

INDEPENDENT SAFETY AUDIT SCHEME

HOUSING AUTHORITY

SAFETY AUDITING SYSTEM

VERSION 1.5



Occupational Safety and Health Council 2011

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Introduction

Independent Safety Audit Scheme (ISAS)

The current trend of occupational safety and health legislation in advanced countries signals a move from detailed prescriptive regulations towards a broader stakeholder obligation and the concept of self-regulation through the establishment of safety management systems (SMS). The Government of the Hong Kong Special Administrative Region (the Government), recognising such trends the then Works Branch (WB), introduced two major safety initiatives in 1996: the Pay for Safety Scheme (PFSS) and the Independent Safety Audit Scheme (ISAS). The schemes were aimed at encouraging public works contractors to set up efficient SMS, and enhancing the overall standard of safety performance of contractors.

The two schemes originated from a trial scheme of three construction contracts carried out between 1993 and 1995. Under the trial PFSS—in order to remove site safety from the realm of competitive tendering—participating contracts had to include a ‘safety checklist’ comprising a fully-specified schedule of pre-priced site safety items within the Bills of Quantities. Payment was then only made to contractors who complied with this requirement. The safety checklist was marked by a team of five representatives: two from the employer, two from the Contractor, and one from the Occupational Safety and Health Council (OSHC). As this commitment could not be sustained in a wider application of the PFSS, it was therefore proposed to set up the ISAS to help further develop the scheme.

In February 1996, a consultancy agreement was entered into between the then WB of the Government and the OSHC for the latter to manage the ISAS, establish a scheme for the accreditation of independent safety auditors, and develop a safety auditing system suitable for the Hong Kong construction industry. In December 1996, the Hong Kong Housing Authority (HA) also joined the scheme. The Occupational Safety and Health Council (OSHC) was invited to develop and manage the Housing Authority independent safety audit scheme, namely the Housing Authority Safety Audit Scheme (HASAS). The aim of the scheme (HASAS) was 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, it intended to promote the concept of safety management and to improve the safety standards in the construction industry.

In order to enhance industrial safety standards, the Government introduced a set of safety management regulations under the *Factories and Industrial Undertakings Ordinance*. The Legislative Council under *Section 7 of the Factories and Industrial Undertakings Ordinance (Cap. 59)* passed 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.

Housing Authority Safety Auditing System (HASAS)—Version 1.5

The safety auditing systems HASAS Version 1.0 was developed in 1996 for use in Housing Authority projects. To take account of changes within the industry and further enhance the site safety performance in Housing Authority construction sites, HASAS has been revised and regularly updated as follows:

- 1 April 1998—HASAS 1.1 (revised safety auditing systems)
- 1 January 2003—HASAS 1.2 (revised safety auditing systems)
- 1 March 2007—HASAS 1.3 (major changes included revised score-weighting of each audit question to better motivate contractors to continuously improve, especially in regard to the implementation of site safety)
- 1 January 2009—HASAS 1.4 (scope extended to include: the implementation of Work Safe Behaviour, Safety Climate Index and further audit criteria on the Safe Working Cycle)
- To achieve continuous improvement for the HASAS, periodic review process was carried out regularly. Amendment and new version 1.5 of the system is developed in mid 2011. The objectives of this new version are to update the audit criteria, definitions and also to introduce Process Control and Safe System of Work concepts into Part B of HASAS to fulfill the General Duty and the Factories and Industrial Undertaking (Safety Management) Regulation requirement. The summaries of scores and changes in safety items can be found in Annex A and Annex B. The process items in Part B are re-grouped under new items including:
 - 14.1 Management of Place of Work
 - 14.2 Management of Tasks and Operations
 - 14.3 Management of Power Plant and Equipment
 - 14.4 Management of Plant and Equipment for lifting of Materials and Persons
 - 14.5 Management of Mechanical Plant and Equipment

The scope of HASAS is divided into two parts:

- Part A concerns the safety and health management system that is evaluated through Element 1 to Element 13.
- Part B concerns the implementation of the safety management systems on site that is evaluated the process control by Element 14.

The fourteen safety elements area 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

Along with the various enhancement measures introduced under HASAS, the success of implementing “Critical Pass” in HASAS version 1.4 provides very valuable insight snapshots for the degree of compliance or non-compliance of key elements including safety inspection and job hazard analysis and high risk activities including working at height, housekeeping, falling objects and lifting operation on site safety. Alert on failure in “Critical Pass” threshold will trigger the respective contractor’s performance report to Contractors Review Committee. HASAS version 1.5 increases “Critical Pass” items to eight. (See Annex C)

Computer Programme

The safety auditing system developed by OSHC incorporates the use of a computerised audit programme for ISAS, which is available from the OSHC.

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.

HASAS version 1.5 Audit Definitions and General Audit Criteria for ASA

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
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	They refer to steps that considered being practicable, reasonable and suitable to that situation.
Building Informing Modeling (BIM)	<p>Building informing modeling is the process of generating and managing building data during its life cycle. Integrating BIM technique into sequence of stages in construction project safe design planning and work processes such that BIM:</p> <ol style="list-style-type: none"> 1. Provides three-dimensional, real-time, dynamic building modeling visualization of project environment for conducting risk assessments 2. Improves accuracy in risk assessment and safe work method statement due to easy retrieval of safety information 3. Embeds of vital hazard predictions at different process stages to assist in preparing safety plans and safety procedures
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 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	Means a biological or chemical agent that has the potential or 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.
Incident	Any event that has caused or has the potential to cause injury, illness or damage.
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.
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 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 – a sheet of information, 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.
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.
Performance indicators	Common safety performance indicators include accident statistics, near miss incidents, safety audit scores, safety inspections, employees safety trained, senior management safety tours, employees' work safe behaviour and safety climate survey scores.

Permit-to-work systems	Permit-to-work systems use a preprinted forms, 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.
Pointing and calling programme	Refers to the action of pointing at a target by finger, while “Calling” refers to the firmly calling out the confirmed slogan. The introduction of “Pointing and Calling” in the course of work procedures will lead to the coordination between one’s mind and hands, thus enhancing one’s alertness and concentration.
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 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 equipment in the process to enable people involved in operating the process to identify and understand the hazards posed the processes.
Radio-frequency identification (RFID)	RFID is a technology that uses radio waves to transfer data from an electronic tag, called RFID tag or label, attached to an object, through a reader for the purpose of identifying and tracking an object related to OSH aspects.
Risk	Combination of the likelihood and consequence(s) of a specified hazardous event occurring.
Risk assessment	Overall process of estimating the magnitude of risk and deciding whether or not the risk is tolerable.
Safe system of work	A safe system of work is a formal procedure which results from a systematic examination of a task in order to

	<p>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
<p>Safe work method statement</p>	<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"> ● Organization’s letterhead showing the name and registered office address of the organization ● A description of the work to be undertaken ● Description of the range of works methods which the work can be done ● 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 and etc. ● Details of the inspection and maintenance checks that will be or have been carried out on the equipment listed

	<ul style="list-style-type: none"> ● Show the signature of a senior management representative of the organization 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 Climate Survey	Refer to the booklet of “Construction Industry Safety Climate Index Software” OSHC for details
Safety innovation	Contractor is encouraged to devise safety innovation on site. The safety innovation should be with a new idea and design differs from traditional practice and it is generally acceptable by workers. The innovation is expected to be practicable and be able to make improvement of control measures in safety or health aspects on site.
Safety inspections	A structured inspection of the workplace 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.
Safety plan	It is a document setting out the specific safety and health resources, responsibilities and procedures or practices for a construction project. It also identifies the hazards associated with the works, and details the control measures that need to be implemented to manage the identified hazards.
Safety supervisor	Means a person employed as a safety supervisor in an industrial undertaking under the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations (Cap.59, sub.leg.)
Target	A detailed performance requirement, quantified wherever practicable pertaining to the organization, that arises from safety and health objectives and that needs to be met in order to achieve those objectives
Work safe behaviour programme (WSB)	Refer to booklet of “Implementing the Work Safe Behaviour(WSB) Programme” OSHC for details.

2. Audit criteria for Safe Working Cycle

Term	Audit Criteria
Daily Prior-to-work Inspection	The prior-to-work inspection should include all items in Part B that are involved in work site processes. The items required to conduct prior-to-work will depend on whether such job(s) is carried out on that day.
Process Safety Discussion	<ol style="list-style-type: none"> 1. Arrangement for process Safety Discussion should be made to ensure all the tools/manpower needed for the next days' work are available, such as drawings, construction guides, measuring/testing tools, personal protective equipment, and competent persons (including electricians, operators and signalmen etc.) 2. Project manager, foreman should be in charge of the discussion to assign next day's work, with safety directions and measures to subcontractors, safety officer and subcontractor representatives should participate in the discussion. 3. Process safety discussion should be recorded.
Weekly Check Up	<p>The contractor and subcontractors (competent persons) should inspect their own machines, electrical installation and scaffolding on site on a weekly basis to ensure the sound operation of such equipment and facilities.</p> <ol style="list-style-type: none"> 1. Plant operators / competent persons, such as electricians and mechanics etc. should check the machinery and facilities on site and the safe operation of equipment for abnormal wear and tear, abuse or misuse. 2. They are required to fill in inspection checklist and conducted timely repair as appropriate or to recommend suspension on use.

3. General Audit Criteria for ASA

Term	General Audit Criteria
Arrange	Auditor should verify the adequacy of auditee’s arrangement for health and safety issues.
Appropriate Steps	Auditor is reminded to comment on the existing procedures, arrangements and appropriate steps (if any) and give recommendations where appropriate to help auditee to make continuous improvement.
Audit follow-up	In order to fulfill the legal requirement 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 the independent verification that the auditee has undertaken corrective actions and that these actions effectively address the audit findings. The result of this verification must be commented 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 .
“Critical Pass”	Along with the various enhancement measures introduced under HASAS, “Critical Pass” provides insight snapshots for the degree of compliance or non-compliance of key elements and activities with potentially high risk impact. Failing in any critical passes in a contract will trigger the respective contractor’s performance report to Contractors Review Committee. (See annex C)

<p>Internal Safety Audit</p>	<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. Most internal safety audits currently done are by contractor’s safety officer or project manager who is 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. These are not desirable and not acceptable, as it will defeat the purpose of monitoring.</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 should not be involved in the project. They could be assigned from head office, team member from other project or outside consultants; ● 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. <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>
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<p>N/A</p>	<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 existed in the past and future in site. Auditor should comment on the efficiency and reliability of safe system of work and/or process control of these items or processes in the corresponding audit questions. However, 'N/A' can put down to those audit questions specifically for checking the safety guarding of a machine which is not found in the site at the time of safety audit.</p>
<p>Procedure</p>	<p>Auditor should verify the adequacy of auditee's procedures for health and safety issues.</p>
<p>Safety audit</p>	<p>ASAs must not just putting down a 'yes', 'no' or 'N/A', but should base on the general principles in auditing that highlighted by the three key works, namely "Effectiveness", "Efficiency" and "Reliability" during the auditing processes in collection of information, the assessment and verification of information. ASAs are required to assess the compliance of safety and health 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>

<p>Safety control measures stipulated in the contract specification</p>	<p>ASAs are required to cover those safety and health related issues required in the contract specifications during audits as follow:</p> <ul style="list-style-type: none"> ● Before the audits, ASAs should consult the HA project team to obtain information on OSH related contract specification. ● ASAs should add the information in their audit plans as the audit criteria for their audits. A Section ‘Information from HA project team’ should be added in the audit plan and nil return is required. ● During the physical inspection of the audit, ASAs 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.
<p>Safety Training is not equivalent to control measure</p>	<p>The main purposes of providing safety training are to workers aware of the safety and health at work and competent 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 which based on the risk assessment.</p>
<p>Site audit findings from Housing Authority and inspection reports from Labour Department</p>	<p>The ISAS Management Office will forward the findings related to OSH to corresponding ASAs for their follow-up in the next safety audit under HASAS. ASAs are reminded that these follow-up actions should be one of the priority areas that required extra attention and close examination. ASAs are also required to verify and comment on the follow-up actions of the contractors in the audit report or inspection report.</p>

<p>Statutory Inspection Form(s)</p>	<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 name and designation otherwise the answer should be “NO”.</p>
<p>Weekly Inspection Checklist and Safety Supervisor Daily Inspection – Form 3A</p>	<p>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 need to pay particular attention:</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-conformity spotted, the priority of rectification action, the person responsible for rectification etc. should be clearly stated and recorded; ● Non-conformity identified in the checklist/form should be reflected and followed up in section/report for corrective actions; ● 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. <p>Repeating of the same non-conformity in form 3A reflects problems in the efficiency, effectiveness and reliability of inspection program on site.</p>

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Module Housing Authority Safety Auditing System Version 1.5

PART A

Section 1 Safety Policy

Sub-section 1.1 Declaration of Intent

Question 1.1.1 **Weighting:** 9

Does the written safety policy commit the organization to high standards of occupational safety and health for all its employees and for other who might come into contact with its activities?

Legal Requirement

The contractor should ensure that policy includes a commitment to achieve a high level of occupational safety and health performance. (Code of Practice on Safety Management Section 5.1.1)

Audit Criteria

- There is a safety policy
- The safety policy contains a general organization commitment to a workplace free from injury & illness
- High standards of OSH include the implementing new innovation programmes, “ Safe Working Cycle (SWC) ”, “Work Safe Behaviour(WSB) Programme”, and “Safety Climate Index Survey (SCI)”.

Auditor Guidance

Contractor is required to establish a steering committee or working team to coordinate the SWC with pointing and calling programme, WSB, SCI and new safety innovation programmes. Auditor is required to verify the progress of these programmes. Otherwise, the answer should be “NO”.

Question 1.1.2 **Weighting:** 3

Does the policy clearly state that decisions about other priorities (e.g. production or finance) should take occupational safety and health requirements into proper consideration?

Legal Requirement

The contractor should ensure that policy includes a commitment to recognize safety and health at work as an integral part of its business performance. (Code of Practice on Safety Management Section 5.1.1)

Audit Criteria

- Integrating safety and health improvement efforts with strategic and financial planning.
- Demonstrate safety and health is an organization priority.

Question 1.1.3

Weighting: 3

Does the policy commit the organization to full compliance with all relevant occupational safety and health legislation?

Legal Requirement

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. (Code of Practice on Safety Management Section 5.1.1)

Audit Criteria

- Safety policy states management's commitment to meet legal obligations for occupational safety and health as minimum.
- 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.

Question 1.1.4

Weighting: 3

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

Legal Requirement

An effective safety policy sets a clear-direction for the organization 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

- There is a procedure and performance indicators in safety plan which assess safety and health performance.
- Regular performance reports are available with chart to indicate the performance of the safety management system.
- Continuous evaluation of the performance of the safety management system

against its policies, objectives and targets.

Auditor Guidance

1. If the commitment to progressive improvement is not stated in the policy, the answer should be “NO”.
2. The target should be clear, specific, realistic, achievable and measurable. For example a target set to have 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 then 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.
3. A target 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”.

Question 1.1.5

Weighting: 3

Does the policy commit to provide adequate and appropriate resources to implement the policy?

Legal Requirement

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

- Safety policy states management’s commitment to meet legal obligation for occupational safety and health, appropriately resource OSH activities.
- Resources have been allocated to safety training.

Sub-section 1.2 Communications and Implementation of the Policy

Question 1.2.1

Weighting: 3

Is the policy signed by the chief executive/managing/project director?

Legal Requirement

The organization’s most senior management should define, document and endorse its safety policy. (Code of Practice on Safety Management Section 5.1.1)

Audit Criteria

- The safety policy is signed by the current CEO/managing director/project director and is dated.

Auditor Guidance

1. The safety policy statement should be site specific. Corporate safety policy statement is not acceptable.
2. The safety policy statement should be posted on prominent area and should be signed by capacity of Project Director or above.

Question 1.2.2	Weighting:	3
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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?

Legal Requirement

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)

Audit Criteria

- Safety policy acknowledges management’s primary responsibility for safety and health in the workplace.

Question 1.2.3	Weighting:	3
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Does the policy identify key senior personnel for overall co-ordination and implementation of the policy?

Legal Requirement

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

- A senior manager has responsibility for the overall management of the safety

management system.

Question 1.2.4 **Weighting: 3**

Is the policy included the commitment to ensure its understanding, implementation and maintenance at all levels?

Legal Requirement

The contractor should ensure that policy includes a commitment to ensure its understanding, implementation and maintenance at all levels in the organization. (Code of Practice on Safety Management Section 5.1.2)

Audit Criteria

- The safety policy sets out management and employee commitments.
- The safety policy is part of induction training for staff and contractors.
- The safety policy is displayed in the workplace.

Question 1.2.5 **Weighting: 3**

Is the policy included the commitment to ensure that employees at all levels have received appropriate training and are competent to carry out their duties and responsibilities?

Legal Requirement

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

- There are sufficient resources to allow staff 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 Requirement

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

- Policy review at least annually.
- Policy includes a process for periodic policy review.

Question 1.3.2 **Weighting: 3**
Does the policy include the commitment to ensure periodic review of the organization’s safety management system?

Legal Requirement

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)

Audit Criteria

- There is a procedure and performance indicators in place which assess safety and health performance.
- Performance indicators balance negative indicators (injury rates, first aid treatments, reported incidents) with positive indicators (training activities, frequency of inspections, timeliness of corrective action).
- Performance indicators are reviewed on a regular basis to make sure the safety management system is running effectively and performance is being improved.

Question 1.3.3 **Weighting: 3**
Does the policy include the commitment to made performance information available to staff?

Legal Requirement

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

- Regular performance reports are available to indicate the performance of the system.
- Safety and health performance is regularly reported to staff.

Section 2

Safety Organization

Sub-section 2.1

Organization Safety Structure

Question 2.1.1

Weighting: 3

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

Legal Requirement

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. Organization should lay down direct and vertical relationships between different levels within the company and provide an effective and efficient organizational structure for ensuring the achievement of safety and health objectives. (Code of Practice on Safety Management Section 5.2.1)

Audit Criteria

- All positions which can impact on safety and health have appropriate safety and health responsibilities/communication lines identified in the chart.

Question 2.1.2

Weighting: 3

Does the organization chart adequately include the appropriate construction teams/subcontractors?

Legal Requirement

The contractor should ensure that every person in the line organization (include construction teams/subcontractors) 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

- The organization chart should include the management in-charge of safety and health, construction teams such as plant & engineering department etc. and subcontractors. 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:
 1. Subletting for specific trades or parts of the Works and New Works contracts (i.e. building contract and combined piling and building contract) is restricted to TWO tiers, and;
 2. Safe for those specified otherwise; subletting of demolition contracts is to be restricted to ONE tier only (Please see table 1. Restriction on subletting for specific trades or parts of the Works under New Works contracts at annex D).

Question 2.1.3 **Weighting: 3**
Is a director accountable for leading occupational safety and health and is clearly shown on the organization safety chart?

Legal Requirement

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

- A director 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 Requirement

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

- Position description lists appropriate legal safety and health responsibilities.
- Senior management's safety and health responsibilities include in carrying out the safe working cycle – daily/monthly safety meeting; such as:
 1. Give briefing on issues such as project development/testing activities, major safety issues, hazards and accident prone activities and the precaution and preventive measures etc.
 2. Lead the morning exerciseAnd the daily and weekly process safety discussion in the safe working cycle; such as:
 1. Organize daily and weekly process safety discussion with workers' and subcontractors' representatives to review the safety performance of the day and the week.
 2. Announce next day's/next week's, especially the new and high risk activities and to outline control measures required.
 3. Project managers, general foremen and safety officers should make a full preparation of the safety material for discussion.
 4. Records of the process safety discussion should be kept.

Question 2.1.5

Weighting: 3

Have the site supervisory staff (including site engineer, foreman, and supervisor) and workers' occupational safety and health responsibilities clearly been defined?

Legal Requirement

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 for SWC (Daily & Monthly – Morning Safety Meeting)

- The site supervisory staff (including site engineer, foreman, and supervisor) and workers' occupational safety and health responsibilities should include the responsibilities to participate the safe working cycle – daily/monthly safety meeting; such as:
 - The foreman leads the morning exercise.
 - The safety supervisor or the foreman reminds the workers to double check their personal protective equipment.
 - Workers participate the morning safety meeting.

- Monthly safety meeting should be held at a predetermined time of each month together with the daily morning safety meeting. The safety promotion activities to improve the workers' sense of safety awareness and to present awards should be included in addition to the routine issues of morning meetings.

Audit Criteria

- The supervisor's role as Code of Practice defined above.
- Assess safety climate
- Work safe behaviour observation and intervention

Question 2.1.6

Weighting: 3

Have the occupational safety and health responsibilities of sub-contractors clearly been defined?

Audit Criteria for SWC (Daily & Monthly – Morning Safety Meeting, Weekly & Monthly – Safety Inspection, Daily & Weekly – Process Safety Discussion and Monthly – Safe Committee Meeting)

- The occupational safety and health responsibilities of subcontractors should include the responsibilities of participation in the safe working cycle such as participation of daily/monthly safety meeting, weekly/monthly safety inspection, daily/weekly process safety discussion and monthly safety committee meeting.

Question 2.1.7

Weighting: 3

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

Legal Requirement

Safety advisor, safety officer or person in charge of the safety office:-

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.

Safety supervisor or the assistant to the person in charge of the safety office:-

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

- Position descriptions list appropriate safety and health responsibilities.

Question 2.1.8

Weighting: 6

Have sufficient and competent safety officer(s), safety advisor(s) and safety representatives appointed and engaged for the site?

Audit Criteria 1

- There should be at least one safety representative from different activities/trade of subcontractors.
- The safety representatives should have successfully completed a safety supervisor training or equivalent.
- Auditor should ask for appointment letters and training certificates of the safety representative.
- The answer should be considered as "No" if any of the above was not available.

Audit Criteria 2

(Revised to include Safety Initiative 3)

- The safety supervisor training should be a training comparable to the construction safety supervisor training programme (course duration 43 hours) organized by the Occupational Safety and Health Council or Construction Industry Council Training Academy (course duration 42 hours). Acceptance of training by other organizations 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.
- The trainer of safety supervisor certificate issued before 1/11/2008 is required

- with possession of OSH certificate and 2 years of safety experience.
- The trainer of safety supervisor certificate issued after 1/11/2008: Trainers of safety supervisor certificate (all subjects except Occupational Health and Hygiene) is required with possession of RSO qualification and at least 7 years post-registration experience related to construction safety and has completed acceptable instructor training (at least 3 days of training from either The Hong Kong Institute of Education or other recognized university) or equivalent. Trainer of Occupational health and hygiene is required with possession of RSO qualification and at least 5 years experience related to construction safety and has completed formal training in occupational hygiene and has completed acceptable instructor training (at least 3 days of training from either The Hong Kong Institute of Education or other recognized university) or equivalent.
 - Strengthen Registered Safety Officer requirements
 - One full-time R.S.O. for building contract / demolition contract
 - For piling/civil contracts, a part-time R.S.O., and if when workers no. exceed 50 persons on site, or if there is a special need for safety monitoring (to be confirmed by the Contract Manager.), one full-time R.S.O.
 - When workers no. exceed 200 persons on site, two full-time R.S.O.s
 - The nominated subcontractors, namely fire installation; building services; air conditioning and lift contractors, should have at least one safety supervisor on site.

Audit Criteria for SWC (Daily – Guidance and Supervision at Work)

- Foremen and ganger should constantly give necessary directions and supervision to the workers during work. Therefore-
 1. There should be at least one safety representative from different activities/ trade of subcontractors
 2. The safety representatives should have successfully completed a safety supervisor training or equivalent.
 3. Auditor should ask for appointment letters and training certificates of the safety representative.
 4. The answer should be considered as “No” if any of the above was not available.

Question 2.1.9

Weighting: 6

Are there arrangements for keeping up to date risk assessments, safety plans and registers of competent persons and examiners required under the relevant legislation?

Audit Criteria

- There should be an assigned location or area for keeping up the relevant safety records which shows a good documental control.
- There is a procedure which covers control of safety and health documents.

Section 3 Safety Training

Sub-section 3.1 Equip Personnel with Knowledge to Work Safely

Question 3.1.1 **Weighting: 6**

Are there arrangements such as training needs analysis and training plan to ensure all employees received appropriate safety training?

Legal Requirements

To equip the workers with knowledge on work safety and health, the contractor must first identify what their safety and health needs are. These needs are best established as part of an overall training needs analysis. (Code of Practice on Safety Management Section 5.3.2)

Audit Criteria 1

- Auditor should comment on the training need analysis and training plan. The safety 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) training provider
 - (d) the targeted trainees
 - (e) specification of the courses
 - (f) type of refresher course to be provided.
- Verification of the safety training programme that has been identified and implemented is necessary.
- The training programme should cover the probationers (workers who newly join the construction industry)
- New Comers (workers with relevant job experience but newly arrive at the site)

Audit Criteria 2

- The site personnel need to fulfill (I) basic safety management course (12 hours) and basic accident prevention course (12 hours) or (II) safety supervisor

(construction) course (43 hours) in accordance with specification clause at annex B. These courses should be provided by the Occupational Safety and Health Council or equivalent course provided by Construction Industry Council Training Academy. Acceptance of training by other organizations 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 (examination, practical, attendance), iv) trainer qualification, v) quality assurance. (See Annex E)

Audit Criteria 3

- SWC (Daily – Guidance and Supervision at Work)
Guidance and supervision at work is another aspect of safety monitoring. It mainly falls within the responsibilities of group leaders. This includes keeping track of implementation of safety measures (learnt from safety training) from Hazard Identification Activity, checking the compliance and problems encounter in actually implementation.

- In order to ensure group leaders competence in carrying their duties, training plan should include the training need of hazard identification activity and guidance and supervision at work in safe working cycle.

Question 3.1.2

Weighting: 6

Have all workers received basic mandatory safety training?

Legal Requirement

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.
- (c) the induction courses for new starters, including part-time, temporary and imported workers;

(Code of Practice on Safety Management Section 5.3.2)

Audit Criteria

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

Question 3.1.3	Weighting:	6
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Have all employees received site specific safety training?

Legal Requirement

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

- Verification is necessary for workers to have received site specific safety training (attending Induction Training Course) through sample checking of workers met on site.
- Checking training records of the Induction Training Course for verification.
- All workers should be provided with a suitable site-specific induction to inform them of the arrangements for safety, health and welfare at their work site. This should include any relevant findings resulting from a risk assessment, including risks arising from the activities of other workers working nearby. If contractors have site rules these should be explained, along with the procedures to be followed in the event of any worker finding themselves in a position of serious and imminent danger. Contractors must communicate to their workers the identity of the person who is responsible for implementing safety and health procedures on site.

Question 3.1.4	Weighting:	6
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Have all workers received tool-box training related to the tasks?

Audit Criteria 1

- Verification is necessary for workers to have received tool box talk training through sample checking of specific trade or group of workers met on site and

or and/or foremen who deliver the tool box talks.

- Checking tool box talk programme and training records.

Audit Criteria 2

Safety Initiative 3

- The site personnel responsible for conducting tool box talk is required to attend
 1. Occupational Safety and Health Trainer Course (normal course duration 18 hours); OR
 2. Foreman Safety Training course (16 hours) OR
 3. Safety Supervisor (Construction) course (43 hours).

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

Question 3.1.5

Weighting:

6

Have all managers received safety management training?

Legal Requirement

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

- 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.

- Safety management training should be of at least 2 days covering safety legislation, elements in safety management and its concepts; basic risk management principles.
- The trainer of safety management certificate issued after 1/11/2008 : Trainers of safety management certificate (all subjects except Occupational Health and Hygiene) is required with possession of RSO qualification and at least 7 years post-registration experience related to construction safety and has completed acceptable instructor training (at least 3 days of training from either The Hong Kong Institute of Education or other recognized university) or equivalent. Trainer of Occupational health and hygiene is required with possession of RSO qualification and at least 5 years experience related to construction safety and has completed formal training in occupational hygiene and has completed acceptable instructor training (at least 3 days of training from either The Hong Kong Institute of Education or other recognized university) or equivalent.

