



Enhancement of HASAS (HASAS Version 1.4)

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Briefing Outline

1. Introduction of Enhancement of HASAS
(HASAS Ver 1.4)
2. Four New Safety Initiatives under HA New Contracts
3. New Audit Criteria of HASAS Ver 1.4



Background

- **Housing Authority Safety Audit Scheme (HASAS)** since December 1996
- **Consists of 2 parts with totally 14 elements**
 - Part A : Elements 1-13 (Establishment of SMS)
 - Part B : Element 14 (Implementation of SMS)
- *HASAS Version 1.0* introduced in 1996, coverage and safety standards regularly reviewed
- *HASAS Version 1.1* had been adopted since Apr 1998 to Dec 2002
- *HASAS Version 1.2* had been adopted since Jan 2003 to Feb 2007
- *HASAS Version 1.3* has been adopted since Mar 2007 to Dec 2008



Background

- The auditing system has been reviewed regularly in respect of its coverage and safety standards
- In the light of the series of accidents on site, we see the need for a system review to further enhance safety performance monitoring through the auditing system
- **OSHC** undertook a review of the HASAS for further enhancements.



Major Changes in HASAS Version 1.3

Increase Weighting of Implementation Aspects

Adjust weighting in Part A

- Reduce weighting of **procedural items** from **6 to 3 marks**
- Weighting of items in **physical performance** aspects to remain at **6 marks**

Adjust weighting in Part B

1. **Guidelines and Procedures** remain **3 marks**
2. **Implementation Aspects** increase **from 3 to 6 marks**
3. **High Risk/Incidence Rate** up by two folds **from 3 to 9 marks**;
i.e. - *Falling from height*
- *Falling objects*
- *Lifting operations*
- *Housekeeping*
- *Electric cables laying on ground*



Score Banding for Payment

Previous Payment Method:

- 100% payment for HASAS scores $>$ or $=$ 70%

New Payment Method with Score Banding:

1. Scores $<$ 70% for Part A or Part B or both, no payment
2. Scores $>$ or $=$ 70% but less than 80% for either part, 70% payment only for the safety audit item
3. Scores $>$ or $=$ 80% for both parts, full payment for the safety audit item



Audit on Nominated Subcontractors

- **Check on-site safety performance of NSCs**
- **Physical checklists on 4 NSCs**
 - Electrical Contractors
 - Fire Services and Water Pump Contractors
 - Lift and Escalator Contractors
 - Air Conditioning & Ventilation Contractors



Enhancement of HASAS (HASAS Version 1.4)

Implemented from 1 January 2009 and onwards.

The new version had been developed in consultation with the Hong Kong Construction Association,



1. Tower Crane Lifting Operation

Introduce mandatory **checking of tower crane lifting operation on working floor and ground floor** by ASA in each and every audit, amongst checking of other high risk operations on site.



2. Introduction of Critical Pass

In Part A key elements & Part B high-risk subsections:

(Scores must be $>$ or $=$ 70%)

Critical Pass in Key Elements of **Part A**

- Element 6. Safety Inspection
- Element 7. Job Hazard Analysis

Critical Pass in High-risk Subsections of **Part B**

- Subsection 14.1.3 Working Height
- Subsection 14.1.4 Housekeeping
- Subsection 14.1.5 Falling Objects
- Subsection 14.3.3 Lifting Operations



2. Introduction of Critical Pass

Part A (Selected Elements are **Crucial to Success of SMS**)

Element 6 Safety Inspection

- monitoring mechanism under SMS (provisions in OSH reg. e.g. scaffold inspection-CSSR; LALG reg. SO & SS Reg etc)

Element 7 Job Hazard Analysis

- related to risk assessment- coping with modern management- risk management approach (provisions in OSH legislation, e.g. confined space, working at height, noise at work, etc.)



2. Introduction of Critical Pass

Part B: High Risk Subsections

14.1.3 Working at Height

14.1.4 Housekeeping

14.1.5 Falling Objects

14.3.3 Lifting Operations

Refer to activities/conditions which are of relatively high risk and will cause issues of concern

e.g. Causes serious accidents or arouses public concern



2. Introduction of Critical Pass

- For all on-going contracts from **1 January 2009** and onwards, **failure** to meet critical pass **in any one** of the key elements of Part A or high-risk subsections of Part B in **TWO** consecutive quarters on contract basis will **trigger alert to the respective Contract Manager**.
- From **1 January 2010** onwards, the deficiency will **trigger alert** to the respective Contractor Review Committee (CRC) for **review of the concerned contractor's safety performance**.



