

***HOUSING AUTHORITY  
SAFETY AUDITING SYSTEM  
(HASAS) (New Works)  
VERSION 1.5***

**17 April 2013**



Occupational Safety & Health Council

# HASAS (New Works) Version 1.5

- Implemented since 1 Oct 2012
- 1. Enhancement Objectives of Version 1.5
- 2. Part A of Version 1.5
- 3. Part B of Version 1.5
- 4. Safe System of Work
- 5. Scoring table
- 6. Critical Pass
- 7. Summary of New Inputs
- 8. Examples of safety innovations
- 9. Assist contractors to acquaint with HASAS version 1.5
- 10. Audit scores in Q4 of 2012
- 11. Appeal mechanism for contractors



# Summary of Score Mapping Enhancement of HASAS 1.4

Score Mapping for Audit Results starting from 1 Jan 2009 to 30 Sept 2011 where HASAS version 1.4 adopted.

<i>Total audits done for the said period</i>	<i>: 285</i>
<i>building projects</i>	<i>: 198</i>
<i>piling &amp; foundation projects</i>	<i>: 49</i>
<i>demolition projects</i>	<i>: 13</i>
<i>others projects</i>	<i>: 21</i>



# Selected Items for Analysis

- **Part A: Key Elements**
  - Element 3 Safety Training
  - Element 4 In-house Safety Rules
  - Element 6 Safety Inspection
  - Element 7 Job Hazard Analysis
  - Element 9 Accident Investigation
- **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
  - 14.5.2 Electrical Supply System



# Enhancement Objectives

1. To update the audit criteria, definitions.
2. To revise the critical pass elements and subsections
3. To establish work safe behaviour programme (WSB), safety climate index survey (SCI) and innovation programme in Part A Safety Promotion Element.
4. To introduce heat stress and cold weather in Part A Health Assurance Programme.
5. To introduce Process Control and Safe System of Work concepts into Part B of HASA to fulfill the General Duty and the Factories and Industrial Undertaking (Safety Management) Regulation requirement.



***HOUSING AUTHORITY  
SAFETY AUDITING SYSTEM  
(HASAS) VERSION 1.5***

**1 Oct 2012**



# Contents of HASAS Version 1.5

## ● PART A

1. Safety Policy
2. Organization
3. Safety Training
4. In-house Safety Rules
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-contractor

## ● 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

# Contents of HASAS Version 1.5

## • PART B

- 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

## • PART B

- 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



# Contents of HASAS Version 1.5

## • PART B

### 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

## • PART B

### 14.5 Management of Mechanical Plant and Equipment

- 14.5.1 Site Transport (loadshifting machinery)
- 14.5.2 Excavator

# Section 1

# PART A Safety Policy





A high level of occupational safety and health performance.



- 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?



# PART A

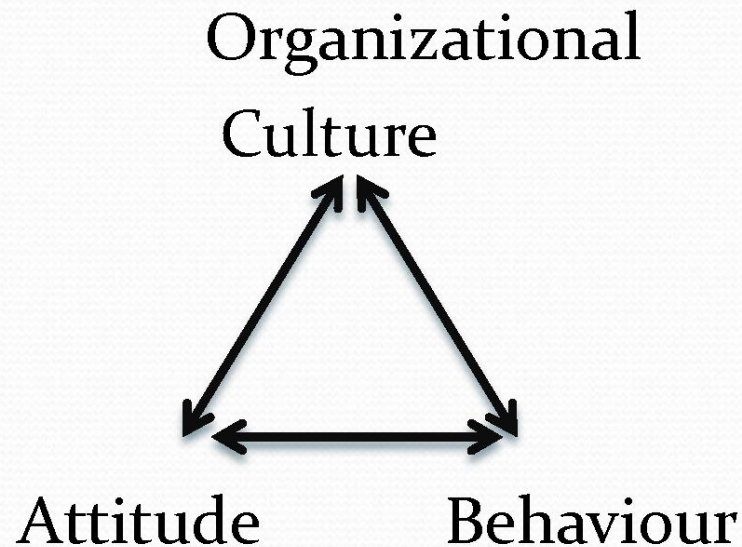
## Section 11

## Safety Promotion





# Promotion, Development And Maintenance of OSH Awareness



- **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?
- **Question 11.1.7 Weighting: 6**  
Is Work Safe Behaviour (WSB) Programme used on critical high risk activities
- **Question 11.1.8 Weighting 6**  
Is Safety Climate Index Survey (SCI) used to promote a proactive safety culture of the project?
- **Question 11.1.9 Weighting: 6**  
Is a new safety innovation programme use to promote a proactive safety culture of the project?