Question 3.1.6 **Weighting: 6**
Have employees responsible for operating plant and equipment such as lifting appliances, abrasive wheels and loadshifting machinery received relevant training?

Audit Criteria

- Check all relevant training certificate records for these competent training conducted by approved course providers (loadshifting machinery and crane operators) or training programme comparable with those organized by OSHC.
- Verification is necessary for sampled operators met on site.

Question 3.1.7 **Weighting: 6**
Have all employees responsible for carrying out high risk activities such as demolition, cartridge operated tools, confined spaces and rescue work etc received relevant training?

Audit Criteria 1

(Silver Card Training)

- The high risk activities also include the 10 high risk trades identified for Silver Card Training (Painter, Formworker/Carpenter, bar bending/steel fixing, plasterer, plumber, scaffolder, demolition, rigger, curtain wall and lift mechanic).
- Check all relevant training certificate records for these competent training

conducted by approved course providers (cartridge-operated tools and confined spaces) or training programme comparable with those organized by OSHC. Silver Card Training should be provided by CICTA.

- Verification is necessary for sampled workers met on site.

Audit Criteria 2

SWC (Monthly – Safety Training)

- Monthly safety training should be held at least once a month to discuss specific accident cases and appreciate their causes and preventive measures. By studying the cause of accidents, the same or similar accidents can be avoided.
- The training should last around an hour. Safety officer will be in charge of the training and all workers (including workers of subcontractors) should participate.
- Attendance record of the monthly safety training should be kept.

Question 3.1.8

Weighting

3

Have all employees first come into the site received relevant training?

Audit Criteria

- Safety training is particularly important even when experienced and competent workers first come into the site. At that stage they are unfamiliar with the system and the hazards they might encounter. There should be arrangement such as training for new comers to reinforce their knowledge and competence.
 - Provide caring programme for new workers including but not limited to the following:
 1. Probationers (workers who newly join the construction industry)
 2. Provide identification with "P" labels.
 3. Assign mentors (with a ratio of 1 mentor to not more than 4 probationers) who possess good experience on the site to take care of the Probationers and provide guidance on site safety with a caring period not less than 3 months.
 4. Provide a safety orientation programme covering the essential safety aspects related to the site, guidance for work and arrangement for familiarization of the site.
 5. Remove identification label from safety helmet after the 3 months' caring period and subject to the mentor being satisfied with the Probationer's safety performance.
 - New Comers (workers with relevant job experience but newly arrive at the site)
 1. Provide identification with "N" labels.
 2. The display of "N" labels shall not be less than two weeks.
-

3. Provide a safety orientation programme covering the essential safety aspects related to the site, guidance for work and arrangement for familiarization of the site.

Question 3.1.9

Weighting: 3

Is there an arrangement to monitor and assess the effectiveness of safety training?

Legal Requirement

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

- The knowledge & competence of employees who attend training are assessed, such as feedback on the training and/or work safe behaviour observation is conducted to assess the effectiveness of the training.
- Regular refresher training is provided covering key safety issues to ensure the effectiveness.

Question 3.1.10

Weighting: 6

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

Legal Requirement

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

- Auditor should comment on the quality of the recording system.
- The summary of safety-training record should include at least group or trade of workers receiving the training, date of training offered, and how many 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 made to identify the need for written occupational safety and health rules?

Legal Requirement

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

- Auditor should check the auditee use the task-hazard inventory to identify formally what in-house safety rules are needed.
- Specialized safety rules should be identified from critical tasks.

Question 4.1.2 **Weighting: 3**

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

Legal Requirement

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

- Auditor should study the site safety plan to identify those specific work activities on the need of safe work method statement and/or permit-to-work systems.
- Specialized work rules, safety work permits and procedures are developed with reference to legal requirements and codes of practice.

Question 4.1.3

Weighting:

3

Are there written general occupational safety and health rules?

Legal Requirement

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)

Audit Criteria

- It is necessary for construction projects to have general safety rules and specific safety rules to cater for various working conditions. 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, 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.
- Auditor should comment on the coverage of the general rules.

Question 4.1.4	Weighting:	6
Are the general safety rules brought to the attention of all employees?		

Legal Requirement

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

- Written procedures are required to ensure workers (including probationers and new comers) know how the safety rules operate.
- Workers (including probationers and new comers) are trained in safety and health rules relevant to their work.

Question 4.1.5	Weighting:	6
Are these rules posted in the vicinity of the activities where they apply?		

Audit Criteria

The rules in this question referred 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.

- A copy of sample safety rules displayed or photo showing such should be

produced as evidence.

- Auditor should sample the safety rules and commend on its content.
- If there are only the general safety rules, the answer should be “No”.
- If there are specific safety rules but not posted out, the answer should be “No”.

Question 4.1.6

Weighting: 3

Is there an arrangement for monitoring the compliance of these safety rules?

Legal Requirement

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

- Safety rules in this question include general safety rules and specific safety rules to cater for various working conditions.

Audit Criteria for SWC (Daily – Guidance and Supervision at Work)

- 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 guidance for safe working. In addition to inspections carried out by safety supervisors and safety officer, monitoring the compliance of these safety rules by foreman and group leaders should be included.

Question 4.1.7

Weighting: 3

Is there disciplinary arrangement for ensuring the compliance of safety rules?

Legal Requirement

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

- A written disciplinary system for enforcing safety and health rules.
- Involving workers in the establishment of safe work practices and safety work rules by using Work Safe Behaviour programme to promote workers following the rules to reinforce good behaviour.

Question 4.1.8 **Weighting: 6**
Are all the rules documented and regularly reviewed?

Audit Criteria

- Check the version of the rules, in particular those posted on site to verify the rules had been regular review to assess their on-going effectiveness.

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 Requirement

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

- Legal and contractual requirements for establishing safety committee are met.

Audit Criteria for SWC (Monthly – Safety Committee Meeting)

- The monthly safety committee meetings aims at strengthening communication among concerned persons on site, eliminating any misunderstandings or lack of coordination at work, reviewing the past safety records and planning for the coming month.
- Implementation of safe working cycle should be an item in the agenda of the safety committee meeting and the effectiveness and feedback for implementation of safe working cycle should be monitored in the safety committee meeting.

Question 5.1.2

Weighting: 6

Does the committee meeting cover all the appropriate occupational safety and health matters?

Legal Requirement

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

- Auditor should comment on the appropriateness of matters discussed in the committee meeting.
- Implementation of Work Safe Behaviour Programme and Safety Climate Index Survey should also be items in the agenda of the safety committee meeting. The effectiveness and feedback for implementation of WSB and SCI should be monitored in the safety committee meeting.

Audit Criteria for SWC (Monthly – Safety Committee Meeting)

- The monthly safety committee meetings aims at strengthening communication among concerned persons on site, eliminating any misunderstandings or lack of coordination at work, reviewing the past safety records and planning for the coming month.
- Implementation of safe working cycle should be an item in the agenda of the safety committee meeting and the effectiveness and feedback for implementation of safe working cycle should be monitored in the safety committee meeting.

Audit Criteria for SWC (Safety Committee Meeting)

- The monthly safety committee meetings aims at strengthening communication among concerned persons on site, eliminating any misunderstandings or lack of coordination at work, reviewing the past safety records and planning for the coming month.
- Implementation of safe working cycle should be an item in the agenda of the safety committee meeting and the effectiveness and feedback for implementation of safe working cycle should be monitored in the safety committee meeting.

Question 5.1.3 **Weighting: 6**

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

Legal Requirement

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

- Auditor should comment on the senior management in leading the committee to manage and improve site safety and health.

Question 5.1.4 **Weighting: 6**

Does the committee have effective, two-way communication between management and subcontractors/employees?

Legal Requirement

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

- 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 employees have been well represented at the meetings.
- 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 workplace, and employee representatives should be in a position to raise issues suggested by other employees in the workplace.
- It is a good practice to have the member names of the safety committee and the representatives of subcontractors from different trades posed on the notice board. Hence, workers know to whom their opinions pertaining to safety and health should be forwarded. The representatives of subcontractors from different trades are subjected to review in accordance to the progress.

Question 5.1.5

Weighting: 6

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

Legal Requirement

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 company doctors, industrial hygienists or safety officers or advisers are employed, they should be made ex-officio members of the safety committee. Other specialists, such as project engineers, chemists, organization 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

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

Question 5.1.6

Weighting: 6

Does the committee meet regularly?

Legal Requirement

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)

Audit Criteria

- Safety Committee meeting should be held monthly and verification is necessary through both verification of meeting minutes and interview of committee members.

Question 5.1.7

Weighting: 6

Does the committee monitor, record, and recommend action on occupational safety and health performance?

Legal Requirement

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

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

Question 5.1.8

Weighting: 6

Has prompt action been taken according to the recommendations of the committee?

Legal Requirement

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

- 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.
- Safety committee plays an active role in managing and improving site safety and

hazardous workplace such as confined spaces, excavations, scaffolds.

Audit Criteria for SWC (Daily – Guidance and Supervision at Work)

Guidance and Supervision at Work is another aspect of safety monitoring. It mainly falls within the responsibilities of group leaders. This includes keeping track of implementation of the safety measures from Hazard Identification Activity, checking the compliance and addressing problems that may occur during its implementation.

- Guidance and Supervision at Work should be one of the frontline supervision programme by group leaders stipulated in the safety plan.

Audit Criteria for SWC (Daily, Weekly and Monthly Inspection)

The daily, weekly and monthly inspection of the safe working cycle should be recorded and followed up.

- The daily inspection carried out by senior management at construction sites serves both as supervision and assurance for the safe operation of daily work.
- The joint weekly inspection by senior management and subcontractors can strengthen their cooperation and work on eliminating the safety problems found during inspection and define their respective responsibilities on-the-spot.
- Monthly inspection aims at improving the management of machines, equipment, tools and materials. It should be carried out in line with relevant rules and regulations by competent person such as electricians and mechanics etc.

Audit Criteria for SWC (Daily – Final Check After Work)

The final check by middle level management is to ensure that no accident will occur at construction sites after works such as fire, flooding, scaffoldings, collapse, theft or trespassing, in order to prevent loss and affect the public.

1. Each worker should check his own work area. Foremen pay special attention to selected items on the checklists such as tidying up is properly conducted, all fire sources are put out, materials properly stored, all workers have left and all gates are locked.
2. Each foreman and subcontractor representative reports on the tidying up work to project manager/site agent.
3. Final check after work should be recorded.

Audit Criteria

- There is procedure which provide guidance as to responsibility, frequency and schedule of inspections, use of information sources, where and what to look for, recording of findings, to whom findings are reported, and tracking of corrective actions.
- There are checklists & forms for the inspection.
- There is a schedule which sets out when inspection is done.

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 Requirement

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 for SWC (Daily, Weekly & Monthly Inspection)

- The daily & weekly inspection carried out by senior management serves both as supervision and assurance for safe operation of daily work.
- Arrangement of senior management such as project manager and site agent to participate in the daily and weekly Inspection should be stipulated in the safety plan.
- For monthly inspection senior management should appoint competent person such as electrician, mechanics and engineers to conduct regular in depth inspections on machines, plants and equipment.

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 Requirement

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

- Check includes site inspection, maintenance of plant and equipment and tests of the work environment.
- Checklists are able to monitor the hazards identified in the risk assessments.
- People who undertake inspections and testing are qualified.
- Identified problems are recorded and appropriate corrective action is developed.

Question 6.1.4

Weighting: 3

Are there appropriate arrangements to monitor the effectiveness and thoroughness of the inspection?

Legal Requirement

An effective inspection programme should have a quality check built in to ensure that the line management is carrying out the monitoring function properly. A good reporting system with supervisory checks, for example, will be able to serve the purpose. The safety inspection programme should be regularly reviewed to identify

deficiencies and possible areas for improvement. (Code of Practice on Safety Management Section 5.5.4)

Audit Criteria

- Internal safety audit can be used as one of the monitoring tools for assessing the effectiveness and thoroughness of the inspections. If an internal audit report provided does not fulfill the requirement on competence, independence and coverage, the answer should be “No”.
- There should be a review of safety inspection program to identify strengths and weaknesses of the programme and have specific recommendations for improvement.
- 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 counter check the inspection records to monitor the implementation of such arrangements.

Question 6.1.5

Weighting: 6

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

Audit Criteria

- Auditor should comment on the quality of inspection reports compiled by safety officers and safety supervisors such as the proper filling in of Form 2A and Form 3A should be emphasized.
- Verification is necessary especially when inspection is carried 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 you need to pay particular attention:

- Coverage of the inspection checklist or report should be adequate to cater for all activities on site;
- 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.
- Non-conformity identified in the checklist/form should be reflected and follow up in section/report for corrective actions;
- 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.

- 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 6.1.6

Weighting: 6

Are there appropriate arrangements to ensure that action is taken as a result of the findings of safety inspection?

Legal Requirement

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

- Corrective action reports show that safety problems are resolved in a timely manner.
- Inspection reports are provided to relevant managers and supervisors for follow up action.

Question 6.1.7

Weighting: 6

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

Legal Requirement

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

- Inspection records are kept.
- The effectiveness of corrective action is reviewed.

Section 7 Job Hazard Analysis

Sub-section 7.1 A Programme to Identify Hazardous Exposure or Risk

Question 7.1.1 **Weighting: 3**

Have a list of all anticipated work activities covering premises, plant, people and procedures, and information?

Legal Requirement

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)

Audit Criteria

- Efforts are made to identify hazards using information sources such as site records, safety inspections, incident reports, reports from workers.
- Some high-risk activities such as loading operation of batching plant, welding in confined area e.g. welding in plant room; water tank; fabrication of metal cage etc. that will be anticipated should be identified in the survey.
- Auditor should comment and advise the auditee to review the survey and prepare risk assessment for all the construction activities anticipated.
- In particular, an additional risk assessment for batching plant operation (if applicable) should be prepared. Missing of any anticipated activities in the survey should be treated as non-conformity.

Question 7.1.2 **Weighting: 3**

Are there procedures and methods stipulated in safety plan for ongoing identification of hazards, risk evaluation and development risk control measures?

Legal Requirement

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)

Audit Criteria for SWC (Daily – Risk Assessment Activity)

- Risk Assessment Activity should be one of the methods stipulated in safety plan for ongoing identification of hazards, risk evaluation and development risk control measures. Before work (maybe after morning briefing) team leaders or foreman from each trade should brief the workers on the work of the day, lead workers to identify the potential hazards of the work and make them aware of the degree of risks and measures for precaution.

Audit Criteria

- There is a procedure which sets out how the risk assessment process operates in the site and in safe working cycle activity.

Question 7.1.3

Weighing: 6

Is the risk assessment and evaluation covered a systematic examination of the likelihood and consequences to people, environment and assets and properly recorded?

Legal Requirement

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

- Identified hazards are assessed to determine their likely impact and appropriate risk controls are developed.
- Risk assessment sheets only consist of activities, potential hazard, control measures and actions, without probability and consequence are considered inadequate and the answer should be “No”.
- A proper risk assessment should be written on an assessment sheet with risk rating incorporated so that the auditee can determine priority for controlling hazards and implementation schedule.
- Auditor should comment on the content of the risk assessment report. A copy of risk assessment report should be submitted as evidence for verification.

Question 7.1.4

Weighing:

6

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

Legal Requirement

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

- 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 high-risk activities commonly observed reflected that the present practice of some contractors needs improvement.
- Unless the safety officer is competent and knows all activities well, the existing arrangement of risk assessment need to be reviewed such as setting up a risk assessment team consists of foremen, project manager, site agent etc. who are

knowledgeable on the construction activities. Otherwise, the answer should be “NO”.

- Qualified Engineer (QE) should be participated in risk assessment team when conducting risk assessment related to Temporary Works, Blasting and Slope Works. Otherwise, the answer should be “NO”.

Audit Criteria for SWC (Daily – Hazard Identification Activity)

- The team leaders or foreman from each trade should be trained and competent in hazard identification and risk assessment to lead workers to identify the potential hazards of the work and make them aware of the degree of risks and measures for precaution. The team leaders or foreman should also fill in the “Risk Assessment Activity and Monitoring Form” for record.

Question 7.1.5	Weighting:	6
Are the recommended risk control measures appropriate to the identified hazards and risk evaluation?		

Legal Requirement

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 &
- (c) be an essential part of the element 12 health assurance programme . (Code of Practice on Safety Management Section 5.11.1)

Audit Criteria

- Safe work practices are developed using the information gained from the risk assessment process.

Question 7.1.6	Weighting:	3
Is there an arrangement to ensure the implementation of the recommended control measures?		

Legal Requirement

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 for SWC (Daily – Risk Assessment Activity)

- After identification of the potential hazards of the work, the team leaders or foreman should fill in the “Risk Assessment Activity and Monitoring Form” to ensure the recommended control measures were implemented and recorded.
- For high risks work, pointing and calling should be conducted to strengthen the safety awareness of workers involved.

Audit Criteria

- Everyone in the site knows about the hazards they face and the risk control that are applied.

Question 7.1.7	Weighting:	3
Is there arrangement for risk assessment to be reviewed or updated?		

Legal Requirement

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

- Apart from the regular review of the risk assessment, the assessment should also be reviewed or updated if there was an accident happened/ receive a suspension notice or improvement notice from Labour Department to a process or an activity. Otherwise, the answer to this question should be “NO” if no review or updating.

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

Question 7.2.1

Weighting: 3

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

Legal Requirement

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

- Auditor should testify 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. **Otherwise, all questions in sub-section 7.2 should be “NO”.**

Question 7.2.2 **Weighting: 3**

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

Audit Criteria

- Auditor should verify the appropriateness of the written control measures for each hazard.

Question 7.2.3 **Weighting: 3**

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

Audit Criteria

- Auditor should verify the safety responsibilities have been given to relevant staff.

Question 7.2.4 **Weighting: 3**

Have the developed safety working procedures/method statements/permit to work been communicated to the relevant personnel?

Audit Criteria

- Auditor should verify all relevant workers are told about the procedures/method statements/permit.

Question 7.2.5 **Weighting: 3**

Are there arrangements to ensure plant, personal protective equipment, and training provided in accordance with safety procedures/method statements/permit to work?

Audit Criteria

- Auditor should verify safety procedures/method statements/permit to work have been reviewed to assess their on-going effectiveness.
-

Section 8 Personal Protection Programme

Sub-section 8.1 Provision of Suitable Personal Protective Equipment

Question 8.1.1 **Weighting: 3**

Have the statutory requirements for the provision of protective clothing/equipment been identified in the safety plan?

Legal Requirement

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

- The safety plan should specify the requirements for PPE when on site.
- Auditor should verify the listed statutory requirements and PPE standards are related to the hazards identified recommended in the risk assessment; otherwise, the answer should be “NO”.

Question 8.1.2 **Weighting: 3**

Have the need of protective clothing/equipment been identified as part of the risk assessment?

Legal Requirement

After the identification of the hazardous exposure or the risk of such exposure to the workers, the contractor should find out whether planned or existing safety precautions (if any) are sufficient to keep the risk under control and meet legal requirements. If the findings are negative, he should take steps to control the risks so that they are reduced to the lowest level that is reasonably practicable, using engineering methods (like adopting a safer production process, enclosure of a noisy machine, removal of the hazardous substances at source, etc.).

If –

- (a) after the aforesaid engineering measures have been taken, the hazardous exposure or the risk of such exposure to the workers in the relevant industrial undertaking is still intolerable, or

- (b) there are no feasible engineering methods to control the risk,

If it is necessary to provide PPE, a contractor should conduct an assessment. The purpose of the assessment is to ensure that the correct PPE is chosen for the particular risk. Except in the simplest and most obvious cases which can be repeated and explained at any time, the assessment should be recorded and kept readily accessible by those who need to know the results. (Code of Practice on Safety Management Section 5.6.2)

Audit Criteria

- Auditor should verify the PPEs provided are related to the risk control measures recommended in the risk assessment; otherwise, the answer should be “NO”.

Question 8.1.3

Weighting: 3

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

Legal Requirement

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

- Arrangement includes the provision of safety information, written specifications, and related data.
- Auditor should verify the provided PPEs’ standards are related to the risk control measures recommended in the risk assessment; otherwise, the answer should be “NO”.
- Requirements of labels on helmets for Probationers and New Comers
 1. Each label shall be adhered on a conspicuous part of a safety helmet.
 2. The size of label shall not be less than 50mm (L) x 50mm (H).
 3. The name and telephone number of the mentor shall be shown on the label for probationers.

Question 8.1.4 **Weighting: 6**

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

Legal Requirement

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

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

Question 8.1.5 **Weighting: 6**

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

Audit Criteria

- Auditor should verify that there is an appropriate issuing facility to ensure all the PPE needed for the site with cleaning and maintenance capability.

Question 8.1.6 **Weighting: 6**

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

Audit Criteria

- System includes inspection of items when received, handling, storage and control of received PPE items, also recording issue and use of equipment.

Question 8.1.7 **Weighting: 3**

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

Legal Requirement

1. Steps (including supervision) to ensure that workers make proper use of PPE.
2. Adequate training, information and instruction to ensure that workers make safe

and proper use of PPE and can maintain it properly.

3. 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) identify 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 for SWC (Daily – Morning Safety Meeting & Prior-to-work Inspection)

- Morning safety meeting provides an opportunity for the safety supervisor or the foreman reminds the workers to double check their personal protective equipment. Personal protective equipment should also be an item in morning safety meeting and prior to work inspection. Provision of instruction or replacement of PPE is necessary if the PPE is not proper used or damage found.

Audit Criteria

- Auditor should verify there is procedure(s) to instruct, train and practice in use of PPEs.
- Training should refer to the manufacturer's instruction and the importance of following them.

Question 8.1.8

Weighting: 3

Is there a procedure to monitor the personal protective equipment brought into site including subcontractors or workers?

Legal Requirement

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

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

Audit Criteria

- 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.
- 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.
- All accidents and dangerous occurrence refer to ALL cases no matter it is serious or not.
- Auditor should also interview site personnel such as workers, foreman, etc. to verify the effectiveness of the procedure.
- There should be no “N/A” even though there is no accident. Auditor should verify the accident reporting procedures as well as verification with site personnel to ensure they understand the procedure. The answer should be “NO” if there is no detailed procedure or the verification proves procedure not effective.

Question 9.1.2	Weighting:	6
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Is there a detailed procedure to ensure that all accidents and dangerous occurrences are promptly investigated?

Audit Criteria

- 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.

- 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 office/project manager etc.
- All accidents and dangerous occurrence refer to ALL cases no matter it is serious or not.
- Auditor should also interview site personnel such as workers, foreman, etc. to verify the effectiveness of the procedure.
- There should be no “N/A” even though there is no accident. Auditor should verify the accident reporting procedures as well as verification 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.
- The answer should be “NO” if there is (a) no detailed procedure; (b) not ALL accidents/dangerous occurrences investigated promptly; (c) the verification proves procedure not effective.
- 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 person responsible for accident /incident investigation and reporting receive a formal training?

Legal Requirement

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

- Auditor should verify the auditee has provided competent and well trained staff with clearly defined responsibilities for accident/incident investigation and

reporting.

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 Requirement

- (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

- 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 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.

- A copy of the selected accident report(s) with related information (if any) should be submitted as evidence for OSHC verification.
- Any audit report that does not have comment on the accident report for the question must clarify.
- 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.
- 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 person in-charges are generally considered competent based on their title/training certificate obtained (e.g. RSO, SS training, etc.), auditor still can comment on their competency based on the audit findings ending up with “non-conformity”.

Question 9.1.5

Weighting: 6

Is there a procedure for ensuring that prompt actions are taken on the basis of the results of the investigations?

Legal Requirement

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

- 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.
- 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.
- Auditor should also interview site personnel such as workers, foreman, etc. to verify the effectiveness of the procedure.
- There should be no “N/A” even though there is no accident. Auditor should

verify that the procedures for prompt action are taken 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 proves procedure not practicing.

Question 9.1.6

Weighting: 3

Is there a procedure for ensuring the results of investigations and actions taken are notified to employees, and where appropriate clients, subcontractors and suppliers?

Audit Criteria

- After investigation there should be a report on the detailed cause of the accident or dangerous occurrences and measures to prevent recurrence. A standard form provided by the Architect/Engineer should be completed to enable them to prepare an up-to-date database on site accident statistics.
- Safety officer should prepare a monthly report of all accidents involving dangerous occurrence, death, personal injury irrespective of severity or damages to properties in or adjacent to the site. The report has to be endorsed by site agent and a copy will be sent to the Architect/Engineer. The monthly report will be discussed by the site safety management committee.
- A copy of accident report should be sent to the supervisors to keep them informed about the accident records of their departments.
- The accident will be released and posted on bulletin board to draw the attention of employees such as:
 - no-injury records
 - unusual accidents
 - frequent causes of accidents
 - charts showing reductions in accidents
 - simple tables comparing departmental records
- The agenda for the site safety meetings where employee/subcontractor representatives are present should also include discussion on the causes of accidents and the preventive measures.

- There should be no ‘N/A’ even though there is no accident. Auditor should verify that the procedures for ensuring the results of investigations and actions taken are notified to relevant parties 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 proves that the procedure is not effective.

Audit Criteria for SWC (Monthly – Safety Training)

- Monthly safety training should be held at least once a month to discuss specific accident cases and appreciate their causes and preventive measures. By studying the cause of accidents, the same or similar accidents can be avoided.
- Safety officer will be in charge of the training and all workers (including workers of subcontractors) should participate.
- Attendance record of the monthly safety training should be kept.
- The training should include analysis the accident case; identify all the problems and determine the cause; work out measures for improvement and review and summarize the discussion results.

Question 9.1.7

Weighting: 6

Is there an arrangement for common causes and trends in accident/ incident data analysed as an aid to accident prevention?

Legal Requirement

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

- Maintaining accident statistics and performing trend analysis serve the purposes of identifying trends and developing action plan to prevent recurrences. The

- (b) the procedures for reporting and declaring emergencies and, when they are over, announcing a return to normal;
- (c) a control centre – its location and resources (such as radio equipment, records, engineering drawings, a list of supporting personnel, etc.);
- (d) an emergency organization – duties and responsibilities of emergency personnel;
- (e) procedures to be followed by employees who must remain to perform critical operations before they evacuate;
- (f) special teams for first aid, salvage, rescue, fire fighting and other operations, if necessary, and their duties;
- (g) training of team members, workers and staff;
- (h) facilities and equipment to meet the needs of emergencies (such as communication equipment for use during emergencies, fire hoses, fire extinguishers, spill containment materials, breathing apparatus, masks and special suits, first aid boxes, and emergency power supply to the main switchboard, sensors, alarm systems, and exit signs/lights.);
- (i) an evacuation route map and a safe assembly point;
- (j) a schedule for emergency drills to test readiness; and
- (k) a list of the authorities to contact in case of emergency.

(Code of Practice on Safety Management Section 5.8.2)

Audit Criteria

- Auditor should verify the development of emergency plan is corresponding to the potential risks of the auditee.

Question 10.1.2

Weighting: 3

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

Legal Requirement

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 issued by Labour Department/OSHC)

Audit Criteria

- Auditor should verify the development of the plans on adverse weather.

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

Audit Criteria

- Auditor should verify the development of emergency plan including the necessary interface with emergency services (both internal and external).

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

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

Question 10.1.5 **Weighting: 3**
Is there an emergency team(s) established to respond to emergency situations?

Audit Criteria

- Auditor should verify the emergency team's personnel roles, lines of authority, and communication corresponding to emergency situations of auditee.

Question 10.1.6 **Weighting: 6**
Have emergency team members been suitably trained on emergency evacuation, fire prevention and fighting etc.?

Audit Criteria

- Auditor should verify and comment on the training of emergency team members.

