

“From Cradle to Cradle”

Workshop on Planning & Design for Safety in Project Life Cycle for Public Housing Developments

Perspective from Designer for Procurement

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- **Who is “Designer”?**
- **Procurement Cycle and Procurement Management**
- **Learning from Incidents**
- **Charting Safety Forward**
- **Aspirations**



Who is “Designer”?



- Client
- Project owner
- Developer
- Project manager

- Engineer
- Architect
- Maintenance surveyor
- Facility manager

- Contractor

Procurement Cycle and Procurement Management (1)



- To provide information on safety and health criteria in new projects and maintenance operations for contractors, the public and other key stakeholders;
- To make safety and health performance one of the critical considerations in tender selection for all new and existing building projects;
- To build up a safety profile of contractors for continuous assessment of safety performance;
- To monitor contractor's performance by independent and in-house assessment;
- To work through partnership by incorporation of contractors' input in respect of safe construction technology and equipment; and
- To promote safety and health issues particularly related to HA projects to enhance the safety and health of all persons involved.

Listing of Contractors

All listed Contractors should be accredited to

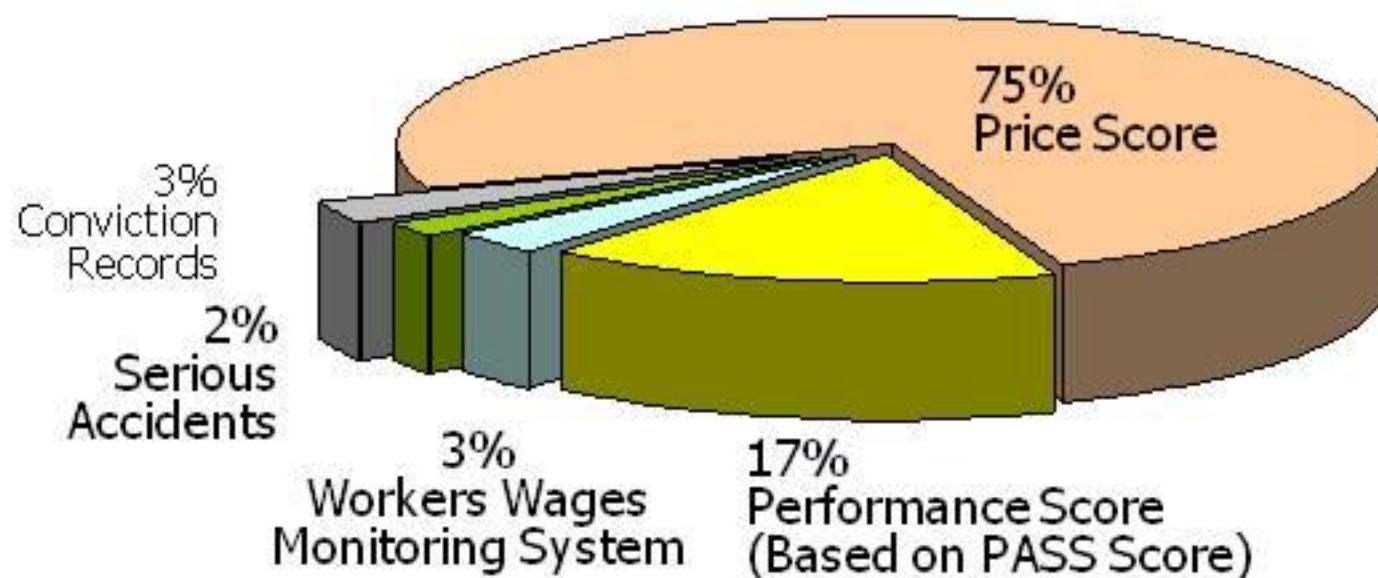
- **OHSAS 18001**
- ISO 9001
- ISO 14001

List Management Systems

- List management, contractors' performance subject to regular reviews
- Report of financial capability and updated ISO certification from Contractor
- Guide to Registration of Contractors & Service Providers
- Tendering Evaluation
- Preferential Tender Award System
- Technical submission
- Quarantine for risk management



Preferential Tender Award System (PTAS)