# PART A

## Section 12

## Health Assurance



## 12.4 Other Occupational Health

### 12. Health Assurance Programme

12.1 Assessment and Control of  
Substances hazardous to  
Health

12.2 Sprains, Strains and Pains

12.3 Noise

12.4 Welfare

- Question 12.4.1

Weighting: 3

Is there an arrangement for a suitable  
assessment of the risk of **heat stress**  
to workers?

- Question 12.4.2

Weighting: 3

Are effective measures taken out based  
on the results of heat stress risk  
assessment?

- Question 12.4.3

Weighting: 3

Are there adequate measures to protect  
workers working in **cold weather**?





# PART B

## Section 14

## Process Control Programme



## Part B of HASAS version 1.5

**The process items in Part B are re-grouping under new items include:**

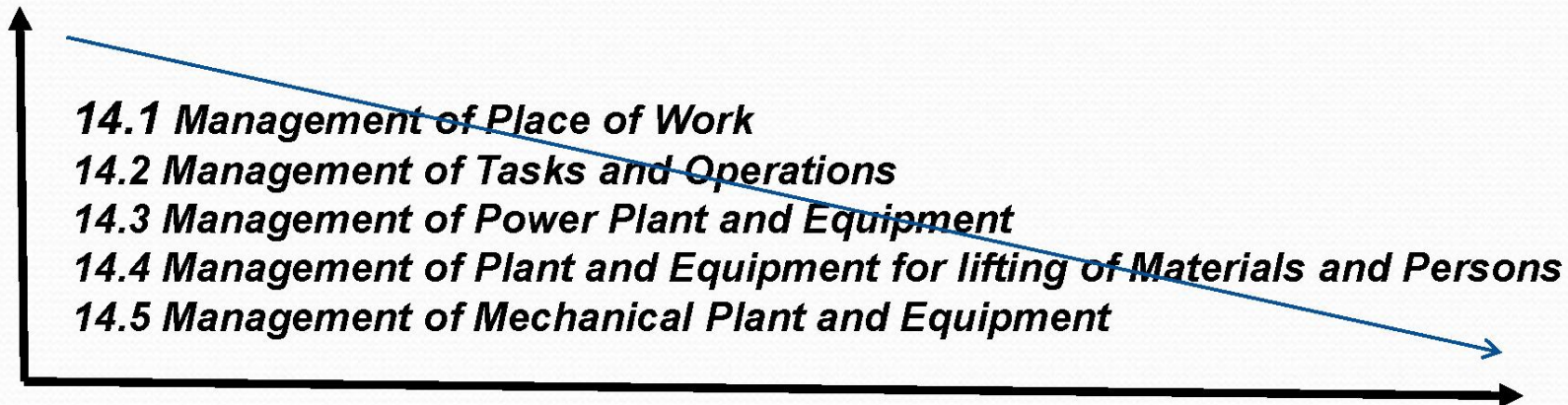
- 14.1 Management of Place of Work**
- 14.2 Management of Tasks and Operations**
- 14.3 Management of Power Plant and Equipment**
- 14.4 Management of Plant and Equipment for lifting Materials and Persons**
- 14.5 Management of Mechanical Plant and Equipment**