Question 10.1.7 **Weighting: 3**
Is there a programme of drills and exercise for all emergency situations?

Audit Criteria

- Auditor should comment on the adequacy of the programme to cover all emergency situations.

Question 10.1.8 **Weighting: 6**

Are the drills and exercises for all emergency situations been conducted and evaluation reports prepared in accordance with the programme?

Audit Criteria

- Evaluation report(s) is available
- Check records of drills and verify with workers or staff on site.
- Comment on the effectiveness of the drills is necessary.
- 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, provision of management briefs for tool-box talks etc. to extend over the life of the project?

Audit Criteria for SWC (Daily & Monthly – Morning Safety Meeting)

- Daily/Monthly safety meeting provides an opportunity to promote team spirit and cooperation by doing morning exercise in the meeting and to convey safety message and raise workers' vigilance.
- In order to facilitate the effectiveness of morning safety meeting loudspeakers, or PA systems, demonstration equipment, white boards and full length mirrors etc. should be available on sites. The senior management should alert the workers on the major safety issues, hazards and accident prone activities and the precaution and preventive measures etc. for that day. Relevant safety posters, leaflets and publication should be available for display or distribution on the meeting.

Audit Criteria

- Safety promotion plan apart from normal promotion activities should cover safe working cycle, work safe behaviour programme and safety climate index survey activities.

Question 11.1.2 **Weighting: 6**

Are safety contest awards or recognition for good safety performance of individual conducted regularly?

Legal Requirement

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 organization. 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 for SWC (Daily & Monthly – Morning Safety Meeting)

- Monthly safety meeting should be held at a predetermined time of each month together with the daily morning safety meeting. The safety promotion activities to improve the workers' sense of safety awareness and to present awards should be included in addition to the routine issues of morning meetings such as-
 1. The issue of Daily Morning Safety Meetings should be dealt with.
 2. The safety records of last month should be reviewed.
 3. The safety promotion plan for the coming month should be announced.
 4. The safety measures formulated on work should be explained.
 5. Safety award should be given and the safety records of each group in each month should be announced.
- 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 subcontractors. Otherwise the award presentation should be part of the agenda in the daily/monthly safety meeting of safe working cycle.

Question 11.1.3

Weighting: 6

Are safety contest awards or recognition for good safety performance among sites and subcontractors conducted frequently?

Legal Guidance

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 organization. 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 for SWC (Daily & Monthly – Morning Safety Meeting)

- Monthly safety meeting should be held at a predetermined time of each month together with the daily morning safety meeting. The safety promotion activities to improve the workers’ sense of safety awareness and to present awards should be included in addition to the routine issues of morning meetings such as-
 1. The issue of Daily Morning Safety Meetings should be dealt with.
 2. The safety records of last month should be reviewed.
 3. The safety promotion plan for the coming month should be announced.
 4. The safety measures formulated on work should be explained.
 5. Safety award should be given and the safety records of each group in each month should be announced.
- 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 subcontractors. Otherwise the award presentation should be part of the agenda in the daily/monthly safety meeting of safe working cycle.

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

Audit Criteria

- Auditor should verify the correctness of accident statistics, the appropriateness of safety signs and posters displayed.

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

Audit Criteria

- Auditor should verify and comment the published bulletin or newsletter did cover the occupational safety and health issues.

Question 11.1.6 **Weighting: 6**
Is Work Safe Behaviour (WSB) Programme used to promote a proactive safety culture throughout the life of the project?

Audit Criteria

- Auditor should verify the safety plan on the development of the WSB.
- Site safety committee to coordinate and monitor the WSB Programme and a task group is established to implement the programme.
- Appoint competent WSB observers who have completed the 12-hour Work Safe Behaviour Workshop organized by the OSHC or equivalent to observe worker's behaviour. The senior management officer and Competent Observer(s) shall not be the Safety Manager or Safety Officer.
- Conduct WSB observations daily together with Safe Working Cycle.
- Auditor is required to verify the progress of WSB Programme during safety audit. Otherwise, the answer should be "No".

Question 11.1.7 **Weighting: 6**
Is Work Safe Behaviour (WSB) Programme used on critical high risk site activities?

Audit Criteria

- Site safety committee and its task group should identify the critical high risk site activities and at least cover working at height, lifting operations, confined space and traffic safety for WSB programme.
- Appropriate WSB observation checklists should be developed and WSB observations are conducted with the observed data analyse for behaviour interventions.
- The effectiveness of WSB programme should be evaluated.

Question 11.1.8 **Weighting: 6**
Is Safety Climate Index Survey (SCI) used to promote a proactive safety culture of the project?

Audit Criteria

- Auditor should verify the safety plan on the development of the SCI.
- SCI is conducted every six months.
- Action plan is developed and implemented after analysis of SCI result.

Question 11.1.9 **Weighting: 6**
Is a new safety innovation programme use to promote a proactive safety culture of the project?

Audit Criteria

- The safety innovation should be with a new idea and design such as Building Information Modeling BIM or Radio Frequency Identification RFID or integrate “pointing and calling” programme into safe working cycle, plant and equipment, job methods etc., differs from traditional practice and it is generally acceptable by workers. The innovation is expected to be practicable and be able to make improvement of control measures in safety or health aspects on site.
- Auditor is required to indicate the safety innovation devised by the contractor in the audit report and the audit summary.
- The answer should be “Yes” for all audits throughout the whole contract period for any one innovation was recognized. Otherwise, the answer of this question should be “N/A” if no safety innovation was observed.

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?

Legal Requirement

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

- 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.

Question 12.1.2

Weighting: 3

Have the risks to health arising from these substances been assessed?

Legal Requirement

The process of determination of risk helps to decide which health risk should be given priority. The aim is to identify the steps to be taken to control risk. The process should be done by competent persons. (Code of Practice on Safety Management Section 5.14.2)

Audit Criteria

- 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.
- 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 12.1.3

Weighting: 3

Have adequate information about the risks to health associated with the substances and the precautions been obtained?

Legal Requirement

Relevant sources of 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. (Code of Practice on Safety Management Section 5.14.1)

Audit Criteria

- Auditor should verify the standards adopted by auditee are followed the code of practice on control of air impurities (chemical substances) in workplace (Labour Department).
- Information for establishing the exposure criteria should be obtained from reliable sources such as the manufacturers, occupational health and safety agencies and publications of reputable professional bodies.

Question 12.1.4 **Weighting: 3**
Are there arrangements to conduct assessments of health risks, and monitor exposure levels?

Legal Requirement

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 [(a) to (h) Question 12.1.3]. 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)

Audit Criteria

- Health risks assessment should include the following elements:
 - (a) consideration of the nature and properties of the substances, the possible health effects, the likelihood of exposure and the consequence of excessive exposures;
 - (b) consideration of the factors contributing to the exposures such as work processes, duration and engineering controls and systems for controlling potential exposures;
 - (c) determination of the extent and potential exposures;
 - (d) comparison to the OELs of the substances where available; and
 - (e) conclusion on the health risks, the adequacy of existing control measures and the necessary remedial measures.

Question 12.1.5 **Weighting: 3**
Is there a procedure to ensure the health risk assessments are updated regularly?

Audit Criteria

- Auditor should verify there is a procedure to ensure the assessment is made before any exposure of the worker to the hazard.
-

- There is a procedure to ensure the assessment is reviewed whenever there is a reason to suspect that the previous assessment is no longer valid.

Question 12.1.6 **Weighting: 3**
Have appropriate measures to control the risks of health hazardous substances used or encountered in the work been introduced?

Legal Requirement

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)

Audit Criteria

- Auditor should verify the risk control measures are followed the above hierarchy of control.

Question 12.1.7 **Weighting: 3**
Have procedures been established to ensure that control measures are implemented and that all equipment is properly maintained?

Auditor Criteria

- Auditor should verify there are procedures to ensure auditee did monitor the exposure level(s) is below the OELs of the air impurities at the workplace.

- Exposures should be measured by using suitable sampling strategies, methodologies, equipment and procedures for obtaining correct and accurate results.

Question 12.1.8

Weighting: 3

Have a system such as pre-employment and medical examination programme been established for monitoring the exposure of workers to substances which are hazardous to health?

Legal Requirement

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

- Health surveillance is basically a system of monitoring the health status of persons to determine departures from normal health, so as to identify potential problem areas and the effectiveness of existing preventive strategies. Medical examination is a common means of conducting such surveillance.

- Pre-employment examination would then be used as a base-line against which subsequent changes can be evaluated. Pre-employment examination also ensures that the worker selected is fit to undertake the job without risk to him.

- Periodic medical examinations are useful in detecting “susceptible” groups for whom corrective action may be taken even before they develop clinical signs of the disease.
- Law stipulates that employees engaged in mines, quarries or compressed air work should undergo pre-employment and periodic medical examinations and receive chest-X ray examination if necessary to prevent silicosis and compressed air sickness, etc.
- Auditor should verify there is such a system existed if required.

Question 12.1.9 **Weighting: 3**
Have all the employees been informed, instructed and trained about the risks to their health and the precautions to be taken?

Audit Criteria

- Auditor should verify auditee did inform employees about the substances they work with and train them to properly use any control measures provided.

Question 12.1.10 **Weighting: 3**
Have the appropriate protective clothing/equipment been selected and issued to employees exposed to substances hazardous to health?

Audit Criteria

- Auditor should verify auditee did provide the right protective PPE to protect against different hazardous substances, and if necessary ask suppliers or specialists for advice.
- Audit should verify auditee had taken steps to ensure PPE is replaced, cleaned and inspect regularly.

Question 12.1.11 **Weighting: 3**
Have substances hazardous to health such as asbestos, lubricants etc. that require the engagement of specialist contractors to deal with the use, or disposal been identified?

Audit Criteria

- Besides asbestos, residue of chemicals, fuel oil and cleaning agents are also considered as substance hazardous to health. Auditor should verify whether

auditee has arrangement or engage contractor in handling the residue or chemical waste. If there is no such arrangement in place, the answer to this question should be “No”.

Sub-section 12.2 Sprains, Strains and Pains

Question 12.2.1	Weighting:	3
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Has risk assessment for all manual operations been prepared?

Legal Requirement – A Guide to Part VII of the Occupational Safety and Health Regulation (Manual Handling Operations)

- (a) Make a preliminary assessment of the risks of manual handling operations
- (b) Make a further assessment of the manual handling risk if the hazardous operation cannot be avoided;

Audit Criteria

- Auditor should verify the compliance of manual handling operations fulfilled the legal requirement.
- 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.

Question 12.2.2	Weighting:	3
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Does the assessment include the health hazards of materials been handled?

Legal Requirement – A Guide to Part VII of the Occupational Safety and Health Regulation (Manual Handling Operations)

Relevant information is provided to employees before hazardous manual handling operations are undertaken.

Audit Criteria

- Auditor should verify whether employees are informed of the safety and health risks of the operations, and the preventive and protective measures that have been taken in relation to those operations.

Question 12.2.3	Weighting:	3
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Have competent persons appointed to assist in carrying out the risk assessment with respect to manual handling operations?

Legal Requirement – A Guide to Part VII of the Occupational Safety and Health Regulation (Manual Handling Operations)

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.

Audit Criteria

- Auditor should verify the competency of the person. Competency includes proper training and experience.

Question 12.2.4	Weighting:	3
Where materials must be handled manually, are workers properly selected to perform those tasks according to their respective capabilities?		

Legal Requirement – A Guide to Part VII of the Occupational Safety and Health Regulation (Manual Handling Operations)

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.

Audit Criteria

- 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.

Question 12.2.5	Weighting:	3
Have relevant information and proper training given to employees to undertake manual operations?		

Legal Requirement – A Guide to Part VII of the Occupational Safety and Health Regulation (Manual Handling Operations)

An employer is required to provide employees with adequate training. Such training should cover the following aspects:

- Safe work practices
- Optimum use of bodily effort
- Proper use of mechanical aids and protective devices
- Accident reporting procedures

For new employees, they should be provided with relevant safety and health training in addition to job training. Whenever a new plant is installed, new technology introduced, or a new system of work or work practice is adopted, appropriate training should also be provided. Refresher training should be provided when necessary, especially for “occasional workers”. Task-specific training is helpful for reducing hazards in high risk operations. All such training should be provided during the employees’ normal working hours.

Audit Criteria

- Auditor should verify the proper trainings provided to employees.

Question 12.2.6 **Weighting: 3**
Are personal protective clothing/equipment for manual operations provided and are they used?

Legal Requirement – A Guide to Part VII of the Occupational Safety and Health Regulation (Manual Handling Operations)

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.

- Auditor should verify employees are followed safe work practices.

Sub-section 12.3 Noise

Question 12.3.1 **Weighting: 3**

Have noise assessment been carried out to determine which machines, combinations of machines or work processes including ambient noise, are liable to expose workers to noise levels of 85 dBA or more?

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

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.

Auditor Criteria

- Noise assessment should find out whether the noise exposure is likely to reach the ‘action levels’, and provide enough information about the noise to decide what action to take.
- The noise assessment is done by a competent person (possession of RSO or certificate of competent in workplace noise assessment or equivalent and appointed by contractor or employer that he had the ability to do the job properly).

Question 12.3.2 **Weighting: 3**
Where noise levels may lead to the risk of deafness, is there a system 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?

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

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

Auditor Criteria

- Auditor should verify the existing of such a system and procedure and also comment on the effectiveness of noise reduction plan, changes or steps.

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

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

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

Audit Criteria

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

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'.

Audit Criteria

- Auditor should verify the arrangement.

Sub-section 12.4 Other Occupational Health

Question 12.4.1	Weighting:	3
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Is there an arrangement for a suitable assessment of the risk of heat stress to workers?

Guidelines on Site Safety Measure for working in hot weather (Construction Industry Council)

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”;
- (i) literature and advice provided by equipment and material suppliers;
- (j) relevant legislations and related codes of practice, international standards and guidelines issued by industry organizations; and
- (k) relevant research findings.

Audit Criteria

- Auditor should verify the risk assessment on heat stress (use of checklist of Labour Department or Construction Industry Council).

Question 12.4.2	Weighting:	3
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Are effective measures taken out based on the results of heat stress risk assessment?

Guidelines on Site Safety Measure for working in hot weather (Construction Industry Council)

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.

Audit Criteria

- Measures should cover the assessment of workers working in or near of heat-generating machinery and poor ventilated areas.
- Measures should cover provision of drinking water, provision of sheltered resting place.
- Other measures like lower workload or shorter working during, clothing, etc.

Question 12.4.3	Weighting:	3
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Are there adequate measures to protect workers working in cold weather?

Health guide for working during the 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, where practicable, rotate from outdoor to indoor or sheltered worksites within shift
- 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

- Auditor should verify of the arrangements to protect workers working in cold weather.

Question 12.4.4	Weighting:	3
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Is there adequate provision and properly maintain for toilet and washing facilities on site?

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.

Audit Criteria

- Auditor should base on contractual requirement on provision for toilet and washing facilities if any, and taken into consideration of site situation to make recommendation.
- Sanitary conveniences and washing facilities shall be kept in a clean and orderly condition.

Question 12.4.5 **Weighting: 3**
Are storage facilities for personal property and clothing adequate, properly maintain and secure?

Audit Criteria

- Secure facilities at the work site for changing work clothes and separate changing facilities for male and female workers.
- 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 12.4.6 **Weighting: 3**
Are eating, rest areas and drinking water adequate?

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

- Auditor should base on contractual requirement on provision for eating and

rest areas facilities if any and site situation to make recommendation.

- Auditor should verify the adequacy of provision of drinking water.

Rest rooms and rest areas shall-

- include suitable arrangements to protect non-smokers from discomfort caused by tobacco smoke;
- be equipped with an adequate number of tables and adequate seating with backs for the number of persons at work likely to use them at any one time;
- include suitable arrangements to ensure that meals can be prepared and eaten

Section 13 Evaluation, Selection and Control of Sub-contractor

Sub-section 13.1 Evaluation and Selection Strategy

Question 13.1.1 **Weighting: 3**

Is there an evaluation and selection criteria to identify suitable bidders (potential subcontractors)?

Legal Requirement

- (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 organization;
 - 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)

Audit Criteria

- In the new construction site safety enhancement measures specified in tender document (stated in the selection criteria of contract), contractor is required to restrict the tiers of subcontracting for works or trades involving significant hazards. Otherwise, the answer of this question should be “No”.

- Subletting for specific trades or parts of the Works and New Works contracts (i.e. building contract; piling contract and combined piling and building contract) is restricted to TWO tiers, and;
- Save for those specified otherwise; subletting of demolition contracts is to be restricted to ONE tier only.
(Details please refer to annex D)

Question 13.1.2 **Weighting: 3**
Are specific occupational safety and health information provided in the specifications to the bidders?

Legal Requirement

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

- Auditor should verify the contracts of auditee with subcontractors on the provisions of specific OSH in specifications.

Question 13.1.3 **Weighting: 3**
Is there a procedure for identification of suitable sub-contractors?

Legal Requirement

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

- Auditor should verify the selection procedure and safety plans of sub-contractors.

Question 13.1.4 **Weighting: 3**
Are the occupational safety and health responsibilities and obligations of the subcontractors clearly defined?

Audit Criteria for SWC (Weekly & Monthly – Safety Inspection, Daily & Weekly – Process Safety Discussion and Monthly – Safety Committee Meeting)

- In order to promote communication and health sub-contractors improve their work, the OSH of sub-contractor should include the responsibilities of participation in the safe working cycle such as participation of weekly and monthly safety inspections, daily and weekly process safety discussion, monthly safety committee meeting and take follow up actions according to the records and minutes.

Question 13.1.5 **Weighting: 3**
Is there a procedure set up to evaluate the safety performance of the subcontractor?

Audit Criteria

- Auditor should verify the procedure and evaluation forms.

Sub-section 13.2 **Control Strategy**

Question 13.2.1

Weighting: 3

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

Legal Requirement

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 subcontractor'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

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

Question 13.2.2 **Weighting: 3**

Is there an arrangement whereby the sub-contractor has to participate in conducting a risk assessment and recommending a safe system of work before commencement?

Legal Requirement

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

- 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 there an arrangement with subcontractors' staff well in advance of the start of work to discuss occupational safety and health aspects of the work under their contracts?

Legal Requirement

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. (Code of Practice on Safety Management Section 5.9.2)

Audit Criteria

- Auditor should verify the meeting records and minutes.

Question 13.2.4 **Weighting: 6**

In these special meetings with sub-contactors' staff, are matters such as occupational safety and health in-house rules and procedures, hazards created by the contractors, sub-contractors and other subcontractors discussed?

Legal Requirement

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

- Auditor should verify the meeting records and minutes.

Question 13.2.5 **Weighting: 3**

Is there an arrangement to communicate and coordinate the occupational safety and health matters to subcontractors?

Legal Requirement

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 for SWC (Daily and Weekly – Process Safety Discussion)

Arrangement to communicate and coordinate the occupational safety and health matters to subcontractors should be stipulated in safety plan including the following:

- Subcontractors should joint both the daily and weekly process safety discussion with project manager, general foremen and put forward topics for review during the meeting.
- Findings of inspections, results from guidance and supervision, next day's work with safety directions and measures etc. should be assigned to subcontractors.
- Daily and weekly process safety discussion provides an opportunity for communication and cooperation in solving problems. It also creates opportunities for bringing problems to attention and for an early remedy. Minutes of the process safety discussion should be recorded.
- The work in last week should be reviewed and the work of coming week should be planned on weekly basis such that different types of work could be coordinated in line with the progress.

Question 13.2.6 **Weighting: 3**

Is there an arrangement to ensure the compliance of occupational safety and health in-house rules and procedures by subcontractors and their employees?

Legal Requirement

- 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 for SWC (Daily, Weekly, Monthly – Safety Inspection)

Safety inspection carried out by senior management serves both as supervision and assurance for the safe operation of daily work. Safety working cycle should be used as tools to monitor compliance of occupational safety and health in-house rules and procedures by subcontractors and their employees. These include:

- The daily inspection should be carried out at least once per day before the Process Safety Discussion.
- Daily and weekly inspection records should include the monitoring of subcontractors.
- Monthly inspection aims at improving the management of machines, equipment, tools and materials. It should be carried out in line with relevant rules and regulations by competent person such as electricians and mechanics etc.

Question 13.2.7

Weighting: 3

Is there an arrangement to ensure that the tools, plant, equipment, materials and substances by subcontractors and suppliers comply with relevant statutory requirements?

Audit Criteria

- There should be written document submitted from sub-contractors regarding

what they will bring into site and there should be a system for checking and monitoring that they are complied with the requirements. Otherwise, the answer should be “No”.

- Document support and verification by interview of knowledgeable person are required in audit.

Question 13.2.8 **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 subcontractors and suppliers are available?

Audit Criteria

- Auditor should verify the arrangement that auditee used.
-

PART B

Section 14 Process Control Programme

The major causes of accidents at work in construction industry involve failures in systems of work – the way things are done. 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. To enhance the effectiveness on auditing the major processes of construction activities, auditor using this version 1.5, will examine the whole safe systems of work of the control of processes which consist of process safety information, process hazards analysis (risk assessment), operating procedures, training and competency of workers, and mechanical integrity (maintenance programme).

PART B

14.1 Management of Place of Work

- 14.1.1 Fire Hazards
- 14.1.2 Work in Confined Spaces
- 14.1.3 Working at a Height

- 14.1.4 Housekeeping
- 14.1.5 Protection against Falling Objects
- 14.1.6 Overhead and Underground Services
- 14.1.7 Storage of inflammable Substances, Gases and Vehicle Fuels
- 14.1.8 Occupational Safety and Health in Offices
- 14.2 Management of Tasks and Operations
 - 14.2.1 Demolition
 - 14.2.2 Excavations
 - 14.2.3 Lifting Operations
 - 14.2.4 Roadworks
 - 14.2.5 Temporary Works
 - 14.2.6 Structural Steel Erection
 - 14.2.7 Welding / Cutting Operations and Installations
 - 14.2.8 Site Traffic

 - 14.2.9 Works over Water or Adjacent to Water
 - 14.2.10 Piling and Foundations
 - 14.2.11 Glazing
 - 14.2.12 Grit Blasting
 - 14.2.13 Asbestos
 - 14.2.14 Machinery Guarding
 - 14.2.15 Prestressing
 - 14.2.16 Ground Investigation
- 14.3 Management of Powered Plant and Equipment
 - 14.3.1 Compressed Air Tools
 - 14.3.2 Electrical Supply System
 - 14.3.3 Electrical Works and Portable Electric Tools
 - 14.3.4 Hand Tools
 - 14.3.5 Woodworking Machines
 - 14.3.6 Abrasive Wheels
 - 14.3.7 Hand-held Power Tools
- 14.4 Management of Plant and Equipment for Lifting of Material and Persons
 - 14.4.1 Tower Crane
 - 14.4.2 Mobile Crane
 - 14.4.3 Gondola (Suspended Working Platform)
 - 14.4.4 Power-operated Elevating Working Platform
 - 14.4.5 Material Hoist

14.4.6 Power-driven Lifting Appliance for Carrying Person and Passenger Hoist

14.5 Management of Mechanical Plant and Equipment

14.5.1 Site Transport (Loadshifting Machinery)

14.5.2 Excavator

An audit question, usually the last question of some high risk operations/activities in PART B are designed in line with the process control programme by auditing the contractor did build up the appropriate generic safety checklist as a means for monitoring mechanism. They are:

- Fire checking – Q14.1.1.10
- Confine Space – Q 14.1.2.12
- Working at Height – Q 14.1.3.7
- Housekeeping – Q14.1.4.6
- Falling Objects – Q14.1.5.4
- Storage of Inflammable Substances – Q14.1.7.7
- OSH in Office – Q14.1.8.5
- Excavation – Q14.2.2.12
- Lifting Operations – Q14.2.3.11
- Temporary Works – Q14.2.5.7
- Woodworking – Q14.3.4.10
- Abrasive Wheels – Q14.3.6.10
- Tower Crane – Q14.4.1.12
- Mobile Crane – Q14.4.2.7
- Gondola – Q14.4.3.7
- Elevating Working Platform – Q14.4.4.6
- Material Hoist – Q14.4.5.6
- Passenger Hoist – Q14.4.6.6
- Site Transport – Q14.5.1.6
- Excavator – Q14.5.2.7

The above items are by no means exhaustive. Contractors should review the needs of extra generic safety checklists to ensure continuous improvement in monitoring the safety management systems and site safety conditions.

Sub-section 14.1 Management of Place of Work

Part 14.1.1 Fire Risks

Question 14.1.1.1 **Weighting: 3**

Is there accurate process safety information addressing the fire hazards in site?

Audit Criteria

Safety information will need to cover the existing on-site and off-site fire risks and provide relevant information on fire risks in preparing the safety plan. Information includes:

- Location and nature of flammable substances on site;
- Location of gas services;
- Nature of nearby activities especially if they are sensitive to site-generated fire risk or pose fire risks to the construction site;
- Details of any likely continued occupation of the site (especially in office or residential projects); and/or
- Details of any design assumptions or suggested construction processes or methods which lead to high fire risk.

Question 14.1.1.2 **Weighting: 3**

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of fire hazards in the site?

Audit Criteria

- A detailed fire risk assessment and required controls need to be developed from the outset identifying the stages and activities which give rise to critical risk points and which, therefore, will need highest levels of control.
- Process fire risks must be considered in conjunction with the general fire

precautions required at particular stages.

Question 14.1.1.3

Weighting: 6

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

Audit Criteria

Fire extinguishers should be:

- Located at identifiable fire points at each storey exit.
- Appropriate for the risk and serviced and maintained.

- Those carrying out hot work should have appropriate fire extinguishers with them and know how to use them.
- The fire risk assessment may indicate that additional extinguishers are required especially near escape routes.

Question 14.1.1.4

Weighting: 6

Where relevant, are fixed electric water pumps/water tanks installed properly, regularly checked and maintained?

Audit Criteria

- In high-rise building where there is a need for additional fire protection is required to installing equipment as the building progress.

Question 14.1.1.5

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?

Audit Criteria

- All sections of the site premises including site office, if possible, there are at least two escape routes in different directions.
 - Ladders may be suitable for simple projects for small numbers of able-bodied, trained staff.
 - Exit onto scaffold, if deemed part of escape plan, should be easily accessible, i.e. not through a window opening unless it is designed for the purpose, with easy access.
 - Escape routes and exits should be kept clear and clearly signed.
 - Emergency lighting should be installed, if necessary, to enable escape.
-

Question 14.1.1.6 **Weighting: 3**

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

Audit Criteria

- Auditor should verify the training record of fire fighting.

Question 14.1.1.7 **Weighting: 6**

Is there a means of raising fire alarm and is it checked regularly?

Audit Criteria

Fire warning systems are needed on all sites other than very small sites. The type of alarm needed can range from manual bells or klaxons to sophisticated automatic systems, including visible warning devices. Auditor should consider:

- It is appropriate for the size of the building, number of storey and complexity;
- It can be heard by everyone working on site over normal background noise;
- It is located so it can be activated immediately;
- Manual bells or klaxons are only used on very small sites.

Question 14.1.1.8 **Weighting: 6**

Are there planned fire drill and evacuation procedure and conducted on a regular basis?

Audit Criteria

- An up-to-date emergency plan that is appropriate for the circumstances and that makes clear who does what during a fire.
- Fire drill is conducted.
- Someone (and a deputy as necessary) appointed to coordinate fire prevention, fire fighting and evacuation procedure.

Question 14.1.1.9 **Weighting: 3**

Is the fire drill and evacuation procedure drawn to the attention of employees, sub-contractors, etc. who are new to the site?

Audit Criteria

- Fire action notices, which should be clearly displayed where everyone on site will see them, for example at fire points, site entrances or canteen areas.

- Arrangements to ensure instruction, information and training on fire evacuation procedure are given to all involved with work on the site.

