



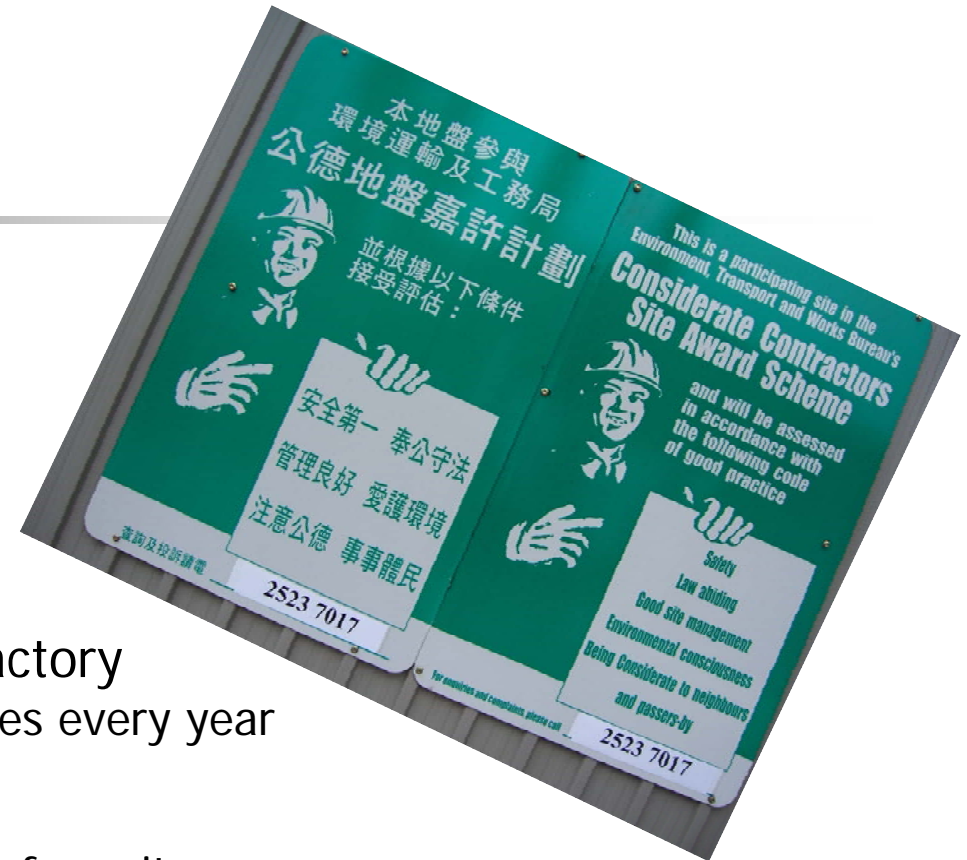
# Prevention of Incidences of Falling from Height



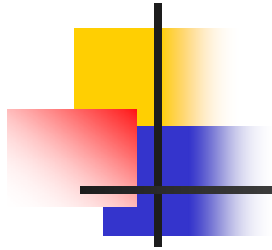
*Ir Dr Encon Y.Y. Hui*

# Introduction

- Modern metropolitan city
- Building activities
  - ◆ Construction,
  - ◆ Operation & Maintenance,
  - ◆ Project Works,
  - ◆ Demolition
- Safety statistics far from satisfactory
  - ◆ Significant percentage of injuries every year
    - ◆ 'Fall of person from height'
    - ◆ 'Struck by falling object'
  - ◆ Something to do with the pull of gravity
- What are the safety hazards of working at height?
- What can we do to prevent it?







- Housing Authority Site Safety Report
- Year 2004
  - ◆ 160 cases of occupational injuries
  - ◆ 14 cases of ‘fall of person from height’
  - ◆ 20 cases of ‘struck by falling object’
  - ◆ 1 case of fatal injury was due to ‘struck by falling object’





# Why work at Height?

---

- **Inside the building**
  - ◆ Objectives of Space planning
  - ◆ Services installed at ceiling level
- **Outside the building**
  - ◆ Maintenance of building envelope
  - ◆ Routine cleaning of glazed windows
  - ◆ Renovation projects
  - ◆ Repair of facilities external to the building

# What are the Hazards?

Principal Work	Scenario	Fall of Person from Height	Struck by Falling Object
Building works (19 scenarios of 'fall of person from height'; 14 scenarios of 'struck by falling object')	Rebar preparation		✓
	Installing rebar	✓	
	Formwork	✓	
	Removal of formwork	✓	
	Lifting		✓
	Operating caterpillar crane	✓	✓
	Laying concrete	✓	✓
	Plaster work	✓	
	Plumbing	✓	
	Fire services work	✓	✓
	Lift installation	✓	✓
	Lift transportation		✓
	Air-conditioning installation	✓	
	Air-conditioning transportation		✓
	Painting	✓	
	Entering/leaving gondola	✓	
	Operating gondola	✓	✓
	Aluminium window installation	✓	✓
	Cabinet installation	✓	
	Lifting		✓
Tile/cladding installation	✓	✓	
Use of hoist	✓	✓	
Cleaning (interior)	✓		
Cleaning (exterior)	✓	✓	