# Examine the whole safety systems of work of the control of processes listed in Part B

Accidents



Time

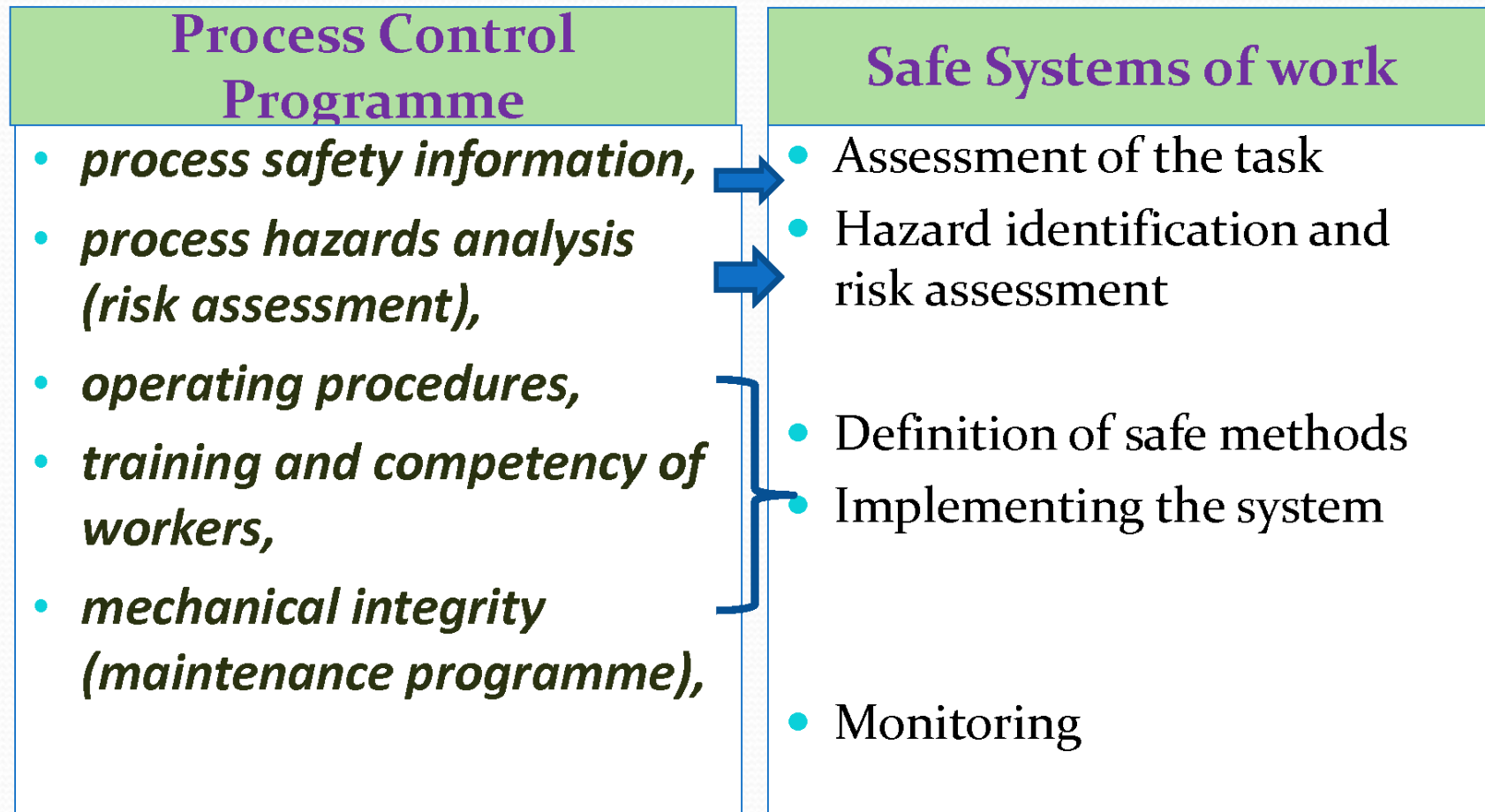
## Audit Question Format

- *process safety information,*
- *process hazards analysis (risk assessment),*
- *operating procedures,*
- *training and competency of workers,*
- *mechanical integrity (maintenance programme), and*
- *monitor*





# Audit Question Format



# Weighting of items under PART B

Items of:

1. Documentation such as Procedures remain 3 marks
2. Implementation Aspects - 6 marks
3. Specific Critical Pass items – 9 marks

*9 marks - Falling from height (14.1.3.3 – 4, 14.1.3.6, 14.1.3.8 – 12)*

- Falling objects (14.1.5.3 – 8)*
- Lifting operations (14.2.3.4, 14.2.3.6 – 7)*
- Housekeeping (14.1.4.3 – 5, 14.1.4.8)*
- Electrical supply system (14.3.2.7 – 12 )*
- Tower Crane (14.4.1.9 – 11 )*
- Mobile Crane (14.4.2.4 – 5)*

# Process Control Audit Question Pattern

## Example: Work in Confined Space

- 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?
- 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?
- Question 14.1.2.3                      Weighting:                      6  
Has a risk assessment been conducted by a competent person before the work in confined space commenced?