Question 14.1.1.10 **Weighting: 6**

Have the effectiveness of management of fire risks been regularly monitored by field inspection?

Audit Criteria

- Fire checklist is prepared and used.
- The inspection results are reviewed for continuous improvement.

Part 14.1.2 Work in Confined Spaces

Question 14.1.2.1 **Weighting: 3**

Is there accurate process safety information addressing the locations and processes that need to work in confined spaces on site, and a procedure to ensure the safety of employees working there?

Audit Criteria

- 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 the work to be undertaken and which could affect the condition of the confined space.
- 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 space. In many cases it will involve modifying working practices.

Question 14.1.2.2 **Weighting: 6**

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of 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:

- Supervision
- Competence for confined spaces working
- Communications
- Testing/monitoring the atmosphere
- Gas purging
- Ventilation
- Removal of residues
- Isolation from gases, liquids and other flowing materials
- Isolation from mechanical and electrical equipment
- Selection and use of suitable equipment

- Personal protective equipment (PPE) and respiratory protective equipment (RPE)
- Portable gas cylinders and internal combustion engines
- Gas supplied by pipes and hoses
- Access and egress
- Fire prevention
- Lighting
- Static electricity
- Smoking
- Emergencies and rescue
- Limited working time

Question 14.1.2.3

Weighting: 6

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

Audit Criteria

- Appoint a competent person to carry out a risk assessment to identify the hazards likely to be present in the confined space by auditee.
- 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 particulars of the competent person who has carried out the risk assessment.

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

- 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 dusts. 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.
- The atmosphere in a confined space can often be tested from the outside, without the need for entry, drawing samples through a long probe.
- 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.

Question 14.1.2.5

Weighting: 3

Where relevant, are personnel responsible for atmospheric testing properly trained?

Audit Criteria

- 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.*).

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

- Purging with inert gas and ventilation may be necessary to reduce the risk of a fire or explosion inside or outside the space.
- Blanking-off, clean out and lockout procedures established if necessary
- 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.

- The size of openings to confined spaces needs to be adequate. Openings affording 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.
- 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, have personnel who are needed to work in confined spaces been specially supervised and trained?

Audit Criteria

- The degree of supervision should be based on the findings of the risk assessment. The supervisor's role to ensure that the permit-to-work system, where applicable, operates properly, the necessary safety precautions are taken, and that anyone in the vicinity of the confined space is informed of the work being done.
- Before a person is allowed 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 (*sec. 8(a) and 2 of F&IU(Confined Spaces) Reg.*).

Question 14.1.2.8

Weighting: 6

Where relevant, is a permit-to-enter and a permit-to-work system in operation and have all persons involved been trained and instructed in their use?

Audit Criteria

- Entry into a confined space for work should be permitted only after the issue of a valid certificate by the proprietor or contractor within which the confined space work is carried out.
- 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.*)

- 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, for example, 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.
- Effective measures should be taken to ensure that no worker would enter the confined space during the period when the completed. Permit-to-work certificate is being delivered to the proprietor or contractor for proper cancellation.

Question 14.1.2.9

Weighting: 6

Where relevant, has an emergency rescue procedure been developed and communicated to all persons involved, and rescue equipment available?

Audit Criteria

- 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 suitable and sufficient 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.
- 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 full knowledge on how to properly use all those rescue equipment.
- 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.

- 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 14.1.2.10

Weighting: 6

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

Audit Criteria

- 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.
- Conduct field inspection and work safe behaviour observation to assess the workers safe working practices while working in confined space.

Part 14.1.3

Work at a Height

Question 14.1.3.1

Weighting: 3

Is there accurate process safety information addressing the locations and processes that need to work at a height on site, and a procedure to ensure the safety of employees working there?

Audit Criteria

- The identifications in regulations, codes of practice and guidance which apply to provide a safe place of work and suitable and sufficient steps to be taken so far as is reasonably practicable to prevent any person falling.
- There should be no "N/A" for piling and foundation work as working at height is also anticipated in piling and foundation work such as load test, stockpile and adjustment of dropping hammer, etc.
- If these activities were not identified, the answer should be "No".
- It is recommended to cover the activities in the survey of risk assessment and develop appropriate control measures to prevent workers falling from height.
- 'Code of Practice for Bamboo Scaffolding Safety', published by Labour Department

- 'Code of Practice for Metal Scaffolding Safety', published by Labour Department
- 'A Guide to the Provisions for Safe Places of Work under PVA of the Construction Sites (Safety) Regulations, published by Labour Department.

Question 14.1.3.2

Weighting: 3

Have risk assessments 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

- The auditor should verify the coverage of risk assessments.

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

- There should be no "N/A" for piling and foundation site as access and egress is also anticipated in piling and foundation work such as carrying out load test, stockpile and adjustment of dropping hammer, etc.
- If safe means of access and egress were not identified, the answer should be "NO".
- It is recommended to cover them in the survey of risk assessment and develop appropriate control measures to prevent hazard arising from poor means of access such as slip, trip over, etc.

Question 14.1.3.3 (Working at Height) a safe means of access refers to access and egress to all work areas.

Question 14.2.5.6 (Temporary Works, mainly referring to false work) refers to constructing and dismantling false work where means of access is/are needed.

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 responsibilities include:

- To prevent the falsework collapsed because of overload;
- **To ensure those engaged in constructing and dismantling the falsework can carry out their work safely, in particular to prevent fall from height;** and

- 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.

Double deduction on scores would be possible if the contractor's performance is not satisfactory. Please refer to the below different scenarios for further information:

Scenarios	Question 14.1.3.3 (Working at Height)	Question 14.2.5.6 (Temporary Works)
1. Safe means of access, egress and working platforms are provided for all work areas, including temporary works.	Yes (score: 9)	Yes (score: 6)
2. Safe means of access, egress and working platforms are provided for all constructing/dismantling false work. But some unsafe accesses were observed in other work areas.	No (score: 0)	Yes (score: 6)
3. Safe means of access were not provided to false work. But safe means of access and egress are provided in all other work area.	Yes (score: 9)	No (score: 0)
4. Safe means of access were not provided to false work. Unsafe accesses were also observed in other work areas.	No (score: 0)	No (score: 0)

Question 14.1.3.4**Weighting: 9**

Has every worker been provided with a safe place of work such as provision of proper working platforms or if not practicable, the use of the fall-arresting system etc. for all activities?

Audit Criteria

- The measures to control the risks associated with falls from heights are not solely determined by conducting a risk assessment. Instead, a hierarchy of controls, which relate solely to the risks associated with people falling from heights. The controls measures in order are:
- (i) The provision and maintenance of a stable and securely fenced work platform (such as scaffolding or other form of portable work platform)
 - (ii) If complying with (i) is not reasonably practicable, the provision and maintenance of secure perimeter screens, fencing, handrails or other forms of physical barriers that are capable of preventing the fall of a person.
 - (iii) if complying with (ii) is not reasonably practicable, the provision of other forms of physical restraints that are capable of arresting the fall of a person from a height of more than two metres.

- Auditor should verify the risk control measures follow the hierarchy.
- All special scaffolds should be properly designed and certified by a professional engineer.

Question 14.1.3.5

Weighting: 3

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

Audit Criteria

- Competent Person – means a person appointed by the contractor by reason of his/her substantial training and practical experience, competent to perform the duty.
- Substantial Training – refers to a person who has satisfactorily completed a formal training in scaffolding work such as the 3-year Bamboo Scaffolder Apprenticeship Scheme (VTC) or the 1-year full-time training course in Bamboo Scaffolding of CICTA.
- Practical Experience of a Competent Person – refers to experience of 10 years or more in scaffolding work.
- 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. (Regulation 38F of the CSSR)
- Dismantling work should be carried out according to the plan. The dismantling work shall be done by trained workmen under the immediate supervision of a competent person. (Regulation 38E of the CSSR)

Auditor has to get the followings evidence:

1. Check the appointment letter for the competent person to carry out regular inspections of scaffolds and supervision required.
2. Verify records (Form 5) to prove the competent person who has carried out inspections/supervisions.

Scenarios

- If the scaffold work has not started yet, Auditor should check item No.1 and the answer should be “Yes” for conformity.
- If the scaffold work is in progress, Auditor should check item No.1 to 2 and the answer should be “No” for non-conformity.

- If no scaffold work is anticipated or all scaffold work had been completed, the answer should be “N/A”.

Question 14.1.3.6 **Weighting: 9**
Are inspections carried out at appropriate intervals to scaffolds including working platforms/anchors and results entered in the prescribed forms?

Audit Criteria

Auditor has to get the following evidence:

- Training & experience records and appointment letter as Question 14.1.3.5
- Update and proper inspection records (Form 5) to prove the competent person has conducted the inspections in 14 day interval or where necessary with his designation and signature.
- 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 name and designation otherwise the answer should be “NO”.

Question 14.1.3.7 **Weighting: 3**
Is there an arrangement for checking the effectiveness and thoroughness of the inspections and record keeping of scaffold?

Audit Criteria

- Prompt action on faults identified by inspection.
- Internal safety audit by competent person with result kept.
- If an internal audit report provided does not fulfill the requirement on competence, independence and coverage, the answer should be “No”.

Question 14.1.3.8 **Weighting: 9**
Are special scaffolds and temporary loading platforms properly designed and certified by a professional engineer and with safe working loads displayed?

Audit Criteria

- 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 he designed can safely resist the imposed loads in accordance with recognized engineering principles

- Auditor should verify the specification for scaffolding contract document which incorporate particular requirements and essential information for the scaffolding work to be planned and implemented safely. (For example, the provision of design drawings and method statement; phasing of work – particularly with other contractors; periodic maintenance and repair of scaffold.)
- Realistic assessment of loadings on the scaffold at all work stages should be made. In considering the wind load on the scaffold, reference should be made to the Code of Practice on Wind Effects, Hong Kong, 1983 or its latest edition.
- The assessed maximum allowable loading (includes vertical and lateral loads) on the scaffold/working platform.
- Documents such as scaffolding plan, method statement, design drawings and specifications of the scaffold, etc. should be made available.

Question 14.1.3.9

Weighting: 9

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

Audit Criteria

- Take adequate steps to prevent any person on construction site or any place where any construction work is carried out with a risk of fall a height of 2 metres or more. (Construction Sites (Safety) Regulations 38B(1) and 38B(1A))
- The height of a toe-board or other similar barrier shall be not less than 200 millimetres and securely fixed.
- The height of a top guard-rail above any place of work on a working platform, gangway, run or stairway shall be not less than 900 millimetres and not more than 1150 millimetres.
- The height of an intermediate guard-rail above any place of work on a working platform, gangway, run or stairway shall be not less than 450 millimetres and not more than 600 millimetres.
- Temporarily removed or unerected 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.

Question 14.1.3.10

Weighting: 9

Are all floor openings, liftshaft openings and stairwell openings provided with suitable guard-rails and toeboards or properly covered?

Audit Criteria

- Openings generally refer to superstructures which have floor openings, lift shaft openings and stairway openings on site. Also brittle roofs, skylights and roof openings within the work area, or access to the work area, should be identified. This should be done as part of a site survey prior to starting the work. Hazardous areas should be clearly marked as “no go” zones during set up.
- In order to foster site safety in prevention of falling objects, HA has enhanced contractual requirement in New Work Contracts. Building contractor is required to incorporate full height temporary protective barriers to lift shaft openings during the course of construction. Otherwise, the answer of this question should be “No”.

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.

Question 14.1.3.11 **Weighting: 9**
Are all other places included edges, working platforms, mobile tower scaffolding, gangways, etc. provided with proper guard-rails and toe-boards?

Audit Criteria

- Take adequate steps to prevent any person on construction site or any place where any construction work is carried out falling from a height of 2 metres or more. (Construction Sites (Safety) Regulations 38B(1) and 38B(1A))

Question 14.1.3.12 **Weighting: 9**
Are there arrangements to ensure all ladders or other means of support such as frame trestle made of suitable and sound materials of sufficient strength and capacity for the purpose for which it is to be used?

Audit Criteria

- The use of ladders, other than use as a means of access and egress, should only be considered if they are the most appropriate for the individual work undertaken and when other safer alternatives, such as scaffolding or elevating work platforms, are not practical options.
- Ladders and other means of support used should possess international safety standards such as British Standard etc. with safe working load displayed.
- Ladders and other means of support maintained in good condition and stored correctly when not in use.
- Ladders and other means of support used and placed properly for access to the working place.

Part 14.1.4 Housekeeping

Question 14.1.4.1 **Weighting: 3**
Is there accurate safety information and procedures addressing the housekeeping properly maintained on site?

Audit Criteria for SWC (Daily – Tidying up after work & Weekly – Tidying up)

- The “Daily and Weekly Tidying Up” should be included as one of the procedures to ensure that housekeeping is properly maintained on site. The 5S programme or other management tools should be adopted to assist the implementation of good housekeeping.

1. 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 dispose of wastes, sorting out the unused materials for future use, putting tools in designed area, keep the passageways clear.
 2. 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 in charge by foremen from contractor and subcontractors.
 3. Contractor should assist in determine the location and the methods for storing the materials, equipment and tools; set aside storage stations for wastes; provide containers for different wastes.
 4. Rewards should be given to those workers who have done a good housekeeping work.
- Auditor should focus on the hazards related to housekeeping:
1. Is the observed evidence of hazards (trip, slips and striking against objects, collapse or falling objects) is likely to cause injuries to site workers?
 2. If creating a temporary obstruction is unavoidable, e.g. for loading and unloading, is contractor have a system of warning people about the hazard, or ideally prevent access?
 3. Is the observed evidence breached the legislation requirements?
- Auditor when assessing the audit question should follow the following criteria where suggestions are provided for reference and recommending improvement actions:

Question	Criteria	Suggestions	Weighting
14.1.4.1 Safety information and procedures to ensure that housekeeping is properly maintained on site	<ul style="list-style-type: none"> ● Safe Working Cycle daily and weekly tidying up arrangements ● Determine the locations and methods for storing the materials(Dangerous Substances), equipment and tools and also waste 	<ul style="list-style-type: none"> ● Many trip and slip hazards can be eliminated at the design and fitting out stages. ● Regular maintenance is important in preventing and fixing hazards ● Conducting a 	3

	<ul style="list-style-type: none"> ● A system of warning people about hazard, or prevent access should be provided if a temporary obstruction is unavoidable. ● Site arrangements for the removal of waste. 	housekeeping risk assessment	
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Question 14.1.4.2

Weighting: 3

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of housekeeping to all entrances, passages and stairs?

Audit Criteria

- Auditor should focus on the hazards related to housekeeping:
 1. Is the observed evidence of hazards (trip, slips and striking against objects, collapse or falling objects) is likely to cause injuries to site workers?
 2. If creating a temporary obstruction is unavoidable, e.g. for loading and unloading, is contractor have a system of warning people about the hazard, or ideally prevent access?
 3. Is the observed evidence breached the legislation requirements?

- Auditor when assessing the audit question should follow the following criteria where suggestions are provided for reference and recommending improvement actions:

Question	Criteria	Suggestions	Weighting
14.1.4.2 Entrance, passages and stairs housekeeping	<ul style="list-style-type: none"> ● Entrance, passages and stairs should be kept clear and free from obstructions. ● Passage means designated walkways to and from the place 	<ul style="list-style-type: none"> ● People trip over, or strike against objects, so it is important to keep entrance, passages and stairs clear of 	9

	<p>of work, but not cover walkways of work areas.</p> <ul style="list-style-type: none"> ● Stairs means general access between levels not cover the temporary stairs provided for working platform ● Entrance means site entrance 	obstructions.	
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Question 14.1.4.3 **Weighting: 9**
Are appropriate steps taken to ensure good housekeeping and proper waste disposal?

Audit Criteria

- Auditor should focus on the hazards related to housekeeping:
 1. Is the observed evidence of hazards (trip, slips and striking against objects, collapse or falling objects) is likely to cause injuries to site workers?
 2. If creating a temporary obstruction is unavoidable, e.g. for loading and unloading, is contractor have a system of warning people about the hazard, or ideally prevent access?
 3. Is the observed evidence breached the legislation requirements?

- Auditor when assessing the audit question should follow the following criteria where suggestions are provided for reference and recommending improvement actions:

Question	Criteria	Suggestions	Weighting
14.1.4.3 Steps to ensure good housekeeping in working areas	<ul style="list-style-type: none"> ● Work areas means the place where construction works are carried out but not cover the places of question 14.1.4.2. 	<ul style="list-style-type: none"> ● People trip over, or strike against objects, so it is important to keep work areas clear of obstructions 	9

	<p>They include all walkways, passages, stairs, landings, working platforms, storage places in work areas</p> <ul style="list-style-type: none"> ● Construction site (Safety) Regulation 52(1) and 52(1A) “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.” 	<p>and loose materials.</p> <ul style="list-style-type: none"> ● The floors of work areas should be kept dry and in a non-slippery condition. 	
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Question 14.1.4.4

Weighting: 9

Are appropriate steps taken to ensure no timber or other material with projecting nails or other sharp objects are used or left on the site?

Audit Criteria

- Auditor should focus on the hazards related to housekeeping:
 1. Is the observed evidence of hazards (trip, slips and striking against objects, collapse or falling objects) is likely to cause injuries to site workers?
 2. If creating a temporary obstruction is unavoidable, e.g. for loading and unloading, is contractor have a system of warning people about the hazard, or ideally prevent access?
 3. Is the observed evidence breached the legislation requirements?

- Auditor when assessing the audit question should follow the following criteria where suggestions are provided for reference and recommending improvement actions:

Question	Criteria	Suggestions	Weighting
<p>14.1.4.4</p> <p>Steps to ensure proper waste disposal and projecting nails or sharp objects used or left on the site</p>	<ul style="list-style-type: none"> ● Work areas should be kept as clear as possible of unnecessary materials and waste. ● Projecting or sharp objects must be adequately protected. ● Construction site (Safety) Regulations 51(1) & 51(2) – “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.” 	<ul style="list-style-type: none"> ● Designating areas for waste collection, providing skips and bins where needed and making clear the responsibilities for waste removal. ● Provide and maintain proper drainage and means of sewage disposal ● Rebar caps, or mushroom caps with larger heads, can be used to protect workers from being cuts and scratches. ● Nails or sharp objects protruding from lumber or boards must be removed. 	<p>9</p>

Question 14.1.4.5

Weighting: 9

Are materials and equipment stored and stacked safely?

Audit Criteria

Auditor should focus on the hazards related to housekeeping:

1. Is the observed evidence of hazards (trip, slips and striking against objects, collapse or falling objects) is likely to cause injuries to site workers?

2. If creating a temporary obstruction is unavoidable, e.g. for loading and unloading, is contractor have a system of warning people about the hazard, or ideally prevent access?
3. Is the observed evidence breached the legislation requirements?

Auditor when assessing the audit question should follow the following criteria where suggestions are provided for reference and recommending improvement actions:

Question	Criteria	Suggestions	Weighting
14.1.4.5 Materials and equipment storing and stacking	<ul style="list-style-type: none"> ● Construction Site (Safety) Regulations 52(2)(a) &52(2)(b) – “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.” 	<ul style="list-style-type: none"> ● Bagged or sacked material should be stacked or piled no more than ten high and should be cross piled on skids to prevent the material falls, rolls, overturns or breaks. ● 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 securely manner 	9

		<p>and fenced off with warning notices in both Chinese characters and English</p> <ul style="list-style-type: none"> ● Materials must be properly stored, stacked or piled away from power lines and to prevent tipping/spilling. ● Tools must not leave on the floor, or in any location where they can be easily dislodged. 	
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Question 14.1.4.6

Weighting: 3

Do regular workplace inspections include housekeeping?

Auditor Criteria

- Auditor when assessing the audit question should follow the following criteria where suggestions are provided for reference and recommending improvement actions:

Question	Criteria	Suggestions	Weighting
14.1.4.6 Housekeeping checking	<ul style="list-style-type: none"> ● Items in safety inspection checklist cover housekeeping ● Attention should be on hazards caused by slipping and tripping 	<ul style="list-style-type: none"> ● Apart from safe inspection checklist, Safe Working Cycle daily checklist and weekly tidying up checklist are required. 	3

Question 14.1.4.7

Weighting: 3

Are there appropriate arrangements to warn and prevent the general public from entering or trespassing?

Auditor Criteria

- Auditor when assessing the audit question should follow the following criteria where suggestions are provided for reference and recommending improvement actions:

Question	Criteria	Suggestions	Weighting
14.1.4.7 Protection of general public	<ul style="list-style-type: none"> ● Construction activity must not present a risk to members of the public, especially to children. ● Where members of the public are in the vicinity of construction work, suitable and safe routes must be provided to ensure that the safety of members of the public is not put at risk from the construction work activity, 	<ul style="list-style-type: none"> ● Other warning devices such as warning notice, mirror, warning light and signaler should be provided if necessary. ● Suitably constructed fencing must be used to secure sites. ● Consideration must also be given to persons with disabilities. 	3

Question 14.1.4.8

Weighting: 9

Are suitable and adequate lighting provided to all places where lighting is necessary to secure workers' safety?

Auditor Criteria

- Auditor when assessing the audit question should follow the following criteria where suggestions are provided for reference and recommending improvement actions:

Question	Criteria	Suggestions	Weighting
<p>14.1.4.8 Suitable and adequate lighting provided to all places</p>	<ul style="list-style-type: none"> ● Construction Site (Safety) Regulation 50 – “Suitable and adequate lighting necessary to secure workmen’s safety shall be provided”. 	<ul style="list-style-type: none"> ● Adequate lighting must be afforded to persons accessing and working in darkened areas to prevent workers 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. ● Emergency lighting provides to escape route and workplaces where necessary 	<p>9</p>

Part 14.1.5 Protection against Falling Objects

Question 14.1.5.1 **Weighting: 3**
Is there accurate safety information and procedures addressing the risk of materials falling from height and injuries arising out of such risks are substantially reduced?

Audit Criteria

- 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 risk of falling in a survey and then develop the appropriate control measures, etc.
 - Workers and passers-by can be injured by the premature and uncontrolled collapse of structures, and by flying debris. A safe system of work is one that keeps people as far as possible from the risks.
-

Question 14.1.5.2

Weighting: 3

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of falling objects?

Audit Criteria

- For risks associated with falling objects, some of the following risk control measures may be used:
 1. a safe means of raising and lowering objects
 2. a secure physical barrier to prevent the free fall of objects
 3. measures to arrest the falls of objects
 4. personal protective equipment.
 - There should be no “N/A” for auditing piling and foundation sites as falling objects are foreseeable e.g. hand tools falling down.
 - It is recommended to cover the activities in the survey of risk assessment and develop appropriate control measures to prevent falling objects.
 - If the hazard was not identified, the answer should be “NO”.
-

Question 14.1.5.3

Weighting: 9

Are there arrangements to provide adequate protection such as nylon mesh and catch-fan to guard against falling objects?

Audit Criteria

- 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.)
- Regular inspection to those arrangements mentioned (protective fans and/or nets) 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 counter check the inspection records to monitor the implementation of such arrangements.
 - Material or debris protection nets – smaller mesh 12 mm intended to protect those below from falling objects.

Safety Initiative 2

- Building contractor is required to incorporate full height temporary protective barriers to lift shaft openings as protection against fall of persons and falling objects during the course of construction. Otherwise, the answer of this question should be “No”.(Details of performance specification should refer to Q14.1.3.10)

Question 14.1.5.4

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

- 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, Building contractor is required to incorporate full height temporary protective barriers to lift shaft openings during the course of construction.
 - Regular inspection to those arrangements mentioned (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 counter check the inspection records to monitor the implementation of such arrangements.
-

Question 14.1.5.5 **Weighting: 9**
Where relevant, are there arrangements to provide covered walkways to protect workers and pedestrians?

Audit Criteria

- Auditor should verify the provision and adequacy of the covered walkways.

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

Audit Criteria

- The stacking/storage area must be well organize 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.
- Conduct risk assessments for handling, stacking and storing of material with consideration on the ground, environmental conditions and safe work practices;
- Secure loose or light material stored on roofs and open floors to keep it from blowing away in the wind;
- Workers involved in material handling must be adequately trained and appropriately supervised;
- The hazard identification activity of Safe Working Cycle must be conducted for identifying the hazards involved in material handling, stacking and storing.

Question 14.1.5.7 **Weighting: 9**
Are there arrangements to prevent materials, hand tools etc. during working from falling from height?

Audit Criteria

- Working platforms, staircases and floor edges provided with guard-rail and toe-boards with wire mesh filling between them.
- Closely boarded working platform.

- Adequate measures and arrangements to avoid objects from falling down from height during the process of cutting, transferring or during lifting and lowering.
- There should be no “N/A” for auditing piling and foundation as falling objects from piling and foundation work are foreseeable e.g. sheet pile during cutting from falling down. Auditor should verify the effectiveness and reliability of the control measures and arrangements.
- It is recommended to cover the activities in the survey of risk assessment, method statements if any and the developed control measures.

Question 14.1.5.8

Weighting: 9

Are suitable safety helmets properly worn by all workers?

Audit Criteria

- There should be no “N/A” for auditing piling and foundation sites as falling objects or striking against hard objects are foreseeable e.g. hand tools falling down.
- Auditor should verify whether all workers properly wearing suitable safety helmets. The standard of safety helmet and expiry date of safety helmet should be checked. Otherwise, the answer should be “NO”.

Part 14.1.6

Overhead and Underground Services

Question 14.1.6.1

Weighting: 3

Have all possible information about underground services and overhead power lines from utility undertakers and from the owners or occupiers of adjacent sites been obtained?

Audit Criteria

- 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.
- 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, or other suitable information which achieves the same aim are provided.

- In connection with electrical supply, 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)”. Auditors are advised to get a copy of the “Code of Practice on Working near Electrical Supply Lines” published by EMSD for reference.
- The suspension of in-house electric cable lines at the entrance or around the site would be dealt with under Electricity (Section 14.3.3). Auditor should also comment on sufficient arrangement of barriers, goal posts and signs, etc. where applicable to those cables.

Question 14.1.6.2

Weighting: 3

Where relevant, has a safe system of work been established in consultation with the utility undertakers?

Audit Criteria

- A safe system of work has four basic elements: planning the work; plans; cable- and pipe-locating devices; safe digging practice.
- Risk assessments should consider how the work is to be carried out; ensuring local circumstances are taken into account.

Question 14.1.6.3

Weighting: 6

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

Audit Criteria

- Steps should cover precautions near live overhead lines, work beneath power lines and passage beneath power lines.
- 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:
 - posts and rail fences;
 - a high-tension wire fence earthed at both ends (this should have warning flags or flicker tape on the wire so that it is clearly visible);
 - large steel drums, brightly painted, filled with rubble and placed at frequent intervals;
 - an earth bank at least 1 m high and marked by posts;
 - timber baulks which act as wheel stops.

- Auditor should verify the steps have implemented.

Question 14.1.6.4 **Weighting: 3**

Where relevant, have all workers in the vicinity of power lines been provided with information and instruction on the safety procedures?

Audit Criteria

- Before excavation work commences, workers must have proper safe work procedures and adequate supervision.
- Instruction should cover hand-digging should employed when nearing the assumed line of the cable.
- 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.

Question 14.1.6.5 **Weighting: 6**

Where relevant, have those pipes and cables of underground services which are still live or potentially hazardous been identified and marked?

Audit Criteria

- 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.

Question 14.1.6.6 **Weighting: 6**

Where relevant, has detection equipment been provided and employees trained in its use?

Audit Criteria

- 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.
-

- Radio frequency detection or transmitter/receiver types of locating device should be used to help locate metallic gas pipes before excavation. However many gas pipes are made of polyethylene (PE) and unless they incorporate a tracer wire, these cannot be traced by such devices. As a result it is especially important to use plans and safe digging practices.

Question 14.1.6.7

Weighting: 3

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

Audit Criteria

- 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.
- 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.

