit-to-work systems on hazardous trade processes such as hot work and electric arc process;
 - (g) if the building is under TOP arrangement, the corresponding safety and protection measures; and
 - (h) the Risk Assessment Report.
 - (i) Planning Team should prepare a pre-work check reference.

CIC safety guideline (volume 3)

Section 6.4 Safety measures for Lift Works should be well considered and addressed in safety plan / method statement with the implementation details for managing and reducing potential risks. In addition, the Lift Contractor should also consider the following in formulating safety plan / method statement:

- (a) Develop a safe system of work to ensure that the works are carried out in a safe and controlled manner;
- (b) Establish and implement a permit-to-work system for controlling hazardous processes;
- (c) Avoid Lift Workers working alone as far as practicable and observe the relevant requirements laid down in the Codes of Practice. When it is unavoidable to work alone, the Lift Worker should have sufficient communication devices including a motion sensor to generate alarm in addition to the provision of walkie talkie, etc., taking into consideration the effectiveness of the communication device in the environment;
- (d) Provide adequate safety / refreshment training for Lift Workers on work processes / procedures / PPE / manual handling, etc. to enhance their safety awareness;
- (e) Provide a safe access to and egress from every place of work, including the lift car

- top and lift pit;
- (f) Take adequate steps to prevent any Lift Worker from falling from height. Where necessary, proper fall protection (e.g. suitable guard-rails and toe-boards, temporary covers for openings, working platforms and personal fall protection equipment, etc.) should be provided for use;
 - (g) Use proper lifting equipment for hoisting / transportation / positioning of heavy parts / components (e.g. chain block, electric winch, etc.). Lifting equipment shall be checked before use and certified in accordance with the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations;
 - (h) Avoid working on live electrical equipment. Where it is unavoidable, proper protection and control measures (isolation, insulation, use of protective gloves / mat, etc.) should be adopted; and
 - (i) Use proper PPE as specified by relevant ordinances, regulations, codes of practices and guidelines. When the work involves the use of chemicals, suitable PPE should be readily available for use. In addition, every container holding chemicals should be properly labeled and all used / waste chemicals should be properly disposed.

Code of practice for Safety at Work (Lift and Escalator)

All the work carried out on lifts/escalators should be conducted by workers authorized by the proprietors or contractors. They should be strictly supervised and instructed clearly in the work to be performed and how it is to be done in a manner that is safe and without risk to health (Section 6.1).

Question 1.4

Weighting: 3

Is the process information available to all who need it?

Audit Criteria

1. Working procedure and instructions should be available on site.
2. All site personnel are clearly instructed as to what procedure they should follow.
3. Auditee should place warning notices and safe working procedures near lift shaft openings at prominent locations to remind all site personnel to take all necessary safety precautions when entering the lift shaft.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 6.4 A planning team comprised of site managerial and supervisory representatives from the Main Contractor, the Lift Installation Contractor and

subcontractors, including Project Manager/Engineer, site agent, registered safety officer (RSO), site supervisor and any related personnel who will be involved in the lift installation works or any other lift shaft works (as defined in Volume 1 of the Guidelines), should be lined up to participate in the planning process and the endorsement of the lift installation safety plan.

Section 6.5 The Lift Installation Contractor should draft the lift installation safety plan and submit it to the planning team for consideration. After the planning team finalizes the plan, the plan should be signed by the Project Manager or Site Agent of the Main Contractor and properly documented by the RSO.

Section 6.6 The content, frequency, and duration of safety and health training for lift workers should be specified in the lift installation safety plan.

Section 6.17 A copy of the lift installation safety plan should be kept on site for inspections by relevant government officers.

CIC safety guideline (volume 3)

Section 6.1 Before the commencement of a contract for Lift Works, the Lift Contractor should provide a safety plan for Lift Works. The safety plan should include the details of Lift Works, its method statement and its risk assessment to ensure that the safety of Lift Workers and other occupants of the building are well covered. General and specific safety measures for the Lift Works shall also be specified.

Section 6.5 The safe plan should be reviewed whenever there is a substantial change in working environment, working method or risk assessment.

Section 8.1.1 Lift Works are essential to keep lifts in safe working order. The Lift Contractor has the responsibility for ensuring the safety and health of Lift Workers carrying out the works and occupants / users of the building. To proper discharge this duty, the Lift Contractor should:

(g) provide Lift Workers with all the necessary information, including relevant layout drawings, method statements, and corresponding manuals issued by the lift manufacturer;

Code of practice for Safety at Work (Lift and Escalator)

Section 5.1 All personnel, including workers, supervisors and engineers, who might at any time be authorized by the proprietors or contractors to work on a lift/escalator installation should be instructed in appropriate basic safety procedures, including those recommended in the codes. Also the information on appropriate first-aid treatment should be given to the worker, with practical training including in the event of receiving

electric shock.

Section 5.2 All the engineers/supervisors should receive further safety training relating to the hazards associated with the installation, thorough examination, inspection, testing, services/maintenance, repair, and dismantling of lifts/escalators and knowledge of safe working practices to be adopted to avoid those hazards, the statutory safety regulations, standards and codes.

Question 1.5	Weighting:	3
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Are all codes and standards used for design documented?

Audit Criteria

1. Relevant requirement for all codes and standards should be sufficiently identified in the project safety plan.
 - Construction Sites (Safety) Regulations, Chapter 59I [CSSR]
 - Lifts and Escalators Ordinance, Chapter 618
 - Code of Practice on Building Works for Lifts and Escalators, Buildings Department
 - Code of Practice for Lift Works and Escalator Works, Electrical & Mechanical Services Department (EMSD)
 - Code of Practice for Safety at Work (Lift and Escalator), Labour Department
 - Guidelines of Safety of Lift Shaft Works Volume 2, CIC
 - Guidelines of Safety of Lift Shaft Works Volume 3, CIC

Question 1.6	Weighting:	3
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For the high risk tasks, is there sufficient information regarding the hazards?

Audit Criteria

1. Task specific risk assessment and method statement should be prepared for high risk activities.

Reference: (not exhaustive)

CIC safety guideline (volume 3)

Section 8 General Precautions for Lift Works

To ensure the safety and health of workers engaged in Lift Works, the Lift Contractor should implement general precautionary measures and pay attention to the following issues:

- (a) Work inside lift pit;
- (b) Work inside lift shaft;

- (c) Work on lift car top;
- (d) Work inside lift machine room;
- (e) Lifting operation;
- (f) Hot work; and
- (g) Safe use of electricity.

Section 9.1 Lift Contractors should pay special attention to safety and health of workers for specific works or special working conditions including:

- (a) Lift Alteration Works;
- (b) Rope Replacement Work;
- (c) Machine room-less Lift Work;
- (d) Common Lift Shaft Work;
- (e) Double Deck Lift Work;
- (f) High Speed Lift Work;
- (g) Building / Structural (including Demolition, Alteration or Addition) Works; and;
- (h) Demolition of Lift

Question 1.7

Weighting: 3

Is there an arrangement for selection and procurement of appropriate protective clothing / equipment?

Audit Criteria

1. Arrangement includes the provision of safety information, written specifications and related data.
2. Auditor should verify the provided PPE standards are related to the risk control measures recommended in the PHA/ risk assessment. Otherwise, the answer should be “No”.
3. The identification and selection of PPE to be used can take reference to corporate safety plan with due to consideration of their applicability and suitability.
4. Contractor should provide each of operatives and site supervisory staff (also includes all visitors) with safety helmets with ventilation vents and Y-type chin straps.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 11.8 All workers, including other trade worker, if any, should be provided with suitable safety harnesses and fall arrestors when they are required to work inside a lift shaft. They should be instructed to wear the harnesses with their lanyards attached to fall arrestors and to lock fall arrestors onto independent lifelines or suitable anchorages.

Section 11.9 All workers, including other trade workers, should be provided with reflective vests when they are required to work inside a lift shaft. They should be instructed to wear reflective garment (vest or equivalent) when they remain inside a lift shaft.

CIC safety guideline (volume 3)

Section 11.3.1 The lift contractor should provide suitable personal protective equipment (such as safety helmets, safety gloves, hearing protectors, eye protectors, respirators, safety shoes and safety harnesses where necessary) for lift workers to use.

Section 11.3.2 As a protection against risks of fall from height inside a lift shaft, the lift contractor should provide and maintain a fall protection system. Among others, whenever there is a falling hazards, lift workers should be provided with suitable safety harnesses and suitable fittings. They should also be instructed to wear safety harness with their lanyards attached to suitable anchorages. In providing suitable anchorages and using personal protective equipment against fall from height, the lift contractor should make reference to the Code of Practice for Safety at Work (Lift and Escalator), Guidance Notes on Classification and Use of Safety Belts and their Anchorage Systems issued by Labour Department, or relevant international standards.

Question 1.8

Weighting: 3

Is there a safety organisation chart covering necessary personnel with responsibility and communication lines for safety management?

Audit Criteria

1. The project safety organisation chart should be project-specific.
2. The name and position should be clearly showed.
3. The project safety organisation chart should include sufficient personnel which including a top management for the project accountable for leading occupational safety and health, senior management, site supervisory staff and safety personnel.
4. All positions which can impact safety and health have appropriate safety and health responsibility/ communication lines identified in the chart.
5. At least one safety supervisor should be employed for the contract.
6. Safety Supervisor(s) shall be accredited under the Hong Kong Safety and Health Certification Scheme managed by the OSHC.

Question 1.9

Weighting: 3

Have the occupational safety and health responsibilities of each grade or position in the organisation clearly been defined?

Audit Criteria

1. Safety organisation chart is developed with assignment of safety responsibility of each grade or position in the organisation.
2. Everyone on site should know their job duties with safety responsibility once they are employed with written job duty list or through briefing.

PART C1

Section 2 Process Hazard Analysis (PHA) / Risk Assessment

Question 2.1

Weighting: 3

Is there a process hazards analysis (PHA) / risk assessment appropriate to the complexity and hazards of the process?

Audit Criteria

1. There should be a written procedure for formulating PHA / risk assessment.
2. Information sources such as site records, safety inspections findings, incident reports, reports from workers should be considered.
3. High-risk activities such as lifting operation of plant and equipment should be identified in the PHA / risk assessment.
4. Auditor should comment and advise the auditee's PHA / risk assessment for all the lift and escalator activities anticipated.

Reference: (not exhaustive)

Code of Practice on Safety Management

The contractor should establish and maintain a programme for identification of job hazards, assessment of risks, development, implementation and maintenance of safety procedures and risk control measures and review. The programme should aim at:

- (a) recording known hazards; (Code of Practice on Safety Management Section 5.11.1)

CIC safety guideline (volume 2)

Section 8.3 The assessment should include but not limited to hazards related to falling objects, fall-from-height, collapse of platform/ supporting structures for platform or lifting appliances, defective lifting appliance and lifting gear, improper rigging, absence of lighting and ventilation, electrocution, fire, etc as are relevant to the lift installation works. The assessment should include fire safety measures in carrying out lift shaft works, especially when, if unavoidable, hot works are to be carried out. With reference to each operation involved in the lift installation process, the assessment should recommend safety precautions and state the person responsible to execute the safety

measures. The risk assessment report should be signed by the RSO and jointly endorsed by the Project Manager/Engineer of the Lift Installation Contractor and the Project Manager or a site agent of the Main Contractor.

Question 2.2

Weighting: 3

Does the process hazard analysis (PHA) / risk assessment address the process hazards, previous incidents, failures of administrative and engineering controls and also human factors?

Audit Criteria

1. The PHA/risk assessment conducted should be appropriate to the complexity of the process and it should also identify, evaluate, and control the hazards involved in the process.
2. The PHA/risk assessment should focus on equipment, instrumentation, utilities, human actions (routine and non-routine), and external factors that might impact the process.
3. Identification of any previous incident which had a likely potential for the adverse consequences in the workplaces should be made.
4. Engineering and administrative controls applicable to the hazards and their interrelationships such as appropriate application of detection methodologies to provide warning alarms should be considered.
5. Human factors should be included when conducting the review of worker / process and worker/equipment interface.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 8.3 The assessment should include but not limited to hazards related to falling objects, fall-from-height, collapse of platform/ supporting structures for platform or lifting appliances, defective lifting appliance and lifting gear, improper rigging, absence of lighting and ventilation, electrocution, fire, etc. as are relevant to the lift installation works. The assessment should include fire safety measures in carrying out lift shaft works, especially when hot works are to be carried out. With reference to each operation involved in the lift installation process, the assessment should recommend safety precautions and state the person responsible to execute the safety measures. The risk assessment report should be signed by the RSO and jointly endorsed by the Project Manager/Engineer of the Lift Installation Contractor and the Project Manager or a site agent of the Main Contractor.

Question 2.3

Weighting: 3

Is there a standard PHA / risk assessment methodology?

Audit Criteria

1. There should be written procedure for formulating PHA / risk assessment.
2. Identified hazards should be assessed to determine their likely impact and appropriate risk controls should be developed.
3. PHA / risk assessment sheets only consist of activities, potential hazard, control measures and actions, without probability and consequence should be considered inadequate and the answer should be “No”.
4. A proper PHA / risk assessment should be written on an assessment sheet with risk rating for determining priority for controlling hazards and implementation schedule.
5. Auditor should comment on the content of the PHA / risk assessment report.

Reference: (not exhaustive)

Code of Practice on Safety Management

The relevant industrial undertaking should establish and maintain a programme for identification of job hazards, assessment of risks, development, implementation and maintenance of safety procedures and risk control measures and review. The programme should aim at:

- (a) identifying new hazards;
- (b) evaluating the risks associated with the hazards;
- (c) analyzing the effects or the potential effects resulting from these risks, and
- (d) developing and implementing means to eliminate the risks or to reduce them to a tolerable level. (Code of Practice on Safety Management Section 5.11.1)

The risk associated with a hazard is a reflection of the likelihood that the hazard will cause harm and the severity of that harm. The two elements of risk, i.e. likelihood and severity, are independent of each other. The vast majority of hazards are relatively straightforward and requiring only a simple method of risk rating. The method incorporates a judgment as to whether or not a risk is tolerable (Code of Practice on Safety Management Section 5.11.4)

Question 2.4

Weighting: 3

Has the PHA / risk assessment methodology been employed by a team knowledgeable of the process operations?

Audit Criteria

1. The PHA/ risk assessment should be conducted by the working team/assessment team on each type of lift installation/alternation works. The working team/assessment team members shall include Engineer/Site Supervisor and RSO.
2. The PHA/ risk assessment should be conducted by competent person with sufficient training (not less than a two-day, 12 hours, risk assessment course organized by OSHC or equivalent. Persons who have attended a 27-hr “Safety Training Course for Site Management Staff” training course are considered as trained personnel. RSO is considered as a competent person to conduct risk assessment.)

Reference: (not exhaustive)

Code of practice for Safety at Work (Lift and Escalator)

As an essence of a safe system of work for lift/escalator, an initial site safety assessment should be made to the work site by a person who is competent to do so before the commencement of every lift/escalator work. Such an experience engineer/supervisor, with adequate experience of safety and health at lift and escalator works (Section 6.6.1)

CIC safety guideline (volume 2)

Section 8.2 As an essence of a safe system of work, a risk assessment should be conducted by the planning team formed under paragraph 6 (Vol 2) on each type of lift installation works, with close attention on those risks from jump lift and machine-room-less lift installations. The RSO should be consulted for completeness of the risk assessment process.

CIC safety guideline (volume 3)

Section 7.3 For Lift Alteration Works or other Lift Works carried out inside a lift shaft involving different contractors / parties, the Lift Contractor should line up a risk assessment team comprising a Competent Personnel and site managerial representatives from relevant contractors / parties to participate in the risk assessment. The Lift Contractor should consult a Registered Safety Officer for completeness of the risk assessment process and the report should be endorsed by a Project Manager / Engineer of the Lift Contractor.

Question 2.5

Weighting: 3

Does the PHA / risk assessment identify and cover all foreseeable hazards?

Audit Criteria

1. The PHA/ risk assessment should identify all potential hazards for the operations.
2. Auditor should comment on the content and coverage of the PHA/ risk assessment

report.

3. If critical hazards for work activities were not identified, the answer should be “No”. Auditor should clearly point out areas which need improvement and provide corresponding recommendation to auditee.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 8.3 The assessment should include but not limited to hazards related to falling objects, fall-from-height, collapse of platform/ supporting structures for platform or lifting appliances, defective lifting appliance and lifting gear, improper rigging, absence of lighting and ventilation, electrocution, fire, etc as are relevant to the lift installation works. The assessment should include fire safety measures in carrying out lift shaft works, especially when hot works are to be carried out. With reference to each operation involved in the lift installation process, the assessment should recommend safety precautions and state the person responsible to execute the safety measures. The risk assessment report should be signed by the RSO and jointly endorsed by the Project Manager/Engineer of the Lift Installation Contractor and the Project Manager or a site agent of the Main Contractor.

CIC safety guideline (volume 3)

Section 7.1 Risk assessment is a systematic and comprehensive examination to identify any potential hazards associated with lift works, to decide who might be harmed and how. It is also to evaluate the risks and decide on the necessary precautions for elimination/ mitigation of the risks, to record the findings and to review the assessment. It should be revised and reviewed whenever necessary.