2. Introduction of Critical Pass

- For all **new works contracts to be tendered out from 1 March 2009 and onwards**, failure to meet “critical pass” in any one of the key elements of Part A or high-risk subsections of Part B in **TWO** consecutive quarters will result in **no payment in regard to “Safety Audit Performance” under Pay for Safety.**



3. Implementation of Safe Working Cycle & foster Safety Culture

- For all ongoing contracts from 1 January 2009 and onwards
- **Promote implementation of Safety Climate Index survey, Work Safe Behaviour and encourage Safety Innovation**
- Additional audit questions, with increased weighting and additional audit criteria on Safety Climate Survey, Work Safe Behaviour and Safety Innovation are incorporated
- **Enrich the application of Safe Working Cycle** and drive it to a higher level of safety culture in practice.
- Additional audit criteria are added to gauge the implementation of Daily, Weekly and Monthly Safe Working Cycle.



4. Submission of Checklist for High Risk Activities

- For all on-going contracts from 1 January 2009 and onwards
- Instigate generic (non-exhaustive) checklist for high risk activities for which safety control measures or step-by-step safe operation procedures have to be submitted along with site demonstrations for safety audits.



5. Merit and Demerit System for Accumulative Industrial Accident Rate

- For all new works contracts to be tendered out from 1 April 2009 and onwards (where Pay for Safety is applicable),
- A merit and demerit system for accumulative industrial accident occurrence rate (safety output) on contract basis in accordance with accident occurrence rate benchmarks will apply with HASAS score adjustments.
- The “adjusted HASAS scores” will only affect the Pay for Safety item.
- “Unadjusted HASAS scores” will continue to be used for PASS safety score merging and for the basis of safety performance regulatory actions.



5. Merit and Demerit System for Accumulative Industrial Accident Rate

Merit /demerit system for accumulative accident occurrence (safety output) scoring system:

| Accumulative reportable accident occurrence rate benchmarks (per 1000 workers) | Merit (+) /demerit (-) to overall safety audit score – adjusted on the basis of accumulative <u>annualised</u> accident occurrence rate benchmarks |
|--|--|
| 1. $x < 6$ | +10% |
| 2. $6 \leq x < 9$ | + 5% |
| 3. $9 \leq x < 12$ | + 3% |
| 4. $12 \leq x < 15$ | 0% |
| 5. $15 \leq x < 18$ | - 3% |
| 6. $18 \leq x < 21$ | - 5% |
| 7. $x \geq 21$ | - 10% |

Accumulative accident rate per 1000 workers on each contract basis (benchmark items 1 to 7) on quarterly basis based on reportable accident data and the average no. of workers from GF527 records will be compiled by the S&H Unit, commencing from 1 January 2009 and onwards.

A fatal accident occurrence will lead to no payment (one-off) in regard to "Safety Audit Performance" under Pay for Safety in the immediately following payment.



Four New Safety Initiatives

(Applied to new projects tendered out after 1 March 2008 or with first audit after 1 Nov 2008. However, all other requirements under HASAS version 1.4 applied)



Initiative 1.

- Subletting for specific trades or parts of the Works and **New Works contracts** (i.e. building contract and combined piling & 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.



Restriction on subletting for specific trades or parts of the Works under New Works contracts

| Type of Contract | Subletting for specific trades or parts of the works is restricted to: | |
|--|--|--|
| | No more than <u>ONE</u> tiers of sub-contractors | No more than <u>TWO</u> 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) 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; |



Initiative 2.

- Protection against falling objects during the course of construction
- Full height barriers to lift shaft openings





Initiative 3.