## Example: Work in Confined Space

- 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?
- Question 14.1.2.5                      Weighting:                      3  
Where relevant, are personnel responsible for atmospheric testing properly trained?
- 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?
- Question 14.1.2.7                      Weighting:                      6  
Where relevant, have personnel who are needed to work in confined spaces been specially supervised and trained?



## Example: Work in Confined Space

- 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?
- 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?
- Question 14.1.2.10                      Weighting:                      6  
Where relevant, have the effectiveness of management of confined space been **regularly monitored**?



### Scoring Table for HASAS Version 1.5

**Critical  
pass**

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
<b>PART A Total</b>		<b>139</b>	<b>567</b>	<b>100%</b>



## Part B

**Critical  
pass**

**Critical  
pass**

Section	Element	No. of Questions	Score	% of total score
<b>14</b>	<b><i>Process Control Programme</i></b>			
<b>14.1</b>	<b><i>Management of Place of Work</i></b>			
14.1.1	Fire Hazards	10	48	3
14.1.2	Work in Confined Spaces	12	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
<b>14.2</b>	<b><i>Management of Tasks and Operations</i></b>			
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	1
14.2.15	Ground Investigation	5	15	1
14.2.16	Prestressing	5	15	1

**Critical  
pass**

<b>14.3</b>	<b><i>Management of Powered Plant and Equipment</i></b>			
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
<b>14.4</b>	<b><i>Management of Plant and Equipment for Lifting of Material and Persons</i></b>			
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
<b>14.5</b>	<b><i>Management of Mechanical Plant and Equipment</i></b>			
14.5.1	Site Transport (loadshifting machinery)	6	21	2
14.5.2	Excavator	7	27	2
<b>PART B Total</b>		<b>309</b>	<b>1470</b>	<b>100%</b>

**Critical  
pass**



	HASAS Version 1.4	HASAS Version 1.5
<b>Score of the system</b>	Part A: 570 Part B: 1,611 Total: 2,181	Part A: 567 Part B: 1,470 Total: 2,037
<b>Numbers of questions</b>	Part A: 138 Part B: 332 Total: 470	Part A: 139 Part B: 309 Total: 448
<b>Sections updated in Part A</b>		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
<b>Sections in Part B changes to suit the project processes of HA</b>	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 “

### • HASAS 1.5

#### **Part A**

Job Hazard Analysis

#### **Part B High risk subsections**

- Working at height (14.1.3)
- Housekeeping (14.1.4)
- Falling Objects (14.1.5)
- Lifting Operations (14.2.3)
- Electrical Supply System (14.3.2)
- Tower Crane (14.4.1)
- Mobile Crane (14.4.2)

### • HASAS 1.4

#### Part A

- Job Hazard Analysis
- Programme for Inspection of Hazardous Conditions

#### Part B

- Working at height (14.1.3)
- Housekeeping (14.1.4)
- Falling Objects (14.1.5)
- Lifting Operations (14.2.3)

# New inputs to reduce Human Errors:

## 1. Work Safe Behaviour Programme (WSB)

- 
- ```
graph LR; Q1[Questions 1.1.1 – high standards] --> R1[A steering committee or working team to coordinate the WSB programme]; Q2[Question 11.1.6 – WSB programme] --> R2[Safety plan covers WSB programme]; Q2 --> R3[WSB observers completed the suitable training course]; Q2 --> R4[Observers shall not be the safety manager or safety officer]; Q2 --> R5[Conduct together with safe working cycle]; Q3[Question 11.1.7 – critical high risk activities] --> R6[At least cover working at height, lifting operations, confined space and traffic safety];
```
- Questions 1.1.1 – high standards
  - Question 11.1.6 – WSB programme
  - Question 11.1.7 – critical high risk activities
- A steering committee or working team to coordinate the WSB programme
  - Safety plan covers WSB programme
  - WSB observers completed the suitable training course
  - Observers shall not be the safety manager or safety officer
  - Conduct together with safe working cycle
  - At least cover working at height, lifting operations, confined space and traffic safety

## New inputs to reduce Human Errors:

### 2. Pointing and Calling

- Questions 1.1.1 – high standards
  - Question 11.1.9 – safety innovation programme
- A steering committee or working team to coordinate the safe working cycle with pointing and calling programme
  - Integrate Pointing and Calling programme into safe working cycle
  - Recommended by ASA
  - Accepted by OSHC



## Pointing and Calling Programme

- Coordination between one's mind and hands, enhancing one's alertness and concentration.