Question 2.6

Weighting: 3

Are the recommended risk control measures appropriate for the identified hazards and risk evaluation?

Audit Criteria

1. Auditor should verify the appropriateness of the written control measures for each identified hazards.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 8.3 The assessment should include but not limited to hazards related to falling objects, fall-from-height, collapse of platform/ supporting structures for platform or

lifting appliances, defective lifting appliance and lifting gear, improper rigging, absence of lighting and ventilation, electrocution, fire, etc as are relevant to the lift installation works. The assessment should include fire safety measures in carrying out lift shaft works, especially when hot works are to be carried out. With reference to each operation involved in the lift installation process, the assessment should recommend safety precautions and state the person responsible to execute the safety measures. The risk assessment report should be signed by the RSO and jointly endorsed by the Project Manager/Engineer of the Lift Installation Contractor and the Project Manager or a site agent of the Main Contractor.

CIC safety guideline (volume 3)

Section 7.1 Risk assessment is a systematic and comprehensive examination to identify any potential hazards associated with lift works, to decide who might be harmed and how. It is also to evaluate the risks and decide on the necessary precautions for elimination/ mitigation of the risks, to record the findings and to review the assessment. It should be revised and reviewed whenever necessary.

Question 2.7	Weighting:	6
Have the recommendations given in PHA / risk assessment promptly been followed?		

Audit Criteria

1. Lift contractor should establish a system to promptly address the PHA / risk assessment findings and recommendations.
2. The recommendations should be followed in a timely manner and documented.

Question 2.8	Weighting:	3
Has the PHA / risk assessment result been communicated to all employees involved?		

Audit Criteria

1. The PHA / risk assessment result be documented.
2. Communication channels should be established to ensure the PHA / risk assessment is available / assessable to employees.
3. Training on PHA / risk assessment should be provided to all employees involved.

Reference: (not exhaustive)

Code of practice for Safety at Work (Lift and Escalator)

The site agent or client's representative should be informed and recorded on the log book whenever work is to be carried out on the lift/escalator. Communication channels

should be established among the worker-in-charge on site, the site agent, client's representatives, trade representatives and subcontractors so that assistance can be sought in case of need. Besides, any special precautions or procedures needed to be taken in that particular work site can be made known to all persons involved (Section 6.4).

CIC safety guideline (volume 2)

Section 8.1 When hazards cannot be physically eliminated and some elements of risks remain, a safe system of work will be required. The system should be able to identify the potential risks and develop the corresponding intervention measures. It should be effectively communicated and should be precisely and fully implemented by all project participants. Workers, supervisors, engineers and project managers should be trained with the necessary skills and be fully aware of the potential risks and the precautions they need to adopt.

CIC safety guideline (volume 3) (For Lift Modernization)

Section 7.4 Upon completion of the risk assessment, it should be properly recorded and communicated to the contractors / parties concerned. Safety measures required by the risk assessment should be implemented to ensure the safety and health of those parties involved.

Section 7.6 A method statement for the Lift Works should be prepared, taking into consideration all safety measures from the risk assessment report. The precautionary measures should be disseminated to all relevant parties to ensure that they are properly understood and followed.

Question 2.9	Weighting:	3
Are all PHA / risk assessment and preventive measures to the recommendations kept for all phases of the operations?		

Audit Criteria

1. PHA/risk assessment for all phases of the operations should be kept.

Reference: (not exhaustive)

Code of practice for Safety at Work (Lift and Escalator)

The technical data of the lift/escalator should be recorded in a register or file, drawn up once the lift/escalator is put into service. This register or file should be kept up-to-date and compose of:

1. A technical section indicating the technical data of the lift/escalator, including modifications or alterations. Layout drawings and wiring diagrams including

- amendments should also be attached; (Section 6.5.1)
2. A section where inspection reports with dates, tests with observations as well as records of any accidents are kept (Section 6.5.2)

Question 2.10 **Weighting:** 3
Is there an arrangement to review and update the PHA / risk assessment?

Audit Criteria

1. The PHA / risk assessment should be reviewed regularly.
2. The PHA / risk assessment should be reviewed if there is any significant change for the working procedure. Apart from the regular review, the PHA / risk assessment should also be reviewed or updated if there was an accident happened or a suspension notice received from Labour Department to a process or an activity. Otherwise, the answer to this question should be “No” if no review or updating.

Reference: (not exhaustive)

CIC safety guideline (volume 3)

Section 7.5 The risk assessment should be regularly reviewed. If there is any significant change to the lift works concerned, re-assessment should be made to mitigate the risks.

PART C1

Section 3 Development of safe methods- operating procedures and practices

Question 3.1 **Weighting:** 3
Are there clear written procedures for all phases of operations which address safety systems, safety precautions and limits?

Audit Criteria

1. Written procedures with clear instructions for safely conducting work activities for all phases of work should be provided.
2. Written procedures should contain descriptions of tasks that to be performed and safety and health precautions to be taken.

Question 3.2 **Weighting:** 3
Are there clear written process procedures for developing method statements and permit-to-work system?

Audit Criteria

1. A clear written procedure for developing method statement should be available.

2. There are clear written procedures for developing the permit-to-work system to cover all hazardous trade processes.
3. Permit-to work system is implemented.
4. Display of permit-to-work is required.

Reference: (not exhaustive)

Code of practice for Safety at Work (Lift and Escalator)

For escalator, after making the site safety assessment, a method statement should be provided (Section 6.6.1 (j))

CIC safety guideline (volume 2)

Section 10.5 Permit-to-work system should be implemented for the following hazardous trade processes:

- (a) Other trade workers are required to work inside the lift shaft where lift workers are installing a lift. In this case, the Main Contractor should, after consultation with the Lift Installation Contractor, issue a certificate of permit-to-work system endorsed by both the Main Contractor and Lift Installation Contractor to that effect;
- (b) When lift workers are required to work below a guided-SWP or a platform lift, the Lift Installation Contractor should implement a permit-to-work system, with a control measure that the switch key of the appliance is kept by a lift worker staying below the platform;
- (c) Lift workers are required to work in a deep lift pit. Safety precautions, such as provision of safe access and egress, fall-arrest-system, work-in-pair, proper lighting and ventilation, should be adopted and implemented by the Lift Installation Contractor;
- (d) Hot work or electric arc process is conducted inside or near a lift shaft. The Lift Installation Contractor should also ensure that suitable fire precautions are taken to prevent hot sparks from the process falling onto combustible materials or suspension / safety ropes of a guided-SWP. At the work spot, suitable protective screen of fire retardant nature, such as tarpaulin should be used. If tarpaulin is being used as protective screen, its fire retardant characteristics should meet the requirements of BS 5867-2: 2008 (Type B performance requirements) or other equivalent standards; and
- (e) Lift workers are required to work on the car top of an assembled lift car. The permit-to-work system should include the adoption of a switch lock on the Inspection Operation Panel on the car top or similar alternative measure to that effect.

CIC safety guideline (volume 3)

Section 7.6 A method statement for the Lift Works should be prepared, taking into consideration all safety measures from the risk assessment report. The precautionary measures should be disseminated to all relevant parties to ensure that they are properly understood and followed.

Question 3.3 **Weighting: 3**
Are occupational safety and health rules available in written form?

Audit Criteria

1. It is necessary to have general safety rules and specific safety rules to cater for various working condition. General safety rules are for reminding persons on site of the general safety issues that should be followed such as wearing safety helmets, safety shoes, prohibition of smoking, etc. The general safety rules should be regarded as the basic measures / practices to be followed by all site personnel including site staff and workers.
2. Specific safety rules should be developed with reference to legal requirement and codes of practice.

Question 3.4 **Weighting: 3**
Are the written working procedures, method statements, permit-to-work and in-house safety rules reviewed regularly?

Audit Criteria

1. The written working procedures, method statements, permit-to-work and in-house safety rules should be reviewed as often as necessary to assure that they reflect current operating practices.
2. The procedures should be up-to-date.

Question 3.5 **Weighting: 3**
Are the working procedures and in-house safety rules readily accessible?

Audit Criteria

1. The working procedures and in-house safety rules should be readily accessible to site personnel.

Question 3.6 **Weighting: 6**
Are there training needs analysis and training plan to ensure all site personnel received appropriate safety training?

Audit Criteria

1. Auditor should comment on the training need analysis and training plan. The training plan should include at least the following items otherwise the answer should be “No”.
 - (a) provision of schedule of training (with tentative date)
 - (b) location of training
 - (c) trainer/ training provider
 - (d) the targeted trainees
 - (e) specification of the courses
 - (f) type of refresher course to be provided
2. The training courses should at least include mandatory safety training, specific safety training, tool-box training, safety management training, training for operating plant and equipment, etc.
3. Site management staff should attend a training comparable to the 27-hr “Safety Training Course for Site Management Staff” provided by the OSHC or CIC covering safety legislation, elements in safety management and its concepts, safety inspection, accident investigation, risk assessment, work safe behaviour, safety climate index, safe design and CDM, etc.
4. Upon completion of the 27-hr “Safety Training Course for Site Management Staff” course for 5 years, site management staff should attend and complete a revalidation course to revalidate his / her certificate before continuing to engage in his / her role.
5. The safety supervisor should have successfully completed a safety supervisor training or equivalent. The safety supervisor training should be a training comparable to the construction safety supervisor training programme (course duration 43 hours) organized by the OSHC or CIC (course duration is 42 / 43 hours).
6. The employees responsible for carrying out high risk activities should receive relevant silver card training on courses including but not limited to Bamboo Scaffolder and Metal Scaffolder, Lift Mechanic and Construction Materials Rigger or Construction Materials Rigger and Signaller.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 6.6 The content, frequency, and duration of safety and health training for lift workers should be specified in a lift installation safety plan.

CIC safety guideline (volume 3)

Section 11.2.2 Lift Workers should be explained of the findings of risk assessment

reports, the safety procedures of a method statement and the implementation of a permit-to-work system by the Lift Contractor. The safety and health training should include emergency preparedness.

Section 11.2.3 Lift Workers should receive the following training:

- (a) The mandatory basic safety training (Green Card) from a government recognised organisation; and
- (b) Lift Works related training (including related safety precautions) by a Lift Contractor.

Question 3.7

Weighting: 3

Are the working procedures used for safety training?

Audit Criteria

1. The working procedures should be available to form a foundation of training needs for workers.
2. If workers are not fluent in English/Chinese, procedures need to be prepared in a second language that understood by the workers.
3. Pictorial / graphical presentation of safe working procedures / method statements is required for better understanding of front-line personnel.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 6.6 The content, frequency, and duration of safety and health training for lift workers should be specified in a lift installation safety plan.

CIC safety guideline (volume 3)

Section 11.2.2 Lift Workers should be explained of the findings of risk assessment reports, the safety procedures of a method statement and the implementation of a permit-to-work system by the Lift Contractor. The safety and health training should include emergency preparedness.

Section 11.2.3 Lift Workers should receive the following training:

- (a) The mandatory basic safety training (Green Card) from a government recognized organisation; and
- (b) Lift Works related training (including related safety precautions) by a Lift Contractor.

Question 3.8

Weighting: 3

Is there an emergency plan with drill programme for effective and prompt response to all emergency situations?

Audit Criteria

1. Auditor should verify the development of emergency plan is corresponding to the potential risks.
2. The emergency situations should at least include fire and accident.
3. Auditor should comment on the adequacy of the programme to cover all emergency situations.
4. The emergency contact list should be displayed prominently. The practice of carrying a handbook with those information is acceptable as fulfilling this audit criteria.

Question 3.9

Weighting: 3

Is there an emergency team and emergency equipment prepared to respond to emergency situations that may affect the safety of the site?

Audit Criteria

1. Auditor should verify the auditee has provided sufficient and competent staff with clearly defined responsibilities for the emergency team.
2. Auditor should verify the emergency team's personnel roles, line of authority and communication corresponding to emergency situations of auditee.
3. Auditor should verify the emergency equipment and first aid facilities on site.

Question 3.10

Weighting: 6

Does the safety training on working procedures include emergency preparedness?

Audit Criteria

1. Training in how to handle emergent conditions should be accomplished as well as what to do in emergencies.
2. Communication for emergencies should be available for working team.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 11.5 The safety and health training should include drills on steps and procedures to be followed in case of emergency or accident. Records of safety training should be properly kept.

CIC safety guideline (volume 3)

Section 11.2.2 Lift Workers should be explained of the findings of risk assessment reports, the safety procedures of a method statement and the implementation of a permit-to-work system by the Lift Contractor. The safety and health training should include

emergency preparedness.

PART C1

Section 4 Implementing the system

Question 4.1 **Weighting: 6**

Are there appropriate steps taken to ensure the PHA / risk assessment results used to develop safe working procedures / method statements / permit-to-work?

Audit Criteria

1. Procedures should be available to ensure PHA/ risk assessment is used to develop safe working procedures/method statements/permit-to-work and it should also address the followings :
 - The hazards of the process;
 - Performed by a competent person or team;
 - Promptly address the PHA/ risk assessment findings and recommendations.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 9.3 Method statements for any lift installation works should be prepared, taking into consideration of all safety measures from the risk assessment report. The related precautionary measures should be disseminated to all relevant parties to ensure that they are properly understood and followed.

CIC safety guideline (volume 3)

Section 7.6 A method statements for the Lift Works should be prepared, taking into consideration all safety measures from the risk assessment report. The precautionary measures should be disseminated to all relevant parties to ensure that they are properly understood and followed.

Question 4.2 **Weighting: 3**

Is there a written specification of the control measures for each hazard, which includes safe systems of work, protective clothing / equipment and training?

Audit Criteria

1. Safe work procedure should be developed and implemented such as lockout/tag out; confined space entry; hot work permit; control over entrance etc.
2. Work procedures / method statements / permit-to-work should include specific instructions or details on what steps to be taken or followed.

3. The written control measures should include the applicable safety precautions, training and appropriate information.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 9.4 The specific safety procedures when applying scaffold-less, jump lift or machine-room-less lift installation methods:

- (a) the use of installation appliances;
- (b) a heavy-duty lifting appliance to convey machine components of a jump lift to an upper level of a lift shaft; and
- (c) the use of scaffolds or a guided-SWP in the installation of a machine-room-less lift.

Section 9.5 If a guided-SWP or a platform lift is used for the lift installation works, the following specific safety precautions, but not limited to, should be adopted:

- (a) the control switches, safety devices and/or pedal brakes of the appliance should be functionally checked by a competent person at the beginning of each work shift;
- (b) a notice prescribing the maximum number of workers working on the platform should be clearly displayed on the appliance facing the lift shaft opening. In no circumstance should the appliance be overloaded with workers on the platform;
- (c) no worker is allowed to work alone on the platform;
- (d) no works should be carried out while the appliance is moving;
- (e) no other worker should be allowed to enter the lift shaft when the appliance is operating;
- (f) worker(s) should immediately anchor safety harness(es) to the independent lifeline(s) before entering the platform;
- (g) all portable tools should be properly placed in the tool box and bag when working on the platform;
- (h) the platform of the appliance should be properly stopped at appropriate level above the lift pit and locked in an inoperative mode. The switch key should be kept by the worker working inside the lift shaft. A warning notice should be posted at the control of the platform to that effect before entering the lift pit for works;
- (i) lift car and frame assembly works should be carried preferably at the lowest level;
- (j) if the lift car and frame assembly works are carried out at the lowest level,

the guided-SWP should be properly stopped at appropriate level above the lift pit and locked in an inoperative mode. The switch key should be kept by the worker working inside the lift shaft and a warning notice should be posted at the control panel of the platform to that effect; and

- (k) if the lift car and frame assembly works are carried out at the highest level, the guided-SWP should be properly stopped at one level below and locked in an inoperative mode. The switch key should be kept by the worker working inside the lift shaft and a warning notice should be posted at the control panel of the platform to that effect.

Section 11.4 Competent lift workers and lift workers should receive the following training:

- (a) mandatory safety training (Green Card) from government recognised organisation;
- (b) not less than half day lift installation related safety training by a lift installation contractor; and
- (c) advanced safety training (Silver Card) from CIC/CICTA.

CIC safety guideline (volume 3)

Section 8 To ensure the safety and health of workers engaged in Lift Works, the Lift Contractor should implement general precautionary measures and pay attention to the following issues:

- (a) Work inside lift pit;
- (b) Work inside lift shaft;
- (c) Work on lift car top;
- (d) Work inside lift machine room;
- (e) Lifting operation;
- (f) Hot work; and
- (g) Safe use of electricity.

Section 9.1 Lift Contractors should pay special attention to safety and health of workers for specific works or special working conditions including:

- (a) Lift Alteration Works;
- (b) Rope Replacement Work;
- (c) Machine room-less Lift Work;
- (d) Common Lift Shaft Work;
- (e) Double Deck Lift Work;
- (f) High Speed Lift Work;
- (g) Building / Structural (including Demolition, Alteration or Addition) Works; and;
- (h) Demolition of Lift

Question 4.3

Weighting: 3

Is there a written specification for managers and supervisors or personnel responsible for ensuring the implementation of the control measures for each hazard?