Part 14.1.7

Storage of Inflammable Substances, Gases and Vehicle Fuels

Question 14.1.7.1

Weighting: 3

Have all relevant requirements in regulations and codes of practices and safety information that apply to use, storage or transport of inflammable substances and gases and vehicle fuels (including petrol diesel and LPG) been identified?

Audit Criteria

- Inflammable 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.
- 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.

Question 14.1.7.2

Weighting: 3

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

Audit Criteria

- 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.
- Locate external stores in the 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.
- 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.
- Store oxygen cylinders separately from cylinders of flammable gases such as LPG and acetylene.
- Auditor should verify the correctness and coverage of risk assessments of auditee in providing suitable storage of flammable liquids, gases and vehicle fuels.

Question 14.1.7.3

Weighting: 6

Where inflammable liquids, gases and vehicle fuels stored exceed the exempted quantities, have the appropriate licenses been obtained?

Audit Criteria

- Inflammable substances exceeding 35 litres in aggregate shall be stored in suitable closed containers and the containers shall be kept in a storeroom approved for that purpose by the Director of Fire Services Department.
 - Valid DG licenses should be obtained if there is any inflammable liquid and gas such as diesels, thinner, LPG for forklift truck, oxygen & acetylene cylinders etc. stored have exceeded the exempted quantities. Otherwise the answer should be "NO".
 - If it is less than the exempted quantity, the answer should be "N/A".
-

Question 14.1.7.4 **Weighting: 6**
Where flammable liquids, gases and vehicle fuels stored not exceed the exempted quantities, have properly stored?

Audit Criteria

- Inflammable substances not exceeding 35 litres in aggregate 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.
- every container, storeroom, cupboard and bin used for storing inflammable substances shall be clearly and boldly marked 'Inflammable Substance 易燃物品'.

Question 14.1.7.5 **Weighting: 6**
Are there "No Smoking" signs displayed in all locations containing readily combustible or inflammable materials?

Audit Criteria

- Steps shall be taken to ensure that smoking or the use of naked lights is prohibited in a site where inflammable liquid or any mixture containing any such liquid or any substance or thing which will involve danger from fire is used.

Question 14.1.7.6 **Weighting: 3**
Are there procedures in safety plan on the storage of inflammable substances, gases and vehicle fuel?

Audit Criteria

- Auditor should verify the procedures in safety plan.

Question 14.1.7.7 **Weighting: 3**
Is there a system such as safety inspection for monitoring the storage of inflammable substances, gases and vehicle fuel?

Audit Criteria

- Auditor should verify the licenses and records.

Part 14.1.8 Occupational Safety and Health in Offices

Question 14.1.8.1 **Weighting: 3**

Have all relevant requirements in regulations and codes of practices and safety information that apply to site offices been identified?

Audi Criteria

- Including sufficiently well lit by natural or artificial lighting, latrine and washing conveniences complying with provisions of Building Ordinance (Cap 123), fire hazards and first aid.
- Every person employed shall be allowed a cubic space of not less than 7 cubic metres (250 cubic feet).

Question 14.1.8.2 **Weighting: 3**

Have risk assessments for display screen equipment to identify any foreseeable hazards, assess their risks, and recommend action for office in the site?

Audit Criteria

- 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.
- 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.

Question 14.1.8.3 **Weighting: 6**

Are all steps, stairs and floors in the office maintained in good condition and free from trip hazards?

Audit Criteria

- Slip and trip hazards around the office workplace, such as uneven floors, trailing cables, areas that are sometimes slippery due to spillages.

- Floors need to be checked for loose finishes, holes and cracks, worn rugs and mats etc.

Question 14.1.8.4 **Weighting: 6**
Is all electrical equipment properly installed and maintained?

Audit Criteria

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

Question 14.1.8.5 **Weighting: 3**
Are inspections of the office buildings carried out regularly?

Audit Criteria

- Auditor should verify the safety inspection of the site cover the office area.

Sub-section 14.2 Management of Tasks and Operations

Part 14.2.1 Demolition

Question 14.2.1.1 **Weighting: 3**
Have all the requirements in all regulations, codes of practice and safety information which apply to demolition work been identified?

Audit Criteria

- This question is not only applicable to all building demolition contracts that required permission from Office of the Building Authority, but also the renovation, refurbishment, alteration and additional works etc. that involved demolition of original building structures/walls/partitions 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.

Question 14.2.1.2 **Weighting: 3**
Has a survey been carried out to identify the structural arrangement and condition prior to demolition?

Audit Criteria

- The structural survey should consider include 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.
- The method statement for the demolition should identify the sequence required to prevent accidental collapse of the structure.

Question 14.2.1.3 **Weighting: 6**
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

- A written method statement has been prepared and agreed with the Architect/Engineer.
- Consult the utility companies and disconnect or divert all services.
- Existing floors planned to be used are not overloaded. Otherwise, shoring should be installed to support the floors.

Question 14.2.1.4 **Weighting: 3**
Is there a “Specialist Contractor” appointed to carry out the demolition of a building?

Audit Criteria

- In the new construction site safety enhancement measures 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 14.2.1.5 **Weighting: 3**
Is there a “Competent Person” appointed to supervise the demolition of a building?

Audit Criteria

- Verifying a competent person is in charge of the operation.

Question 14.2.1.6 **Weighting: 3**
Have all demolition workers including plant operators been trained?

Audit Criteria

- Verifying the workers and operators training record.
- Plant operators/workers for demolition works should receive trade specific training.

Question 14.2.1.7 **Weighting: 3**
Have all demolition workers been instructed on the requirements of the method statement?

Audit Criteria

- Verifying the training and briefing contents did cover the method statement.

Question 14.2.1.8 **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

- Erect warning notices.
- Adequate protection steel hoarding and covered walkway with lighting and safe access for the public.

Question 14.2.1.9 **Weighting: 6**
Have all materials and processes likely to create health hazards, e.g. noise and dust, been identified by risk assessment and all necessary precautions taken?

Audit Criteria

- During demolition and dismantling, workers can be injured falling from edges, through openings, fragile surfaces and partially demolished floors.

- Workers and passers-by can be injured by the premature and uncontrolled collapse of structures, and by flying debris.
- Uncontrolled collapse.
- Gas, electricity, water and telecommunications services need to be isolated or disconnected before demolition work begins
- Effective traffic management systems are essential on site, to avoid putting workers at risk of being hit by vehicles turning, slewing, or reversing.
- Hazardous materials that need to be considered include dust, asbestos and respirable crystalline silica (RCS).
- Fire is a risk where hot work (using any tools that generate spark, flame or heat) is being done.
- Noise and vibration.

Question 14.2.1.10

Weighting: 6

Are there flame-retardant sheeting installed to cover the building to be demolished?

Audit Criteria

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

Part 14.2.2 Excavations

Question 14.2.2.1

Weighting: 3

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

Audit Criteria

- 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.
- Code of practice on Safe Use of Excavator.

Question 14.2.2.2

Weighting: 3

Is there a risk assessment to assess the excavation plant suitable selected for the work to be carried out?

Audit Criteria

- Plant and vehicles driven too close to the edge of an excavation, particularly while reversing, causing the sides to collapse.
- Excavators, loaders and combined excavators 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.
- 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 14.2.2.3

Weighting: 6

Is the operator of the excavation plant competent to carry out the work?

Audit Criteria

- Loadshifting machines used on construction sites-
 - (a) a bulldozer;
 - (b) a loader;
 - (c) an excavator;
 - (d) a truck;
 - (e) a lorry;
 - (f) a compactor;
 - (g) a dumper;
 - (h) a grader;
 - (i) a locomotive;
 - (j) a scraper
- A loadshifting machine must only be operated by a person who has attained the age of 18 years; and holds a valid certificate applicable to the type of load shifting machine to which that machine belongs.

Question 14.2.2.4

Weighting: 3

Has a risk assessment for the excavation work and for the support of the excavation and all associated protection?

Audit Criteria

- Undertake a risk assessment and to develop, implement and maintain a system of work that ensures safety for work in or near the vicinity of an excavation.

Hazards commonly associated with excavation work should be considered by risk assessment are:

- fall or dislodgement of earth and rock;
- the instability of the excavation or any adjoining structure;
- the inrush or seepage of water;
- unplanned contact with utility services;
- the placement of excavated material;
- falls into excavations;
- the movement and positioning of heavy plant and equipment affecting the excavation;
- ground vibration affecting the excavation ;
- vehicle movement;
- excessive noise from the operation of machinery and plant;
- manual handling injuries.

Question 14.2.2.5

Weighting: 6

Is the excavations adequately shored in accordance with the design of the temporary support systems?

Audit Criteria

- Before digging any trench pit, or other excavations, plan and or method statement will be required to decide what temporary support systems and safety precautions to be taken.
- Make sure the equipment and precautions needed (trench sheets, props, baulks etc) are available on site before work starts.
- 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.
- When removal of shoring supports, the support system should be extracted/dismantled in the reverse order of its installation. Person working inside the excavation should work inside the protection of the ground support.
- Battering the excavation sides to a safe angle of repose may also make the excavation safer.

Question 14.2.2.6

Weighting: 6

Are adequate measures provided to prevent the fall of person and drowning in excavation?

Audit Criteria

- Suitable guard rails and toe boards inserted into the ground immediately next to the supported excavation side; or
- Using support system itself, e.g. trench box extensions or trench sheets longer than the trench depth.
- Where, during excavation work, and 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 14.2.2.7

Weighting: 6

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

Audit Criteria

- Plant and vehicles close to the sides of excavations can make extra loadings to the sides of excavations more likely to collapse.
- Loose materials may fall from spoil heaps into the excavation. Edge protection should include toeboards or other means, such as projecting trench sheets or box sides to protect against falling materials.
- Suitable and sufficient measures shall be taken so as to prevent any vehicle from falling into any excavation or pit, or into water, or overrunning the edge of any embankment or earthwork.

Question 14.2.2.8

Weighting: 6

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

Audit Criteria

- where there is reason to apprehend danger to persons employed therein from rising water or from an irruption 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
- Provision of a safe means of movement between different levels of the excavation. Use of intermediate platforms for deep excavation.
- Where ladders are used for access, the ladder should be secured at both top and bottom against 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 14.2.2.9 **Weighting: 6**
Where applicable, are control measures taken to protect workers against airborne and soil contaminants?

Audit Criteria

- 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 14.2.2.10 **Weighting: 6**
Have competent persons with training and experience been appointed to carry out regular inspections and examinations?

Audit Criteria

Auditor has to get the following evidence:

1. Training and experience records of the competent person i.e. qualification in engineering and acceptable experience.
2. Appointment letter for the competent person to carry out regular inspections of all excavations.

Scenarios

- If the excavation work has not started, Auditor should check item No.1 & 2 and the answer should be "YES" for conformity.
- If the excavation work is in progress, Auditor should check item No.1 & 2 and the answer should be "YES" for conformity.
- If no excavation work is anticipated or all excavation work had been completed, the answer should be "N/A".

Question 14.2.2.11 **Weighting: 6**
Are inspections and examinations carried out at appropriate intervals and the results entered in the prescribed form?

Audit Criteria

Auditor has to get the following evidence:

1. Training, experience records and appointment letter as Question 14.2.2.10.
 2. Update and proper inspection records (Form 4) to prove the competent person had conducted the inspections in 7 day interval or where necessary with his designation and signature.
- 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 name and designation otherwise the answer should be “NO”.

Question 14.2.2.12

Weighting: 3

Are there procedures for checking the effectiveness and thoroughness of the inspection, examination and record keeping?

Audit Criteria

- There is a procedure for reporting faults discovered in the inspections and examinations.
- Internal safety audit has been used as one of the monitoring tools for assessing the effectiveness and thoroughness of the inspections. The audit should be conducted by competent person(s) with independence as far as practicable. If an internal audit report provided does not fulfill the requirement on competence, independence and coverage, the answer should be “NO”.

Part 14.2.3

Lifting Operations

Question 14.2.3.1

Weighting: 3

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

Audit Criteria

- FACTORIES AND INDUSTRIAL UNDERTAKINGS (LIFTING APPLIANCES AND LIFTING GEAR) REGULATIONS, lifting appliances and gear manufacturers’ manual and certificates etc.

- 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 14.2.3.2 **Weighting: 3**

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of lifting operations?

Audit Criteria

- The risk assessments carried out for all lifting operations.

Question 14.2.3.3 **Weighting: 3**

Are lifting plan which covered 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

- The lifting plan will need to address the risks identified by the risk assessment and identify the resources required, the procedures and the responsibilities so that any lifting operation is carried out safely.
- Lifting plans need to identify resources required, this means people in the lifting team as well as equipment – and thereby the competencies, knowledge and skills they require.

Question 14.2.3.4 **Weighting: 9**

Are there arrangements to ensure all lifting appliance and associated lifting gear are suitable for the operations and carried out safely?

Audit Criteria

- Thorough planning of the operations, along with the selection, provision and use of suitable lifting appliance(s) and associated lifting gear.
- The position and movement of lifting appliances are safe and suitable.
- 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.
- 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.

Question 14.2.3.5

Weighting: 3

Are there arrangements for all non-standard lifting operations such as tandem lifting?

Audit Criteria

- 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.
 - A competent person shall be specially appointed to supervise the operation of using more than one lifting appliance to raise or lower one load.
-

Question 14.2.3.6

Weighting: 9

Are all operators of lifting appliances competent to carry out the work required and has their training achievement been certificated?

Audit Criteria

- 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 CICTA 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.
-

Question 14.2.3.7

Weighting: 9

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

Audit Criteria

- A signaler shall be appointed and stationed to give effective signals to the operator of a lifting appliance to ensure its safe working.
- A signaler shall attain the age of 18 years unless he is undergoing training under the supervision of a competent person.
- Lifting appliance shall 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.

- The riggers have received appropriate training on general safe lifting operations, and capable of selecting lifting gears suitable for the loads and liaise with the signaler for directing the movement of the crane safely.
 - The responsible person is appointed by the contractor and is responsible for the control of the overall tower crane lifting operation and ensuring the proper implementation of a site safety management system.
-

Question 14.2.3.8

Weighting: 3

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

Audit Criteria

Auditor should refer to the definition of competent examiners and competent person in the Code of Practice for Safe Use of Mobile Cranes and Tower Cranes.

Auditor has to get the following evidence:

- Training and experience records of the competent person i.e. qualification in engineering and acceptable experience.
 - Appointment letter for the competent person to carry out regular inspections of all lifting appliances.
-

Question 14.2.3.9

Weighting: 3

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

Audit Criteria

Auditor has to get the following evidence:

- Training, experience records and appointment letter as Question 14.2.3.8.
- Update and proper inspection records (Form 1) to prove the competent person has conducted the inspections in 7 day or where necessary interval with his designation and signature.
- Examinations and tests record produced by RPE.
- 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 in the statutory inspection form such as Form 1 for Weekly Inspection of Lifting Appliances. As this is a mandatory requirement, the form should be properly filled in name and designation otherwise the answer should be “NO”.

Question 14.2.3.10

Weighting: 3

Is there a procedure for reporting on faults discovered in the examinations and inspections?

Audit Criteria

- 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.

Question 14.2.3.11

Weighting: 3

Is there a system for checking the effectiveness and thoroughness of inspections record keeping and examinations?

Audit Criteria

- Internal safety audit has been used as one of the monitoring tools for assessing the effectiveness and thoroughness of the inspections. The audit should be conducted by competent person(s) with independence as far as practicable.
- If an internal audit report provided does not fulfill the requirement on competence, independence and coverage, the answer should be “NO”.

Part 14.2.4

Roadworks

Question 14.2.4.1

Weighting: 3

Are there an approved Temporary Traffic Management Scheme (TTMS) which included a layout plan for lighting, signing and guarding equipment in place for the safe operation of roadworks and work near moving traffic?

Audit Criteria

- 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.

- 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 14.2.4.2

Weighting: 3

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of roadworks?

Audit Criteria

- 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.
- Site access and egress, unloading and storage areas, traffic and pedestrian routes.
- The use of thermoplastic substances and bituminous materials in hot form.

Question 14.2.4.3

Weighting: 6

Have arrangements provided for ensuring a safety clearance between the works area and any part of the trafficked carriageway?

Audit Criteria

- Where possible, the following safety clearance should be maintained between the works area and the trafficked carriageway (clearance 0.5 m for traffic approach speed up to 85 km/h and 1.2 m for traffic approach speed over 85 km/h).
- Where it is impractical to provide such a safety clearance, consideration should be given to devising alternative methods of working, providing work zone protection barriers or methods of reducing traffic speed at the approach to the road work section.

Question 14.2.4.4

Weighting: 6

Do all road warning signs conform to the requirements of the code of practice for Lighting, Signing and Guarding of Roadworks?

Audit Criteria

- 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 14.2.4.5

Weighting: 6

Have arrangements provided for ensuring safety of other road users, especially pedestrians?

Audit Criteria

- 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 access and egress points.
- Works area should not leave 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.
- Barriers with detachable horizontal members made of hard objects should not be used on high speed roads.
- Adequate separation should be provided between the works area and the public access.

Question 14.2.4.6

Weighting: 6

Have workers been provided with appropriate protective clothing/equipment, including high visibility clothing and, where necessary, ear protection, and are they used?

Audit Criteria

- Provide and use of proper PPE includes in the site rules.

Question 14.2.4.7

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

- Site induction procedures with specific reference to traffic diversion, site protection, vehicle on site and use of PPE, hazardous substances, emergency procedures.

Question 14.2.4.8

Weighting: 6

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

Audit Criteria

- Vehicle should be fitted with amber flashing beacons, and/or multiple sequence warning sign.
- Vehicles fitted with automatic reversing warning indicator.

Part 14.2.5 Temporary Works

Question 14.2.5.1

Weighting: 3

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

Audit Criteria

- Temporary Works, mainly referring to false work (Formwork) which means the surface, support and framing used to define the shape of concrete until it is self-supporting.
- 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.

Question 14.2.5.2

Weighting: 3

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of temporary works?

Audit Criteria

- The falsework collapsing under load. Concrete pouring by crane, skip, barrow, dumper or pumping produces impact forces.
- The works under construction should be suspended when any undue movement of the falsework occurs.
- Falls from height.
- 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 14.2.5.3

Weighting: 3

Is there a procedure/method statement for erection and dismantling of temporary works?

Audit Criteria

- 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.

Question 14.2.5.4

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 design temporary works system?

Audit Criteria

- 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.
- Site management personnel and workman should be trained to fully understand the contents of the drawings and specifications for the falsework, specially the sequence of erection which should strictly be adhered to.
- All works, especially interface works between different trades should be

continuously supervised by competent site management personnel.

- 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.
- 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.
- The workman should be trained to fully understand the contents of the method statement, especially the sequence of dismantling which should strictly be adhered to.

Question 14.2.5.5

Weighting: 3

Where relevant, has a permit to load certificate been prepared for a fully design temporary works before loading?

Audit Criteria

- Once complete, all falsework should be inspected and certified as ready for use (a written permit-to-load procedure is strongly recommended).
- The sequence of placing permanent works such as wet concrete should comply with the competent engineer's intentions expressed in the drawings and specifications.
- 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 14.2.5.6

Weighting: 6

Are safe means of access and safe working platforms provided for temporary works workers, including those who have to check the installations?

Audit Criteria

Question 14.1.3.3 (Working at Height) refers to access and egress to all work areas.

Question 14.2.5.6 (Temporary Works, mainly referring to false work) refers to constructing and dismantling false work where means of access is/are needed.

False work is defined as any temporary structure used to support a permanent structure while it is not self-supporting, either in new construction or refurbishment. Contractors' responsibilities include:

- preventing the falsework collapsing under load;
- **ensuring that those constructing and dismantling it can carry out their work safely, with particular regard to preventing falls from height;** and
- eliminating 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.

Double deduction on scores would be possible if the contractor's performance is not satisfactory. Please refer to the below different scenarios for further information:

Scenarios	Question 14.1.3.2 (Working at Height)	Question 14.2.5.6 (Temporary Works)
1. Safe means of access, egress and working platforms are provided for all work areas, including temporary works.	Yes (score: 9)	Yes (score: 6)
2. Safe means of access, egress and working platforms are provided for all constructing/dismantling false work. But some unsafe accesses were observed in other work areas.	No (score: 0)	Yes (score: 6)
3. Safe means of access were not provided to false work. But safe means of access and egress are provided in all other work area.	Yes (score: 9)	No (score: 0)
4. Safe means of access were not provided to	No (score: 0)	No (score: 0)

false work. Unsafe accesses were also observed in other work areas.		
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Question 14.2.5.7

Weighting: 6

Are inspections carried out at appropriate intervals and the results entered in the record?

Audit Criteria

- The frequency of subsequent inspections will depend on the nature of the temporary works. They should be carried out frequently enough to enable any faults to be rectified promptly.

Part 14.2.6

Structural Steel Erection

Question 14.2.6.1

Weighting: 3

Where work involves the erection of structures, has a method statement been developed in conjunction with the designer of the structure?

Audit Criteria

- Sufficient information should be provided by designers so that the erection contractor is aware of the precautions which need to be taken to ensure the stability of the steelwork.
- Contractor should provide method statement of the proposed erection method and submit to the designer for acceptance.

Question 14.2.6.2

Weighting: 3

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of steel structure erection?

Audit Criteria

- The erection of steel structures and building frames involved work at heights and exposed positions.
- The time spent at individual work points is often relatively short; access scaffolding is frequently not used.
- The movement of structural steelwork by cranes.
- Collapse of structures.
- Structural steel columns blow down by the wind.

Question 14.2.6.3 **Weighting: 6**
Have safe means of access and safe working platforms been provided where high level work is necessary?

Audit Criteria

- Working platforms designed to be attached at ground level, raised with the components and removed by crane after use.
- Ladders fixed to stanchions before erection should be used for vertical access.
- Provision of horizontal access between points of structural frames by means of permanent staircases and walkways complete with guard-rails.
- Mobile scaffold towers and mobile hydraulic extending platforms can be used with great improved safety.

Question 14.2.6.4 **Weighting: 3**
Are the hazards identified and control measures in risk assessment brought to the notice of all erection personnel and others likely to be affected by the work?

Audit Criteria

- Very often, fabricators and erectors of structural steelwork are from different companies, there is a need for a supervisor from the main contractor to ensure that all procedures, checks and inspections are carried out, including clearance of any modifications or changes introduced.
- All personnel and others likely to be affected should be informed through the morning assembling and hazard identification parts of the safe working cycle.

Question 14.2.6.5 **Weighting: 6**
Is there clear access for all mobile access equipment, cranes, etc?

Audit Criteria

- Construction of ground-floor concrete slabs access roads to provide a cleaner and safer site.

Question 14.2.6.6 **Weighting: 6**
Are there suitable storage areas for components awaiting erection?

Audit Criteria

- The layout of the storage area for steelwork and materials needs to be arranged so that vehicles and cranes can move about without fear of collision.

Question 14.2.6.7

Weighting: 6

Have all the personnel involved in the erection tasks been trained and provided with appropriate protective clothing/equipment and used?

Audit Criteria

- Some steel erectors are mistaken belief that they are in a special class, able to rely on their skill to take care of themselves in all situations, dangerous practices such as climbed bare steel, beam walking and straddling are commonplace. Work safe behaviour programme should be used to observe and reinforce good practices.

Part 14.2.7

Welding/Cutting Operations and Installation

Question 14.2.7.1

Weighting: 3

Have all the requirements in regulations, codes of practice and safety information for safe welding and cutting been identified?

Audit Criteria

- FACTORIES AND INDUSTRIAL UNDERTAKINGS (GAS WELDING AND FLAME CUTTING) REGULATION
- Code of Practice: Safety and Health at Work for Gas Welding and Flame Cutting
- 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).
- The requirements under the Factories and Industrial Undertakings (Confined Spaces) Regulation (Cap. 59 sub.leg.)
- Blowpipe ISO 5172:1995; Gas hose ISO 3821:199; Hose connection ISO 3253:1998; Pressure regulator ISO 2503:1998; Other associated safety devices ISO 5175:1987.
- 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), Gas Safety Ordinance (Chapter 51).

Question 14.2.7.2 **Weighting: 3**

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of welding/cutting operations and equipment?

Audit Criteria

- 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 inflammable materials; gas leaking from hoses, valves and other equipment; misuse of oxygen; backfires and flashbacks.
- The main hazards of welding on metals may lead to a build-up of dangerous fumes requiring exhaust ventilation.
- Other hazards include electric shock, radiation and burns.

Question 14.2.7.3 **Weighting: 6**

Are all personnel involved in gas welding and flame cutting operations and installation competent?

Audit Criteria

- Gas installation and the associated piping should be designed by a professional engineer with the appropriate training and experience in gas safety.
- Gas welding and flame cutting work is only performed by a person who has attained the age of 18 years and holds a valid certificate.

Question 14.2.7.4 **Weighting: 6**

Is there an arrangement of the gas installation and associated piping to facilitate routine inspection and maintenance?

Audit Criteria

- 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.
-

- Gas hoses should not be coiled around the gas cylinder or the pressure regulator.
-

Question 14.2.7.5 **Weighting: 6**

Are gas welding/cutting cylinders stored as per regulations/guidance?

Audit Criteria

- 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”.
 - 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.
 - Auditors should comment on the storage condition and visual evidence should be provided for verification.
-

Question 14.2.7.6 **Weighting: 6**

Are safety devices provided in gas supply system to prevent fire and explosion?

Audit Criteria

- The use of safety devices to prevent fire and explosion, including flashback arrester, non-return valve, pressure relief device, vent and purge device.
-

Question 14.2.7.7 **Weighting: 6**

Have purpose-built trolleys /carriers been provided for moving cylinders?

Audit Criteria

- Moving cylinders in suitable trolleys which they are secured upright.
-

Question 14.2.7.8 **Weighting: 6**

Are welding operatives provided with adequate protective clothing/equipment and used?

Audit Criteria

- Suitable personal protective equipment should be selected appropriate to the hazards encountered, and should be properly used and maintained.
- 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.

- Auditor should comment on the personal protective equipment provided to welding operatives even though there was no operation being carried during the physical verification.
- If there is no issue record of personal protective equipment for the welding operatives, the answer should be “NO”.
- The answer may be “N/A” if no activity was carried during physical verification provided auditor had verified the provision of personal protective equipment to the operatives.

Question 14.2.7.9

Weighting: 6

For electric arc welding, are adequate arrangements to protect people from the hazard of electrocution?

Audit Criteria

- 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 out voltage at no-load condition

Question 14.2.7.10

Weighting: 3

Are welding operations adequately screened or isolated from other workers/passers by?

Audit Criteria

- The work area should be screened off with sturdy opaque or translucent materials.

Question 14.2.7.11

Weighting: 3

Are the workplace well ventilated?

Audit Criteria

- Ventilate the indoor workplace using air blowers and exhaust fans to remove poisonous fumes and gases that are given off during welding.
-

Part 14.2.8 Site Traffic Control

Question 14.2.8.1 **Weighting: 3**

Have all the requirements in regulations, codes of practice and safety information for site traffic control been identified?

Audit Criteria

- 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.
 - 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 14.2.8.2 **Weighting: 3**

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of site traffic?

Audit Criteria

- Site congestion and poor traffic layout.
 - Lack of proper roadways combined with uneven ground and debris.
 - Careful planning and consideration of site traffic control issues can result in a reduction in the likelihood of collisions between vehicles and/or equipment.
-

Question 14.2.8.3 **Weighting: 6**

Is there arrangement to control traffic flow in the site?

Audit Criteria

- Speed limits should be required and clearly displayed; they should be reduced for adverse site conditions and for areas near work in progress;
- Traffic lights can be used to control flow at busy junctions, in narrow locations and at entry and exit locations to the site;
- One-way systems should be considered where necessary to reduce the

likelihood of collision, reduce congestion and improve traffic movement;

- 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 14.2.8.4 **Weighting: 6**
Are there arrangements to protect hazardous installations, routes approach overhead structure or overhand power lines and excavations or openings in the site?