# New inputs to strengthen Accident Prevention

## 3. Enhancement of Risk Assessment

- Section 7 Job Hazard Analysis
    - Sub-section 7.1
    - Sub-section 7.2

8% of part A
  - Section 14 – all parts
- 8% of part B

- This section covers the design, method and procedures, control measures implementing arrangement, and review of risk assessment programme.
- This section relates to the using risk assessment to make procedures, method statement and specialised permit
- The risk assessment is in the form of process hazard analysis (PHA) to each process in PART B of HASAS 1.5
- PHA of each process must appropriate to the audit conditions

## New inputs to enhance lifting operation:

### 4. Classify lifting operations

- Part 14.2.3 lifting operations } 3%  
Part B
- Part 14.4 – specific lifting plants
  - Tower crane    - Elevated working platform
  - Mobile crane   - Material hoist
  - Gondola        - Passenger hoist } 12%  
Part B

- This part is focused on generic lifting operations, lifting appliances and gear, measures and arrangements to ensure competence and procedures for reporting on faults and maintenance etc.
- These parts pinpoint the safe system of work on specific lifting plants



## New inputs in using safety checklists to monitor the specific processes

- The requirement for production of general checklists in HASAS 1.4 for the processes which is considered to be not effective – no mark deduction.
- HASAS 1.5 is now covered the checklists in most of the last audit question of each high risk process.

## Contractors using the checklists to monitor the following specific processes

- 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

**By no means exhaustive**



# Safety innovation

## 創新工地安全措施



## Safety innovation 創新工地安全措施

- '360 Degree Free Rotating Hanger System'全方位電線掛架 – The hanger is set up on a steel frame to accommodate a generator and welding sets for hanging the electricity cables above ground. The hangers can be rotated so that the cables can be relocated easily during the welding work. The design could help improving the site housekeeping and reducing the risk of tripping accident by the cables lying on ground. It could also help reducing the risk of electrical shock and manual handling operations.
- 掛架附設在發電機上,用以掛起電線,掛架可以轉動方便移動電線,加強工地整理,防止電線損壞及減少人力搬運





## New safety innovation in Q2 and Q3 2012

- 'Whale knife' as a temporary support during the connection of steel reinforcement cage for the construction of large diameter bored pile 作為臨時支撐鐵籠的鯨魚刀
- 鯨魚刀的結構由工程師設計,兩旁的翼可以防止鯨魚刀打翻,鯨魚刀通過風險評估及施工方案的建立後在工地使用,亦須進行相關人力提舉風險評估.





# Safety innovation 創新工地安全措施

## Prefabricated Large Diameter Bored Pile Reinforcement Cages

### 預製工序 - 扎結鑽樁鐵籠

- Fabrication of large diameter bored pile reinforcement cages by off-site factory
- Tailor-made machine together with automatic robotic welding arm
- Proper support for reinforcement bars
- Manual handling of heavy components is significantly replaced by the mechanical facilities in the factory.
- The fabrication only needs 2 workers to work. Error in communication and coordination will be reduced in comparison with the traditional method done by 5-6 workers.
- Mechanical integrity of the reinforcement cage is consistent and more reliable. The risk of collapse of reinforcement cage is minimal.
- Housekeeping is very good by this production plant because the waste and scrap are minimal.
- 扎結鑽樁鐵籠工序在工廠進行
- 由專用機械及自動焊接機械臂進行工作
- 鐵籠的良好支撐
- 減少人力提舉
- 減少倒塌風險
- 良好工作場所整理



# Safety innovation 創新工地安全措施

## Prefabricated Large Diameter Bored Pile Reinforcement Cages

預製工序 - 扎結鑽樁鐵籠





## Safety innovation 創新工地安全措施

### 樁頭破除工序的隔音措施

- 為高噪音工序加上額外的隔音設備
- 成功達致6-10分貝的噪音消減
- 保護附近工友的聽覺健康
- 同時亦減少對附近環境的影響

### Provide noise enclosure for pile head breaking

The enclosure achieved a 6-10 dB noise reduction during pile head breaking operation