Audit Criteria

1. There is written arrangement of the responsibilities of manager, supervisor and personnel for ensuring the implementation of the control measures.
2. Managers and supervisors or personnel responsible for ensuring the implementation of the control measures should be involved in developing safety working procedures / method statements / permit to work.

Reference: (not exhaustive)

CIC safety guideline (volume 3)

Section 8.7.3 A hot work supervisor should be present at the site during the whole time while hot work relating to Lift Works is being carried out. Hot work supervisors and workers should have received training on fire safety. Hot work supervisors should have attended fire safety training course organized by recognized institutions

Section 12.4.1 To ensure safety of work at lift shaft and relevant workplace, Responsible Person shall properly manage the following: -

- (a) Render proper protective guards for all machinery or equipment;
- (b) Provide a safe route of access and egress to the lift machine room, machinery space, lift shaft and lift pit;
- (c) Provide sufficient and suitable lighting, including emergency lighting, for entry into or working in the lift machine room and lift shaft;
- (d) Provide a clear and clean working environment, for instance, lift machine room and lift lobby are free of water;
- (e) Remove water accumulated in lift shaft and lift pit;
- (f) Provide adequate and sufficient ventilation of the lift machine room;
- (g) Prevent unauthorized person from entering into the lift works environment;
- (h) Provide adequate working area for lift major alteration works as far as possible (For example, lowest landing lobby area shall be allowed as working area for repair work inside lift pit.);
- (i) Provide adequate storage area for some of the common items as far as possible (For example, portable barriers, ladder and warning signs could be stored on-site for easy retrieval whenever needed, as lift maintenance is a regular feature.);
- (j) Ensure proper fall protection means in place when lift landings are opened for non-

- lift works, for example, portable barriers for routine maintenance and hoardings for lift major alteration works; and
- (k) Liaise and coordinate with the Lift Contractor.

Question 4.4

Weighting: 3

Have the developed safety working procedures/method statements/ permit to work been communicated to relevant personnel?

Audit Criteria

1. Verifying the safety records of the briefings, training and tool box talks is needed.
2. It should cover the known potential hazards, the emergency action plan, and safe work practices, and ensuring compliance with the standard.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 8.1 When hazards cannot be physically eliminated and some elements of risks remain, a safe system of work will be required. The system should be able to identify the potential risks and develop the corresponding intervention measures. It should be effectively communicated and should be precisely and fully implemented by all project participants. Workers, supervisors, engineers and project managers should be trained with the necessary skills and be fully aware of the potential risks and the precautions they need to adopt.

CIC safety guideline (volume 3)

Section 6.4 Provide adequate safety / refreshment training for Lift Workers on work processes / procedures / PPE / manual handling, etc. to enhance their safety awareness;

Section 7.6 A method statement for the Lift Works should be prepared, taking into consideration all safety measures from the risk assessment report. The precautionary measures should be disseminated to all relevant parties to ensure that they are properly understood and followed.

Section 8.1.1 The Lift Contractor has the responsibility for ensuring the safety and health of Lift Workers carrying out the works and occupants / users of the building. To proper discharge this duty, the Lift Contractor should:

- (f) provide adequate training and specific instructions to Lift Workers for them to carry out the works properly and in a safe manner;
- (g) provide Lift Workers with all the necessary information, including relevant layout drawings, method statements, and corresponding manuals issued by the lift manufacturer;
- (h) supervise the works to ascertain that safety measures are taken and instructions are

followed by the Lift Workers;

Section 11.2.2 Lift Workers should be explained of the findings of risk assessment reports, the safety procedures of a method statement and the implementation of a permit-to-work system by the Lift Contractor. The safety and health training should include emergency preparedness.

Question 4.5

Weighting: 6

Are there appropriate steps taken to ensure plant, personal protective equipment, and training provided are in accordance with safety working procedures / method statements / permit-to-work?

Audit Criteria

1. Verifying the arrangement on the provisions required by the safety working procedures/method statements/permit-to-work system is required.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 10.1 The Main Contractor should continue to manage and administer the permit-to-work system for controlling access to the lift shaft after handing over the lift shaft to the Lift Installation Contractor. The Main Contractor and the Lift Installation Contractor should ensure that all the safety provisions stipulated under the lift installation safety plan are readily in place before applying for the permit-to-work system inside the lift shaft.

Section 10.2 After handing over a lift shaft to the Lift Installation Contractor, a permit from the Main Contractor should be granted to the Lift Installation Contractor for the commencement of the lift installation works.

Section 10.3 The Main Contractor should endorse all permit-to-work systems for all hazardous trade processes. If any such hazardous trade processes involve the safety and health of lift workers only, the systems should be endorsed by the Main Contractor and the Lift Installation Contractor.

Section 10.4 Permit-to-work systems should be enforced on the hazardous trade processes and implemented by Main Contractor and Lift Installation Contractor respectively according to the nature of the hazardous trade processes. Each permit should specify its length of validity in terms of shift and the type of trade workers who are required to work inside the lift shaft.

Section 10.5 The following hazardous trade processes indicate some examples:

- (a) other trade workers are required to work inside the lift shaft where lift workers are installing a lift. In this case, the Main Contractor should, after consultation

- with the Lift Installation Contractor, issue a certificate of permit-to-work system endorsed by both the Main Contractor and Lift Installation Contractor to that effect;
- (b) when lift workers are required to work below a guide-SWP or a platform lift, the Lift Installation Contractor should implement a permit-to-work system, with a control measure that the switch key of the appliance is kept by a lift worker staying below the platform;
 - (c) lift workers are required to work in a deep lift pit. Safety precautions, such as provision of safe access and egress, fall-arrest-system work-in-pair, proper lighting and ventilation, should be adopted and implemented by the Lift Installation Contractor;
 - (d) hot work or electric arc process is conducted inside or near a lift shaft. The Lift Installation Contractor should also ensure that suitable fire precautions are taken to prevent hot sparks from the process falling onto combustible materials or suspension/safety ropes of a guided-SWP. At the work spot, suitable protective screen of fire retardant nature, such as tarpaulin should be used. If tarpaulin is being used as protective screen, its fire retardant characteristics should meet the requirements of BS 5867-2: 2008 (Type B performance requirements)⁷ or other equivalent standards; and
 - (e) lift workers are required to work on the car top of an assembled lift car. The permit-to-work system should include the adoption of a switch lock on the Inspection Operation Panel on the car top or similar alternative measure to that effect.

CIC safety guideline (volume 3)

Section 10.1 The Lift Contractor should develop and implement a permit-to-work system for controlling hazardous trade processes during Lift Works. As regards lift shaft works, each permit should specify its length of validity in terms of shift and the type of trade workers who are required to work inside the lift shaft.

Section 10.2 The following are some examples of hazardous trade processes:

- (i) When other trade worker(s) is / are required to work inside the lift shaft where Lift Worker(s) is / are engaging in lift works;
- (ii) When Lift Worker(s) is / are required to work below a guided-SWP or a platform lift;
- (iii) Hot work or electric arc welding is conducted inside or near a lift shaft;
- (iv) Lift Alteration Works inside lift shaft;
- (v) Demolition of lift;

- (vi) Rope replacement work;
- (vii) Hoisting of a lift car or heavy parts; and
- (viii) Paint spraying process with the use of flammable liquids.

Question 4.6

Weighting:

6

Have all the project staff received required trainings?

Audit Criteria

1. Verification is necessary for site personnel to have received relevant training through sample checking on site.
2. Verification of the safety training programme that has been identified and implemented is necessary.
3. Site management staff (project manager, project engineer, or similar rank or above stationed on site) should attend a training comparable to the 27-hr “Safety Training Course for Site Management Staff” provided by the OSHC or CIC covering safety legislation, elements in safety management and its concepts, safety inspection, accident investigation, risk assessment, work safe behaviour, safety climate index, safe design and CDM, etc.
4. Upon completion of the 27-hr “Safety Training Course for Site Management Staff” course for 5 years, site management staff should attend and complete a revalidation course to revalidate his / her certificate before continuing to engage in his/ her role.
5. The safety supervisor should have successfully completed a safety supervisor training or equivalent. The safety supervisor training should be a training comparable to the construction safety supervisor training programme (course duration 43 hours) organized by the OSHC or CIC (course duration is 42 / 43 hours).
6. The employees responsible for carrying out high risk activities should receive relevant silver card training on courses including but not limited to Bamboo Scaffolder and Metal Scaffolder, Lift Mechanic and Construction Materials Rigger or Construction Materials Rigger and Signaller.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 11.3 Apart from the induction safety training provided by the main contractor, the planning team should plan and arrange regular safety and health training for workers, in relation to the implementation of lift installation works in accordance with the lift installation safety plan by the lift installation contractor. Workers engaged in lift installation work should be briefed by the lift installation contractor on the findings of the risk assessment report, the safety procedural steps of a method statement and the

implementation of a permit-to-work system. The main contractor shall provide induction safety training to all lift installation contractors.

Section 11.4 Competent lift workers and lift workers should receive the following training:

- (i) the mandatory safety training (Green Card) from a government recognized organisation;
- (ii) not less than half day lift installation related safety training by a lift installation contractor; and
- (iii) Safety Training Course for Construction Workers of Specified Trade (Silver Card) from Construction Industry Council Training Academy (CICTA).

CIC safety guideline (volume 3)

Section 6.4(d) Provide adequate safety/ refreshment training for lift workers on work processes/ procedures/ PPE/ manual handling, etc. to enhance their safety awareness.

Question 4.7

Weighting: 6

Are there procedures to ensure the proper use of protective clothing/ equipment and the provision of training and instruction?

Audit Criteria

1. Auditor should verify there is procedure(s) to instruct, train and practice in use of PPE(s).
2. Training should refer to the manufacture's instruction and the importance of following them.
3. Ensure proper use of PPE through routine supervision and through monitoring via safety inspection.
4. The answer should be "No" if worker(s) does not use his / her PPE properly.

Reference: (not exhaustive)

CIC safety guideline (volume 3)

Section 6.4(d) Provide adequate safety/ refreshment training for lift workers on work processes/ procedures/ PPE/ manual handling, etc. to enhance their safety awareness.

Question 4.8

Weighting: 6

Have drills and exercises for all emergency situations been conducted and evaluation reports been prepared in accordance with the programme?

Audit Criteria

1. Auditor should verify the drill evaluation report.
2. Check records of drills and verify with workers or staff on site.
3. Comment on the effectiveness of the drills is necessary.
4. Weaknesses uncovered during drills of the emergency are quickly corrected.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 11.5 The safety and health training should include drills on steps and procedures to be followed in case of emergency or accident. Records of safety training should be properly kept.

Question 4.9 **Weighting: 3**
Have promotional activities for caring culture been organised?

Audit Criteria

1. Auditee should conduct all the following caring culture promotional activities.
 - (a) “Good Deeds” promotion
 - (b) Appointing at least one caring representative
2. The “Good Deeds” promotion aims at a tactic linking positive personal achievement with caring culture among peers on site. For example, an election for voting the most supporting person who actively care other person in the project could be organised. The good deeds promotional activities should be conducted at least quarterly. At least half of workers in a project should participate in the activities and the number of participants for each activity
3. The appointed representative(s) should encourage workers positively through active caring by a “top-down” approach. For example, auditee can appoint a front line supervisor as a caring ambassador for the project. The caring ambassador is required to communicate with workers during meeting/ gathering on a regular basis. The activities should be conducted at least quarterly. At least half of workers in a project should participate in the activities.
4. This question is not applicable for lift addition contract.

Question 4.10 **Weighting: 3**
Have activities for health promotion and “caring tree” been organised to promote a proactive safety and health caring culture?

Audit Criteria

1. For health promotional activities, auditee should organise a series of health

- promotional activities which at least include a body check programme and two optional activities in relation to health promotion.
2. The body check programme should at least include measuring Body mass index (BMI) and blood pressure. The body checking is not compulsory to be conducted by contractor's staff and it is acceptable for contractor to set up a self-checking health station for workers. However, relevant usage records such as log book or photo record should be kept as evidence. Auditor is reminded to take extra care to handle those sensitive personal information under the personal data privacy policy.
 3. At least two types of following optional activities should be conducted:
 - a. Heat stroke preventive activity;
 - b. Smoking cessation activity;
 - c. Health talk/ workshop;
 - d. Distributing healthy food/ products such as "Fruit Day".
 4. For the "Caring Tree" activity, there should be a designated place such as a notice board for posting message from workers' family members. Workers are required to post those messages before commencement of work and take it back after work every day.
 5. All the promotional activities should be conducted at least quarterly. At least half of workers in a project should participate in the activities.
 6. This question is not applicable for lift addition contract.

Question 4.11

Weighting: 3

Are workers provided with appropriate masks with high protection level and high breathability?

Audit Criteria

1. It is strenuous for workers to wear a mask for extended periods of time. Therefore, apart from the protection level of face masks, their breathability and comfortability also matters to users. Delta P (i.e. Differential Pressure) is the measurement value of mask breathability, which reflects its airflow resistance. The higher the value of Delta P, the higher the air flow resistance of a mask.
2. The masks provided to workers shall comply with the following requirement:
3. High protection level such as ASTM Level 3 or equivalent;
4. Low Delta P ($\Delta P \leq 3$).
5. Purchasing record such as receipt should be submitted as documentary evidence.
6. Verification is necessary for sampled workers met on site. The answer should be "Yes" if at least 90% of random sampled workers are provided with appropriate masks. Otherwise, the answer should be "N/A" since this is not a compulsory item.

PART C1

Section 5 Monitoring the system

Question 5.1 **Weighting: 6**

Have the effectiveness of safety working procedures, method statements or specialized permit-to-work been regularly checked by field inspection?

Audit Criteria

1. Verifying the inspection records is required.
2. Inspections should be carried out in regular intervals.

Reference: (not exhaustive)

CIC safety guideline (volume 2)

Section 6.7 Before the handover of a lift shaft, the planning team should develop a 'handover checklist' for checking and recording the conditions of the lift shaft to be taken over by the Lift Installation Contractor.

Section 7.1 The Main Contractor and the Lift Installation Contractor should keep proper records of all inspection records for safety provisions.

Question 5.2 **Weighting: 3**

Has a comprehensive inspection checklist and inspection programme been developed and stipulated in the safety plan?

Audit Criteria

1. The inspection programme and inspection checklist should be project-specific.
2. Auditor should comment on the adequacy of the inspection programme and the coverage of inspection checklist.
3. Inspection checklists and forms are available with a schedule which sets out when inspection is done.
4. Electronic inspection checklist on online platform / mobile applications with proper storage function for the contract period could be accepted as inspection records.

Reference: (not exhaustive)

CIC safety guideline (Volume 2)

Section 6.9 Strict supervision should be administered on both routine works and hazardous trade processes. For routine works, site supervisions of the Lift Installation Contractor should conduct pre-work check on a half-day basis with focus on the use of safety devices including personal protective equipment (PPE). For hazardous trade

processes inside a lift shaft, the planning team should appoint suitable personnel to oversee the permit-to-work systems.

Question 5.3

Weighting: 3

Are monitoring team members chosen for their knowledge, experience, and familiarity with the task?

Audit Criteria

1. Verify the qualifications and experience of monitoring team members.
2. Safety inspection should be conducted by special assigned personnel such as safety supervisor or someone trained (at least completed a one-day (8 hours) safety inspection training course or 27-hr “Safety Training Course for Site Management Staff” provided by the OSHC or CIC or equivalent) to take up the monitoring role.

Reference: (not exhaustive)

CIC safety guideline (Volume 2)

Section 6.9 Strict supervision should be administered on both routine works and hazardous trade processes. For routine works, site supervisors of the Lift Installation Contractor should conduct pre-work check on a half-day basis with focus on the use of safety devices including personal protective equipment (PPE). For hazardous trade processes inside a lift shaft, the planning team should appoint suitable personnel to oversee the permit-to-work systems.

Section 9.8 Any design and method statement for the construction of anchorages, including those temporary anchorages, for material and equipment lifting, plant operation, installation of lift appliance, connecting independent lifeline, or any other uses must be checked by a Registered Professional Engineer (either appointed by the Main Contractor or the Lift Installation Contractor) for certification of the load bearing capacity and the fixing details of the anchorages.

CIC safety guideline (Volume 3)

Section 7.2 Before the commencement of Lift Works of a contract, the Lift Contractor should appoint a Competent Personnel to conduct an initial site safety assessment to establish necessary precautions for ensuring the safety and health of persons at work.

Section 7.3 For Lift Alteration Works or other Lift Works carried out inside a lift shaft involving different contractors / parties, the Lift Contractor should line up a risk assessment team comprising a Competent Personnel and site managerial representatives

from relevant contractors / parties to participate in the risk assessment. The Lift Contractor should consult a Registered Safety Officer for completeness of the risk assessment process and the report should be endorsed by a Project Manager / Engineer of the Lift Contractor.

Section 8.7.3 A hot work supervisor should be present at the site during the whole time while hot work relating to Lift Works is being carried out. Hot work supervisors and workers should have received training on fire safety. Hot work supervisors should have attended fire safety training course organized by recognized institutions,

Section 9.1.8 The Lift Contractor should adopt the following special precautions for preventing falling and trapping of Lift Workers working on lift car top for major alteration, such as addition / replacement of any driving-machine, safety components or safety equipment, controller and change of rated speed or rated load.