Audit Criteria

- 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;
- Erecting warning barriers of the goalpost type for overhead structure or power lines;
- Barriers, banksmen and fixed stops to prevent vehicles get too near the edge of excavations and openings.

Question 14.2.8.5 **Weighting: 6**
Have site roads been properly demarcated and separated from locations where people have to work?

Audit Criteria

- Entrances and exits – provide separate entry and exit gateways for pedestrians and vehicles;
- Walkways – provide firm, level, well-drained pedestrian walkways that take a direct route where possible;
- Crossings – where walkways cross roadways, provide a clearly signed and lit crossing point where drivers and pedestrians can see each other clearly.

Question 14.2.8.6 **Weighting: 6**
Are there arrangements for minimizing vehicle movements in the site?

Audit Criteria

- The term 'vehicles' includes: cars, vans, lorries, low-loaders and mobile plant such as excavators, lift trucks and site dumpers etc.
 - Provide car and van parking for the workforce and visitors away from the work area if possible;
 - Control entry to the work area; and
 - Plan storage areas so that delivery vehicles do not have to cross the site.
-

Question 14.2.8.7

Weighting: 6

Is there designated and sufficient location for vehicles to reverse to avoid them from travelling in reverse?

Audit Criteria

- The need for vehicles to reverse should be avoided where possible as reversing is a major cause of fatal accidents.
 - One-way systems can reduce the risk, especially in storage areas.
-

Question 14.2.8.8

Weighting: 6

Are there facilities to clean and remove mud from vehicles at site exit?

Audit Criteria

- Auditor should verify the effectiveness of these facilities provided.
-

Part 14.2.9

Work Over Water or Adjacent to Water

Question 14.2.9.1

Weighting: 3

Have all the requirements in regulations, codes of practice and safety information for work over water or adjacent to water been identified?

Audit Criteria

- Construction Sites (Safety) Regulations on prevention of drowning.
 - Risk areas include lakes, ponds (natural and man-made) reservoirs, rivers, streams, swimming pools water holding tanks (if of sufficient size) and the sea, the vicinity of culvers, outfalls and other discharge points, and at coastal sites.
 - Code of Practice Safety and Health at Work (Land-based Construction Work Over Water – Prevention of Fall)
-

Question 14.2.9.2 **Weighting: 3**
Have risk assessments 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

- Fall from heights.
 - Loss of balance, e.g. caused by high winds.
 - Rising swell or swell from passing waterborne traffic.
-

Question 14.2.9.3 **Weighting: 3**
Is there an arrangement to plan the work to eliminate working alone?

Audit Criteria

- Periodic checks should be made to ensure nobody is missing. Personnel should work in pairs or in sight of each other to enable one person to raise the alarm in the event of an emergency.
-

Question 14.2.9.4 **Weighting: 3**
Are there arrangements to prevent workers from falling into water?

Audit Criteria

- Where there is a risk of falling from an edge of adjacent land, a structure, scaffolding or a floating stage, etc, guardrails or fencing must be provided.
 - Safety nets can be used where it is not possible to provide a full and proper scaffold or gangway with handrails and toeboards, etc. provided that everything practicable has been done in respect of providing scaffolding.
 - Safety harnesses can be used instead of nets provided that secure anchorage points exist and the harness is constantly worn and attached.
-

Question 14.2.9.5

Weighting: 3

Are adequate illumination and lighting in darkness provided?

Audit Criteria

- Permanent illumination should be provided for night work and in dark areas including immediate water surfaces. The light should be evenly spread so as to avoid deceptive shadows and glare.
- Spotlights mounted on swivels should be installed at strategic locations close to the shore so that any person fallen into water can be spotted easily.
- Appropriate navigation light signals should be provided close to the shore in compliance with the relevant regulations and directions, e.g. those made under the Shipping and Port Control Ordinance, Cap. 313.

Question 14.2.9.6

Weighting: 3

Is there an emergency and rescue procedure and equipment?

Audit Criteria

- If there is any risk of persons falling into water and drowning, suitable rescue equipment should be provided nearby and persons trained or instructed in the use of it.
- All personnel working over or near water and at risk of falling in should wear some form of lifejacket or buoyancy aid.
- Lifebuoys should be available wherever workers are working on, over, or near water. Standard 760 mm diameter lifebuoys with rope or cord lifelines (30 metres) attached should be placed on conspicuous positions near the water's edge.
- Emergency procedure should include audible alarm, communications, emergency series, site access for vehicles and first aiders.

Question 14.2.9.7

Weighting: 6

Is there a stand-by boat, under the control of a boatman experienced in call-out, man overboard, and other necessary emergency procedures?

Audit Criteria

- At least one rescue boat should be provided and kept ready for immediate use whenever workmen are employed to work over or adjacent to turbulent or tidal water where rescue of them would have to be carried out by boat. The rescue boat may be a rigid or an inflatable vessel. It should comply with the requirements stipulated in the Merchant Shipping (Safety) (Life-Saving Appliances) (Ships built on or after 1 July 1986) Regulations and should be properly maintained so that it is operational at any time in good condition.
- The rescue boat should be power-driven with a fixed self-starting engine. Effective two-way radio communication should be set up between the rescue boat and the management on the shore. If night work is to be carried out, a powerful swivel-mounted spotlight should be installed on the rescue boat so that any person fallen into water can be spotted easily.

Question 14.2.9.8

Weighting: 6

Are all workers working over or in the vicinity of water receiving training and instruction in safe methods and systems of work?

Audit Criteria

- Personnel should be fully trained in the use of safety harnesses, lifejackets and buoyancy aids.
- Emergency procedures and rescue techniques.

Part 14.2.10

Piling and Foundations

Question 14.2.10.1

Weighting: 3

Have all the requirements in regulations, codes of practice and safety information for piling and foundations work been identified?

Audit Criteria

- Sufficient information that plant and processes can be used and carried out in a stable environment.
- Safety Guide for Interlocking of Steel Sheet Piles.

- Carrying of persons by means of lifting appliance.
- Borehole should be treated as a confined space.
- Ground investigation.
- Fabrication of metal cage design plan and drawing

Question 14.2.10.2

Weighting: 3

Have risk assessments 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

- Exposure to dangerous substances, noise or vibration – fluids used by processes and those in the ground as contaminants or services.
- Manual handling.
- 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.
- Poor access to the workplace – working in confined spaces or in poor conditions underfoot.
- Workplace stability – excavations or near temporarily unstable structures or machinery.
- Falls from height.
- Falling objects or debris.
- Revolving spindle and other moving dangerous parts of drilling rig.
- Collapse of metal cages and cage lifting safety

Question 14.2.10.3

Weighting 3

Has a method statement with risk assessment been produced for piling work and loading test process?

Audit Criteria

- Written method statement setting out the precautions relevant to the type of piling employ.
- Written method statement of fabrication of metal cage

Question 14.2.10.4

Weighting: 6

Have adequate means been provided for adequately supporting all machines and materials used?

Audit Criteria

- A working platform if selected 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.
- 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 14.2.10.5

Weighting: 6

Have suitable plant or equipment been designed and procedures been provided for the safe operation of workers working at height?

Audit Criteria

- Design adequate working platform for access by plant and workers.
- If the RCD working platform of piling machine is permanently attached is an integral part of the machine, then the working platform will be required to be examined as part of the piling machine.
- 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 time it is re-located, provided that its structure and component has not been damaged and/or altered in any way from the original design.
- 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.
- A sheet pile threader is a mechanical device design for interlocking sheet piles such that no worker is required to work at height.
- If a worker is required to climb 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 14.2.10.6

Weighting: 6

Are there arrangements to prevent any tilting and settlement caused to nearby structures?

Audit Criteria

- Design takes stability of neighbouring buildings into account, ensure excavations are stable in temporary condition or parameters are known such that adequate temporary shoring can be designed.

Question 14.2.10.7

Weighting: 6

If work involved 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

- During hoisting, tag lines or similar devices shall be used where necessary to control rotation of the load.
- Piles or sheet piling shall be adequately supported during placing or removal.
- Secure all shackles with steel wire or other means.
- 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.
- Check pile tops, handling holes, and splices of casings for damage from driving.
- 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.
- Level concrete floor slabs provided to ensure the stability of fabrication metal cage process.
- Safety checklist established and used to monitor the processes.

Part 14.2.11 Glazing

Question 14.2.11.1

Weighting: 3

Have all the requirements in regulations, codes of practice and safety information

for installing glazing identified?

Audit Criteria

- Activities involve lifting, moving and fitting glazed panels.
- Cut and fix aluminum framing.

Question 14.2.11.2

Weighting: 3

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of lifting and carrying sheets of glass and installing glazing?

Audit Criteria

- Cuts from broken glass or cutting tools;
- Manual handling injuries;
- Working at height;
- Contact with hazardous chemicals (e.g. sealants);
- Environmental hazards (working at the roadside, adverse weather etc).

Question 14.2.11.3

Weighting: 3

Are workers received manual handling training and implemented as required?

Audit Criteria

- Workers provided with glass lifting suckers with proper lifting capacity.
- Sheets placed in accessible area close to fixing point.
- Sheets are handled by two or more workers.
- Where possible, sheets of glass placed on pallets and moved by mechanical manual handing devices.
- Use scissor lifts, crane etc.

Question 14.2.11.4

Weighting 6

Is work area properly separated from general public?

Audit Criteria

- By hoardings.
- Barricade area below to public and other workers including floor and deck

opening.

- Erect appropriate signage.

Question 14.2.11.5

Weighting 6

Are workers protected from exposure to glass breakage and fixed sharp edges and precautions taken when using glues and adhesives?

Audit Criteria

- Safety equipment (Safety shoes, gloves, gauntlets) when glazing and/or deglazing.
- Clearly identify newly installed glass panels.
- Follow directions of MSDS.
- Used PPE and work in a well ventilated area.

Part 14.2.12 Grit Blasting

Question 14.2.12.1

Weighting: 3

Have all the requirements in regulations, codes of practice and safety information for grit blasting identified?

Audit Criteria

- FACTORIES AND INDUSTRIAL UNDERTAKINGS (BLASTING BY ABRASIVES) SPECIAL REGULATIONS
- "Blasting process" means the cleaning, smoothing, roughening or removing of part of the surface of any substance or thing including granite, stone or brick by the use as an abrasive of a jet of sand, metal shot or grit or other material propelled by a blast of compressed air or steam or water or by a wheel.

Question 14.2.12.2

Weighting: 3

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of grit blasting?

Audit Criteria

- No person shall use sand or other material containing free silica as an abrasive in any blasting process.
- Exposed to vibration with grit blasting.
- Exposure to dust and noise.

Question 14.2.12.3 **Weighting 6**

Is a wet process being used in preference to a dry process if possible?

Audit Criteria

- Alternative methods of surface cleaning which do not generate high levels of dust, are to be used if reasonably practicable, for example, wet blasting and ultra high pressure water jetting.

Question 14.2.12.4 **Weighting: 6**

Are dust control measures being carried out?

Audit Criteria

- For smaller items, booths are available which separate the worker from the process. Large blasting booths and ventilated enclosures should be designed so that there is directional movement of air across the worker from the back to the front, or from side to side. To prevent the spread of dust, booths and enclosures should have an inward air velocity of at least 2 ms^{-1} across openings away from the immediate blasting area.
- Blasting helmets are an essential method of protection in many situations and should be selected carefully. Equipment should be suitably robust for the job being done and kept well maintained. For hired equipment, records of maintenance should be available to users and should be examined.

Question 14.2.12.5 **Weighting: 6**

Have the site been effectively sheeted and screened?

Audit Criteria

- The principle for dust control in confined areas should be to produce a flow of dusty air away from the worker, with dust laden air extracted as close as possible to the work.
- In the immediate blasting area there should be no gaps which will allow the escape of dust which may be at a greater velocity than the inward air current.

Question 14.2.12.6 **Weighting: 3**

Have all personnel been instructed on the safety procedures?

Audit Criteria

- Use of respiratory Protective Equipment, including helmets should be trained in correct use according to the instructions. This should include how to fit and wear the equipment, and the limitations of its protection.
 - Training in maintenance procedures should be given to whoever is to be responsible.
-

Part 14.2.13 Asbestos

Question 14.2.13.1

Weighting: 3

Is the work with asbestos or asbestos-based materials carried out by a specialist contractor with a method statement prepared?

Audit Criteria

- 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.
- The manager of the registered asbestos contractor and the registered asbestos consultant are required to attend the Asbestos Management Course (with course duration 33 hours including theory and practical examination) provided by the Occupational Safety and Health Council.
- Acceptance of training by other organizations 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.
- Asbestos Professionals under Environmental Protection Department. The supervisor is required to attend the Safe Handling of Asbestos Course (with normal course duration 24 hours including theory and practical examination).
- The workers of involved in the asbestos works are required to attend the General Safety in Handling of Asbestos Course (with course duration 6 hours including examination).
- The course should be provided by the Occupational Safety and Health Council. Acceptance of training by other organizations 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 14.2.13.2

Weighting: 3

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of asbestos?

Audit Criteria

- Take account of other risks as well as asbestos, eg work at height, and take the precautions necessary to do the job safely.
- Look at building plans, previous asbestos surveys and any other relevant documents to identify asbestos hazards.

Question 14.2.13.3

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

- 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.
- Local exhaust ventilation system should be inspected weekly and thoroughly examined and tested at intervals of not more than six months.
- 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.
- 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 14.2.13.4

Weighting: 6

Have all employees likely to be exposed to risk been provided with approved respiratory protective equipment and protective clothing and are they used?

Audit Criteria

- 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.

- Provide adequate and suitable protective clothing for use by any workman who is exposed to asbestos unless no asbestos is liable to be deposited on the body or personal clothing of the workman.
- 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.
- Non-disposable RPE should be checked and cleaned before and after each time it is used. Repairs to RPE must be performed only by competent persons using parts specifically designed for the RPE.

Question 14.2.13.5

Weighting: 3

Have all employees been instructed about the risks to health with asbestos, the precautions to be taken and how to fit and maintain respirators and other equipment?

Audit Criteria

- Training and instruction should be provided prior to commencement of the work with asbestos, and before a workman is engaged in work with asbestos.
- 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.
- Instruct all workmen not to eat, drink or smoke in asbestos work area or the washing and changing facilities; or not to take 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 14.2.13.6

Weighting: 3

Has a procedure been established to ensure whereby employees exposed to dust will be medically examined?

Audit Criteria

- Person in working with asbestos has within the 4 months immediately preceding the commencement of such employment undergone a radiographic examination

of his chest and is certified by a registered medical practitioner to be fit to do such work.

- A health registers in the approved form for every person employed in working with asbestos.

Question 14.2.13.7

Weighting: 6

Have adequate measures taken to prevent or reduce to the lowest level reasonably practicable the spread of asbestos from the asbestos work area to other areas of the workplace?

Audit Criteria

- 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.
- Total enclosure dust-producing part of the process is localized and totally enclosed. The enclosure should be incorporated with dust extraction which is capable of removing the dust generated in the course of the process. The dust extraction system should incorporate HEPA filter.
- 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 filtration of air (by HEPA filter) must be effective and reliable.

Question 14.2.13.8

Weighting: 6

Have cleansing units been provided with showers and storage for clothing?

Audit Criteria

- Adequate and suitable washing and changing facilities must be provided.
 - 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.
 - 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 14.2.13.9

Weighting: 6

Have procedures been established for the temporary storage and subsequent disposal of materials and followed?

Audit Criteria

- 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.
 - Where any asbestos is required to be put in a container that container shall have affixed to it a clear and visible label.
-

Part 14.2.14 Machinery Guarding

Question 14.2.14.1

Weighting: 3

Have all the requirements in regulations, codes of practice and safety information for machinery guarding identified?

Audit Criteria

- Machinery in this part does not cover woodworking machinery, abrasive wheels, portable and hand tools
 - No young person shall be permitted to clean any dangerous part of the machinery while the machinery is in motion by the aid of any mechanical power.
 - 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 14.2.14.2

Weighting: 3

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the dangerous part of machinery?

Audit Criteria

- Identify machinery with dangerous parts.
- Risks may cause by:
 - not fitting adequate guards on machines, leading to accidents caused by entanglement, shearing, crushing, trapping or cutting;
 - not fitting adequate controls, or the wrong type of controls, so that equipment cannot be turned off quickly and safely, or starts accidentally;
 - not properly maintaining guards, safety devices, controls etc so that machines or equipment become unsafe;
 - not providing the right information, instruction and training for those using the equipment.

Question 14.2.14.3

Weighting 6

Have all the dangerous parts of machines and equipment that could cause injury been effectively guarded?

Audit Criteria

- Use fixed guards wherever possible, properly fastened in place with screws or nuts and bolts which need tools to remove them;
- 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;
- 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.

Question 14.2.14.4

Weighting: 3

Have regular maintenance and preventive checks, and inspections of the guarding of machinery been conducted?

Audit Criteria

- Daily inspection and checking all machinery guarding before start working under the Safe Working Cycle practice.

- 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.
- Keep a record of inspections made as this can provide useful information for maintenance workers planning maintenance activities.

Question 14.2.14.5 **Weighting: 3**
Are there any arrangements such as lockout procedures and checklists to ensure the carry out maintenance work safely?

Audit Criteria

- Safe work practice such as:
 - where possible, carry out maintenance with the power to the equipment off and ideally disconnected or with the fuses or keys removed, particularly where access to dangerous parts will be needed;
 - isolate equipment and pipelines containing inflammable 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;
 - 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 14.2.14.6 **Weighting 3**
Are employees been instructed and trained to use and maintain equipment safely?

Audit Criteria

- Provide information they need, e.g. manufacturer's instructions, operating manuals, training courses and check they understand them.
- Instruct them on how to avoid risks.

Part 14.2.15 Ground Investigation

Question 14.2.15.1 **Weighting: 3**

Have all the requirements in regulations and codes of practice which apply to ground investigation been identified and complied with?

Audit Criteria

- 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.
- Related safety regulations and code of practice.

Question 14.2.15.2 **Weighting: 3**

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of ground investigation?

Audit Criteria

- The construction process may expose site workers to particular risks from ground related hazards associated with:
 - a. Excavations;
 - b. Contamination;
 - c. Temporary works instability;
 - d. Machine instability; and
 - e. Overhead and undergrounding services.
- 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 14.2.15.3 **Weighting 3**

Has safety rules and operation procedures been produced for ground investigation work?

Audit Criteria

- A working platform should be designed which is adequate to support all the machines which will be used during ground treatment.
- 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 to them.
- The location and depth of local buried services should be identified. Where necessary these should be diverted or protected.
- Protective screens should be provided to shield the flying debris.
- Situations in which workers have to work close to machines should be minimized
- Maintenance of the stability of the building may require temporary supports such as scaffolding or props during the construction activity.

Question 14.2.15.4

Weighting 3

Have arrangements been produced for safe operation of machinery?

Audit Criteria

- The safe operation of machinery depends in part on the suitability of the ground support.
- 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 can be used, or power packs for hydraulic equipment located away from the confined space.

Question 14.2.15.5

Weighting: 3

Have safety checklists developed and used for monitoring the safe operation of ground investigation?

Audit Criteria

- Safety checklist should cover the items of operative in ground investigation
- .

Part 14.2.16 Prestressing

Question 14.2.16.1

Weighting: 3

Have all the requirements in regulations and codes of practice which apply to prestressing process been identified and complied with?

Audit Criteria

- Prestressing is an operation that places tension in the cable or stretches it by putting it under an applied load.
- The different forms of construction used in a number of more or less conventional structures built during the last few decades will give rise to a variety of problems when the time comes for them to be demolished. Prestressed concrete structures fall in this general category. The most important aspect of demolishing a prestressed concrete structure takes place during the engineering survey. During the survey, a qualified person should determine if the structure to be demolished contains any prestressed members.

Question 14.2.16.2

Weighting: 3

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of prestressing?

Audit Criteria

- The demolition contractor should inform all workers on the demolition job site of the presence of prestressed concrete members within the structure. They should also instruct them in the safe work practice which must be followed to safely perform the demolition. Workers should be informed of the hazards of deviating from the prescribed procedures and the importance of following their supervisor's instruction.
- Prestressed beams and slabs may be lifted and lowered to the ground as complete units after the removal of any composite concrete covering to tops and ends of the units. When units are too large to be removed, consideration should be given to temporary supporting arrangements.

Question 14.2.16.3

Weighting 3

Has safety rules and operation procedures and approved statement been produced for prestressing process or handling of prestressed concrete members?

Audit Criteria

- Breaking up of prestressed unit should be lowered to the ground, if possible. It is advisable to seek the counsel of a professional engineer before carrying out this work, especially where there are ungrouted tendons. After lowering the units can be turned on their side with the ends up on blocks after any composite

concrete is removed. This may suffice to break the unit and release the prestress; if not, a sand bag screen, timbers, or a blast mat as a screen should be erected around the ends and demolition commenced, taking care to clear the area of any personnel. It should be borne in mind that the end blocks may be heavily reinforced and difficult to break up.

Question 14.2.16.4 **Weighting 3**
Is there procedure to check the compliance of the approved working method and safe work procedure?

Audit Criteria

- Auditor should verify the existing of the approved working method and procedure and also its implementation.

Question 14.2.16.5 **Weighting 3**
Have the approved working method and the safe working procedures been communicated to all relevant personnel in appropriate languages, and also other people working in the vicinity on the site are aware of the stressing operation?

Audit Criteria

- Auditor should verify the relevant personnel understood the approved working method.
- Steps to ensure other people working in the vicinity aware of the operation

Sub-section 14.3 Management of Plant and Equipment
Part 14.3.1 Compressed Air Tools

Question 14.3.1.1 **Weighting: 3**
Have all the requirements in regulations, codes of practice and safety information in respect of compressed air work been identified?

Audit Criteria

- BOILERS AND PRESSURE VESSELS REGULATIONS

Question 14.3.1.2 **Weighting: 3**
Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of compressed air tools?

Audit Criteria

- 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.
- Dirty or 'wet' air can cause a system to fail e.g. by causing fine particles of debris to agglomerate, blocking safety related valves.
- Awareness of headline dangers of air compression use, e.g. orificial bodily entry, skin penetration, explosions and optical damage caused by particles
- Compressor noise is one of the most common noise problems associated with the workplace and is potentially damaging.
- 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 14.3.1.3

Weighting: 3

Are the air compressor and all compressed air tools regularly inspected?

Audit Criteria

- Daily inspection and checking all air compressors and tools before start working under the Safe Working Cycle practice.
- 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.
- 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 14.3.1.4 **Weighting: 3**

Has the air receiver been examined at statutory intervals by a competent person and is a record kept for the examination?

Audit Criteria

- The BOILERS AND PRESSURE VESSELS REGULATIONS set out the duties of users and owners of air receivers.

Question 14.3.1.5 **Weighting: 6**

Have the appropriate valve and gauges been set and maintained?

Audit Criteria

- 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.
- 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.
- The drain valve, safety valve, examination holes and manholes need to be accessible.
- The scale of any gauges needs to be clearly visible.

Question 14.3.1.6 **Weighting: 6**

Are compressed air line joints fitted with whip check or other devices to prevent accidental dislodge?

Audit Criteria

- 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.
- 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.

- 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.

Part 14.3.2 Electrical Supply System

Question 14.3.2.1 **Weighting: 3**

Have all the requirements in regulations and codes of practice which apply to the use of electricity on site, in workshops and in offices been identified and complied with?

Audit Criteria

- FACTORIES AND INDUSTRIAL UNDERTAKINGS (ELECTRICITY) REGULATIONS
- CONSTRUCTION SITES (SAFETY) REGULATIONS
- ELECTRICITY ORDINANCE (Cap 406)
- Code of Practice for the Electricity (Wiring) Regulations

Question 14.3.2.2 **Weighting: 3**

Have the electrical supply system and all subsequent alterations or extensions thereto been carried out and certified by a registered electrical contractor/worker using prescribed Work Completion Certificates (WR1)?

Audit Criteria

- The Registered Electrical Worker/ Registered Electrical Contractor to complete a Work Completion Certificate (Form WR1) after satisfactory inspection and testing of the electrical installation as required by the Code of Practice for the Electricity (Wiring) Regulations.

Question 14.3.2.3 **Weighting: 3**

Is an up to date as-fitted electrical schematic diagram for the electrical supply system displayed near the main switch and is the electrical supply system in accordance with the electrical schematic diagram?

Audit Criteria

- The electrical wiring diagram for the switchboard is provided and displayed prominently in its vicinity.

Question 14.3.2.4

Weighting: 3

Is the name, 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?

Audit Criteria

- Verify the registered electrical worker and the logbook of the record results of regular inspection and testing on the electrical installations.

Question 14.3.2.5

Weighting: 3

Are appropriate signage/notice displayed to warn electrical hazard and live parts?

Audit Criteria

- 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.

Question 14.3.2.6

Weighting: 3

Is appropriate notice for treatment of electrical shock and resuscitation, in both English and Chinese, displayed in areas where electricity is used?

Audit Criteria

- 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,
- Some personnel trained and familiar with first aid and cardio-pulmonary resuscitation (CPR) if available to treat electric shock.

Question 14.3.2.7

Weighting: 9

Are temporary distribution boards securely mounted on supports and provided with suitable main switches?

Audit Criteria

- No illegal connections/extensions, however temporary, are allowed. Keep the doors of switchboard locked.

Question 14.3.2.8

Weighting: 9

Have appropriate earth leakage protection devices been installed and maintained properly for the electrical supply system?

Audit Criteria

- 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.
- The switchboards and devices are regularly checked and maintained by Registered Electrical Workers.

Question 14.3.2.9

Weighting: 9

Are reduced voltage systems used for portable and hand-held tools and temporary site lighting?

Audit Criteria

- Portable and hand-held tools and temporary site lighting operate off the 110V supply.
- All insulated or double insulated tools to BS 2754 give extra protection against electric shock.

Question 14.3.2.10

Weighting: 9

Is an appropriate earthing conductor provided for connection 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

- Earthing systems are recommended for all transportable plant operating at any voltage above 110V and supplied with flexible cables.
- Periodic maintenance, inspection and testing are essential.

Question 14.3.2.11

Weighting: 9

Where a generator is installed, is there any switch provided for isolation of electricity supply from the generator?

Audit Criteria

- Provision of Isolation switch.
- Generators are operated only by authorized persons who should be adequately trained. Training should include emergency and shutdown procedures.

Question 14.3.2.12

Weighting: 9

Where generators is installed, is it appropriately earthed and are exhaust fumes discharged in a direction not to cause harm or nuisance?

Audit Criteria

- The generator is properly earthed and the impedance of the earthing electrode and connection is periodically checked by a Registered Electrical Worker.
- The exhaust pipe of the generator is not directed to people and work areas.

Part 14.3.3

Electrical Works and Portable Electric Tools

Question 14.3.3.1

Weighting: 6

Are cables securely installed, properly supported and protected against mechanical damage, heat, vibration and ingress of moisture and corrosive substances?

Audit Criteria

- Wires and cables are protected against chafing, pinching, cutting, or other hazards, which damage the insulation of the metal conductor leading to an electric shock.
- The locations of underground cables are marked to that they will not be damaged by excavating equipment.

Question 14.3.3.2

Weighting: 6

Where relevant, are electric cables adequately suspended/installed to avoid them from being unduly laid on floor?

Audit Criteria

- All outgoing cables shall be protected and supported.
- Wire and cables are kept off floors over that vehicles may pass (height 5.8 m above ground). If they must be on the floor, ensure that they are adequately

protected against damage.

- Suspended cables should be no tension or strain on connections, adequately marked for protection, supported on proper hooks. Over 3 m spans supported by catenary wires on poles

Question 14.3.3.3

Weighting: 3

Have arrangements been made to inspect, test and record details of all electrical installations including switch boxes, cables, sockets, switches before they are used, and again at regular intervals?