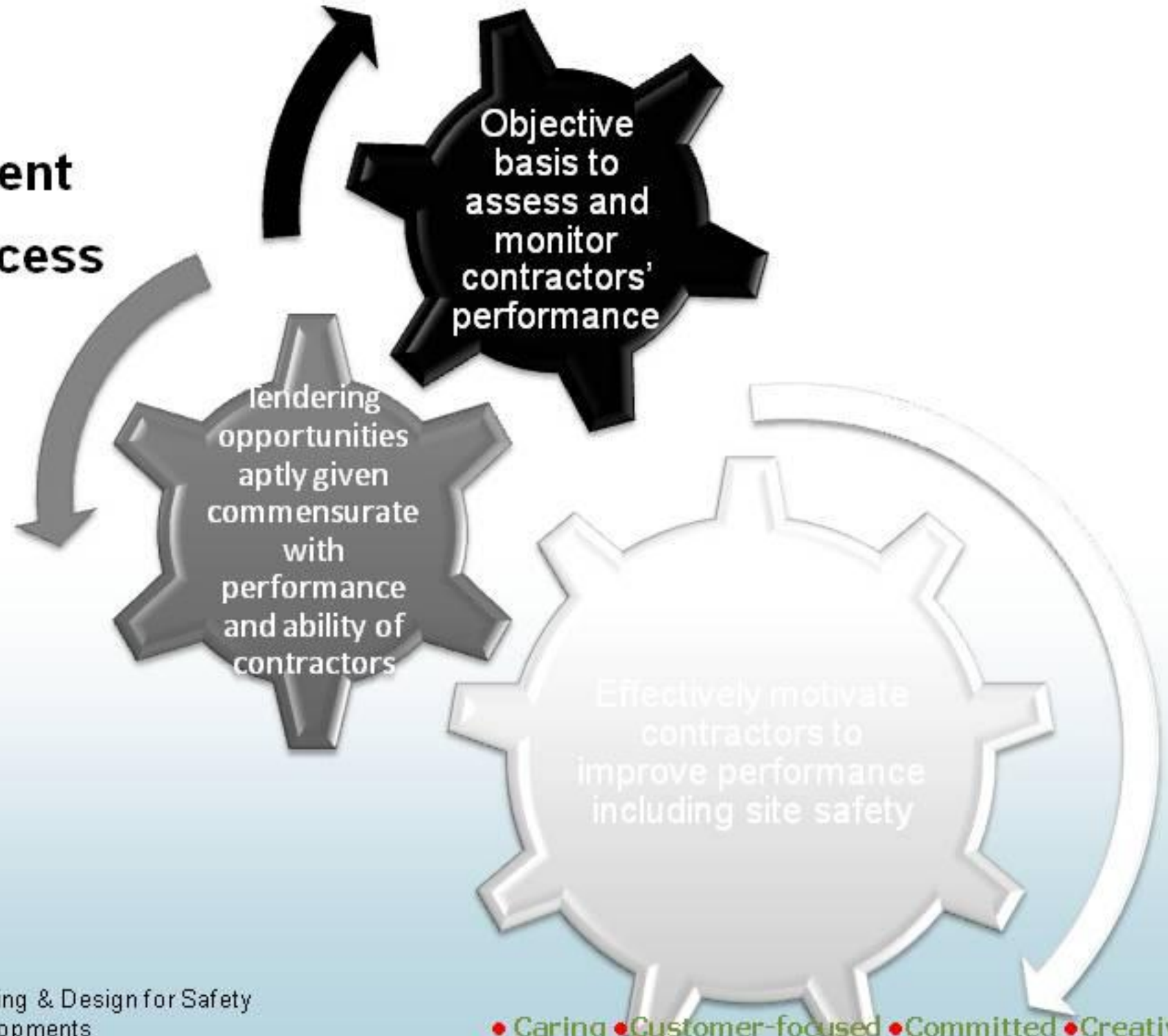
Components of Corporate Score

Component of Corporate Score	Building Contract	Nominated Sub-contract	Piling Contract
● Recent Serious Accidents (Demerit Points)	2	2	2
● Conviction Records (Demerit Points)	3	3	-
● Wages Payment Monitoring System (Bonus Points)	3	3	3
Total Scores =	8	8	5

Performance Monitoring Performance Assessment Scoring Systems (PASS)

Main functions:

- List management
- Tendering process
- Performance monitoring
- Review

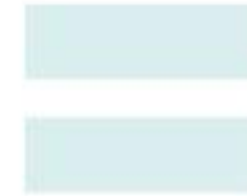


Performance Monitoring Housing Authority Safety Auditing System (HASAS)

An independent expert system to assess the effectiveness of Safety Management System



Align Top Management, Supervisors and Workers to the same standards



HA Safety Auditing System (HASAS)

- Encourage contractors to conduct safety climate index surveys and adopt work safe behaviour programme
- Enforce Safe Working Cycle
- Recognize innovative safety initiatives



System enhancements of HASAS version 1.4 for implementation from January 2009 and onwards

- Mandate checking of tower crane lifting operation on working floor and ground floor
- Instigate generic 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
- Introduce “Critical Pass” elements
- Forge the implementation of Safe Working Cycle, Safety Climate Index Survey and foster Work Safe Behaviour practice, and encourage safety innovation
- Strengthen link to Pay for Safety Scheme on account of performance driven criteria, based on safety audit results



System enhancements of HASAS version 1.4 for implementation from January 2009 and onwards (cont'd)

- **Safety audit scores to be adjusted based on annualized accumulative accident rate and “critical pass”**
- **Unsatisfactory safety performance, occurrence of serious accident or near miss incident with potentially serious consequence**
 - **Trigger CRC to interview** the contractor
 - **Additional safety audit**
 - **Close monitoring** of the contractor's safety performance



Procurement Cycle and Procurement Management (8)

Safety Climate Index Surveys

- 794 returns from 9 new works building contracts (2008)

OBSERVATIONS

STRENGTHS

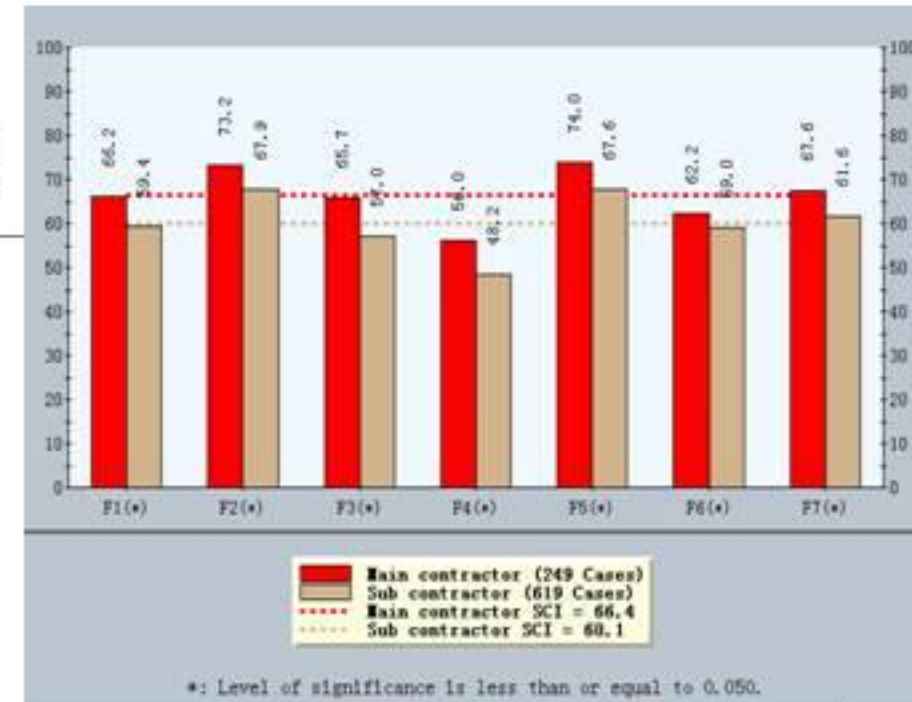
- Factor 2 - Safety Resources and Support
- Factor 5 - Personal Involvement in Safety and Health

AVERAGE

- Factor 7 - Safety Promotion and Communication
- Factor 1 - Corporate and Management Commitment

WEAKNESSES

- Factor 6 - Safe Working Attitude
- Factor 3 - Awareness of Risk-taking Behaviour and Hazards
- Factor 4 - Perception of Safety Rules and Procedures



- Main contractors are more capable of carrying out safety functions than subcontractors
- "Leading from the Top" is the most effective driving force in fostering site safety
- Workers in general hold that it is not easy to comply with the safety regulations and operational guidelines
- Workers are of the view that the attitude of fellow workers can uplift influence on the work practices among them

Learning from Incidents (1)

Case 1

A collision of tower cranes occurred in two adjoining building sites

The tower crane of Site B entered into the overlapping working zone of the tower cranes of the two Sites A & B. The sling of tower crane in Site A was hit by the tower crane in Site B and the concrete skip being hoisted in Site A was swung to the external wall of Site A causing minor damage to the scaffolding. There was no personal injury in the incident.