- (a) After the Lift Alteration Works and before the lift is used to carry Lift Workers either inside its lift car or on its car top for the first time, the lift should be examined by a Registered Lift Engineer (RLE) to ensure that the operating switches and safety devices are functioning properly. The examination should be properly documented for checking;

Section 9.1.11 If a new anchorage is to be installed for permanent use, a RSE should be appointed to check, prepare and certify the plans, design information justification, load bearing capacity, fixing details and / or method statement of such anchorage and to ensure that the structural integrity of the parent structure would not be adversely affected. The RSE should also certify the completion of such installation / alteration. Prior to the installation of the new permanent anchorage, advice from AP / RSE should be sought to confirm if approval and consent from the BA are required for the associated building works. If required, prior approval and consent by the BA should be obtained before the commencement of such building works.

Question 5.4

Weighting: 6

Are there appropriate steps taken to ensure that the site inspections and follow up actions are implemented in accordance with the inspection programme?

Audit Criteria

1. Planned safety inspection should be done daily for the whole project with records for follow-up and analysis.
2. Identified problems are recorded and appropriate corrective action is developed.

3. Inspection reports are provided to relevant managers and supervisors for follow up action.
4. Person to follow up the non-conformance items should be identified and target date for completion should be specified.
5. Corrective action reports show that safety problems are resolved in a timely manner.

Question 5.5

Weighting: 6

Are there appropriate steps taken to collate and analyze the results of safety inspections and causes / trends in accident / incident?

Audit Criteria

1. Inspection records should be kept.
2. The effectiveness of corrective action should be reviewed.
3. Trend analysis of safety inspection results should be done at least half yearly to provide reference for preventive safety programme.
4. Maintaining accident statistics and performing trend analysis serve the purposes of identifying trends and developing action plan to prevent recurrences. The arrangement should include:
 - a. The establishment of classifications of accident to group similar data for analysis.
 - b. Examples are the use of histogram or bar chart to show that a particular type of accident is increasing or decreasing in a period of time to assist the identification of the seriousness and to arrive at a control strategy.
 - c. Use the analysis to provide objective support and justification for budget requests, training programs, or other management safety initiatives.

Reference

Code of practice on safety management

Sections 5.5.4 A contractor should keep full records of each inspection with details of both positive and negative findings. Such reports should be analyzed to identify repeated substandard situations and their underlying causes. Records of inspections should be kept for a period of not less than 3 years.

Question 5.6

Weighting: 3

Has internal safety audit / safety review been conducted to ensure continuous improvement to the safety management system?

Audit Criteria

1. Internal safety audit / safety review should be conducted to assess the effectiveness

and thoroughness of the safety management system. If an internal audit report provided does not fulfill the requirement on competence, independence and coverage, the answer should be “No”.

2. There is an arrangement for internal audit and yet if the first internal safety audit is not due when the first audit is conducted, the answer should be “N/A”.
3. Internal safety audit / safety review should be conducted not less than once in each six months period beginning with the day on which the undertaking comes into existence.
4. If the internal safety auditor is an employee of the contractor, the contractor should only require him / her to carry out work relating to conducting the safety audit.

Auditor Guidance

1. Safety audit/safety review for assessing the safety management system specified in “Code of Practice on Safety Management” issued by Labour Department would be considered acceptable.
2. For lift contractor has the corporate level safety audit/review conducted for lift installation division complied with “Code of Practice on Safety Management” would be acceptable. The contract should be visited during the safety audit / review if the contract is commenced and available.

Question 5.7

Weighting: 6

Have the safety practices, work safe behaviour been regularly observed and interviews with relevant staff been conducted regularly?

Audit Criteria

1. Work Safe Behaviour Program should be used to observe and reinforce work safe behavior and practices of staff.
2. Appoint competent WSB observers who have completed the 12-hour Work Safe Behaviour Workshop organized by the OSHC or equivalent. Upon successful completion of the 12-hour “Train-the-Trainer for Work Safe Behaviour and Safety Climate Index Survey” course (WSBCIST) offered by OSHC, personnel could deliver internal training of WSB observers. The course duration of this internal training of WSB observers should be at least 3 hours. The senior management officer and Competent Observer(s) shall not be the Safety Manager or Safety Officer.
3. WSB should cover at least one high risk site activity such as working at height (of not more than 15 observation items on each observation checklist) at any one time.
4. Morning briefings, tool-box talks and daily meetings to promote work safe

- behaviour and safe practices should be implemented.
5. Use a work safe behaviour programme with reference to the guidebook “Implementing The Work Safe Behaviour (WSB) Programme” issued by the OSHC.
 6. Contractor should identify the major high risk activities according to the construction cycle.
 7. Based on the major high risk site activities identified, create and develop relevant work safe behaviour checklists and conduct observations with observed data analysed for behaviour interventions. It should be not more than 15 observation items on each observation checklist.
 8. Analyse the work safe behaviour result and prepare the WSB report.
 9. Develop and implement an action plan according to the analysed result .
 10. The effectiveness of WSB programme should be evaluated.
 11. Auditor is required to verify the progress of WSB Programme during safety audit. Otherwise, the answer should be “No”.

Question 5.8 **Weighting: 3**
Have safety contest awards or recognition for good safety performance of individual been conducted regularly?

Audit Criteria

1. Each project should organize “Safety Worker / Staff” Award promotion programme half yearly as a start for the Initial Stage.
2. The award should have some forms of recognition of the safety performance of the staff either in cash coupon, trophy, certificate, or the like.
3. A simple presentation ceremony of the award is also accepted as part of the safety promotion programme. It can be held before the monthly safety committee meeting, during morning briefing, or on similar occasions.
4. Alternatively, other equivalent safety promotion activities to improve the workers’ sense of safety awareness and to present awards could be done such as: safety award given and the safety records of each group in each month announced.
5. There should be a venue, an event or an occasion that specified in the safety plan to present the safety contest awards or recognition for good safety performance of individual.

Question 5.9 **Weighting: 3**
Does the committee meeting meet regularly and have representatives from all parts of every area of responsibility?

Audit Criteria

1. Safety committee meeting should be held monthly and verification is necessary through both verification of meeting minutes and interview of committee members.
2. Auditor should comment on the composition of the representatives of the safety committee.

Auditor Guidance

1. For Lift Installation contracts, the answer should be “Yes” if lift contractor representative(s) had attended site safety committee meeting organized by the building works contractor.
2. For lift company has the divisional safety committee meeting, the arrangement would be acceptable.

Question 5.10

Weighting: 6

Does the committee meeting cover all the appropriate occupational safety and health matters?

Audit Criteria

1. Auditor should comment on the appropriateness of matters discussed in the committee meeting.
2. Auditor should verify the meeting minutes and interview of committee members.
3. Safety committee meeting should actively monitor and recommend action on occupational safety and health performance.
4. The agenda for the site safety meetings should include discussion on the causes of accidents and the preventive measures.

Auditor Guidance

1. For lift installation contracts, the answer should be “N/A” if lift contractor did not organize its own safety committee meeting.

Question 5.11

Weighting: 6

Have prompt actions been taken according to the recommendations of the committee?

Audit Criteria

1. The agenda and minutes of the safety committee meetings are circulated in the site so everyone has the chance to raise issues and to know what is going on.
2. Safety committee plays an active role in managing and improving site safety and

health.

Auditor Guidance

1. For lift installation contracts, the answer should be “N/A” if lift contractor did not organize its own safety committee meeting.

Question 5.12

Weighting: 6

Is there a detailed procedure to ensure that all accidents / incidents and dangerous occurrences are promptly reported and recorded?

Audit Criteria

1. The investigation procedure should be project specific. If the investigation arrangement is modified from the corporate one, it should be stated so in the chapter on “Accident/Incident Investigation” in the safety plan and the project team should be well aware of it.
2. Auditor should check the document such as the safety plan to find out whether there is a procedure that can meet the criteria of prompt reporting and recording of accident and dangerous occurrence (including time frame). The detailed procedure refers to procedure that is capable of ensuring all accidents and dangerous occurrences are promptly reported and recorded.
3. Definition of accident and incident is to be defined to ensure all site personnel understand the difference.
4. Report accidents, incidents and dangerous occurrence as defined in the Factories and Industrial Undertakings Regulations to LD in the prescribed Form 2 with Supplementary Information on Accidents on Construction Sites & Dangerous Occurrence Report Form.
5. Notify the CM immediately of all 'reportable accidents' as defined under the Factories and Industrial Undertakings Regulations and of the accidents, incidents to be reported in prescribed forms.
6. Auditors need to comment on “prompt” reporting and recording. It should be within a reasonable period of time such as serious accident immediately reported to site agent/project manager etc. Reporting to Labour Department as required by regulation can be used as a reference.
7. A reporting system should be developed with help of flowchart for easy understanding and communication. It should be displayed on site.
8. Auditor should also interview site personnel such as workers, foreman, etc. to verify the effectiveness of the procedure.
9. There should be no “N/A” even though there is no accident. Auditor should verify the

accident reporting procedures as well as verify with site personnel to ensure they understand the procedure. The answer should be “No” if there is no detailed procedure or the verification confirms procedure not effective.

Question 5.13

Weighting: 6

Is there a detailed procedure to ensure that all accidents / incidents and dangerous occurrences are promptly investigated?

Audit Criteria

1. Auditor should check the document such as the safety plan to find out whether there is a procedure that can meet the criteria of prompt investigation of accident and dangerous occurrence (including time frame). The detailed procedure refers to procedure that is capable of ensuring all accidents and dangerous occurrences are promptly investigated.
2. Auditors need to comment on “prompt” investigation. It should be within a reasonable period of time such as serious accident is immediately investigated by the safety officer/project manager etc.
3. Auditor should also interview site personnel such as workers, foreman, etc. to verify the effectiveness of the procedure.
4. There should be no “N/A” even though there is no accident. Auditor should verify the accident reporting procedures as well as verify with relevant site personnel such as project manager/site agent (or personnel who is responsible for carrying out the investigation) to ensure they understand the procedure.
5. The answer should be “No” if there is (a) no detailed procedure; (b) not ALL accidents/dangerous occurrences investigated promptly; (c) the verification confirms procedure not effective.
6. Auditor should verify the auditee has provided competent and well trained staff with clearly defined responsibilities for accident/incident investigation and reporting.
7. Trained personnel (at least completed a one-day (8 hours) accident investigation training course organized by OSHC or equivalent) to carry out accident/incident investigation.
8. Simple incident can be done by individual but serious one should be done by a team consists of Registered Safety Officer (RSO).
9. There should be an investigation report on the detailed cause of the accident or dangerous occurrences and measures to prevent recurrence.

Auditor Guidance

1. Persons who have attended a 27-hr “Safety Training Course for Site Management

Staff” training course and Registered Safety Officer are considered as trained personnel.

Question 5.14

Weighting: 6

Does the accident / incident investigation report cover at least the circumstance, causes of accident and recommendations for preventing the recurrence of accident / incident?

Audit Criteria

1. Accident/incident investigation is a reactive monitoring function in SMS. It helps to find out the root causes of incidents and come up with remedy action to prevent recurrence of accidents.
2. Auditor is required to comment on the whole accident report. If there are too many accidents, auditor can get the overall summary of the causes of the accident before deciding which accident reports are sampled to comment. Generally, serious accidents such as fatal or dangerous occurrence (DO) should be the priority. Accidents that are frequently occurred should also look into. The comment could be purely based on the information of the accident report. Where necessary, verification with knowledgeable person will help in arriving at a desirable and acceptable recommendation.
3. A copy of the selected accident report(s) with related information (if any) should be submitted as evidence for OSHC verification.
4. If the recommendations on the report could not prevent the recurrence of similar accident/incident, the answer should be “NO”. The answer could be “N/A” if there is no accident.
5. If the quality of audit reports such as skill of writing, investigation technique, etc (not including the basic principle of having the recommendations capable to prevent the recurrence of similar accident) need improvement, the answer could be “Yes” and the auditee should be advised accordingly. At the same time, the related audit questions concerning the competence of the person responsible for accident investigation should be suitably reflected. Please be reminded that even though the persons-in-charge are generally considered competent based on their title/training certificate obtained, auditor still can comment on their competency based on the audit findings ending up with “non-conformity”.
6. All accident/incident reports should be endorsed by Project Manager/in-charge. Relevant remedy action with responsible action party should be addressed with tentative rectified date.
7. Standard accident/incident reporting forms as well as statement of facts from

witness should be developed serving as supporting evidence.

Question 5.15 **Weighting: 6**
Have prompt actions been taken on the basis of the results of the investigations?

Audit Criteria

1. Auditor should check the document such as the safety plan to find out whether there is a procedure that can meet the criteria of prompt actions are taken on the basis of the results of the investigation.
2. Auditors need to comment on “prompt action”. It should be within a reasonable period of time such as control measures for serious accident are taken immediately.
3. Auditor should also interview site personnel such as workers, foreman, etc. to verify the effectiveness of the procedure.
4. Brief facts of accident in form of “Safety Alert” should be published as reminder and promotion.
5. Accident/incident cases, investigation results and trends should be reported to safety committee monthly for endorsement of accident prevention programme.
6. The answer could be “N/A” if there is no accident occurred.

PART C2 **Work Site Conditions**
Section 6 **Working at Height**

Question 6.1 **Weighting: 6**
Is a safe means of access (and egress) used, e.g. to the machine room, top of lift car, lift pit and escalator pit, etc.?

Audit Criteria

1. Checking the provision of safe means of access and egress.

Reference: (not exhaustive)

CIC safety guideline (Volume 2)

Section 6.14 Safe access to deep lift pit should be provided in the following ways:

- (a) Where practicable for lift pit over 2.5 m deep, a separate permanent access point instead of cat ladder is recommended to be provided to facilitate the safe access to the lift pit;
- (b) If the layout of the building so permits, it is strongly advisable that for the pit depth that exceeds 1.6 m, an access door shall be provided to the pit in the building design/planning stage. The design of the permanent access door should be in

compliance with the Code of Practice on The Design and Construction of Buildings and Building Works for the Installation and Safe Use of Lifts and Escalators 2011 paragraphs 3.8.2 & 3.8.3;

- (c) It is also recommended to provide a working platform or reserve space for the working platform if the pit depth exceeds 2.5 m for future maintenance and repair works; and
- (d) However, if it is impracticable to maintain a permanent access point and to erect a working platform inside a deep pit.

Question 6.2

Weighting: 6

Has every worker been provided with a safe place of work for all activities?

Audit Criteria

1. Checking the provision of working platform is the top priority in protection of workers working at height.
2. For any work-above-ground, suitable working platforms should be the primary means of support to be considered for use. Proper working platform should be used for working at height involving a possible fall of 2 metres or more.
3. For working involving a possible fall of less than 2 metres but more than 900mm, light-duty working platform such as hop-up platform and step platform / platform ladder should be provided with guard-rails and toe-boards.
4. Unless in very exceptional circumstances that working platforms or light-duty working platforms are impracticable to be used, use of ladders for work-above-ground should be prohibited. Under such exceptional circumstances where ladders have to be used, task-specific risk assessment should be conducted and safe system of work, such as a permit-to work system, should be formulated and implemented beforehand.
5. Checking correctness of the worker's safety harness, safety net and fall arrestor system.
6. Referring to the "Guidance Notes on Classification and Use of Safety Belts and their Anchorage Systems" issued by Labour Department, eyebolt/fixed anchorage should be assessed by "Professional Engineer of the Structural Discipline" if the independent lifeline is connected. Eyebolt/ fixed anchorage for fall protection purpose with statutory form – Form 6 and Form 7 which is certified by professional engineer other than "Structural Discipline" will be considered as non-compliance. For details, please refer to Labour Department's GN.

Reference: (not exhaustive)

CIC safety guideline (Volume 2)

Any temporary facility/installation including scaffoldings, formworks, platforms, plankings and strutting etc. inside such lift shafts should be constructed of non-combustible materials (Section 6.10).

If a metal or bamboo scaffold is used for installation of a machine-room-less lift, the planning team should:

- (a) examine the loading capacity of the metal or bamboo scaffold;
- (b) prepare and approve a design plan to reinforce the scaffoldings during the conveying of components at the top level; and
- (c) modify the scaffoldings to suit the purpose (Section 6.11).

If a guided-SWP or a platform lift is used, lift shaft protection cages should not be opened from outside when the top and middle guards behind the cages are not kept in their proper positions, except for the reinstatement of the guards by workers who have hooked their lanyards of their safety harnesses onto secure anchors or independent lifelines (Section 7.16).

A log should be kept to register the locations of the door keys or the person-in-charge for holding such key(s) (Section 7.17).

Openings for landing doors, emergency doors, inspection doors and access panels to the lift shaft should be properly covered and protected to prevent any working personnel or objects falling from height (Section 7.19).

Provision of personal protection equipment to ensure the safety and health of workers are considered as last resorts or secondary protection to cope with engineering measures to eliminate safety and health hazards. As a secondary protection against risks of fall from height inside a lift shaft, fall arresting system should be provided, properly maintained and used by all parties concerned (Section 11.6).