Training requirements for:

- frontline supervisors and personnel
- foremen and site agent & other contract team members



OSH Training requirements

| Site Personnel | Safety Training Requirements |
|--|--|
| <ol style="list-style-type: none">1. Quality Control Manager (QCM)2. Architectural Quality Control Coordinator (AQCC)3. Structural Quality Control Coordinator (SQCC)4. Building Services Engineer5. Blasting Control Engineer6. Asbestos Removal Site Supervisor7. Registered Asbestos Consultant8. Authorized Signatory (AS)9. Technically Competent Person (TCP) for SSP10. Certified Supervisor (CS) for Application of Tile Adhesive | <ol style="list-style-type: none">a. Basic Safety Management course (12 hours) andb. Basic Accident Prevention course (12 hours) <p><u>OR</u></p> <ol style="list-style-type: none">c. Safety Supervisor (Construction) course (43 hours) |
| <ol style="list-style-type: none">11. General Foreman & Block Foreman | <ol style="list-style-type: none">a. Foreman Safety Training course (16 hours) <u>OR</u>b. Safety Supervisor (Construction) course (43 hours) |



Initiative 4.

Enhance physical measures for monitoring lifting operations using tower cranes:

- such as to provide with video surveillance such as camera and similar device such that the operator is able to perform lifting operation safely with unobstructed view, and

Enhance risk management measures:

- by means of cordoning off lifting zone on ground
- provide audio-visual alarm device such that the lifting zone at lifting location is clear to ensure no personnel is endangered by the lifting load

| Enhancement of HASAS 1.4 Version | | On-going Contract | Contracts (tendered out after 1 March 2008) | New Works Contracts (tendered out from 1 April 2009) |
|---|--|--|--|--|
| 1. Tower Crane Lifting Operation | Introduce mandatory checking of tower crane lifting operation on working floor & ground floor by ASA in each audit. | ✓ | ✓ | ✓ |
| 2. Introduction Of Criteria Pass | <p>(Audit Scores must be > or = 70%)</p> <p>Critical Pass in Key Elements of Part A Element 6. Safety Inspection Element 7. Job Hazard Analysis</p> <p>Subsections of Part B 14.1.3 Working Height 14.1.4 Housekeeping 14.1.5 Falling Objects 14.3.3 Lifting Operations</p> | <p>✓</p> <p>(From 1 Jan 09, Failure will trigger alert to the Contract Manager.) (From 1 Jan 10, Failure in 2 consecutive quarters will trigger alert to the Contractor Review Committee)</p> | <p>✓</p> <p>(From 1 Jan 09, Failure will trigger alert to the Contract Manager.) (From 1 Jan 10, Failure in 2 consecutive quarters will trigger alert to the Contractor Review Committee)</p> | <p>✓</p> <p>(Failure to meet any “critical pass” in 2 consecutive quarters will result in no payment in regard to “Safety Audit Performance”) (From 1 Jan 10, Failure in 2 consecutive quarters will trigger alert to the Contractor Review Committee)</p> |
| 3. Promote implementation of Safety Climate Index survey, Work Safe Behaviour & encourage Safety Innovation | Additional audit questions, with increased weighting and additional audit criteria on Safety Climate Survey, Work Safe Behaviour and Safety Innovation are incorporated | ✓ | ✓ | ✓ |
| 4. Submission of Checklist for High Risk Activities | Instigate generic (non-exhaustive) checklist for high risk activities for which safety control measures or step-by-step safe operation procedures have to be submitted along with site demonstrations for safety audits. | ✓ | ✓ | ✓ |
| 5. Merit & Demerit System for Accumulative Industrial Accident Rate | A merit and demerit system for accumulative industrial accident occurrence rate (safety output) on contract basis in accordance with accident occurrence rate Benchmarks will apply with HASAS score adjustments. Only affect PFS item. | ✗ | ✗ | ✓ |

| 4 New Safety Initiatives (Applied to contracts tendered out after 1 Mar 08) | | On-going Contract | Contracts (tendered out after 1 March 2008) | New Works Contracts (tendered out from 1 April 2009) |
|---|--|--|---|--|
| Initiative 1. | Subletting for specific trades or parts of the Works and New Works contracts (i.e. building contract and combined piling & 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. | ✓ (but NOT APPLICABLE to contracts tendered out before 1 March 2008, only as a high standard) | ✓ | ✓ |
| Initiative 2. | Protection against falling objects during the course of construction Full height barriers to lift shaft openings | ✓ (but NOT APPLICABLE to contracts tendered out before 1 March 2008, only as a high standard) | ✓ | ✓ |
| Initiative 3. | Training requirements for: frontline supervisors and personnel foremen and site agent & other contract team members | ✓ (but NOT APPLICABLE to contracts tendered out before 1 March 2008, only as a high standard) | ✓ | ✓ |
| Initiative 4. | Enhance physical measures for monitoring lifting operations using tower cranes: such as to provide with video surveillance such as camera and similar device such that the operator is able to perform lifting operation safely with unobstructed view, and Enhance risk management measures: by means of cordoning off lifting zone on ground provide audio-visual alarm device such that the lifting zone at lifting location is clear to ensure no personnel is endangered by the lifting load | ✓ (but NOT APPLICABLE to contracts tendered out before 1 March 2008, only as a high standard) | ✓ | ✓ |