Lesson learnt from the incident –

- Risk assessment
- Coordination
- Supervision
- Handling the incident
- Precautionary measures
- Safety awareness and training

Enhancement measures at site

- | | |
|---|---|
| 1 | Enhanced coordination and communication for site operations |
| 2 | Anti-collision system with “permit to work” for by-pass |
| 3 | Responsible person to manage and control by-pass key |

Learning from Incidents (2)

Case 2

An accident involving falling object in a construction site

A worker on the ground floor was injured by a long reinforcement bar dropped from the working floor. Instead of calling for ambulance, the contractor arranged their safety officer to accompany the injured person to hospital by taxi for medical treatment.

Lesson learnt from the incident –

- Risk assessment
- Coordination
- Supervision
- Handling the incident
- Precautionary measures
- Safety awareness and training

Enhancement measures at site

- | | |
|---|---|
| 1 | Enhanced coordination and communication for site operations |
| 2 | Tightened supervision & sub-contractors management |
| 3 | Observe immediate & timely notification of incident report; handling the injured; training and communication to site team |

Learning from Incidents (3)

Case 3

An accident involving a worker being struck by a metal pile

While a protruding portion of a socket H-pile was being cut above a slope, a section of the pile (8m long by 510mm diameter) suddenly fell down and struck against a worker who was assisting in aligning the gas hoses of the flame cutting equipment nearby. The worker was seriously injured. No support to the concerned portion of H-pile was provided during the cutting.

Lesson learnt from the incident –

- Risk assessment
- Coordination
- Supervision
- Handling the incident
- Precautionary measures
- Safety awareness and training

Enhancement measures at site

- | | |
|---|---|
| 1 | Early planning of site works; avoid haphazard operations |
| 2 | Conduct risk assessment, implement precautionary measures |
| 3 | Train all site personnel; strengthen communication |

Learning from Incidents (4)

Case 4

An accident involving tower crane lifting of metal formwork

Metal moulds were lifted from ground floor to the working floor of a domestic block by a tower crane. A rigger was assigned to station on the ground to hook the metal moulds.

When the tower crane operator was lowering the hook of the tower crane to the ground for lifting the last piece of metal mould to the working floor, the rigger hurriedly instructed the crane operator to stop lowering the hook through the walkie-talkie. A moment later, the crane operator found the rigger lying on the ground and injured.

Lesson learnt from the incident –

- Risk assessment
- Coordination
- Supervision
- Handling the incident
- Precautionary measures
- Safety awareness and training

Enhancement measures at site

- | | |
|---|---|
| 1 | Review of lifting procedures, site demonstrations with photos, briefing to site personnel |
| 2 | Slow down motion of lifting in proximity to lifting object |
| 3 | Suggest to install CCTV at lifting zone |

Charting Safety Forward (1)

(1) Further contractual enhancement measures

- **Safety Helmet with Chin Strap**
- **Tower Crane Lifting**
 - CCTV Surveillance System in Lifting Zones
 - Log Book under Lifting Operation Plan
 - Appoint Responsible Person for Lifting Operation
 - Computerised Surveillance in Site Office
 - Permit to work
- **Installation of Reversing Video Device (RVD)**
 - CIC's Publication No. 3 "Guidelines on Safety of Site Vehicles and Mobile Plant"