The Main Contractor should install at least 3 sets of independent lifelines inside a lift shaft before handing over to the Lift Installation Contractor. At least one independent lifeline should be located near the door openings of a lift shaft. The independent lifelines should be anchored to eyebolts fixed by the Main Contractor. The position of lifelines should be defined in a lift installation safety plan. The Lift Installation Contractor may require to modify or adjust its position (Section 11.7).

All workers, including other trade workers, if any, should be provided with suitable safety harnesses and fall arrestors when they are required to work inside a lift shaft. They should be instructed to wear the harnesses with their lanyards attached to fall arrestors and to lock fall arrestors onto independent lifelines or suitable anchorages (Section 11.8).

All workers, including other trade workers, should be provided with reflective vests when they are required to work inside a lift shaft. They should be instructed to wear reflective vests when they remain inside a lift shaft (Section 11.9).

No worker is allowed to enter a lift shaft if he is not wearing a safety harnesses with a fall arrestor and a reflective garment (Section 11.10).

Code of Practice for Safety at Work (Lift and Escalator)

7.1.4 The provision of a safe place of work or a platform for the persons working on lift/escalators should always be the first choice. If this is impracticable and there is a risk for a person working in the lift well, the escalator wellway or any other places to fall more than 2 m, a suitable safety net should be erected or the person should wear a safety harness/belt with suitable lanyard securely attached to an independent lifeline or an anchorage as an alternative [Regulation 38Q of the CS(S)R].

7.1.5 The use of safety nets would be a better alternative than the use of safety harnesses in certain instances. Some of the examples are as follows:-

- (a) where many workers working in one location, or;
- (b) where large open areas or long loading edges expose workers to height hazards and the use of safety harness is deemed impractical or not feasible for the work method. The work of erecting and dismantling safety nets should be carefully planned and supervised and only undertaken by competent working personnel.

7.1.6 Safety nets should be fitted as close to the working surface as possible, and in no case further below than the maximum distance marked on the label attached to the net which would be either 1m or 6m. The gap between a net and the building should be as close as practicable but in no case should this be more than 200 mm.

Question 6.3

Weighting: 6

Are inspections of scaffolds/ working platforms carried out by competent person at regular intervals and results recorded?

Audit Criteria

1. Working platform including bamboo scaffold, metal scaffold, power-operated elevating work platform and light-duty working platform should be considered.
2. Display of properly filled in prescribed form of bamboo / metal scaffolding if applicable Auditor should check and comment on result of inspection and recommendation, competent person, date, name and signature and inspection date should be the same date as the filling date.

Reference: (not exhaustive)

CIC safety guideline (Volume 2)

Generally, the Main Contractor should be responsible for the erection and dismantling, alteration, if required under the contract, of scaffold inside a lift shaft. The Lift Installation Contractor should inspect the conditions of the scaffold during the handover of the lift shaft. After the handover, the Lift Installation Contractor should properly use and maintain the scaffold in good conditions at all times and timely report to the Main Contractor for any identified damage on scaffold for immediate repair or replacement. The Lift Installation Contractor should not alter and cut any members of a scaffold (Section 7.7).

Form 5 issued under the Construction Sites (Safety) Regulations should be displayed on the scaffold at ground floor entrance of a lift shaft or at the lift shaft door opening where the lift shaft platform is located (Section 7.8).

If a section of a scaffold is required to be altered to facilitate lift car assembly, the altered scaffold should be supported and reinforced by designated anchors on the wall of a lift shaft in accordance with the designed requirements stipulated in the lift installation safety plan (Section 7.9).

The Lift Installation Contractor should check the loading capacity of a scaffold used for the installation of a machine-room-less lift. Each machine component of the lift should be properly rigged when being conveyed onto the structures of the lift shaft top so as to avoid any sudden impact onto the scaffold due to the irregular movement of a suspended machine component (Section 7.10).

Question 6.4	Weighting	6
Are all working platforms including those on car tops installed with suitable guard-rails and toe-boards?		

Audit Criteria

1. Checking working platform(s) conform to legal requirement.
2. Working platform including bamboo scaffold, metal scaffold, power-operated elevating work platform, light-duty working platform should be applicable.

Reference: (not exhaustive)

Code of Practice for Safety at Work (Lift and Escalator)

Working at Height (Section 7.1)

Where work cannot be safely carried out on the ground, from any part of a building or other permanent structure, suitable scaffolds with proper working platform(s) should be provided for working personnel [Regulation 38B of the CS(S)R].

Guard rails of 900 mm to 1150 mm in height should be provided on the car top where the worker may fall via the gap between the lift and the well enclosure. Such guard rails

should be sufficiently strong and secure [Regulation 38P of the CS(S)R]. (Section 9.2.3)

Question 6.5	Weighting	6
Are all floor openings and lift shaft openings provided with suitable guard-rails and toe-boards or properly covered?		

Audit Criteria

1. Openings generally refer to superstructures which have floor openings, lift shaft openings and stairway openings on site.
2. Cover all floor openings or provide railings around floor openings and voids to prevent people falling from height as follows:
 - a. Cover all floor openings with solid and sound material constructed and securely fixed in position to prevent the fall of persons. These covers shall be clearly and boldly marked to show its purpose; or
 - b. Provide rigid guard-rails and toe boards around floor openings with, including but not limited to, the following:
 - i. Secure top railings at a height of 900 mm to 1150 mm;
 - ii. Secure middle railings at a height of 450 mm to 600 mm; and
 - iii. Secure toe boards of 200 mm high above the surface of the slab where no permanent upstand exists.
3. In order to foster site safety in prevention of falling objects, HA has enhanced its contractual requirement. The contractor is required to incorporate full height temporary protective barriers to lift shaft openings during the course of installation. Otherwise, the answer of this question should be “No”.

Reference: (not exhaustive)

The performance specification of full height temporary protective barriers to lift shaft openings is provided as follow:

- Function as protection against fall of persons and falling objects through lift shaft openings from the respective floor levels;
- Be locked when no access of person or material and no work inside lift shaft;
- Be self-closing and readily open from the inside of lift shafts at any time without the need of separate key operations. Such self-closing operation shall impose minimal momentum without affecting the stability of a person’s foothold.
- Height of steel gates: full height of the lift shaft opening;
- Mesh size for steel gates: maximum 50 x 50 mm;
- Dismantle and clear away the steel gates properly and safely when they are not required anymore;

- Ensure that no part of the temporary steel gates shall obstruct the installation of the permanent lift doors and architraves;
- Ensure that other permanent works such as wall and floor finishes and tiles, where affected by this temporary installation, shall be completed to contractual requirements upon dismantling of the temporary steel gates;
- Maintain the steel gates to operate in a proper, efficient and safe manner until the permanent cover is provided by the Nominated Sub-contractor for lift installation and clear away.

CIC safety guideline (Volume 1)

Section 7.4 For openings above lift shaft in lift machine room, they should be protected by ferrule or concrete curb and covered up with fixed wooden board or metal plate. Ventilation openings should also be covered with mesh and reinforcement.

Question 6.6	Weighting	6
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Have all suspended working platforms been installed based on all factors affecting their stability in the site?

Audit Criteria

1. The suspended working platform should be installed according to the approved design.
2. All loose items of suspended working platform are securable to fixed structures so that, the items will not be disintegrated or damaged.
3. Emergency stop device should be located at each operator control station and other places where emergency stop may be required.
4. The answer should be “N/A” if no suspended working platform was observed during on-site verification.

Question 6.7	Weighting	6
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Are all suspended working platforms properly examined, tested, inspected and operated by competent personnel?

Audit Criteria

1. Updated inspection records and examination records should be verified.
2. Testing and thorough examination of the suspended working platform by a competent examiner.
3. Inspection of suspended working platforms should be carried out by the competent person who are specified in Code of Practice for Safe Use and Operation of

Suspended Working Platforms. Verifying the correctness and completeness of inspection records (Form 1 for suspended working platform) is needed.

4. Every person operating the suspended working platform or working thereon should:
 - be at least 18 years old;
 - be fit, agile and not height phobic;
 - have undergone training that is either recognized by the Commissioner or provided by the manufacturer of the suspended working platform or its local agent; and
 - have obtained a certificate in respect of such training from the person who provided the training.

Reference: (not exhaustive)

CIC safety guideline (Volume 2)

Section 7.21 A guided-SWP should be tested, examined, inspected, maintained and operated in accordance with the provisions of the Factories and Industrial Undertakings (Suspended Working Platforms) Regulation. The Lift Installation Contractor should also comply with the requirements of the Compliance Notes on Guided-SWP issued by the Labour Department (LD).

Question 6.8

Weighting 6

Have standards required for the safe operation of suspended working platform been established and implemented?

Audit Criteria

1. Provision of personal protective equipment and communication system between the person on the working platform and the person in charge of the operation.
2. Termination of the use of the suspended working platform during unsafe condition.
3. Emergency preparedness including the recovery procedure of the plant and the personnel staying on the working platform.
4. The personnel on the working platform are wearing and using proper personal protective equipment, such as a safety harness and a helmet with Y-type chin strap.
5. Properly take care of hand tool and equipment.
6. Working platform is not so loaded with building materials that may affect worker's foothold and handhold, and endanger the stability of the working platform.
7. All wire ropes shall be inspected prior to commencement of daily work.
8. Every person riding on a suspended working platform shall wear a safety harness properly attached to an independent lifeline or an appropriate anchorage.
9. Every gondola should be marked clearly and legibly on its working platform :

- the safe working load applicable to the suspended working platform;
 - the maximum number of persons that may be carried at any one time; and
 - an appropriate mark to distinguish it from other similar gondolas.
10. Accumulation of debris / materials on working platform are strictly prohibited. Overloading may lead serious consequences including fall from height / falling objects. Auditors should pay attention during on-site assessment. Site management / operator interview should include the arrangements in prevention of SWP overload.
11. The answer should be “N/A” if no suspended working platform was observed during on-site verification.

Reference: (not exhaustive)

CIC safety guideline (Volume 2)

Section 9.5 If a guided-SWP or a platform lift is used for the lift installation works, the following specific safety precautions, but not limited to, should be adopted:

- (a) the control switches, safety devices and/or pedal brakes of the appliance should be functionally checked by a competent person at the beginning of each work shift;
- (b) a notice prescribing the maximum number of workers working on the platform should be clearly displayed on the appliance facing the lift shaft opening. The appliance should not be overloaded with workers on the platform under any circumstance;
- (c) no worker is allowed to work alone on the platform;
- (d) no works should be carried out while the appliance is moving;
- (e) no other worker should be allowed to enter the lift shaft when the appliance is operating;
- f) worker(s) should immediately anchor safety harness(es) to the independent lifeline(s) before entering the platform;
- (g) all portable tools should be properly placed in the tool box and bag when working on the platform;
- (h) the platform of the appliance should be properly stopped at appropriate level above the lift pit and locked in an inoperative mode. The switch key should be kept by the worker working inside the lift shaft. A warning notice should be posted at the control of the platform to that effect before entering the lift pit for works;
- (i) lift car and frame assembly works should be carried out preferably at the lowest level;
- (j) if the lift car and frame assembly works are carried out at the lowest level, the guided-SWP should be properly stopped at appropriate level above the lift pit and locked in an inoperative mode. The switch key should be kept by the worker working inside the lift shaft and a warning notice should be posted at the control panel of the platform to that effect; and

Question 7.2	Weighting	6
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Are there appropriate measures taken to prevent hand tools etc. from falling from height?

Audit Criteria

1. Checking the effectiveness of prevention materials and tools from falling measures.
2. Auditor should verify whether the auditee has arrangement in place e.g. avoid placing hand tools or other objects close to floor openings or edges, provide tools strap etc. to prevent falling objects.
3. The measures of hand tools with tool straps should be applied only at working at height working environment.

Reference: (not exhaustive)

CIC safe guideline (Volume 2)

All portable tools should be properly placed in the tool box and bag when working on the platform. (Section 9.5 (g))

Code of Practice for Safety at Work (Lift and Escalator)

Any items of equipment for dismantling should be lowered under control and should not be dropped down under all circumstances (Section 9.1.7).

A lift should not be returned to normal operation when the work is finished unless it has been ascertained that there is no person, tools, access equipment, etc. in the lift well. All equipment and facilities for maintenance, service or installation work, e.g. propping device, should be returned to their proper positions (Section 9.1.9).

Question 7.3	Weighting	6
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Are there appropriate measures taken to prevent materials from falling from height in stacking / storage area?

Audit Criteria

1. The stacking / storage area must be well organize with appropriate arrangements to ensure the material is not:
 - insecurely stacked in a place ;
 - stacked in such a way as to overload and render unsafe any floor or other part of a building or structure on the site.

Question 7.4

Weighting: 6

Are suitable safety helmets properly worn by all workers?

Audit Criteria

1. Auditor should verify whether all workers properly wearing suitable safety helmets. The answer should be “No”, if the Y-type chin strap cannot fix the safety helmet onto worker’s head securely.
2. The in-use life statement from a manufactory can be taken as reference.
3. A helmet should be regularly inspected for damage and wear and tear. Excessive wear and tear can considerably reduce a helmet’s lifespan and any helmet that has deep scratches, has been cut or has any impact damage should be discarded and replaced.
4. Auditee should provide all workers with safety helmet with ventilation vents and Y-type chin straps and ensure all personnel wear the helmet properly.

Reference: (not exhaustive)

Guidance Notes on the Selection, Use and Maintenance of Safety Helmets

- To effectively reduce the risks of head injury, an appropriate type of safety helmets with chin straps should be provided. The safety helmet selected should satisfy certain performance requirements including shock absorption, resistance to penetration, and be adjustable to fit and made comfortable to the user. Certainly, the safety helmet can never be effective unless it is properly worn for the purpose.
- Safety helmets should have a limited lifetime because of material degradation that can take place due to sunlight, heat or material self-degradation. Suppliers or manufacturers should be consulted for acquiring the lifetime of safety helmets.
- Under normal services, most helmet shells can provide adequate protection for about 2 to 3 years. Plastic components of harnesses may deteriorate more rapidly in service and so harnesses should be replaced at intervals not longer than 2 years, unless otherwise specified by the manufacturer. It should be noted that signs of damage or deterioration may be observed in a much shorter service life. Should such be a case, the safety helmet should be immediately withdrawn from service and discarded.

Section 8

Housekeeping

Question 8.1

Weighting: 6

Are there appropriate measures taken to ensure no timber or other material with projecting nails or other sharp objects are used or left on the site?

Audit Criteria

1. Projecting nails or other sharp objects must be adequately protected or removed.

Reference: (not exhaustive)

Legal Requirement

(1) The contractor responsible for a construction site shall ensure that no timber or material with projecting nails or other sharp objects are used or left on the site if the nails or objects are a source of danger to workmen employed there.

(2) Any contractor who has direct control over any construction work shall ensure that no timber or material with projecting nails or other sharp objects are used in the construction work or left on the place where the construction work is being carried out if the nails or objects are a source of danger to workmen employed there.

(CSSR Chapter 59I, Regulation 51)

Question 8.2

Weighting: 6

Are there appropriate measures taken to ensure good housekeeping and proper waste disposal?

Audit Criteria

1. Auditor should verify the condition of lift / escalator pit and machine room.
2. Auditor should focus on the hazards related to housekeeping.
3. Auditor when assessing the audit question could recommend the following improvement actions:
 - i) People may trip over, or strike against objects, so it is important to keep work areas clear of obstructions and loose materials.
 - ii) The floors of work areas should be kept dry and in a non-slippery condition.
4. Working areas should be kept as clear as possible and free from stacking of materials and waste.
5. Provide and maintain proper drainage and means of sewage disposal for lift pit.

Reference: (not exhaustive)

Legal Requirement

Platforms, gangways, floors, or other places used as passageways on a construction site shall be kept clear of any loose materials which are not required for immediate use.

(Construction Site (Safety) Regulations 52(1) and 52(1A))

CIC safety guideline (Volume 3)

- 8.2.1(d) The lift pit should be kept clean and dry to prevent any slipping hazard. No

Lift Worker or any other person is allowed to carry out works in a lift pit with standing water.

Question 8.3 **Weighting: 6**
Are materials and equipment stored and stacked safely?

Audit Criteria

1. Materials shall not be insecurely stacked in a place where they may be dangerous to site personnel on site.

Question 8.4 **Weighting: 6**
Where work is being taken, are suitable and adequate lighting provided to all places where lighting is necessary to secure workers' safety such as lift pit?

Audit Criteria

1. Suitable and adequate lighting should be provided to secure workers' safety.
2. Emergency lighting, e.g. electric torch or headlamp, should be provided to each workers.
3. Measures to prevent mechanical damage of lightings should be considered.

Reference: (not exhaustive)

CIC safety guideline (Volume 2)

Section 7.29 Appropriate lighting should be provided for works in the lift machine room and inside a lift shaft. Lighting devices should be properly protected against impact damage.

CIC safety guideline (Volume 3)

Section 8.2.1(c) Adequate lighting and ventilation should be provided. Lighting for working in the lift pit should be switched on when Lift Workers are working inside the lift pit. For emergency purpose, portable torches or emergency lights should be provided to lift workers working inside the lift pit.