# Safety innovation 創新工地安全措施

## 應用建築資訊模型（BIM）技術於安全訓練



- 大直徑磨樁工程涉及多個高風險的工序
- 承建商運用建築資訊模型製作安全訓練材料
- 讓工友了解工序的風險及相應的安全措施
- 同時亦加強工友的技術知識，加強工程的品質保證

## Safety training video on large diameter bored pile construction by BIM

The duration of this safety training video is 12.5 minutes. The aim of this video is to enhance the workers' safety awareness as well as technical knowledge on construction procedures of large diameter bored pile. The training video was used in the on-site induction training and tool box talk. The video enables to enhance the specific safety training.





|                                                                                                  |                                                                                                                                                                                                                                             |                                                                                      |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <p>CCTV system on mechanical plant</p>                                                           | <p>Mechanical plant such as excavator installed with CCTV system enable a safe movement of the plant particularly when reversing and slewing on site thus prevent serious accidents involving heavy plant in the construction industry.</p> |   |
| <p>Electrically Operated Steel Wire/Rope &amp; Nylon Protection Net above Steel Bending Yard</p> | <p>The protection net is electrically operated to protect workers in the steel bending yard against falling objects. It also helps to reduce heat stress.</p>                                                                               |  |

Portable  
platform ladder

A platform was available at the top of this ladder. Suitable guardrails and toe-board were installed at the platform. The use of this platform ladder enables to reduce the risk of falling from height.



Mini-Fire  
Engine

The machine is designed to increase the pressure of water supply from the hose reel. The effective fire-fighting distance was increased from 15m to 40m by using the machine. The site staff could move the machine easily as push bar and casters were installed for the machine. The machine enables to improve the emergency response within the site in case of fire.



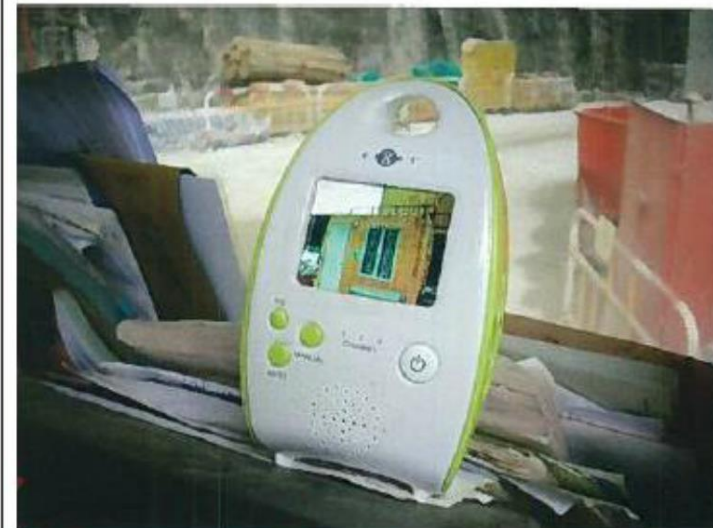


|   |                                       |                                                                                                                                                                                                                                                                      |                                                                                      |
|---|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 8 | Exhaust gas purifier for cranes       | Exhaust gases are piped into a purposely made vessel filled with water. The exhaust gas passes through the water before they are discharged. Dust and odour are thus significantly reduced. The design enables to improve the air quality for the health of workers. |   |
| 9 | Reflective vest with cooling function | A piece of cooling material was attached to the reflective vest to reduce body temperature under hot weather. The design helps to reduce the heat stress when carrying out physical activity at the construction site.                                               |  |



Wireless  
Reversing Video  
Device for  
Vehicles

The device is available at the site entrance for the drivers of incoming vehicles to use. The camera should be attached to the rear of the vehicle and the driver could view the back through the wireless display. The device could help reducing the risk of accidents involving reversing vehicles on the construction site.



Block Protective  
Screens

The screens are extra nylon netting provided on the external wall to prevent falling objects. It limits the path of the falling objects so that the objects would not fall outside the metal protective canopy. The screens could help reducing the falling objects within the site and the nearby public area.



Installation of  
remote CCTV  
surveillance  
monitor system  
onto material  
hoist

CCTV system was installed in material  
hoist for the supervisor to monitor the  
safe use of material hoist efficiently.  
Video was recorded for review when  
necessary. The system enhances the  
monitoring of material hoist operation.  
OSHC would recommend the design as a  
safety innovation.