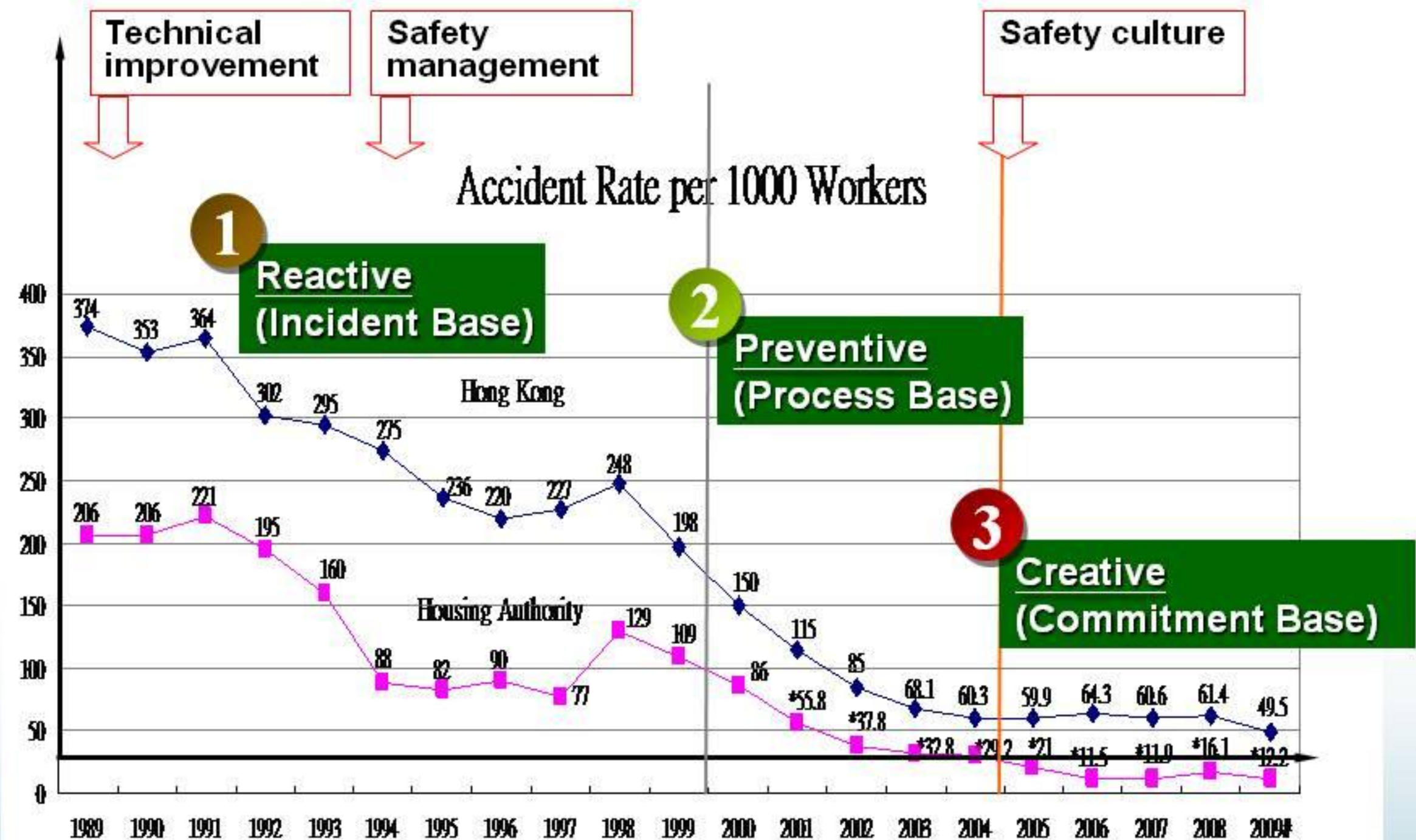


(2) Enhancing collaborative learning

- **Safety Training Programme for Resident Site Staff** (2-year full launching phase from 2010 and onwards + incubation) --- basic safety management + basic accident prevention + construction safety modules
- **Safety Training Programme for Professional Staff (& technical grade staff)** encompassing "design for safety"



Charting Safety Forward (2)



Source of information: Labour Department & Census and Statistics Department

* For New Works projects

Charting Safety Forward (3)

- No fatal accidents
- Accident rate per 1000 workers not more than 15 per year
- Zero incident



Getting together is a beginning.

Working together is progress.

Collaborating together is success.

Key Success Factors

- Partnering through **teamwork**
- Building a considerate **work culture**
- Work to achieve better value in **service delivery**
- **Commitment** for continuous improvements

CARING

- **C**ommitment
- **A**ttitude
- **R**esponsibility
- **E**ffectiveness



Thank you