Code of Practice for Safety at Work (Lift and Escalator)

Appropriate illumination level should be provided and maintained at the workplace for the sake of safety and health of the lift/escalator workers. Excessive or inadequate illumination level would both pose risk at work (Section 7.7.2).

Code of Practice for Lift Works and Escalator Works

Section 4.25.1 Adequate lighting for the works should be provided to workers working in a lift shaft or a confined or dark area. Emergency lighting or a battery torch should be provided or made available to workers for use in the event of power failure or sudden failure of the normal lighting.

Question 8.5

Weighting: 6

Are there appropriate measures taken to warn and prevent unauthorised persons from entering or trespassing?

Audit Criteria

1. Checking the effectiveness of the arrangement.
2. Where unauthorised persons are in the vicinity of construction work, suitable and safe routes must be provided to ensure that the safety of general public is not put at risk from the construction work activity.

Reference: (not exhaustive)

CIC safety guideline (Volume 3)

8.2.1(g) Suitable barriers with warning signs should be erected in front of the landing doors of the lowest floor and inside the lift car to prevent any person from getting close to the working area, falling into the lift pit or entering the lift car.

Section 9

Lifting Operations

Question 9.1

Weighting: 6

Is a lifting plan prepared to define the lifting and rigging method?

Audit Criteria

1. Checking on the lifting plan if it can define the lifting and rigging method applied to each machine part, material and equipment to be hoisted for the Lift Works..
2. The lifting plan is a set of plans which is created for use in any lifting operations. All lifting operations shall be accompanied by a lifting plan supported by a risk assessment, a safe work procedure and / or method statement. Frequent or routine lifting operations may only require a basic lifting plan. Non-routine or complex lifts however, requires additional planning and engineering design efforts to ensure that the lifting is conducted safely.
3. The lifting plan will need to identify the resources required, the procedures and the responsibilities so that any lifting operation is carried out safely.

4. The lifting plan shall include but not limited to following:
 - Personnel required;
 - Personnel's roles, responsibilities and competencies;
 - Nature, weight and dimension of loads;
 - Selection of appropriate lifting equipment and lifting gear;
 - Application of the correct lifting methods;
 - Position of personnel and lifting equipment;
 - Assessment of the need for tag lines; and
 - Means of communication.

Reference: (not exhaustive)

CIC safety guideline (Volume 3)

Section 8.6.1 The Lift Contractor should prepare a lifting plan to define the rigging method applied to each machine part, material and equipment to be hoisted for the Lift Works. Properly designed, installed and maintained lifting equipment should be provided for conveying machine parts, material and equipment.

Question 9.2

Weighting: 6

Are all lifting appliances and associated lifting gear inspected, tested and examined; and suitable for the operations to be carried out?

Audit Criteria

1. Checking on the conformity of legal and CIC requirements
2. Thorough planning of the operations, along with the selection, provision and use of suitable lifting appliance(s) and associated lifting gear.
3. The position and movement of lifting appliances are safe and suitable.
4. Check for any ramps, slopes, gates, archways, buildings, trees or overhead lines that would present an obstacle or danger, and refueling or other service vehicles can gain access without causing a hazard.
5. The method of determining the weight of the load to be hoisted. This information can be obtained from shipping papers, design plans, catalogue data, manufacturer's specifications, and other dependable sources. When such information is not available, it is necessary to calculate the load weight.

Reference: (not exhaustive)

CIC safety guideline (Volume 2)

The Lift Installation Contractor should be responsible for erection, testing, examination, maintenance and dismantling of installation appliances, winches, chain block systems,

other lifting appliances and lifting gear used inside a lift shaft for the lift installation works (Section 7.20).

A guided-SWP should be tested, examined, inspected, maintained and operated in accordance with the provisions of the Factories and Industrial Undertakings (Suspended Working Platforms) Regulation. The Lift Installation Contractor should also comply with the requirements of the Compliance Notes on Guided-SWP issued by the Labour Department (LD) (Section 7.21).

If a platform lift is used for the lift installation works, a Registered Lift Engineer should examine the appliance before it is put into use for the first time. The Lift Installation Contractor should also comply with the requirements of the Compliance Notes on Platform Lift issued by LD (Section 7.22).

CIC safety guideline (Volume 3)

Section 6.4(g) Use proper lifting equipment for hoisting / transportation / positioning of heavy parts / components (e.g. chain block, electric winch, etc.). Lifting equipment shall be checked before use and certified in accordance with the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations, Cap 59J;

Code of Practice for Safety at Work (Lift and Escalator)

In carrying out the lift or escalator work, the mechanical handling involved most frequently is the raising and lowering of equipment, parts and materials. The lifting operation should follow the legal requirements stipulated in the FIU(LALG)R and the CS(S)R (Section 7.3.1).

Any lifting appliances and lifting gears used in the operation should be properly constructed and securely supported during the operation [Regulations 4 and 7D of the FIU(LALG)R] (Section 7.3.2).

The lifting appliances and lifting gears should be properly maintained, regularly tested, thoroughly examined and inspected as required in Regulations 5, 6A, 7A and 18 of the FIU(LALG)R (Section 7.3.3).

For a crane that requires the provision of an automatic safe load indicator (ASLI), the ASLI should be functioning properly, and inspected and tested by a competent examiner [Regulation 7B of the FIU(LALG)R] (Section 7.3.4).

When a lifting appliance is used at or moved in the work site, its stability during operation should be considered by taking appropriate safety precautions, i.e. spreading the load, reinforcing the supports, etc. where the situation warrants [Regulation 7D of the FIU(LALG)R] (Section 7.3.5).

The safe working load of the lifting appliances and gears should be clearly identified and marked [Regulations 11 and 18 of the FIU(LALG)R]. Loading diagram if applicable

should be provided in a conspicuous position for the worker to observe (Section 7.3.6).

Code of Practice for Lift Works and Escalator Works

4.31.3 All permanently installed lifting equipment provided in machinery spaces or pulley rooms should be used only within its safe working load. The lifting equipment should also be tested and examined in accordance with the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations, Cap. 59J.

Question 9.3

Weighting: 6

Are all lifting operations being carried out safely?

Audit Criteria

1. Lifting operations should be conducted according to the lifting plan.
2. Proper fencing off of all lifting zones (e.g. providing fencing or barricade) with suitable warning notices displayed.
3. Conduct a trial of the lifting operation, that the load should be lifted 300 - 500mm off the level for 3 seconds to ensure the load is securely rigged before the load is further lifted.
4. If it is not reasonably practicable to fence off the lifting zones due to space constraint, etc. the taking of effective measures such as appointment of sufficient watch-out personnel to ensure no unauthorized entry into the zones.

Reference: (not exhaustive)

CIC safety guideline (Volume 3)

Section 8.6.2 Any lifting appliances and lifting gear (LALG) used in the operation should be properly constructed and securely supported. The LALG should be also properly and regularly maintained, inspected, tested and thoroughly examined.

Code of Practice for Safety at Work (Lift and Escalator)

- A makeshift hook, damaged hook or a hook with a defective safety latch or catch should never be used (Section 7.3.11).
- The load should be hooked to the lifting block by clamp or through the loops of the sling. The end links, rings or shackles should be riding freely on the hook (Section 7.3.12).
- The slings should be protected from sharp edges damage by using soft packing (Section 7.3.13).
- A chain should not be shortened by tying knots in them [Regulation 18 of the FIU(LALG)R]. Wire ropes should not contain kink or twist (Section 7.3.14).

- Lifting block should never be dropped from a height or dragged under a load (Section 7.3.15).
- Before mounting any lifting gear from a point provided in the building, a beam or a girder, the lifting gear together with the building, a beam or a girder on which it is to be mounted should be checked to ensure it can withstand the load (Section 7.3.16).
- The operator should be familiar with the lifting appliance he is using. He should understand which direction the chain/rope should be pulled in order to raise or lower (Section 7.3.17).
- Warning to others in the vicinity should be given when the load is about to be lifted (Section 7.3.18).
- The load should be positioned directly under the lifting appliance to prevent swinging during lifting (Section 7.3.19).
- When the load is just lifting off the ground, it should be raised slowly and steadily. Stability should also be checked during such operation and sufficient space should be provided prior to unloading (Section 7.3.20).
- The load should not be allowed to revolve as this may cause the eyebolt to become loosened (Section 7.3.21).
- Nobody should work or stand below the path or within the swing radius or locus of the suspended load during the lifting operation (Section 7.3.22).

Question 9.4

Weighting: 6

Are all responsible persons engaged on lifting operation competent to carry out the work required?

Audit Criteria

1. The responsible persons include lifting appliance operator, signalers and riggers.
2. Checking the competence of the operators of power-driven lifting appliances.
3. Training course 'Safe use of Lifting Appliance and Lifting Gear' provided by OSHC or equivalent courses is accepted for lifting appliance operator.
4. In-house training by Lift Contractors with standardize duration of training and training contents recommended by LECA is accepted for lifting appliance operator.
5. If a crane is used in the operation, a signaler shall be appointed and stationed to give effective signals to the operator of a lifting appliance to ensure its safe working.
6. The riggers are capable of selecting lifting gear suitable for the loads and liaise with the signaler for directing the movement of the crane safely.
7. For lifting operations involving use of crane, riggers shall have completed “A12 Silver Card” and signallers shall have completed “A12 Silver Card and Signaller”

for Hoisting Operations at Construction Sites Course” or “A12S Safety Training Course for Construction Workers of Specified Trade - Rigger and Signaller” provided by CIC.

Reference: (not exhaustive)

CIC safety guideline (Volume 3)

Section 8.6.4 The operator of a power-driven lifting appliance should be trained and competent to operate the appliance. He should be familiar with the lifting appliance he is using.

Code of Practice for Safety at Work (Lift and Escalator)

7.3.9 The operator of a crane should be at least 18 years old, competent to operate the crane and holder of a valid certificate [Regulation 15A of the FIU(LALG)R].

7.3.10 The operator of a power-driven lifting appliance, other than a crane, should be at least 18 years old and is trained and competent to operate the appliance [Regulation 15A of the FIU(LALG)R].

Section 10

Welding/Cutting Operations and Equipment

Question 10.1

Weighting: 3

Are all personnel involved in electric arc welding or / and in gas welding and flame cutting operations competent?

Audit Criteria

1. The general welder shall have at least attained the level of intermediate tradesman and registered as Registered Semi-skilled Worker under the Construction Workers Registration Ordinance.
2. The general welder undertaking flame cutting and gas welding work shall have attained the training qualification of a gas welding safety training course approved by Labour Department and holds a valid training certificate.

Reference: (not exhaustive)

- Factories and Industrial Undertakings (Gas Welding and Flame Cutting) Regulation.
- Code of Practice: Safety and Health at Work for Gas Welding and Flame Cutting
- Code of Practice: Safety and Health at Work for Manual Electric Arc Welding

Question 10.2

Weighting: 3

Are gas welding / cutting equipment including hoses, cables, gauges in good conditions?

Audit Criteria

1. Checking the gas welding/cutting equipment conforms to the Code guideline.

Reference: (not exhaustive)

Code of Practice for Safety at Work (Lift and Escalator)

7.5.2 Gas welding/cutting

- Gas cylinders should be transported and used in a trolley or stand made for the purpose. When in use, all gas cylinders should stand alone and be kept in the upright position. Valve handles or valve wrenches should be retained in place while the cylinders are in use. In regards to the quantity of compressed or flammable gas allowed in a work site, the provisions in the Dangerous Goods Ordinance (Cap.295) should be observed.
- Cylinders should not be subjected to rough usage, excessive shock or high temperature.
- Cylinders under storage in the work site should not be stacked too high or under heavy weights.
- Cylinders should never be stored in places where grease or oil is likely to make contact with the valves or gas connections. Also grease or oil should never be used on valve fittings and threads.
- All gas connections should be checked for leaks.
- Gauges and torches should be protected from damage.
- Regulator and flash back arrestor should be used.
- Oxygen should not be used to blow out or clean equipment.
- Cylinder caps should be in place wherever cylinders are not in use, or while they are in storage.
- Care should be taken that hose not to become kinked or tangled, or be stepped on, run over or otherwise damaged. Before operation, a worker should be assigned to inspect the gas hose for any physical damage that may lead to gas leakage, and report to the supervisor if damage is detected.
- Torches should be lit with friction lighters, stationary pilot flames or other safe source but not with matches, cigarette lighter or other inappropriate ignition device.
- The key-operated cylinder valve should be kept closed and the pressure from the hoses should be relieved when not in use.
- Gas cylinders should never be placed on the car top, inside the lift well/pit, inside

the car or other places inside the truss of the escalator.

Question 10.3 **Weighting: 3**
Are safety devices provided in gas supply system to prevent fire and explosion?

Audit Criteria

1. The use of safety devices to prevent fire and explosion, including flashback arrestor, non-return valve, pressure relief device, vent and purge device.

Question 10.4 **Weighting: 3**
For electric arc welding, are adequate welding earths and returns ensured and properly connected to the workpiece?

Audit Criteria

1. Checking the arc-welding equipment conforms to the Code guideline.
2. Construction and condition of electric arc welding sets should be considered, such as:
 - The workpiece should be well earthed, and all equipment should be earthed and insulated.
 - Welding machines having a maximum current output exceeding 30A single phase or half the maximum demand of an installation in any one phase is directly connected to the mains on a 3-phase supply.
 - Turn off the welding machine when left unattended.
 - Use welding machine for enclosed type, and ensure that terminals of the welding machine are properly protected to avoid accidental contact.
 - The welding machine should be equipped with a voltage reducing device to automatically reduce the output voltage at no-load condition.

Reference: (not exhaustive)

Code of Practice for Safety at Work (Lift and Escalator)

7.5.3 Electric arc welding/cutting

- The exposed metal parts including the iron core of the welding transformer and the welding workpiece should be properly and effectively earthed.
- The welding transformer should be completed with an earthed metal casing for protection against damage and weathering. The use of open-type welding transformer should be avoided. For enhanced safety, the welding transformer should incorporate electric shock-preventing device.
- The welding transformer should not be placed on the car top, inside the lift

well/pit or inside the car or the truss of the escalator.

- Cables and cable connectors used in arc-welding circuits should be effectively insulated (Regulations 6 and 9 of the Factories and Industrial Undertakings (Electricity) Regulations [FIU(E)R]. Only cables of adequate current carrying capacity should be used. To eliminate fire hazard, dedicated welding return cable of appropriate type and size must be used for welding/cutting. The use of the steel guide rails or other steelworks and metal parts as the welding return is forbidden.
- Electrode holders should have adequate current carrying capacity and be adequately insulated to prevent shock, short circuiting or flashovers.
- The car top and the lift well/pit are restrictive workplaces. Extra care has to be taken when carrying out electric arc welding work in those locations to minimize the risk of getting electric shock or burns.
- The welding equipment should be switched off when not in use and when it is left unattended.

Question 10.5

Weighting: 3

Are welding operations adequately screened or isolated from other workers / passers-by and other non-compatible processes?

Audit Criteria

1. A screen to protect other employees and persons in the vicinity from ultra violet and other harmful radiation emitted during electric arc welding/cutting should be provided.
2. Include all means of welding/cutting operations. Non-compatible processes including paint spraying and tiles cleaning etc.
3. Warning notice on welding process is in progress should be displayed.
4. Measures should be taken to prevent the falling of sparks generated by the welding or flame cutting operation onto the surrounding areas.

Question 10.6

Weighting: 3

Is the workplace suitable for carrying out welding works?

Audit Criteria

1. Remove any combustible / flammable materials from the work area. No welding operation should be conducted in an environment having a flammable atmosphere or having flammable materials in the vicinity.
2. Ensure that adjacent areas, which may be affected by the heat, sparks and slag

generated by the welding operation, are free from combustible / flammable materials and fire hazards.

3. Ventilate the indoor workplace using air blowers and exhaust fans to remove poisonous fumes and gases that are given off during welding.

Question 10.7

Weighting: 3

Are all welding operatives provided with appropriate personal protective clothing/equipment and are they used properly?

Audit Criteria

1. Suitable personal protective equipment should be selected appropriate to the hazards encountered, and should be properly used and maintained.
2. PPE includes eye protection, skin and body protection, if local ventilation cannot be arranged, welder should be provided with respiratory protection and a supply of fresh air.
3. Auditor should comment on the personal protective equipment provided to welding operatives even though there was no operation being carried out during the physical verification.
4. If there is no issue record of personal protective equipment for the welding operatives, the answer should be “No”.
5. The answer may be “N/A” if no activity was carried out during physical verification provided that auditor had verified the provision of personal protective equipment to the operatives.

Section 11

Abrasive Wheels

Question 11.1

Weighting: 3

Are suitable abrasive wheels used and adequately guarded?

Audit Criteria:

1. The selection of wheels, condition of the guarding and machine should be considered.
2. Include all grinding machines (fixed and portable types).
3. Guards for portable machines should be so designed that in the event of a wheel bursting or breaking, the guard remains attached to the machine.
4. Angle grinder used must be provided with an auxiliary handle.
5. Angle grinder should not be used on wood working works.

Reference: (not exhaustive)

Factories and Industrial Undertakings (Abrasive Wheels) Regulations

Question 11.2

Weighting: 3

Have all abrasive wheels mounters been trained in accordance with the requirements of the Factories and Industrial Undertakings (Abrasive Wheels) Regulations, and have they been assessed as competent and been given written authority to carry out their work?