Audit Criteria

- Daily inspection and checking all electrical installations before start working under the Safe Working Cycle practice.
- All electrical installations are regularly checked and maintained by Registered Electrical Workers.
- Maintain a logbook to record results of regular inspection and testing on the electrical installations.
- Testing and inspections include:
 - Visual inspection
 - Continuity of final circuit conductors
 - Continuity of protective conductors
 - Earth electrode resistance
 - Insulation resistance
 - Polarity
 - Earth fault loop impedance
 - Operation of residual current devices and fault voltage operated protective devices.

Question 14.3.3.4

Weighting: 6

For electric equipment and installations used in damp situations or exposed to weather, is it a weatherproof type or contained in an appropriate weatherproof enclosure?

Audit Criteria

- Temporary switch boxes, socket outlets, plugs and cable couplers are of splash-proof type with a protection class of IP54 or above.

Question 14.3.3.5

Weighting: 6

Are tough rubber workshop cables/armoured cables used as trailing cables and weather proof connections kept in good conditions?

Audit Criteria

- 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.
- Tough Rubber Sheathing (TRS) resistant to wear and abrasion (not used near solvents or oils).

Question 14.3.3.6

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

- All electrical connections must be proper plugs and sockets. Makeshift connections and taped joints are not permitted.
- Check for BS2769 (Kite Mark) or double insulated Mark (BS 2754).
- Check the tool fitted with correct plug; type and size, and also the plug is undamaged.
- Check trailing lead is not cut or frayed.
- Check the nameplate is secure with details of type, voltage, frequency, current, speed and other details depending on manufacturer.
- No cut off, bend back the "earth pin" on three-prong plugs.
- Check the cutting off electricity supply of the tool and equipment.

Question 14.3.3.7

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 warning the possibility of automatic starting?

Audit Criteria

- 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.
- Check for the provision of such arrangement if necessary.

Question 14.3.3.8

Weighting: 6

Are all live parts of apparatus, equipment and tools appropriately against accidental personal contact either by design and construction of the apparatus or by the manner of its installation?

Audit Criteria

- '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.
- Provisions for the physical locking off of switches etc.
- BS2769 (Kite Mark) or double insulated Mark (BS 2754) for portable tools.
- Prohibits the placing of switches in the neutral side of a circuit.

Question 14.3.3.9

Weighting: 6

Are the electrical installations and equipment readily accessible for repair and maintenance works to be carried out?

Audit Criteria

- Adequate access, lighting and working space must be provided for repair and maintenance works to be carried out.

Part 14.3.4 Hand Tools

Question 14.3.4.1

Weighting: 3

Have all the requirements in regulations, codes of practice and safety information for hand tools identified?

Audit Criteria

- There are many different types of hand tool for different kinds of work, such as

shovels, axes, crowbars, chisels, screwdrivers, hammers and wrenches.

- A good quality hand tool should be designed to fit the hand and the task.

Question 14.3.4.2 **Weighting: 3**
Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of hand tools?

Audit Criteria

- Accidents with hand tools always arise from human failing – not knowing the right tool for the job, ignorance of safety precautions, or failure to maintain tools and to keep them properly.

Question 14.3.4.3 **Weighting: 3**
Is there an arrangement to select, use and maintenance hand tools and a record maintained?

Audit Criteria

- 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.
- Handles should have a smooth finish, should be easy to grasp and should have no sharp edges or corners.
- Tools should be firmly fixed and should be regularly checked for splits and cracks.
- Tools should be kept free of grease and dirt, and moving and adjustable parts should be well oiled.
- Damaged tools should be repaired or replaced.

Question 14.3.4.4 **Weighting: 6**
Are hand tools properly stored in safe working conditions?

Audit Criteria

- 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.
- Carry tools in tool holders and not in the pockets of worker clothing.

Question 14.3.4.5 **Weighting: 6**
Are hand tools used fit the tasks?

Audit Criteria

- For work on or near electrical apparatus only properly insulated tools should be used.
 - Use spark resistant tools where highly flammable vapours may be present.
 - 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.
 - Use the correct size spanner. Never use a hammer or extension handle on a spanner for tightening up nuts.
-

Part 14.3.5 Woodworking Machines

Question 14.3.5.1 **Weighting: 3**
Have all the requirements in regulations, codes of practice and safety information for woodworking machines identified?

Audit Criteria

- Woodworking machines include circular saw, band saws, grooving machines, planing machine, chain sawing machines, mortising machines, tenoning machines, vertical spindle moulding machines, multi-cutter moulding machines, trenching machines, boring machines, automatic and semi-automatic lathes.
 - FACTORIES AND INDUSTRIAL UNDERTAKINGS (WOODWORKING MACHINERY) REGULATIONS
 - 'A Guide to the Factories and Industrial Undertakings (Woodworking Machinery) Regulations' published by the Labour Department.
-

Question 14.3.5.2 **Weighting: 3**
Have risk assessments 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

- Accidents on woodworking machinery are occurred on circular saws and planing machines.
- Woodworking machine cutters can inflict very serious injuries and it is essential

that guarding them are strictly observed.

Question 14.3.5.3 **Weighting: 6**

Are all cutters of woodworking machines effectively guarded?

Audit Criteria

- 'Cutter' includes saw blades, chain cutters, knives, boring tools, detachable cutters and solid cutters.
- Cutters must be guarded to the greatest practicable extent, having regard to the work being done.
- Guards to be of substantial construction, properly secured and adjusted, and constantly in position while cutters are in motion.
- No adjustment may be made to any guard while cutters are in motion, unless safe means (i.e. mechanical adjusters) are provided.
- Please note that portable, hand-held machines are covered in this question.
- Keep the circular saw cutters sharp at all times, and properly adjust the riving knife and top guard.
- 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 14.3.5.4 **Weighting: 6**

Have emergency switch or dead man switch been provided to all the woodworking machines?

Audit Criteria

- 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 in charge of the machine.
- Every woodworking machine is provided with a readily accessible emergency stop button.

Question 14.3.5.5 **Weighting: 6**

Are wood chips and dust produced regularly removed and properly stored?

Audit Criteria

- Exhaust extraction equipment should be provided for circular saws and planners to convey chips and particles from cutters into a suitable receptacle.
 - Remove sawdust regularly to minimize fire hazard.
-

Question 14.3.5.6 **Weighting: 6**
Have suitable fire extinguishers been provided to woodworking machines?

Audit Criteria

- Provide suitable fire extinguishers adjacent to the work location.

Question 14.3.5.7 **Weighting: 6**
Are woodworking machines installed and operated in suitable location?

Audit Criteria

- Sufficient clear and unobstructed space to be provided around machine to allow work without risk of injury.
- Floors to be level, in good condition, free of loose material and not slippery.
- 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.
- In a location away from source of ignition and smoking prohibited.

Question 14.3.5.8 **Weighting: 3**
Have all employees working with woodworking machinery been trained and instructed of the hazards, the operating procedures and the necessary precautions on safe use?

Audit Criteria

- During safe working cycle.
- No person should be employed on a woodworking machine, unless he has been trained and instructed in its operation.
- No person under 16 years of age shall be employed on any woodworking machine.
- Familiar with type of machine and with manufacturer's operating instructions.

Question 14.3.5.9 **Weighting: 6**
Are all employees working with woodworking machines been provided with the necessary PPE including hearing protectors and are they used?

Audit Criteria

- Auditor should comment on the personal protective equipment such as ear protectors, dust mask, etc. provided to workers involved in woodworking even though there was no operation being carried during the physical verification.
- If there is no issue record of personal protective equipment for woodworkers, the answer should be “NO”.
- The answer may be “N/A” if no activity was carried during physical verification provided auditor had verified the provision of personal protective equipment to the workers.

Question 14.3.5.10

Weighting: 3

Have safety checklists developed and used for monitoring the safe operation of woodworking machinery including hand held circular saw and chain saw?

Audit Criteria

- Safety checklist should cover the items of operative, before use, in use and after use of woodworking machinery.

Part 14.3.6

Abrasive Wheels

Question 14.3.6.1

Weighting: 3

Have all requirement in all regulation, codes of practices and safety information in the use of abrasive wheels been identified?

Audit Criteria

- FACTORIES AND INDUSTRIAL UNDERTAKINGS (ABRASIVE WHEELS) REGULATIONS

Question 14.3.6.2

Weighting: 3

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the abrasive wheels?

Audit Criteria

- 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, manufacture and testing by abrasive wheel and machine makers must be coupled with the

adoption of safety measures by the users. Accident statistics indicate that nearly half of all accidents involving abrasive wheels are due to an unsafe system of work or operator error.

- Eye injuries.
- Noise hazard.

Question 14.3.6.3

Weighting: 3

Have all users of abrasive wheels been trained, instructed of the hazards and precautions on safe use?

Audit Criteria

- Training through the safety working cycle, in-house, tool-box talks etc.

Question 14.3.6.4

Weighting: 6

Have all mounters of abrasive wheels been trained in accordance with the requirements of the Factories and Industrial Undertakings (Abrasive Wheels) Regulations, been assessed as competent and been given written authority to carry out their work?

Audit Criteria

- 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 14.3.6.5

Weighting: 6

Have all grinding/cutting machines for the work marked with the maximum working speed?

Audit Criteria

- 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.

Question 14.3.6.6

Weighting: 6

Are all abrasive wheels adequately guarded?

Audit Criteria

- 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.
- 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.
- 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 14.3.6.7

Weighting: 6

Are all abrasive wheels or discs selected for their suitability and are they marked with their maximum permissible speed?

Audit Criteria

- 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 80 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 80 mm in diameter or less should be stated in a notice posted in a position where it can easily be read.

Question 14.3.6.8

Weighting: 6

Have the statutory warning notice in respect of use of abrasive wheel been posted at every grinding wheel?

Audit Criteria

- Statutory warning notice posted.

Question 14.3.6.9

Weighting: 6

Are all abrasive wheels or discs properly examined, handled and stored?

Audit Criteria

- 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.
- 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.
- Suitable racks, bins or compartmented drawers should be provided to accommodate the various types of wheels used.

Question 14.3.6.10

Weighting: 6

Have PPE been provided to all users of abrasive wheels and are they used?

Audit Criteria

- Auditor should comment on the personal protective equipment provided to the users even though there was no operation being carried during the physical verification.
- If there is no issue record of personal protective equipment for all users, the answer should be "NO".
- The answer may be "N/A" if no activity was carried during physical verification provided auditor had verified the provision of personal protective equipment to the users.

Question 14.3.6.11

Weighting: 3

Have safety rules and safety checklists developed and used for monitoring the safe operation of abrasive wheels and discs?

Audit Criteria

- Safety checklist should cover the items of operative, before use, in use and after use of grinding/cutting machines

Part 14.3.7 Hand-held Power Tools

Question 14.3.7.1 **Weighting: 3**

Have all the requirements in regulations, codes of practice and safety information for hand-held power tools identified?

Audit Criteria

- FACTORIES AND INDUSTRIAL UNDERTAKINGS (ABRASIVE WHEELS) REGULATIONS
- FACTORIES AND INDUSTRIAL UNDERTAKINGS (CARTRIDGE-OPERATED FIXING TOOLS) REGULATIONS
- Adequate information relating to the safe and proper use of powered portable tools must be provided.
- Hand-held power tools whether powered electrically, by internal combustion engines, hydraulically or by compressed air.

Question 14.3.7.2 **Weighting: 3**

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the hand-held power tools?

Audit Criteria

- Eyes injuries, noise and vibration, and dusts.
- Contact of revolving parts of the tools.
- Use in atmosphere containing flammable vapours, flammable gases or explosive dusts.
- Bursting of abrasive wheels, hit by fire fixings etc.

Question 14.3.7.3 **Weighting: 6**

Is there a procedure to inspect and repair/replace hand-held power tools including those operated by electric, pneumatic, petrol, cartridge regularly and a record maintained?

Audit Criteria

- Spot checks or tests before starting of work under Safety Working Cycle.
- There is a procedure for inspecting and repairing/replacing of hand-held power tools.
- Hand-held power tools comply with regulations.

Question 14.3.7.4 **Weighting: 3**
Have all operators been instructed and trained in the proper care and use of hand-held power tools?

Audit Criteria

- All operatives know the safety regulations bearing on their activities, and their own responsibilities.
- Safety instructions including in-house safety rules are given through the safety working cycle activities to all operators.

Question 14.3.7.5 **Weighting: 3**
Have all operators who use the specific hand-held power tools such as cartridge-operated fixing tools, chainsaw, stapling gun and abrasive grinder been trained/certificated as appropriate?

Audit Criteria

- All operators of these specific hand-held power tools are trained, holding the certificates as required by law or special trainings by tools suppliers etc and aware of hazards (identified in risk assessment) associated with its operation.

Question 14.3.7.6 **Weighting: 6**
Have safety rules and safety checklists developed and used for monitoring the safe operation of hand-held power tools?

Audit Criteria

- Specific tools are issued to and used only by authorized persons.
- Safety checklist should cover the items of operative, before use, in use and after use and checks show hand-held power tools are used safely.

Question 14.3.7.7 **Weighting: 6**
Are appropriate protective clothing/equipment been issued to operators of

hand-held power tools and their use ensured?

Audit Criteria

- Auditor should comment on the personal protective equipment provided to operators even though there was no operation being carried during the physical verification.
- If there is no issue record of personal protective equipment for the operators, the answer should be “NO”.
- The answer may be “N/A” if no activity was carried during physical verification provided auditor had verified the provision of personal protective equipment to the operators.

Sub-section 14.4 Management of Plant and Equipment for movement of material and persons

Part 14.4.1 Tower Crane

Question 14.4.1.1 **Weighting: 3**

Have all the requirements in regulations, codes of practice and safety information for tower crane been identified?

Audit Criteria

- FACTORIES AND INDUSTRIAL UNDERTAKINGS (LIFTING APPLIANCES AND LIFTING GEAR) REGULATIONS.
- “Code of Practice for Safe Use of Tower Cranes”, published by the Labour Department.
- “Guidelines on Safety of Tower Cranes”, published by the Construction Industry Council (CIC).
- site specific work instructions, including operational plan, site plans, specifications, quality requirements and operational details are obtained and confirmed.
- Tower 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.
- Code of practice on wind effects Hong Kong -1983 issued by the Building Authority.

Question 14.4.1.2 **Weighting: 3**

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the tower crane?

Audit Criteria

- Risk assessment in good time before the commencement of any operation on tower cranes to identify the hazards inherent in the operation and the hazards which could result from adjacent activities. The assessment should be conducted by a safety professional (e.g. a Registered Safety Officer) and Registered Professional Engineers with suitable qualification and experience in appropriate disciplines should be consulted on issues related to structural and mechanical stability.
- Assessment should take account of local conditions. Issues to be considered could include:
 - access routes for vehicles and people including highways, railways, rivers and air paths;
 - ground bearing capacity;
 - free unloading & storage areas (e.g. for the climbing frame and new mast sections);
 - segregation of the work area from other construction activities and public spaces;
 - proximity hazards such as adjacent cranes, overhead electric lines, underground services, nearby structures and stacked materials;
 - local arrangements for obtaining detailed weather forecasts for the site;
 - the maximum wind speed to be permitted and likely variations in wind speed and direction in that location;
 - the specification of ties to the structure and likely effect on verticality and unrestrained mast height;
 - arrangements for communication.
- Physical conditions on the site or adjacent area changed which require the risk assessment to be reviewed.
- Chinese version of the risk assessment report should be made available on site for reference by Specialist Contractors engaged in tower crane operations.

Question 14.4.1.3

Weighting: 3

Has the report of the risk assessment for the tower crane operation including method statement and manufacturer's manual?

Audit Criteria

- The risk assessment should inform the planning process for each climbing job at a site. The assessment, taken together with the climbing instructions provided by the manufacturer or supplier, should then be used to develop a detailed statement of work procedures (method statement) for the safe transportation, assembly, erection, use and dismantling of the climbing frame at that site.
- The method statement will explain in detail the safe system of work for the operation and should as a minimum cover the following topics
 - details of the construction site and construction works including a site layout plan;
 - general safety measures for the works;
 - pre-construction plan;
 - operating procedures with key points illustrated by diagrammatic illustrations;
 - personal protective equipment; and
 - safety measures for the operation and procedures to be followed in case of emergency situation.
- Enclose a copy of the manufacturer's manual in the risk assessment report.

Question 14.4.1.4

Weighting: 3

Has pre-delivery checking by a CME conducted before the tower crane delivered onto the site?

Audit Criteria

- "Competent Mechanical Engineer" (CME) means a Registered Professional Engineer registered under the Engineers Registration Ordinance (Cap 409) in the Mechanical Engineering or Naval Architecture & Marine discipline.
- CME should issue the following documents for the checking –
 - (a) Report on Pre-delivery Verification of Components; and
 - (b) Report on Pre-delivery CheckingThe Report on Pre-delivery Checking of Tower Crane is valid for 12 months.
- The anchorage of the tower crane should also be certified by a CME before the tower crane may be erected.

Question 14.4.1.5

Weighting: 3

Has a Safety Supervision Personnel appointed to certify the adequacy of the design of the temporary works for supporting and anchoring the crane?

Audit Criteria

- “Safety Supervision Personnel” means the “Technically Competent Person of Grade T5” (TCP T5) who possesses the academic or professional qualifications and experience of building works or street works that satisfy the requirements set out in the Code of Practice for Site Supervision issued by Buildings Department for a particular type of site supervision or management tasks; or the person responsible for engineering safety supervision as specified in the works project(s) of the government departments of the Hong Kong Special Administrative Region, as the case may be.
- Appoint a Safety Supervision Personnel to certify the plans, design information and/or method statement of the works which are to be submitted to the Project Engineer. The person so appointed will also certify the completion of works.

Question 14.4.1.6

Weighting: 3

Has a supervising engineer appointed in writing to supervise on site the operations (erection, telescoping and climbing, dismantling) of tower cranes and engaged specialist contractors for the operations?

Audit Criteria

- A supervising engineer must directly supervise on site the operations (erection, telescoping and climbing, dismantling) of tower cranes except in the period where there is no such operation.
- The appointment letter of supervising engineer should mention the model of tower crane at the site and its identification and site location.
- The appointment letter is valid on site basis. Details of appointment of the supervising engineer with his/her name and contact phone number should be clearly posted up at the prominent place near the tower crane.
- Engaged Specialist Contractors registered on the specialty of “Erection, dismantling and climbing” (Code 4.1.1) of the Tower Crane trade of the Voluntary Subcontractor Registration Scheme (the VSRS) administered by CIC to execute tower crane operations. Specialist Contractors should possess relevant experience and sufficient technical capability and directly employ at least one (1) Competent Person and three (3) Senior Workmen with appropriate skills and experience.

Question 14.4.1.7 **Weighting: 3**
Has thoroughly examination and load test conducted to verify the tower crane is fit to use after completion of each operation in pre-use verification?

Audit Criteria

- A CME to conduct a thorough examination and a load test to verify that the tower crane is fit for use.
- The anchorage of the tower crane should also be certified by a CME before the tower crane may be used.

Question 14.4.1.8 **Weighting: 3**
Has an inspection and maintenance system tower crane established and used?

Audit Criteria

- Inspection and maintenance technician(s) holding “the Training Certificate of Routine Inspection and Maintenance of Tower Cranes” to perform inspection and maintenance for the tower crane(s) erected on construction site at least once a month.
- 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.
- Provision of a log-book for competent examiner/competent person to enter the details of testing, examination, inspection, maintenance/repair works.

Question 14.4.1.9 **Weighting: 9**
Has standards required of safe operation of tower crane been established and specific site crane induction been given to all person engaged in crane lifting operations?

Audit Criteria

- Standards required including:
 - Lifting plans
 - Slinging techniques
 - Hand signals
 - Radio communication
 - Lift supervision
 - Wind speed policy
 - Anti collision and zoning arrangements

- CCTV and demarcation of lifting zones
- Persons engaged in crane lifting operations including Slinger Signalers, Crane Supervisors, Crane Coordinators , Operators, Appointed Persons and relevant managers should attend a specific site crane induction.

Question 14.4.1.10

Weighting:

9

Has system of work been established to prevent collision of tower cranes on site?

Audit Criteria

- Risk assessment should be carried out to identify hazards of collisions, along with suitable safety precautionary measures and safe method statements implemented and strictly followed.
- If overlapping zone cannot be avoided, a safe system of work comprising precautionary measures and safe method statements should be developed to prevent tower cranes from colliding, including coordination among parties on arrangement of work area and work schedule, installation of anti-collision system etc.
- Extra attention to the following in regard to using anti-collision system–
 - For overlapping zone straddling more than one construction site, contractors involved should communicate with one another before commencing works. Proper safe system of work on the use of tower cranes should be developed. Ensure that the anti-collision system installed must be communicable among each other (e.g. from the same supplier).
 - Manufacturer’s instructions and manual including proper installation, calibration, testing, inspection, maintenance and use of the anti-collision system must be followed.
 - Continuous audible and visual signal should be provided at the tower crane operator’s cabin to remind the operator to slow down crane movement when approaching a zone with possible risks of collision.
 - Setting of anti-collision system should be carried out by a competent person (e.g. technician from the supplier / trained personnel on site) after alteration of tower cranes.
 - Physical performance of tower cranes should be considered during setting, e.g. braking time and distance, to ensure that the tower cranes can be stopped without collision after receiving signals from the anti-collision system. Appropriate safe distance should be calculated and maintained.

- Detailed work planning should be developed to reduce the frequency of entering the overlapping zones, where possible e.g. by arranging alternative locations of lifting operations using the tower cranes.
- An effective communicating system solely for these tower cranes should be provided for the lifting operations.
- Ensure that the anti-collision system is in use at all times. If by-pass function is to be activated for special operations, e.g. crane testing, special operations in protected zone, a permit to work system should be developed for such operation, which must be closely supervised and monitored. The by-pass key should not be directly controlled by the tower crane operator and should be kept by a responsible person on site.
- Ensure that the anti-collision system is in good working condition at all times. Regular checking of anti-collision system by a competent person e.g. trained mechanics should be arranged and the record should be kept for monitoring.

Question 14.4.1.11

Weighting: 9

Have personnel engaged competent to examine, test and operate the tower crane safely in lifting?

Audit Criteria

- Competent Examiner:
 - i. The Competent Examiner shall be a registered professional engineer registered under the Engineers Registration Ordinance within the discipline of Mechanical Engineering and 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 tower crane as required by the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations.
- Tower Crane Operator:
 - i. The tower crane operator(s) shall hold qualifications and possess relevant experience as specified in the Code of Practice for Safe Use of Tower Cranes issued by Labour Department;
 - ii. The tower crane operator(s) shall be competent to operate the tower cranes in accordance with Code of Practice for Safe Use of Tower 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. LMI devices are an important safety feature on modern cranes.
- Slinger (Construction Materials Rigger):
 - i. The slinger(s) shall possess relevant experience as specified in the Code of Practice for Safe Use of Tower Cranes issued by Labour Department;
 - ii. The slinger(s) shall be competent to attach and detach the load to and from the tower crane, and to use the lifting gear correctly in accordance with the planning of the operation;
 - iii. The slingers should work in pair inside the lifting zone.
- Signaler:
 - i. The signaler(s) shall possess relevant experience as specified in the Code of Practice for Safe Use of Tower Cranes issued by Labour Department;
 - ii. The signaler(s) shall be competent to carry out duties in accordance with the Code of Practice for Safe Use of Tower Cranes issued by Labour Department;
 - iii. The role of signaler can be taken up by slinger possessing relevant experience in carrying out the duties.

Question 14.4.1.12

Weighting: 3

Have safety rules and safety checklists been developed and used for monitoring the safe operation of tower crane?

Audit Criteria

- Safety checklist should cover checking items prior to commencement of work and whilst work is in progress.
-

Part 14.4.2

Mobile Crane

Question 14.4.2.1

Weighting: 3

Have all the requirements in regulations, codes of practice and safety information for mobile crane been identified?

Audit Criteria

- "Code of Practice for Safe Use of Mobile Cranes", published by Labour Department.

- FACTORIES AND INDUSTRIAL UNDERTAKINGS (LIFTING APPLIANCES AND LIFTING GEAR) REGULATIONS.
- 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.
- Code of practice on wind effects Hong Kong -1983 issued by the Building Authority.

Question 14.4.2.2

Weighting: 3

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the mobile crane?

Audit Criteria

- Injuries and deaths of workers exposed to mobile crane tip-over, boom collapse, and uncontrolled hoisted loads.
- 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;
 - the crane(s) is mounted on floating barges;
 - loads are lifted close to powerlines; and
 - high winds or other environmental conditions are present.
- 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 14.4.2.3

Weighting: 3

Have lift plans which based on risk assessment of the accurate information available for all factors affecting mobile crane stability in the site been developed?

Audit Criteria

- Critical lift plans should be in writing. Because 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.

- To prevent crane tip-over, the critical lift 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.
- Procedures to be followed in case of emergency situation.

Question 14.4.2.4

Weighting: 9

Has standards required of safe operation of mobile crane been established and used with specific site crane induction been given to all person engaged in crane lifting operations?

Audit Criteria

- Standards required including:
 - Lifting plan.
 - Cranes must be located on solid, stable ground capable of supporting the weight of the crane plus the suspended load.
 - 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.
 - Operating at or near crane capacity, operating without outriggers fully extended, operating on unstable ground conditions.
 - 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 carry person

Question 14.4.2.5

Weighting: 9

Have personnel engaged competent to examine, test and operate the mobile crane safely in lifting?

Audit Criteria

- Competent Examiner:
 - i. The Competent Examiner shall be a registered professional engineer registered under the Engineers Registration Ordinance within the discipline of Mechanical Engineering and 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.
- 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. LMI devices are an important safety feature on modern cranes.
- 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 planning of the operation;

- iii. The slingers should work in pair inside the lifting zone.
- Signaler:
 - i. The signaler(s) shall possess relevant experience as specified in the Code of Practice for Safe Use of Mobile Cranes issued by Labour Department;
 - ii. The signaler(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 role of signaler can be taken up by slinger possessing relevant experience in carrying out the duties.
- Erection or dismantling operation of mobile crane should be supervised by a competent person.

Question 14.4.2.6 **Weighting: 3**
Has an inspection and maintenance system mobile crane established and used?

Audit Criteria

- 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.
- Provision of a log-book for competent examiner/competent person to enter the details of testing, examination, inspection, maintenance/repair works.

Question 14.4.2.7 **Weighting: 3**
Have safety rules and safety checklists been developed and used for monitoring the safe operation of mobile crane?

Audit Criteria

- Safety checklist should cover checking items prior to commencement of work and whilst work is in progress.

Part 14.4.3 Gondola (Suspended Working Platform)

Question 14.4.3.1 **Weighting: 3**
Have all the requirements in regulations, codes of practice and safety information for gondola been identified?

Audit Criteria

- Code of Practice for Safe Use and Operation of Suspended Working Platforms

- FACTORIES AND INDUSTRIAL UNDERTAKINGS (SUSPENDED WORKING PLATFORMS) REGULATION
- Code of practice on wind effects Hong Kong -1983 issued by the Building Authority – designed to withstand the sustained wind speed up to 14 metres per second and gust up to 31 metres per second.

Question 14.4.3.2

Weighting: 3

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the gondola?

Audit Criteria

- Gondola came off the haul/suspension rope
- Fell from gondola
- Strong wind
- Falling objects
- Safe means of egress and access
- Stability of roof rig

Question 14.4.3.3

Weighting: 3

Have planning of operation which based on risk assessment of the accurate information available for all factors affecting gondola stability in the site been developed?

Audit Criteria

- Selection of a suitable gondola for the type of the job and the working environment.
- Method of installation and means of securing the stability of the suspended working platform.
- The details of anchorage and support of a gondola that may affect the structural integrity of the building should be submitted to the Housing Department or 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.