Additional Audit Criteria in HASAS Version 1.4



Additional Audit Criteria 1

Promotion of Safety Climate Survey, Work Safe Behaviour and Safety Innovation

Q1.1.1 Does the safety policy commit the organisation to high standards of OSH for all its employees and for others who might come into contact with its activities?

(A) Break down into 3 questions
SCI; WSB; Safety Innovation

(B) Weighting : **3 marks** ↑ **6 marks /question**
(Part A audit score weighting 0.5% to 1% - 3%)

(C) Criteria: Contractor is required to implement

- Construction Industry Safety Climate Index Survey (granted for progress)
- Work Safe Behaviour Programme (granted for progress)
- Safety innovative item (granted throughout audit once an item is approved)



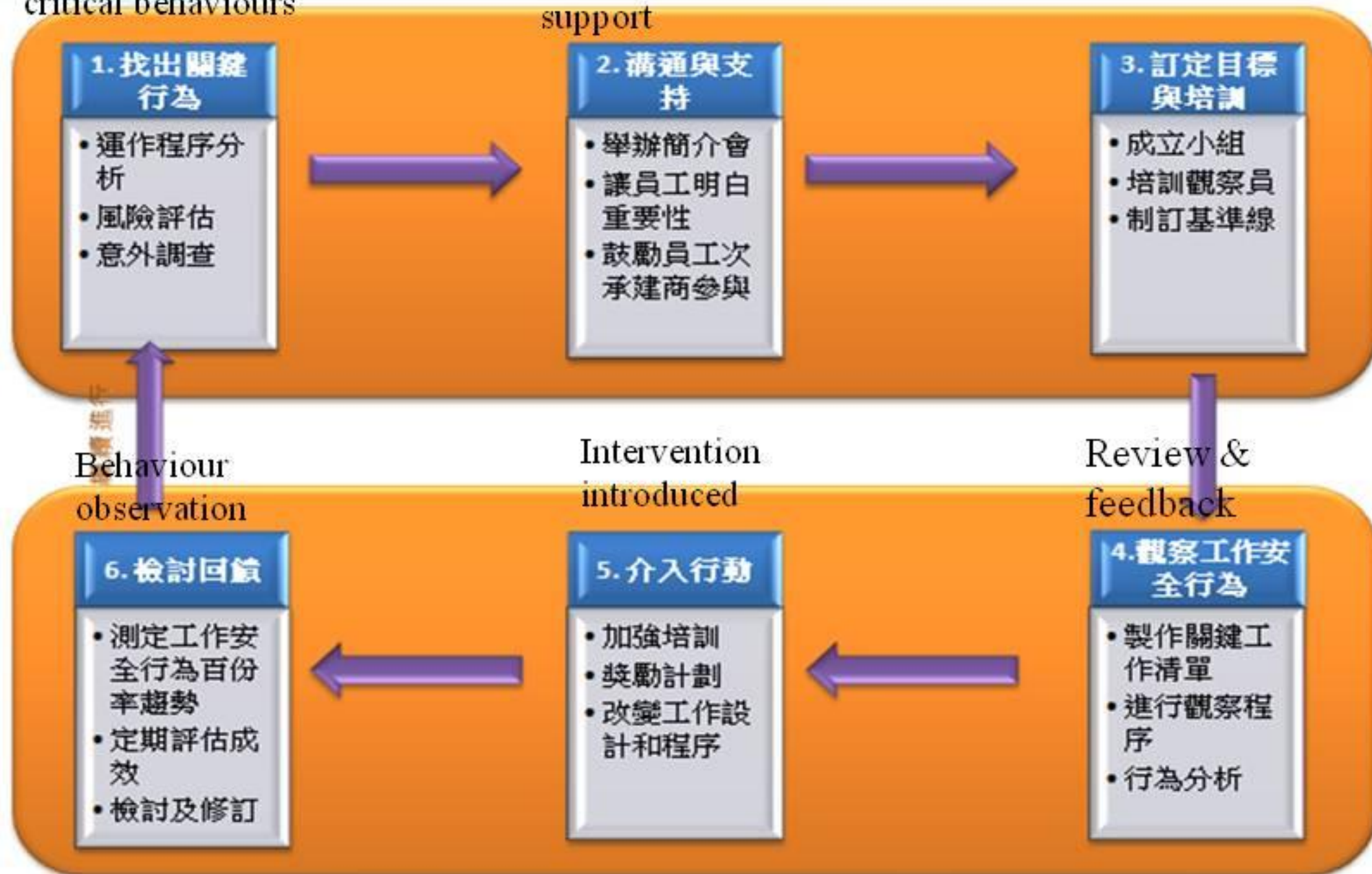


Work Safe Behaviour

Identification of critical behaviours

Communication for support

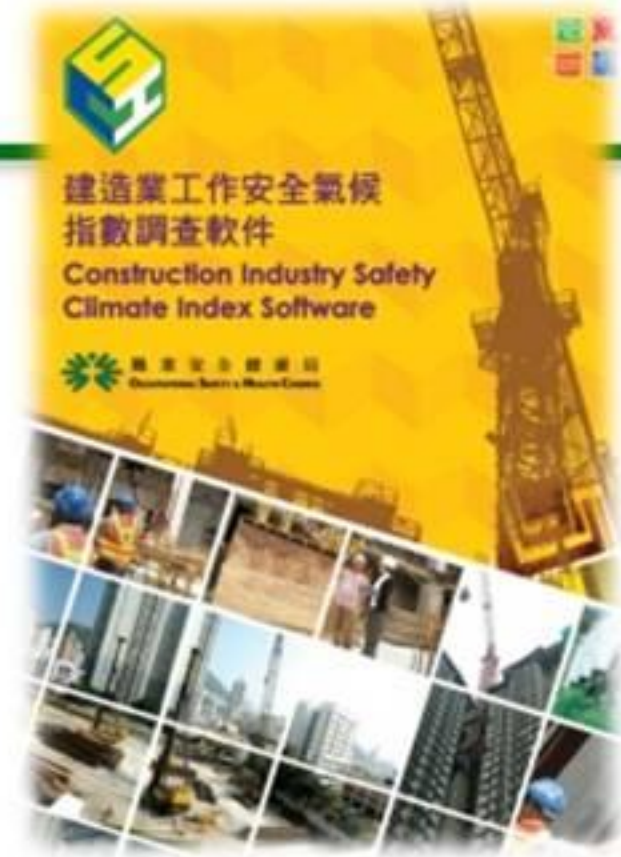
Goal setting & training





SCI Survey

- Preparation of SCI Survey
- Conducting survey
- Data analysis
- Report writing
- Announcement of result
- Continual improvement



38 Questions on 7 Dimensions

1. Commitment and Concern for OSH by Organization and Management
2. Resources for safety and its effectiveness
3. Risk taking behavior and perception of work risk
4. Perception of safety rules and procedures
5. Personal involvement in safety and health
6. Safe working attitude and workmate's influence
7. Safety promotion and communication





Example of Safety Innovation (1)

Criteria :

- Differ from traditional practice
- Improvement of control measures in safety or health aspects
- Effective and acceptable by workers

Safety Innovation: Mobile Fine-mist Humidifier Provided to Reduce Heat Stress



- Reduce 5°C of surrounding dry bulb temperature within 0.5m of the humidifier
- Depressing dust



Example of Safety Innovation (2)

Develop tally system for gondola operation



- Close monitoring safety performance of gondola operators
- Enhance communication system with gondola operators