Audit Criteria

1. An abrasive wheel shall not be mounted except by a person who has been appointed in writing for that purpose by proprietor of an industrial undertaking and is, by reason of training and practical experience.
-

Question 11.3

Weighting: 3

Are all grinding/cutting machines and abrasive wheels selected for their suitability and are they marked with their maximum permissible speed?

Audit Criteria:

1. The maximum speed of the spindle should be marked on every grinding / cutting machine so that it is easy to compare the speed marked on the wheel with the speed of the machine spindle. Where the spindle can be operated at more than one specific speed, each speed must be shown, and if the speed is infinitely variable within a specified range, the notice must show the maximum and minimum speed.
2. The maximum permissible speed in revolutions per minute (rpm) and metres per second (m/s) specified by manufacturers should be marked on every abrasive wheel larger than 55 mm in diameter, or on the blotter or identification label which is sometimes attached to it. Since it is not practicable to mark smaller wheels, the maximum permissible speed in rpm of wheels 55 mm in diameter or less should be stated in a notice posted in a position where it can easily be read.

Reference: (not exhaustive)

Factories and Industrial Undertakings (Abrasive Wheels) Regulations

Question 11.4

Weighting: 3

Has the statutory warning notice in respect of use of abrasive wheel been posted?

Audit Criteria:

1. Statutory warning notice should be posted

Reference: (not exhaustive)

Factories and Industrial Undertakings (Abrasive Wheels) Regulations

Question 11.5

Weighting: 3

Are all abrasive wheels or discs properly examined, handled and stored?

Audit Criteria:

1. Wheels should be carefully unpacked, cleaned with a brush and examined for possible damage in transit. In unpacking, the careless use of a tool may cause damage to the wheel. The soundness of wheels can be further checked by tapping them with a light, non-metallic implement. This is known as the ‘ring’ test. Wheels must be dry and free from sawdust for the ring test otherwise the sound will be deadened. It should also be noted that organic bonded wheels do not emit the same clear metallic ring as inorganic bonded wheels. Heavy wheels should be supported on a clean hard floor for the ring test while light wheels should be suspended from their hole on a finger or small pin. If the wheel sounds dead, for example due to cracking, it should not be used.
2. Handle wheels carefully to prevent dropping or bumping. Do not roll abrasive wheels. Where this is unavoidable because of the large size of the wheel, a soft, resilient floor surface is essential. Use trucks or suitable conveyors which will provide proper support for transporting wheels which cannot be carried by hand.
3. Suitable racks, bins or compartmented drawers should be provided to accommodate the various types of wheels used.

Question 11.6

Weighting: 3

Are all abrasive wheel users provided with appropriate personal protective equipment and are they used properly?

Audit Criteria:

1. Auditor should comment on the personal protective equipment provided to the users even though there was no operation being carried out during the physical verification.
2. If there is no issue record of personal protective equipment for all users, the answer should be “No”.
3. The answer may be “N/A” if no activity was carried out during physical verification provided that auditor had verified the provision of personal protective equipment to the users.

Section 12

Portable Tools

Question 12.1

Weighting:

3

Are the used portable tools fit for the tasks and are they used properly?

Audit Criteria:

1. Where applicable, check the competence of operator such as cartridge-operated fixing tools.
2. Check approved type of tools such as cartridge-operated fixing tools.
3. For work on or near electrical apparatus only properly insulated tools should be used.
4. Use spark resistant tools where highly flammable vapours may be present.
5. Select the correct weight, size and tool for the job. Avoid static load at the shoulder or arm due to the continuous holding of a tool at a raised position or the gripping of a heavy tool.
6. Use the correct size spanner. Never use a hammer or extension handle on a spanner for tightening up nuts.

Reference: (not exhaustive)

Code of Practice for Safety at Work (Lift and Escalator)

Tools and Equipment (Section 8.1)

- 8.1.3 Pliers and pipe wrenches should not be used on bolts and nuts. Makeshift handle extensions to increase the mechanical advantage should not be used.
- 8.1.4 Crescent wrenches are universal tools made for rough work; proper wrench should be used as far as possible.
- 8.1.5 Crowbar required for manual handling should be of correct size. A block of wood should be placed under the head of the crowbar for leverage.
- 8.1.6 Hardened steel surface should never be struck by a steel hammer; a plastic, wood or soft metal hammer should be used instead.
- 8.1.7 Any knife for the job should be sharp and carried in a sheath or holder. A knife should not be used in place of a cable stripper for stripping cable.
- 8.1.10 A screwdriver should not be used as a punch, wedge, pry, or chisel.
- 8.1.11 Files should not be used unless they have a proper handle, and should not be used as a pry.
- 8.1.12 Chisels, center punches, etc. should be dressed to eliminate mushrooming.
- 8.1.13 The correct drill bits should be used for percussion drilling.
- 8.1.15 For the use of cartridge-operated fixing tools, the requirements stipulated in the Factories and Industrial Undertakings (Cartridge-Operated Fixing Tools) Regulations should be observed.

Question 12.2 **Weighting:** 3

Are all portable tools maintained in safe working conditions?

Audit Criteria:

1. Construction and condition of hand tools and power driven portable tools should be considered;

Reference (not exhaustive) :

- Factories and Industrial Undertakings (Electricity) Regulations
- Factories and Industrial Undertakings (Cartridge-Operated Fixing Tools) Regulations

Code of Practice for Safety at Work (Lift and Escalator)

Tools and Equipment (Section 8.1)

- 8.1.1 The correct tools and equipment should only be used for their intended purposes. They should be cleaned, maintained and inspected each time before use.
- 8.1.8 Split or loose handles of any tools should be replaced with new ones. Handles should not be wired or taped.
- 8.1.9 Screwdrivers should always be properly dressed and their handles should be in good condition.

Question 12.3 **Weighting:** 3

Are low voltage or cordless portable tools used, where applicable?

Audit Criteria:

1. If building contractor provides a 110V or below voltage power system, lift contractor must use low voltage portable tools operated at that voltage.
2. Use of cordless electric portable tools is acceptable.
3. Sufficient charging facilities to ensure safe use of electricity should be verified if cordless electric portable tools are used on site.

Reference: (not exhaustive)

Code of Practice for Safety at Work (Lift and Escalator)

Tools and Equipment (Section 8.1)

- 8.1.14 For use of portable power tools or lighting, the following should be observed:-
 - (a) Defective power tools should be returned and properly repaired.
 - (b) Equipment should only be used at its rated supply voltage.

- (c) A plug of different specifications should never be forced into an unmatched socket.
- (d) The lead should be in good working condition, free from cuts or chaffing, and of sufficient length for the job.
- (e) The leads should be properly routed and laid to protect against damage.
- (f) Extra-low supplies ("extra-low voltage" (特低壓) means any voltage not exceeding 50 volts alternating current or 120 volts direct current whether between conductors or to earth;) should be utilized as far as practicable for all if main contractor provided a 110V or below power supply, portable power tools should be operated at that voltage 110V to reduce the risk of electric shock. All power tools to be used should preferably be "double insulated" tools. This requirement should be particularly noted when working on car top, lift well, inside lift car or any other restrictive spaces where rescue or evacuation in case of emergency may pose some difficulties.
- (g) Inspecting lamp should be either 'double-insulated' or 'all insulated' type. The lamp bulb should be guarded with non-conductive materials against accidental breakage. The lamp should not be suspended by its electric cord.
- (h) Proper type of plugs and sockets should be used for power connection.
- (i) Power extension cables should never be hung over nails or be left in places where they can get damaged or wet. The cables should not be lifted or pulled by the electrical connection leads and they should be coiled when not in use.
- (j) An electric tool without an earth connecting wire connected to an effective earth should never be used (except for 'double-insulated' type).
- (k) Other contractor's equipment of which the worker has little knowledge, should not be used unless authorized by the respective owner and also the proprietor/ contractor of the lift/escalator worker to do so.

Question 12.4

Weighting: 3

Are all portable tools properly stored?

Audit Criteria

1. All portable tools should be properly stored in boxes, racks, holders or pocket belts and should not be left so that they can fall, roll or be tripped over; cutting edges should be sheathed.
2. Carry tools in tool holders/boxes and not in the pockets of worker clothing.

Reference: (not exhaustive)

Code of Practice for Safety at Work (Lift and Escalator)

Tools and Equipment (Section 8.1)

8.1.2 Hand tools should be stored and carried in boxes or in tool-bags. Tool boxes should be placed in proper locations so that other person may not trip over them.

Question 12.5 **Weighting: 3**
Are all operatives of portable tools provided with appropriate personal protective equipment and are they used properly?

Audit Criteria:

1. Auditor should comment on the personal protective equipment provided to operators even though there was no operation being carried out during the physical verification.
2. If there is no issue record of personal protective equipment for the operators, the answer should be “No”.
3. The answer may be “N/A” if no activity was carried out during physical verification provided that auditor had verified the provision of personal protective equipment to the operators.

Section 13 **Electrical Works**

Question 13.1 **Weighting: 6**
Where relevant, are electric cables adequately suspended / installed to avoid them from being unduly laid on floor?

Audit Criteria

1. Suspension level, condition of cables and the connector should be considered.

Reference: (not exhaustive)

- Factories and Industrial Undertakings (Electricity) Regulations

Question 13.2 **Weighting: 6**
For electrical equipment and installations used, is it weatherproof type or contained in an appropriate weatherproof enclosure?

Audit Criteria

1. Temporary switch boxes, socket outlets, plugs and cable couplers are of splash-proof type with a protection class of IP54 or above.

Reference: (not exhaustive)

- Factories and Industrial Undertakings (Electricity) Regulations

Question 13.3

Weighting : 6

Are tools and equipment connected to the electrical supply system with approved type of connectors, and provided with appropriate protection against earth leakage and suitably located at means of cutting off the electricity supply when necessary?

Audit Criteria

1. Construction and condition of cables and the connector should be considered.
2. All electrical connections must be proper plugs and sockets. Makeshift connections and taped joints are not permitted.
3. Check for BS2769 (Kite Mark) or double insulated Mark (BS 2754).
4. Check the tool fitted with correct plug; type and size, and also the plug is undamaged.
5. Check trailing lead is not cut or frayed.
6. Check the nameplate is secure with details of type, voltage, frequency, current, speed and other details depending on manufacturer.
7. No cut off; bend back the “earth pin” on three-prong plugs.
8. Using industrial three-way adaptor should be avoided to prevent overloading socket outlets.

Reference: (not exhaustive)

CIC safe guideline (Volume 2) (Section 7)

- 7.25 The Main Contractor should coordinate with the Lift Installation Contractor for the arrangement of electrical supply, earthing, illumination and ventilation on site. Temporary electricity at voltage 110V should be provided by the Main Contractor with circuits equipped with waterproof sockets for use by the Lift Installation Contractor. The location of temporary electricity supply should be indicated clearly on the lift installation safety plan.
- 7.26 The Lift Installation Contractor should ensure that adequate illumination by 110V temporary lighting connected to an isolated transformer having the centre tap of the secondary winding earthed, ventilation and effective communication systems are provided inside the lift shaft during the whole lift installation period.
- 7.27 All electrical appliances including portable electric tools, lighting devices and mechanical ventilation equipment provided by the Lift Installation Contractor should be effectively earthed except that it is an approved type that does not require earthing.

Reference: (not exhaustive)

- Factories and Industrial Undertakings (Electricity) Regulations

Question 13.4

Weighting: 6

Where relevant, has a permit-to-work system in operation for electrical works and have suitable types of Lock Out / Tag Out equipment been used (E.g. Electrical / Machinery maintenance and modification works)?

Audit Criteria

1. 'Permit-to-work' systems are essential to ensure safe working and freedom from hazards, where high voltage electrical supplies, cables and equipment exist, particularly in installation, maintenance or modification works, etc.

Reference: (not exhaustive)

- Factories and Industrial Undertakings (Electricity) Regulations

Question 13.5

Weighting: 6

Is there a suitable control box with emergency stop button and inspection/normal mode of operation switch, etc. being installed at the top of the car and emergency stop buttons located near the landing door at the lowest floor and at lift pit?

Audit Criteria

1. Once the overall lift installation is completed (i.e. Upon condition that contractor's T&C report was issued), stopping device (emergency stop) and inspection/normal mode of operation switch of the lift should be in place.
2. Auditor should assess the arrangement for verifying the effectiveness of landing door interlock at working floor and car top emergency stop button / emergency stop button located inside lift shaft near the landing door at the lowest floor before entering car top / lift pit.
3. Activate the car top emergency stop button immediate before entering car top. Activate emergency stop button located inside lift shaft near the landing door at the lowest floor immediate before entering lift pit.
4. Depress the emergency stop button located at lift pit immediate after entering the lift pit.

Reference: (not exhaustive)

- Factories and Industrial Undertakings (Electricity) Regulations
- Lifts and Escalators (Safety) Ordinance
- The Codes of Practice on the Design, Construction, Examination, Testing and Maintenance of Lifts and Escalators.
- Code of Practice for Safety and Work (Lift and Escalator)

Question 13.6 **Weighting: 6**

Are appropriate notice and signage displayed in areas where electricity is used?

Audit Criteria

1. Mandatory notice in the Chinese and English languages, to the treatment of persons receiving electric shock shall be displayed in all parts of the premises where electricity is generated, transformed.
2. The names, designation and contact telephone number of the registered electrical contractor/worker responsible for the temporary electrical supply and installations permanently displayed near the main switch of the installation
3. Adequate “Danger” notices/signs are provided to indicate that the switchboard is alive. Warning signs and locks, as appropriate, shall be provided on doors of switch rooms to guard against unauthorized entry.

Auditor Guidance

1. For lift installation contracts, if no temporary electrical supply and installation is under lift contractor’s direct control, the answer should be "N/A".

Section 14 Dangerous Substances

Question 14.1 **Weighting: 3**

Have the risks to health arising from all dangerous substances been assessed?

Audit Criteria

1. Auditee should identify each dangerous substances used on site and conduct risk assessment according to relevant MSDS.
2. Auditor should advise auditee to improve the coverage of risk assessment on substances hazardous to health such as health hazards, severity of harm, likelihood of occurrence and control measures.
3. Risk rating should also be incorporated in the assessment and it should be assessed based on hazards, quantity, frequency and method of using the substances etc. Otherwise, the answer should be “No”.

Question 14.2 **Weighting: 3**

Are all dangerous substances on site labelled correctly?

Audit Criteria

1. Condition of the labels should also be considered.
2. Lubricant oil will not be classified as inflammable substance if the liquid having a flash point NOT below 66 °C. MSDS may need to be assessed.

Reference: (not exhaustive)

- Factories and Industrial Undertakings (Dangerous Substances) Regulations

Question 14.3

Weighting: 3

Are all dangerous substances in the workplace stored correctly?

Audit Criteria

1. Quantity and storage condition of the dangerous substances should be considered.
2. Inflammable gases / substances not exceeding in the exempted quantity and aggregate exempted quantity accordingly shall be stored in suitable closed containers and the containers shall be kept in a metal cupboard or bin. The metal cupboard or bin shall be situated in a position where it is least likely that the inflammable substances will catch fire.
3. Every container, storeroom, cupboard and bin used for storing inflammable substances shall be clearly and boldly marked 'Inflammable Substance 易燃物品'.

Reference: (not exhaustive)

- Factories and Industrial Undertakings (Dangerous Substances) Regulations
- Dangerous Goods Regulations

Code of Practice for Lift Works and Escalator Works

Section 4.24.1 Inflammable substances and waste should be handled with great care. Inflammable substances should be properly sealed in a suitable and labeled container when not in use. Inflammable waste should be removed from the workplace immediately after use.

Question 14.4

Weighting: 3

Are there “No Smoking” signs displayed in all locations containing flammable materials?

Audit Criteria

1. Measures shall be taken to ensure that smoking or the use of naked lights is prohibited in a site where flammable liquid or any mixture containing any such liquid or any substance or thing which will involve danger from fire is used.

Question 14.5 **Weighting: 3**
Are workers handling substances hazardous to health provided with appropriate personal protective equipment and are they used properly?

Audit Criteria

1. Auditor should comment on the personal protective equipment provided to workers handling substances hazardous to health even though there was no operation being carried out during the physical verification.
2. If there is no issue record of personal protective equipment for the operators, the answer should be “No”.
3. The answer may be “N/A” if no activity was carried out during physical verification provided that auditor had verified the provision of personal protective equipment to the operators.

Section 15 Manual Handling and Mechanical Materials Handling

Question 15.1 **Weighting: 3**
Has risk assessment for all manual handling operations been carried out by competent persons?

Audit Criteria

1. Auditor should verify the compliance of manual handling operations fulfilled the legal requirement.
2. A manual handling operation takes place every time a load is moved or supported by a person’s hands or arms, or by some other forms of bodily effort. It includes lifting, lowering, pushing, pulling and carrying the load.
3. Manual handling risk assessment should be conducted by competent persons with sufficient training (12-hour Certificate of Competency in Manual Handling course organized by OSHC or other appropriate institutes or authorities) and appointed by contractor or employer that he had the ability to do the job properly. Competency includes proper training and experience).
4. Auditor should verify the quality of the manual handling operations risk assessment reports.