- When roof fixings of a permanent suspended working platform are relied on to ensure stability, the factor of safety against overturning should be at least 3. The roof and fixings should then be designed according to the design stresses appropriate to the materials. The design and construction of the roof fixing should be approved by a professional engineer.
- 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.
- 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.
- Emergency stop device should be located at each operator control station and other places where emergency stop may be required.
- 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.

Question 14.4.3.4

Weighting: 6

Has standards required of safe operation of gondola been established and used with specific site gondola induction been given to all person engaged in gondola operations?

Audit Criteria

- Every person working on the working platform receives suitable training and possesses a certificate of training.
- Provision of personal protective equipment and communication system between the person on the working platform and the person in charge of the operation.
- Termination of the use of the suspended working platform during unsafe condition.
- Emergency preparedness including the recovery procedure of the plant and the personnel staying on the working platform.
- 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.
- Properly take care of hand tool and equipment.

- 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.
- All wire ropes shall be inspected prior to commencement of daily work.
- Every person riding on a suspended working platform shall wear a safety belt properly attached to an independent lifeline or an appropriate anchorage.
- 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.

Question 14.4.3.5 **Weighting: 6**

Have personnel engaged competent to examine, test and operate the gondola safely?

Audit Criteria

- Testing and thorough examination of the suspended working platform by a competent examiner.
- A competent person for erection, repositioning and dismantling of the gondola.
- 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.

Question 14.4.3.6 **Weighting: 3**

Has an inspection and maintenance system for gondola been established and used?

Audit Criteria

- Prior to commencement of daily work, all the suspension ropes and safety ropes should be inspected by a competent person.
- Every gondola should be inspected in the immediately preceding 7 days before its use by a competent person.

- Provision of periodic maintenance of the gondola, including on-site maintenance.
- Provision of operation and maintenance manual, log book, repair record, and certificates of test and thorough examination of the gondola.

Question 14.4.3.7 **Weighting: 3**

Have safety rules and safety checklists been developed and used for monitoring the safe operation of gondola?

Audit Criteria

- Safety checklist should cover checking items prior to commencement of work and whilst work is in progress.

Part 14.4.4 Power-operated Elevating Working Platform

Question 14.4.4.1 **Weighting: 3**

Have all the requirements in regulations, codes of practice and safety information for power-operated elevating working platform been identified?

Audit Criteria

- “Guidance Notes on Safe Use of Power-operated Elevating Work Platforms”, published by the Labour Department.
- Construction Sites (Safety) Regulations
- 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.
- Manufacturer’s manuals and logbook.

Question 14.4.4.2 **Weighting: 3**

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the power-operated elevating working platform?

Audit Criteria

- The working environment, the ground condition and the limitations of the type of mobile elevating work platform should be considered.

- Other hazards including unauthorized operation, the width and the gradients of the slope, ineffective maintenance, overloading or misuse.
- Fell from the platform. It is strongly recommended that a safety harness is worn by workers working from a power-operated elevating working platform. It should be attached to a secure anchorage point within the platform.
- In areas of very high public access, a risk assessment may indicate that additional controls (e.g. barrier tape, barriers, extra manning) are required.
- Overhead power lines.
- Work on or near the highway.
- Wind speeds exceed the manufacturer's recommendations, or there is a risk of unplanned movements or platform overturn.
- Collision with obstructions or other vehicle.
- Risk of entrapment as a result of inquisitive people getting too close or underneath. Scissor lifts particularly are hazardous.
- Additional interlocks or guards may be necessary to prevent the operation of or any tampering with ground level controls by unauthorized persons.

Question 14.4.4.3

Weighting: 6

Has standards required of safe operation of power-operated elevating work platform been established and used with specific site induction been given to all person engaged in power-operated elevating work platform operations?

Audit Criteria

- The safe working load specified by the manufacturer must not be exceeded. SWL should be specified for all conditions of height and reach.
- Steps, ladders, hop-ups or boxes must never be used on the platform to gain extra reach or height.
- 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.
- Ground is firm and will support loading.
- Travel with the platform occupied or boom extended should only be undertaken when this mode of operation is within the machine's specified capabilities.
- A signaller or responsible person is employed if necessary.
- Warning and safety devices including reversing alarm and CCTV device, flashing lights and horns are provided.
- 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.
- Must not be used in wind speeds exceeding that specified by the manufacturer.
- 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.

Question 14.4.4.4

Weighting: 6

Have personnel engaged competent to examine, test and operate the power-operated elevating work platform safely?

Audit Criteria

- 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.
- The operator should carry out a pre-operation inspection to ensure that the power operated elevating work platform is in a serviceable state.
- A competent mechanic or the operator, if authorized and competent, should conduct the weekly inspection.
- 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.
- 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 14.4.4.5

Weighting: 3

Has an inspection and maintenance system for powered-operated elevating work platform been established and used?

Audit Criteria

- 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.
- Periodic servicing/inspection should be carried out on certain components or mechanisms according to the manufacturer's operation and maintenance manuals.
- 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.
- The maintenance logbooks and records should be readily available for reference and examination.
- 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 14.4.4.6

Weighting: 3

Have safety rules and safety checklists been developed and used for monitoring the safe operation of power-operated elevating work platform?

Audit Criteria

- Safety checklist should cover checking items prior to commencement of work and whilst work is in progress.

Part 14.4.5

Material Hoist

Question 14.4.5.1

Weighting: 3

Have all the requirements in regulations, codes of practice and safety information for material hoist been identified?

Audit Criteria

- FACTORIES AND INDUSTRIAL UNDERTAKINGS (LIFTING APPLIANCES AND LIFTING GEAR) REGULATIONS
- 'A Guide to the Provisions for Safe Use of Hoists under the Construction Sites (Safety) Regulations', published by the Labour Department.

- “Safe Use of Material Hoist – Interlocking Device on Hoistway Gate”, published by the Labour Department.

Question 14.4.5.2

Weighting: 3

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the material hoist?

Audit Criteria

- The principle dangers are of falling down the hoistway from a landing on the platform, being struck by the platform/skip or other moving parts, and being hit by materials falling down the hoistway.
- Free fall operation.
- Fell to ground during erecting and dismantling.
- Fail to maintain the hoist vertical.

Question 14.4.5.3

Weighting: 6

Has standards required of safe operation of material hoist been established and used with specific site induction been given to all person engaged in material hoist operations?

Audit Criteria

- A substantial enclosure should be erected at ground level around the hoistway to a height of at least 2 m.
- The remainder of the hoistway should be enclosed throughout its height sufficiently to contain falling material within the enclosure.
- Provide secure gates at all landings and at ground level and ensure that fail-safe interlocking hoistway gates are installed.
- Keep the hoist gate closed when loading or unloading is not in progress.
- Provide an efficient automatic device to prevent the platform or skip of a hoist from over-running the highest point of the travel.
- Make effective signaling arrangements for a hoist operator.
- A hoist shall be so constructed that it can be operated only from one position at any one time.
- Construct the winch of a hoist to prevent free fall.
- Mark, or affix to the hoist a clear and legible notice stating the prohibition of the carriage of persons and the safe working load.

- A receptacle used in connection with a hoist, or lifting gear, for raising or lowering stone, bricks, tiles, slates, or other objects, shall be so enclosed, or constructed or designed, as to prevent the accidental fall of any of such objects.

Question 14.4.5.4

Weighting: 6

Have personnel engaged competent to examine, test and operate the material hoist safely?

Audit Criteria

- A hoist shall be operated by a workman who is –
 - (a) 18 years of age or above; and
 - (b) trained and competent to operate it.
- A hoist may be operated by a workman not so qualified if the operation is supervised by a qualified workman.
- Only workman of 18 years of age or above shall be employed to give signals to the driver of a hoist.
- Material hoist is tested and examined by competent examiner every six months.

Question 14.4.5.5

Weighting: 3

Has an inspection and maintenance system for material hoist been established and used?

Audit Criteria

- Material hoist is inspected at least once in each week by competent person.
- Periodic servicing/inspection should be carried out on certain components or mechanisms according to the manufacturer's operation and maintenance manuals.
- The maintenance logbooks and records should be readily available for reference and examination.

Question 14.4.5.6

Weighting: 3

Have safety rules and safety checklists been developed and used for monitoring the safe operation of material hoist?

Audit Criteria

- Safety checklist should cover checking items prior to commencement of work and whilst work is in progress.

Part 14.4.6 Power-driven Lifting Appliance for Carry Person, builders' Lift and tower Working Platform

Question 14.4.6.1 **Weighting: 3**

Have all the requirements in regulations, codes of practice and safety information for crane for carrying person and passenger hoist and tower working platform been identified?

Audit Criteria

- FACTORIES AND INDUSTRIAL UNDERTAKINGS (LIFTING APPLIANCES AND LIFTING GEAR) REGULATIONS
 - The design, construction, installation, maintenance, test, examination and use of any builder lift and tower working platform in Hong Kong are governed by the Builder's Lifts and Tower Working Platforms (Safety) Ordinance and to be approved by the Director of Electrical and Mechanical Services.
 - Code of Practice on the Design and Construction of Builder's Lift.
-

Question 14.4.6.2 **Weighting: 3**

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of the material hoist?

Audit Criteria

- Person falling out or being trapped.
 - Accesses to landings required for use have been made safe by provision of handrails and overhead protection where required.
 - No installation of a builder's lift or tower working platform should be carried out unless approved by the Director of Electrical and Mechanical Services.
 - Lift collapsed.
-

Question 14.4.6.3 **Weighting: 6**

Has standards required of safe operation of power-driven lifting appliance for carry person, builder's lift or tower working platform been established and used with specific site induction been given to all person engaged in operations?

Audit Criteria

- Where a person is raised, lowered or carried by means of a power-driven lifting appliance other than using a builder's lift or tower working platform to which the Builders' Lifts and Tower Working Platforms (Safety) Ordinance applies or a suspended scaffold, the person shall be carried in a suitable chair, cage, skip or

- other receptacle at least 900 mm deep.
- Where a person is carried in a boatswain's chair or other similar plant or equipment less than 900 mm deep, a suitable safety belt attached to an independent lifeline shall be provided to and worn by the occupant and the lifeline shall be securely suspended.
 - Suitable measures shall be taken to prevent a chair, cage, skip or other receptacle used in raising, lowering or carrying a person from spinning or tipping in a manner dangerous to the occupant.
 - Every hook fitted to a power-driven lifting appliance used in raising, lowering or carrying a person in a chair, cage, skip or other receptacle shall be so designed and maintained as to prevent the accidental displacement of such chair, cage, skip or other receptacle from the hook.
 - No installation of a builder's lift or tower working platform should be carried out unless approved by the Director of Electrical and Mechanical Services.
 - No person should be carried by a builder's lift unless it is provided with
 - Gates that shut to prevent persons falling out or being trapped between cage and any other part
 - An efficient interlocking device which ensures that gates can only be opened when cage is at the landing place, and that the lift cage cannot be moved until gate is closed
 - An efficient automatic over-run device to ensure the lift cage will come to rest at its lowest point of travel.
 - Cage of builder's lift must carry a notice station the safe working load and the maximum number of passengers that can be carried.
 - The hoistways must be protected by a substantial enclosure at ground level, at all access points and wherever persons could be struck by any moving part.

Question 14.4.6.4

Weighting: 6

Have personnel engaged competent to examine, test and operate the power-driven lifting appliance for carry person, builder's lift or tower working platform safely?

Audit Criteria

- The owner should, at all times, retain the services of a registered contractor and must ensure that no lift work is carried out except under the supervision of a registered contractor or a registered examiner.
- 'Lift work' means any kind of work connected with the installation, commissioning, testing, maintenance, repair, alteration or demolition of a builder's lift or tower working platform.

- All 'contractors' and 'examiners' for lift works must be registered with the Director of Electrical and Mechanical Services.
- No person should carry out lift work other than -
 - (a) a registered examiner;
 - (b) an individual who is -
 - i. a registered contractor and is a competent worker; or
 - ii. a member of a partnership that is a registered contractor, and is a competent worker;
 - (c) a competent worker employed by a registered contractor; or
 - (d) a worker directly supervised, at the site where the lift work is being carried out, by a person referred to in (a), (b) or (c).
- The owner should ensure that the builder's lift or tower working platform is operated by competent operators.
- From 1996, in response to the introduction of the requirement of competent operators on Builder's Lifts stipulated under the Builders' Lifts and Tower Working Platform (Safety) Ordinance by the Electrical and Mechanical Services Department, the Construction Industry Council Training Academy (previously the C-I-T-A) has been conducting the Certification Course for Operator of Builders' Lift.

Question 14.4.6.5

Weighting: 3

Has an inspection and maintenance system for power-driven lifting appliance for carry person, builder’s lift or tower working platform been established and used?

Audit Criteria

-

Nature of Work	When should it be carried out ?	Who should carry it out
<p>Test and Examination</p>	<p>a. after each installation (or reinstallation) b. after major alterations c. after alteration of height of travel d. at intervals not exceeding 6 months</p>	<p>Registered examiner</p>

Maintenance	routine maintenance at intervals not exceeding 7 days	Registered contractor
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- A registered contractor should retain a log book recording any repairs, overhaul and routine maintenance that have been carried out.

Question 14.4.6.6

Weighting: 3

Have safety rules and safety checklists been developed and used for monitoring the safe operation of power-driven lifting appliance for carry person, builder’s lift or tower working platform?

Audit Criteria

- Safety checklist should cover checking items prior to commencement of work and whilst work is in progress.

14.5 Management of Mechanical Plant and Equipment

14.5.1 Site Transport (loadshifting machinery)

Question 14.5.1.1

Weighting: 3

Is there a procedure to ensure the safety of site vehicle and have all requirements in safety information, regulations and codes of practices been identified?

Audit Criteria

- When vehicle is constantly moving on or around a site, the factors which create hazards and cause accident may be more difficult to anticipate and eliminated. Therefore, restricting the movement of site traffic to fixed routes and access points will be a good practice to use rules and procedures in plant operation.
- The Factories and Industrial Undertakings (Loadshifting Machinery) Regulation applicable 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.
- Guidelines on Safety of Site Vehicles issued by CIC

Question 14.5.1.2

Weighting: 3

Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of site transport?

Audit Criteria

- People being struck by or run over by a vehicle.
- People being struck by something falling from a vehicle.
- People falling from vehicles.
- Vehicles overturning
- Vehicles are particularly dangerous when they are reversing, because it can be difficult for drivers to see what is going on behind them.

Question 14.5.1.3

Weighting: 3

Have all drivers of site transport vehicles been licensed for the class of vehicles irrespective whether the vehicles have to go onto public roads?

Audit Criteria

- Operator of a loadshifting machine has attained the age of 18 years; and holds a valid certificate applicable to the type of loadshifting machine to which that machine belongs.
- Vehicles used off-site must comply with current vehicle licensing regulations.
- A valid driving licence issued under the Road Traffic Ordinance (Cap 374) of the class to which the truck or lorry belongs.
- Licensing systems can be a useful way of controlling the work activities of contractors and subcontractors. Licences to operate on site are issued for certain periods, and are only renewed if contractors have behaved satisfactorily.

Question 14.5.1.4

Weighting: 6

Has standards required of site transport safety been established and used with specific site induction been given to all person engaged in site activities?

Audit Criteria

- 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:
 - the arrange transport and use of fuel and other flammable materials;
 - the routes to be used;
 - the vehicles and equipment on site;
 - specific hazards; and
 - other people on site, including other contractors, visiting drivers.

- Printing 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.
- Site rules may include:
 - restrictions on the type or size of vehicle the site can safely handle;
 - restrictions on when goods should be delivered or collected;
 - 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;
 - a site plan or sketch showing parking, where the reception is, the route to take through the site, and where loading or unloading areas are;
 - where visiting vehicles should park when arriving, where drivers should report to and any other instructions for the driver;
 - 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;
 - what to do if a load appears to have shifted dangerously in transit;
 - 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);
 - 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;
 - 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;
 - 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
 - contact details for the other people involved in case there are problems.

Question 14.5.1.5

Weighting: 3

Has an inspection and maintenance system for site transport vehicles been established and used?

Audit Criteria

- All vehicles are properly maintained and safe to operate;

- Undertake regular maintenance and vehicle checks in accordance with the manufacturer's recommendations;
- Operate an effective system for reporting, and taking any required action on, any defects that occur.

Question 14.5.1.6 **Weighting: 3**
Have safety rules and safety checklists been developed and used for monitoring the site transport safety?

Audit Criteria

- Safety checklist should cover checking 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.

14.5.2 Excavator

Question 14.5.2.1 **Weighting: 3**
Is there a procedure to ensure the safety of excavator and have all requirements in safety information, regulations and codes of practices been identified?

Audit Criteria

- FACTORIES AND INDUSTRIAL UNDERTAKINGS (LIFTING APPLIANCES AND LIFTING GEAR) REGULATIONS.
- "Code of Practice on Safe use of Excavators" published by Labour Department.
- Road Traffic (Traffic Control) Regulation (Cap. 374 sub.leg.)

Question 14.5.2.2 **Weighting: 3**
Have risk assessments to identify any foreseeable hazards, assess their risks, and recommend action to eliminate or control risks of an excavator?

Audit Criteria

- Most fatal and serious injuries involving excavators occur when the excavator is:
 - Moving – and strikes a worker, particularly while reversing;
 - Slewing – trapping a person between the excavator and a fixed structure or vehicle; or

- Working – when the moving bucket or other attachment strikes a worker or when the bucket inadvertently falls from the excavator.

Question 14.5.2.3

Weighting: 6

Has standards required of excavator safety been established and used with specific site induction been given to all person engaged in site activities?

Audit Criteria

- People should be kept away from areas of excavator operation by the provision of suitable barriers. Most excavator related deaths involve a person working in the vicinity of the excavator rather than the driver.
- When slewing in a confined area the selection of plant with minimal tail swing is preferred. Clearance of over 0.6m needs to be maintained between any part of the machine, particularly the ballast weight, and the nearest obstruction.
- Excavators with the best view around them directly from the driver position should be selected. Excavators should be equipped with adequate visibility aids to ensure drivers can see areas where people may be at risk from the operation of the machine.
- A trained signaler (banksman) should be provided in a safe position to direct excavator operation and any pedestrian movements.
- Quick hitches can be used to secure buckets to the excavator arm to prevent accident occurred when the bucket has fallen from the machine.
- When traveling on a slope, excavator should be driven straight up and down the slope at low speed.

Question 14.5.2.4

Weighting: 6

Has excavator used on site been provided with adequate safety features in accordance with the risk assessment?

Audit Criteria

- Proper and safe means of access and egress.
- Sufficient aids of visibility such as mirrors, ultrasonic devices, TV devices etc.
- Fitted with illumination lights.
- 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.

- Excavator fitted with RPOS and TOPS should provide operator restraint system and an emergency exit – door opens in another direction.
- Warning signs affixed on machine to alert users on potential hazards at different locations of the machine.

Question 14.5.2.5

Weighting: 3

Has safety operation procedures been established when using an excavator for lifting operation?

Audit Criteria

- Designated lifting point should be available from the original manufacturer on its bucket, arm or boom for attaching of lifting ear.
- Testing, thoroughly examination and inspection of the excavator and lifting gear
- The excavator should be positioned on solid and level ground. Excavator with outriggers should be extended.
- An excavator have a safe working load of more than 1 tonne should fitted with an automatic safe load indicator, and for hydraulic excavator, it has fitted with check valves in the hydraulic lifting cylinder or other suitable device, to prevent a gravity fall of the load.

Question 14.5.2.6

Weighting: 3

Has an inspection and maintenance system for excavator been established and used?

Audit Criteria

- A programme of daily visual checks, regular inspections and servicing schedules should be established in accordance with the manufacturer’s instructions and the risks associated with each vehicle.
- Tested, thoroughly examined and certified safe by a competent examiner and periodically inspection by a competent person under LALGR.

Question 14.5.2.7

Weighting: 3

Have safety rules and safety checklists been developed and used for monitoring the site transport safety?

Audit Criteria

- Safety checklist should cover checking of transporting of excavator, work near underground utilities and overhead electricity lines.

Scoring Table for HASAS Version 1.5**Part A**

Section	Element	No. of Questions	Score	% of total score
1	Safety policy	13	45	8
2	Safety organisation	9	33	6
3	Safety training	10	54	10
4	In-house safety rules and regulations	8	36	6
5	Safety committee	8	45	8
6	Programme for inspection of hazardous conditions	7	30	5
7	Job hazard analysis	12	45	8
8	Personal Protection Programme	8	33	6
9	Accident/incident investigation	7	36	6
10	Emergency preparedness	8	36	6
11	Safety promotion	9	51	9
12	Health Assurance Programme	27	81	14
13	Evaluation, selection and control of sub-contractors	13	42	7
PART A Total		139	567	100%

Part B

Section	Element	No. of Questions	Score	% of total score
14	<i>Process Control Programme</i>			
14.1	<i>Management of Place of Work</i>			
14.1.1	Fire Hazards	10	48	3
14.1.2	Work in Confined Spaces	10	51	3
14.1.3	Working at a Height	12	84	6
14.1.4	Housekeeping	8	48	3
14.1.5	Protection against Falling Objects	8	60	4
14.1.6	Overhead and Underground Services	7	30	2

14.1.7	Storage of inflammable Substances, Gases and Vehicle Fuels	7	30	2
14.1.8	Occupational Safety and Health in Offices	5	21	1
14.2	<i>Management of Tasks and Operations</i>			
14.2.1	Demolition	10	42	3
14.2.2	Excavations	12	60	4
14.2.3	Lifting Operations	11	51	3
14.2.4	Roadworks	8	39	2
14.2.5	Temporary Works	7	27	2
14.2.6	Structural Steel Erection	7	33	2
14.2.7	Welding / Cutting Operations and Installations	11	54	4
14.2.8	Site Traffic	8	42	3
14.2.9	Works over Water or Adjacent to Water	8	30	2
14.2.10	Piling and Foundations	7	33	2
14.2.11	Glazing	5	21	2
14.2.12	Grit Blasting	6	27	2
14.2.13	Asbestos	9	39	2
14.2.14	Machinery Guarding	6	21	2
14.2.15	Ground Investigation	5	15	1
14.2.16	Prestressing	5	15	1
14.3	<i>Management of Powered Plant and Equipment</i>			
14.3.1	Compressed Air Tools	6	24	2
14.3.2	Electrical Supply System	12	72	5
14.3.3	Electrical Works and Portable Electric Tools	9	51	3
14.3.4	Hand Tools	5	21	2
14.3.5	Woodworking Machines	10	48	3
14.3.6	Abrasive Wheels	11	54	4
14.3.7	Hand-held Power Tools	7	30	2
14.4	<i>Management of Plant and Equipment for Lifting of Material and Persons</i>			
14.4.1	Tower Crane	12	54	4
14.4.2	Mobile Crane	7	33	2
14.4.3	Gondola (Suspended Working Platform)	7	27	2
14.4.4	Power-operated Elevating Working Platform	6	24	2
14.4.5	Material Hoist	6	24	2

14.4.6	Power-driven lifting appliance for Carrying Person and Passenger Hoist	6	24	2
14.5	<i>Management of Mechanical Plant and Equipment</i>			
14.5.1	Site Transport (loadshifting machinery)	6	21	2
14.5.2	Excavator	7	27	2
PART B Total		309	1470	100%

Annex B

	HASAS Version 1.4	HASAS Version 1.5
Score of the system	Part A: 570 Part B: 1,611 Total: 2,181	Part A: 567 Part B: 1,470 Total: 2,037
Numbers of questions	Part A: 138 Part B: 332 Total: 470	Part A: 139 Part B: 309 Total: 448
Sections updated in Part A		Section 1 – Question 1.1.1, 1.1.2 and 1.1.3 combined and criteria cover work safe behavior, safety climate index, safety innovation and pointing and calling Section 11 – add work safe behavior, safety climate index and safety innovation Section 12 – add heat stress and cold weather
Sections in Part B changes to suit the project processes of HA	Sections removed: 14.2.3 Flammable Liquids and Gases 14.3.4 Mechanical Materials Handling 14.3.9 Site Transport 14.4.1 Blasting (Explosives) 14.4.2 Piling 14.4.4 Tunneling /Pressurized Atmospheres 14.4.5 Diving 14.4.6 Hand Dug Caissons 14.4.8 Sewerage or Drainage Works 14.5.5 Mechanical Plant and Equipment 14.5.8 Building Maintenance 14.5.9 Substances Hazardous to Health	New sections added: 14.1.7 Storage of inflammable Substances, Gases and Vehicle Fuels 14.2.10 Piling and Foundations 14.2.11 Glazing 14.2.14 Machinery Guarding 14.3.4 Hand Tools 14.3.7 Hand-held Power Tools 14.4.1 Tower Crane 14.4.2 Mobile Crane 14.4.3 Gondola (Suspended Working Platform) 14.4.4 Power-operated Elevating Working Platform 14.4.5 Material Hoist 14.4.6 Power-driven lifting appliance for Carrying Person and Passenger Hoist 14.5.1 Site Transport (loadshifting machinery) 14.5.2 Excavator

Critical pass in

Part A

- (a) Element 7 Job Hazard Analysis

Part B High risk subsections

- (b) Working at height (14.1.3)
- (c) Housekeeping (14.1.4)
- (d) Falling Objects (14.1.5)
- (e) Lifting Operations (14.2.3)
- (f) Electrical Supply System (14.3.2)
- (g) Tower Crane (14.4.1)
- (h) Mobile Crane (14.4.2)

For all on-going contracts failure to meet critical pass in any one of the key elements of Part A or high-risk subsections of Part B above contractors on contract basis will trigger alert to the respective Contract Manager and the deficiency will trigger alert to the respective Contractor Review Committee (CRC) for review of the concerned contractor's safety performance.

Annex D

Sub-contractors must be registered under the respective trades of the Primary Register of the Voluntary Subcontractor Registration Scheme.

Type of Contract	Subletting for specific trades or parts of the works is restricted to:	
	No more than ONE tiers of sub-contractors	No more than TWO tiers of sub-contractors
1. Building Contract; & Combined Piling and Building Contract		<ul style="list-style-type: none"> a) Scaffolding; b) Mechanical handling and lifting (for tower crane only); c) Mechanical plant and equipment (for tower crane only); d) Concreting Formwork (for Large Panel formwork only); e) Concreting (for Large Panel formwork only); f) Painting (outside external wall of building); g) Plumbing and drainage work (outside external wall of building); h) Demolition.
2. Demolition Contract	When sub-letting part of the demolition works, 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)	<ul style="list-style-type: none"> a) Scaffolding; b) Mechanical handling and lifting (for tower crane only); c) Mechanical plant and equipment for demolition works;

Restriction on subletting for specific trades or parts of the Works under New Works contracts

Annex E

Safety training requirements:

Site Personnel	Safety Training Requirements
1. Quality Control Manager (QCM) 2. Architectural Quality Control Coordinator (AQCC) 3. Structural Quality Control Coordinator (SQCC) 4. Building Services Engineer 5. Blasting Control Engineer 6. Asbestos Removal Site Supervisor 7. Registered Asbestos Consultant 8. Authorized Signatory (AS) 9. Technically Competent Person (TCP) for SSP 10. Certified Supervisor (CS) for Application of Tile Adhesive	a. Basic Safety Management course (12 hours) and b. Basic Accident Prevention course (12 hours) OR c. Safety Supervisor (Construction) course (43 hours)
11. General Foreman & Block Foreman	a. Foreman Safety Training course (16 hours) <u>OR</u> b. Safety Supervisor (Construction) course (43 hours)

Safety training for site personnel

- a) Basic Safety Management Course (course duration 12 hours) provided by the Occupational Safety and Health Council or equivalent course provided by the Construction Industry Council Training Academy.
- b) Basic Accident Prevention Course (course duration 12 hours) provided by the Occupational Safety and Health Council.
- c) Non-mandatory Safety Supervisor (Construction) Course (43 hours) by the Occupational Safety and Health Council