Additional Audit Criteria 2

Implementation of Safe Working Cycle

| Daily Safe Working Cycle | Element of Safety Management System |
|-----------------------------------|---|
| 1. Morning Safety Meeting | -Safety Organization (Communication) - Q2.14, Q2.1.5 & Q2.16 -Safety Promotion (Safety Awareness) - Q11.1.1, Q11.1.6 & Q11.1.7 -PPE Programs - Q8.1.7 |
| 2. Hazard Identification Activity | -Risk Assessment & Implementation of sites - Q7.1.2, Q7.1.4, Q7.1.6 |
| 3. Prior-to-work Inspection | -Safety Inspection (Daily) - Q6.1.1 -Process Control (Daily inspect. & maintenance of facilities & tools) -14 -PPE (Supervision) - Q8.1.6 |
| 4. Guidance & Supervision at Work | -Safety Training (Supervision) - Q3.1.1 -Safety Organization (Competence) - Q2.1.8 -In-house Safety Rules - Q4.16 -Safety Inspection (Monitoring) - Q6.1.1 |
| 5. Safety Inspection | -Safety Inspection (Supervision) - Q6.1.1 & Q6.1.2 -Subcontractor Control - Q13.2.6 |
| 6. Process Safety Discussion | -Safety Organization (Communication & Cooperation) - Q2.14 & Q2.16 -Subcontractor Control – Q13.1.4 & Q13.2.5 -Process Control -14 |
| 7. Tidying up after Work | -Process Control (Housekeeping) - Q14.1.4.1 |
| 8. Final Check after Work | -Safety Inspection (Monitoring) - Q6.1.1 |

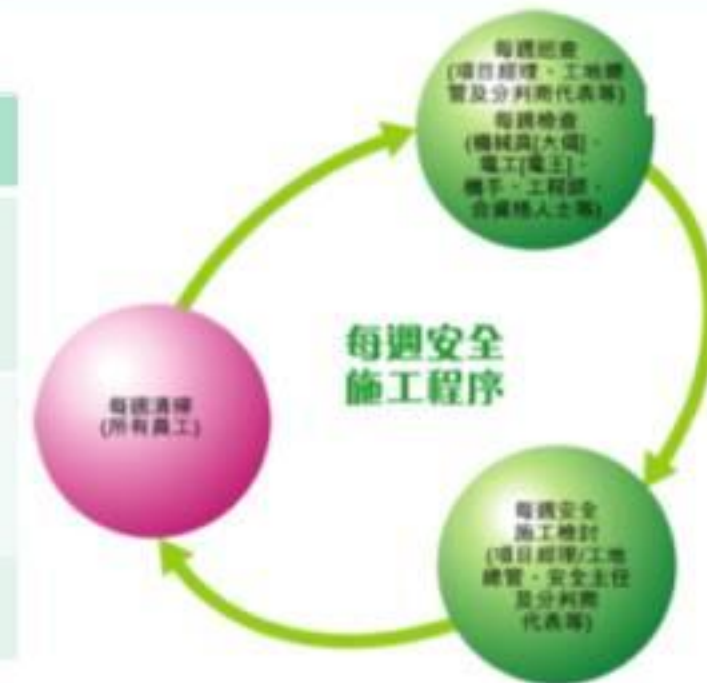




Additional Audit Criteria 2

Implementation of Safe Working Cycle

| Weekly Safe Working Cycle | Element of Safety Management System |
|---------------------------------------|---|
| 1. Weekly Inspection and Weekly Check | -Safety Inspection (Monitoring) – Q2.1.6, Q6.1.1 & Q6.1.2 -Subcontractor Control - Q13.1.4 & Q13.2.6 -Process Control -14 |
| 2. Process Safety Discussion | -Safety Organization (Communication & Cooperation) - Q2.14 & Q2.16 -Subcontractor Control - Q13.1.4 & Q13.2.5 |
| 3. Weekly Tidying up | -Process Control (Housekeeping) - Q14.1.4.1 |



| Monthly Safe Working Cycle | Element of Safety Management System |
|-------------------------------------|---|
| 1. Monthly Safety Meeting | -Safety Organization (Communication) - Q2.14, Q2.1.5 & Q2.16 -Safety Promotion (Safety Awareness) - Q11.1.1, Q11.1.6 & Q11.1.7 |
| 2. Monthly Inspection | -Safety Inspection (Monitoring) – Q6.1.1 & Q6.1.2 -Subcontractor Control – Q2.1.6, Q13.1.4 & Q13.2.6 |
| 3. Monthly Safe Training | -Safety Training - Q3.1.7 -Analysis/Prevention of Accidents - Q9.1.6 |
| 4. Monthly Safety Committee Meeting | -Safety Committee – Q2.1.6, Q13.1.4, Q5.1.1 & Q5.1.2 |





End