Reference: (not exhaustive)

Legal Requirements

- (a) A responsible person is required to appoint competent persons to assist in the

implementation of preventive and protective measures if 10 or more employees are normally employed to carry out hazardous manual handling operations on the premises.

- (b) Make a preliminary risk assessment of a manual handling operation before it is first undertaken at that workplace.
- (c) Perform a further risk assessment of a manual handling operation if (a) the preliminary assessment reveals that it may create safety and health risks and (b) where the operation is unavoidable.

(A Guide to Part VII of the Occupational Safety and Health Regulation (Manual Handling Operations), Section 1)

Question 15.2

Weighting: 3

Has competent person been appointed to operate mechanical handling plants (e.g. forklift operations and use of material hoist, etc.) and is it operated safely?

Audit Criteria

1. Training records / certificates should be checked.
2. Include all mechanical materials handling plants and loadshifting machineries used by lift contractor.
3. Auditor should verify the operation of mechanical aids.

Reference: (not exhaustive)

- Construction Sites (Safety) Regulations
 - Factories and Industrial Undertakings (Loadshifting Machinery) Regulation
 - Guidance Notes for Safe Use of Fork-lift Trucks
-

Question 15.3

Weighting: 3

Are there suitable aids for materials handling and transportation of materials used?

Audit Criteria

1. Include all mechanical aids for manual lifting and transportation of materials conducted by lift contractor such as using trolley, handling and pulling of wire ropes/ chains, installation of wire ropes for the lift and handling and installation of trailing cables for the lift.

Reference: (not exhaustive)

- Occupational Safety and Health Regulations
- Guidance Notes for Manual Handling Operations

Question 15.4 **Weighting:** 3

Are all manual handling operations carried out correctly?

Audit Criteria

1. Include all manual handling operations carried out by lift contractor
2. On-site verification is necessary.

Reference: (not exhaustive)

- Occupational Safety and Health Regulations
- Guidance Notes for Manual Handling Operations

Section 16 **Noise**

Question 16.1 **Weighting:** 3

Has noise assessment been carried out by a competent person to determine which machines, combinations of machines or work processes including ambient noise, are likely to expose workers to noise levels of 85 dBA or more?

Audit Criteria

1. Where applicable, noise assessment report should be checked.
2. The noise assessment is done by a competent person (Certificate of Competence in Workplace Noise Assessment or equivalent courses specified in Guidance Notes on Appointment of Competent Persons for Noise Assessment at Workplaces) and appointed by the contractor or employer that he has the ability to do the job properly.
3. Include all machines, combinations of machines or work processes operated by lift contractor.

Reference: (not exhaustive)

- Factories and Industrial Undertakings (Noise at Work) Regulation
- Guidance Notes for Factories and Industrial Undertakings (Noise at Work) Regulation
- Guidance Notes on Appointment of Competent Person to Conduct for Noise Assessment at Workplaces

Question 16.2 **Weighting:** 3

Where noise levels may lead to the risk of deafness, is there a system implemented to reduce the emission or exposure to noise by planning work, changing machinery or appropriate steps to reduce the need for people to work in high noise levels?

Audit Criteria

1. Where applicable, the arrangement to reduce the emission or exposure to noise should be made and implemented according to hierarchy of control such as by planning work, changing machinery or appropriate steps to reduce the need for people to work in high noise levels. Personal protective equipment should be used as last resort.
2. Include all machines, combinations of machines or work processes operated by lift contractor.

Reference: (not exhaustive)

- Factories and Industrial Undertakings (Noise at Work) Regulation
- Guidance Notes for Factories and Industrial Undertakings (Noise at Work) Regulation
- Guidance Notes on Appointment of Competent Person to Conduct for Noise Assessment at Workplaces

Question 16.3

Weighting: 3

Where noise levels may lead to the risk of deafness, or where noise may create a nuisance, are approved hearing protection selected and issued to employees?

Audit Criteria

1. Where applicable, approved type of hearing protection should be selected and issued for employees responsible for noisy operations/machines.
2. Include all machines, combinations of machines or work processes in operation.

Reference: (not exhaustive)

- Factories and Industrial Undertakings (Noise at Work) Regulation
- Guidance Notes for Factories and Industrial Undertakings (Noise at Work) Regulation
- Guidance Notes on Appointment of Competent Person to Conduct for Noise Assessment at Workplaces

Question 16.4

Weighting: 3

Are the noisy operations/machines identified and marking out high noise level zones?

Audit Criteria

1. Where applicable, the noisy operations/machines are required to be demarcated as high noise level zone.
2. Include all machines, combinations of machines or work processes in operated.

- flammable substances/ naked flame inside lift shaft is allowed.
2. Fire safety measures such as hot work control for electrical grinding cutting works should be fully implemented, in particular for preventing hot sparks/ work pieces from the process falling onto the working platform or lift pit.
 3. During the grinding cutting process, suitable fire retardant matt/ screen should be used to cover the flammable objects on the working platform where the cutting process is taking place and the lift pits.
 4. All other cutting methods for over-sized equipment (i.e. cannot be carted out from the existing lift opening) should only be commenced when the equipment has been lowered to lift pit and its cutting method should be explicitly pre-approved by HA projects officer.

Question 17.4

Weighting : 6

Are debris / dismantled machine parts, etc. properly lowered in a safe manner by means of a lifting appliance and lifting gear?

Audit Criteria:

1. Lifting capacity of electric chain block should be at least two times the total weight of existing lift car
2. Additional safety ropes to hold car cage, guide rails, etc shall be provided to minimize the risk of falling objects
3. To avoid overloading the temporary working platform (i.e. the hoisted lift car) during dismantling works, a separate dedicated hoisting device (i.e. a separate block chain) shall be provided for holding the equipment before dismantling, transporting/hoisting equipment/ materials to the lift pit. No temporary storage of the equipment/ materials on the temporary working platform is permitted. The temporary working platform should not be used as a vehicle or means to transporting dismantle guard-rails or other heavy weight equipment.
4. Auditor should also verify the contractual requirements if the hoisted lift car used as temporary working platform is prohibited by HKHA.

Section 18

Miscellaneous

Question 18.1

Weighting : 3

Are appropriate firefighting equipment available near high risk areas (E.g. welding and spray painting operations)?

Audit Criteria:

1. The suitability, validity, condition and location of firefighting equipment (where applicable) should be considered.

Reference: (not exhaustive)

- Construction Sites (Safety) Regulations
- Code of Practice for Safety and Work (Lift and Escalator)

Code of Practice for Safety at Work (Lift and Escalator)

- 7.4.3 A fire watch should be provided for the hot work process to make sure fires do not start.
- 7.4.4 No worker should be allowed to smoke while lift/escalator works are being carried out.
- 7.4.5 Sufficient number and correct type of fire extinguishers should be available at suitable work locations.

Question 18.2

Weighting : 3

Have all the dangerous parts of machines and equipment that could cause injury been effectively guarded?

Audit Criteria:

1. Use fixed guards wherever possible, properly fastened in place with screws or nuts and bolts which need tools to remove them;
2. If employees need regular access to parts of the machine and a fixed guard is not possible, use an interlocked guard for those parts. This will ensure that the machine cannot start before the guard is closed and will stop if the guard is opened while the machine is operating;
3. Consider about the best materials for guards – plastic may be easy to see through, but can be easily scratched or damaged. If wire mesh or similar materials are used, make sure the holes are not large enough to allow access to the danger area. As well as preventing such access, a guard may also be used to prevent harmful fluids, dust etc. from escaping.
4. The concern of effective guarding for lift counter-weight should be reflected in question 18.3.

Question 18.3

Weighting: 3

Are all the counterweights for lift guarded from contact?

Audit Criteria:

1. Construction and condition of guarding should be considered.

2. Machineries under installation period and before power supply connected should be exempted. Assessment should be conducted if power supply is connected.

Reference: (not exhaustive)

- Construction Sites (Safety) Regulations
- Lifts and Escalators (Safety) Ordinance
- Factories and Industrial Undertakings (Guarding and Operation of Machinery) Regulations – as machine guarding reference only
- The Codes of Practice on the Design, Construction, Examination, Testing and Maintenance of Lifts and Escalators.
- Code of Practice for Safety and Work (Lift and Escalator)

Code of Practice for Safety at Work (Lift and Escalator)

9.5.3 All dangerous parts of the machine and the whole lift installation should be effectively guarded to prevent injury to the workers carrying out the lift installation, repair or maintenance work. The dangerous part which by reason of its position, its construction or the nature of the work being performed does not give rise to any reasonably foreseeable hazard to the safety of any working personnel need not be guarded.

Question 18.4

Weighting: 3

Are there effective communication system between lift workers?

Audit Criteria

1. Checking the effective communication system.

Reference: (not exhaustive)

CIC safe guideline (Volume 2)

Section 6.16 Lift workers are not allowed to work alone inside a lift shaft. If it is practically unavoidable, the worker should have sufficient communication devices such as motion sensor to generate alarm in addition to the provision of walkie talkie. The worker inside the lift shaft should be able to verbally communicate with a nearby co-worker.

Section 11.1 The planning team should develop and implement an effective communication system for lift installation works. Such system should be clearly defined and properly recorded in the lift installation safety plan prior to the commencement of any lift installation work.

Section 11.2 Adequate and effective communication means/equipment, such as walkie-talkie, layout plan showing the designated work area for different work groups, etc.,

should be provided to responsible persons of different parties involved in the lift installation works. Mobile phones should not be considered an effective communication for workers working inside a lift shaft.

CIC safe guideline (Volume 3)

Section 6.4(c) Avoid Lift Workers working alone as far as practicable and observe the relevant requirements laid down in the Codes of Practice. When it is unavoidable to work alone, the Lift Worker should have sufficient communication devices including a motion sensor to generate alarm in addition to the provision of walkie talkie, etc., taking into consideration

Code of Practice for Safety at Work (Lift and Escalator)

Section 6.6.1 f) Arrangements for the use of communication equipment by the working personnel during the work should be made.

Question 18.5	Weighting:	3
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Are storage facilities for personal property and clothing adequate, properly maintained and secured?

Audit Criteria

1. Suitable and sufficient facilities shall, where necessary, be provided or made available at readily accessible places to enable persons to lock away:
 - any such special clothing which is not taken home;
 - their own clothing which is not worn during working hours; and
 - their personal property

Question 18.6	Weighting:	3
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Are adequate welfare facilities such as eating & rest areas and drinking water provided to workers?

Audit Criteria

1. Auditor should base on contractual requirement on provision for eating and rest areas facilities if any and site situation to make recommendation.
2. Auditor should verify the adequacy of provision of drinking water.

Reference: (not exhaustive)

Occupational Safety and Health Regulation – Employees to be provided with adequate supplies of drinking water

The person responsible for a workplace must ensure that sufficient potable water is provided at the workplace for the consumption by employees who are employed there.

Question 18.7

Weighting: 3

Are there appropriate measures taken out based on the results of heat stress risk assessment?

Audit Criteria

1. Auditor should verify the risk assessment on heat stress (use of heat stress checklist published by Labour Department or Construction Industry Council).
 2. Measures should cover the assessment of workers working in or near of heat-generating machinery and poor ventilated areas.
 3. Measures should cover provision of drinking water.
 4. Other measures like lower workload or shorter working during, clothing, etc.
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APPENDICES

Scoring Table for HASAS (M &I) version 1.3

Part A

Section	Element	No. of Questions	Score
1	Safety Policy	10	30
2	Safety Organisation	8	30
3	Safety Training	9	48
4	In-House Safety Rules	7	33
5	Safety Committee	7	39
6	Programme for Inspection of Hazardous Conditions	7	33
7	Job Hazard Analysis	12	84
8	Personal Protection Programme	7	36
9	Accident/Incident Investigation	7	36
10	Emergency Preparedness	7	33
11	Safety Promotion	15	57
12	Health Assurance Programme	13	39
13	Evaluation, Selection and Control of Sub-Contractors	10	39
PART A Total		119	537

Part B

Section	Element	No. of Questions	Score
14	<i>Process Control Programme</i>		
14.1	Management of Place of Work I		
14.1.1	Fire Risks	8	36
14.1.2	Work in Confined Spaces	9	39
14.1.3	Working at a Height	15	126
14.1.4	Housekeeping	9	75
14.1.5	Protection against Falling Objects	8	69
14.2	<i>Management of Place of Work II</i>		
14.2.1	Overhead and Underground Services	8	36
14.2.2	Flammable Liquids and Gases	6	27

Section	Element	No. of Questions	Score
14.2.3	Roadworks	8	39
14.2.4	Occupational Safety and Health in Offices	5	24
14.2.5	Lift Maintenance Works	10	51
14.3	<i>Management of Tasks and Operations I</i>		
14.3.1	Demolition	10	39
14.3.2	Excavations	10	48
14.3.3	Lifting Operations	10	69
14.3.4	Falsework / Temporary Works	7	27
14.3.5	Structural Steel Erection/Dismantling	7	36
14.3.6	Welding/ Cutting Operations and Equipment	11	57
14.3.7	Site Traffic	8	42
14.3.8	Asbestos	9	39
14.4	<i>Management of Tasks and Operations II</i>		
14.4.1	Piling and Foundations	8	39
14.4.2	Ground Investigation	6	24
14.4.3	Work on Slopes	8	39
14.4.4	Machinery Guarding	6	24
14.5	<i>Management of Powered Plant and Equipment</i>		
14.5.1	Mobile Crane	10	75
14.5.2	Gondola (Suspended Working Platform)	9	66
14.5.3	Compressed Air Tools	6	27
14.5.4	Electrical Supply System	13	102
14.5.5	Electrical Works and Portable Electric Tools	8	48
14.5.6	Hand-held Power Tools	7	30
14.5.7	Hand Tools	5	21
14.5.8	Woodworking Machines	9	45
14.5.9	Abrasive Wheels	12	60
14.5.10	Substances Hazardous to Health	5	24
14.5.11	Loadshifting Machineries and Site Vehicles	9	39
14.5.12	Power-operated Elevating Work Platform	7	30
PART B Total		286	1572

Part	Section	No. of Questions	Score
A	1 to 13	119	537
B	14.1 to 14.5	286	1572
Total of PART A and PART B		405	2109

Audit score calculation

$$\text{Audit percentage score (Part A)} = \frac{\text{Scores obtained in Part A}}{\text{Maximum Scores in Part A}} \times 100\%$$

$$\text{Audit percentage score (Part B)} = \frac{\text{Scores obtained in Part B}}{\text{Maximum Scores in Part B}} \times 100\%$$

$$\text{Audit percentage score (Total)} = \frac{\text{Scores obtained in Part A \& Part B}}{\text{Maximum Scores in Part A \& Part B}} \times 100\%$$

Linkage to HASAS (M&I)

OSHC shall make adjustment to the HASAS(M&I) Part B Percentage Score based on the SSIS Score achieved in the immediate previous quarter for the District Term Contract according to the following merit / demerit scheme:

SSIS Score	HASAS(M&I) Part B Percentage Score Deduction/Addition
< 50	- 12
≥ 50 and < 60	- 9
≥ 60 and < 70	- 6
≥ 70 and < 80	- 3
≥ 80 and < 90	No change
≥ 90 and < 95	No change
≥ 95	+ 3

Remark: The HASAS(M&I) Part B Percentage Score after adjustment should be capped in the range of 0-100..

Scoring Table for HALEISAS Version 1.3***Part C1* Safe Systems of Work – Process Control****Programme**

Section	Topics	No. of Questions	Score
1	Process Safety Information	9	27
2	Process Hazard Analysis (PHA)	10	33
3	Development of Safe Methods	10	36
4	Implementing the System	11	48
5	Monitoring the System	15	75
	PART C1 Total	55	219

***Part C2* Work Site Conditions**

Section	Topics	No. of Questions	Score
6	Working at Height	8	48
7	Protection against Falling Objects	4	24
8	Housekeeping	5	30
9	Lifting Operations	4	24
10	Welding/Cutting Operations and Equipment	7	21
11	Abrasive wheels	6	18
12	Portable Tools	5	15
13	Electrical Works	6	36
14	Dangerous Substances	5	15
15	Manual Handling and Mechanical Materials Handling	4	12
16	Noise	4	12
17	Demolition of Lift	4	24
18	Miscellaneous	7	21
	PART C2 Total	69	300

<i>Part</i>	<i>Section</i>	<i>No. of Questions</i>	<i>Score</i>
<i>C1</i>	1 to 5	55	219
<i>C2</i>	6 to 19	69	300
Total of PART C1 and PART C2		124	519

Audit score calculation

$$\text{Audit percentage score (Part C1)} = \frac{\text{Scores obtained in Part C1}}{\text{Maximum Scores in Part C1}} \times 100\%$$

$$\text{Audit percentage score (Part C2)} = \frac{\text{Scores obtained in Part C2}}{\text{Maximum Scores in Part C2}} \times 100\%$$

$$\text{Audit percentage score (Total)} = \frac{\text{Scores obtained in Part C1 \& Part C2}}{\text{Maximum Scores in Part C1 \& Part C2}} \times 100\%$$