**Air pressured  
power grinder**

The fine mist from the water sprayer installed in front of the grinder can help reducing the dust produced when grinding to improve the site hygiene. Air pressured power grinder is used to eliminate the electrical hazard. The Contractor is advised to ensure that the grinding wheel is not over-speeded by the air compressor. Besides, to prevent illness such as Legionnaires' disease, the water used for the sprayer must be kept clean and fresh, e.g. cleansing the water tank regularly.





Kentledge setup  
for loading test of  
completed H-piles  
by steel blocks

The traditional concrete blocks are replaced  
by steel blocks. The use of man cage can be  
eliminated because the height of the setup is  
reduced. Risk of falling concrete fragments  
can also be eliminated.

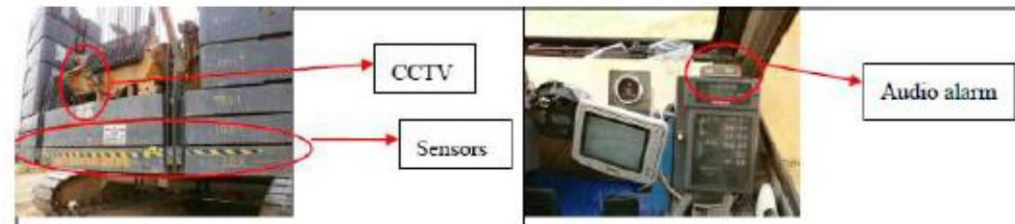


Plastic Cushion  
for Piling Final  
Set Operation

The traditional metal cushion was replaced  
by the plastic cushion. The change could  
prevent flying objects; eliminate welding  
operations; reduce operation noise and  
manual handling operations.



In case of workers come to the back of the crawler crane within a distance of 1.5m, the sensors will send the received signals back to a alarm, which is installed inside at the front of the operator cabinet. A continuous audio sound will be activated and alert the operators that someone stayed at the back of the crawler crane. The operator can identify if there is any worker stayed behind the crawler crane within 1.5, through either the CCTV or communicated with banksman



Put the device onto the bench saw as shown in photo [PH 01] and operate the bench saw as usual, no need to fix before use, the device will not cause any hazard or inconvenience, no power is needed for the device, its energy save.



PH 01 : The cover putting onto the bench saw



## To assist contractors to acquaint with HASAS version 1.5

1. On site visits
  2. Copies of HASAS version 1.5 to contractors
  3. Provide briefings
- Visit sites to cover all the 4 groups – building contracts, piling and foundation, demolition and other contracts
  - Meet the staff of site contractors to understand the adaptation of HASAS 1.5 in the future audits and exchange views



# Conclusions

## HASAS Version 1.5 Part A

1. Increase score weighting on the implementation of work safe behaviour, safety climate index and safe working cycle
2. Introduce heat stress and cold weather programmes
3. Element Job Safety Analysis (Generic Risk Assessment) remains as Critical Pass

## HASAS Version 1.5 Part B

1. Introduce Process Control and Safe System of Work concepts
2. Require update risk assessments (Specific )in each process
3. Require monitoring of each process by specific safety inspections
4. Add in new Critical Pass items
5. Add in new lifting plant and equipment

# Monitoring work by OSHC

1. Mechanism to control the quality of safety audits
2. All audit reports will be verified by Safety Audit Management Office of OSHC
3. Regular monitoring visit
4. Regular **communications** of audit standards/criteria with ASAs and contractors by circulars



# Appeal mechanism for contractors

1. Contractor can inform the Safety Audit Management Office for objection of audit results **within 1 week** after receiving the audit report.
2. Contractors should submit their appeal **in writing with supporting reasons** stated. Photos and document should be attached when necessary.

# OSHC's actions on appeal cases

1. Safety Audit Management Office will study the reasons behind the objection/appeal;
2. Clarify with the auditor when necessary;
3. Comment on the objection after considering both sides' supporting reasons;
4. ASA then may alter their scores if agreed;
5. Safety Audit Management Office will provide verified score.



# Safety Audit Management Office

1. Safety Audit Management Office issues Circulars to contractors and auditors on important issues from time to time.
2. Regular briefings are arranged to enhance communication between ASAs and Safety Audit Management Office. Latest development on auditing scheme and auditing skills will be discussed.
3. Regular experience sharing sessions with contractors and auditors, organized by HA/OSHC





- Thank you!