Source: Hazard Identification Handbook of Occupational Safety & Health Council

# Hazard Prevention Practices

- Fixed Installation
  - Service platform
  - Cat ladder
- Mobile Equipment
  - Hoist
  - Gondola
  - Reach truck
- Others
  - Scaffolding
  - Personal Protection Equipment (PPE)



# Learn from Lessons

- Labour Department has published case study of fatal accidents in Hong Kong
- Cases of falling from height
- Cases of falling objects





# Cases of Falling from Height

Case	Lessons Learned
<p>Case 1. A worker plunged to death from 13/F of a building under construction in an evening</p>	<ul style="list-style-type: none"><li>a) Suitable working platform to worker performing concrete smoothing work at the external wall of the building should be provided and properly maintained.</li><li>b) Suitable and adequate safe access to and egress from the working place at the external wall should be provided and properly maintained.</li><li>c) Every working place and the approach to such place should be adequately and suitably lit.</li></ul>
<p>Case 2. A worker suspected to have fallen into a floor opening on 1/F of a building under construction</p>	<ul style="list-style-type: none"><li>a) If any work under the duct chamber is required, the floor opening has to be adequately fenced or covered against fall before the work commences.</li><li>b) A safe system of work should be developed and implemented, including proper authorization for entry into a place where falling hazard exists.</li><li>c) Suitable and sufficient training, information, instruction and supervision should be provided to ensure the work could be completed safely.</li></ul>

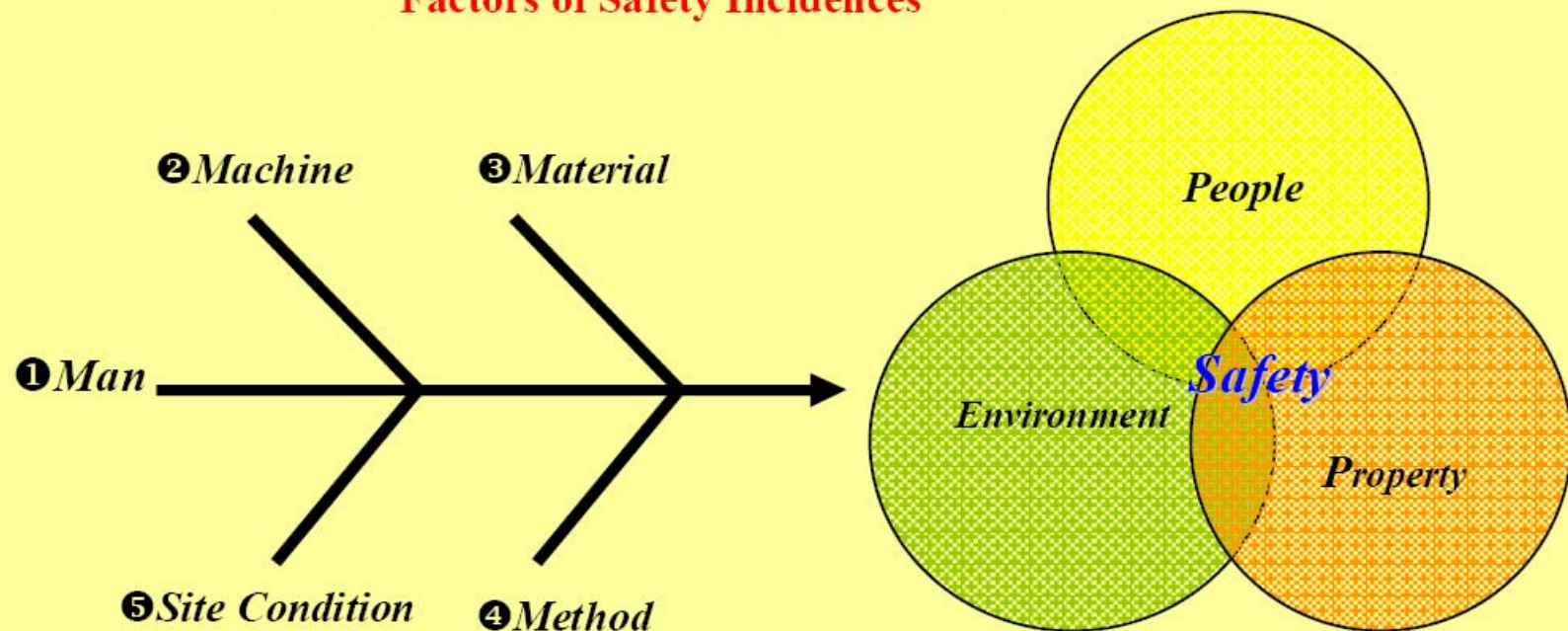


# Cases of Falling Objects

Case	Possible Causes
Case 3. A second hand air-conditioner fell from a 13/F flat under renovation	a) Improper dismantling work b) Object was not secured c) Barrier was not erected at street
Case 4. Aluminium window frame fell from height	a) Improper installation of window b) Inspection had not been made on loose window frame c) Proper maintenance had not be done

# Analysis

## Factors of Safety Incidences





# Findings

---

- Man?
  - Green card and safety inductions
  - Safety awareness has been increased
  - But training to work at height?
- Machine?
  - Hoist is not always available
  - Maintenance issue
- Material?
  - No shortage of PPE
  - Proper usage?
- Site Condition?
  - Can be managed



---

➤ Method?

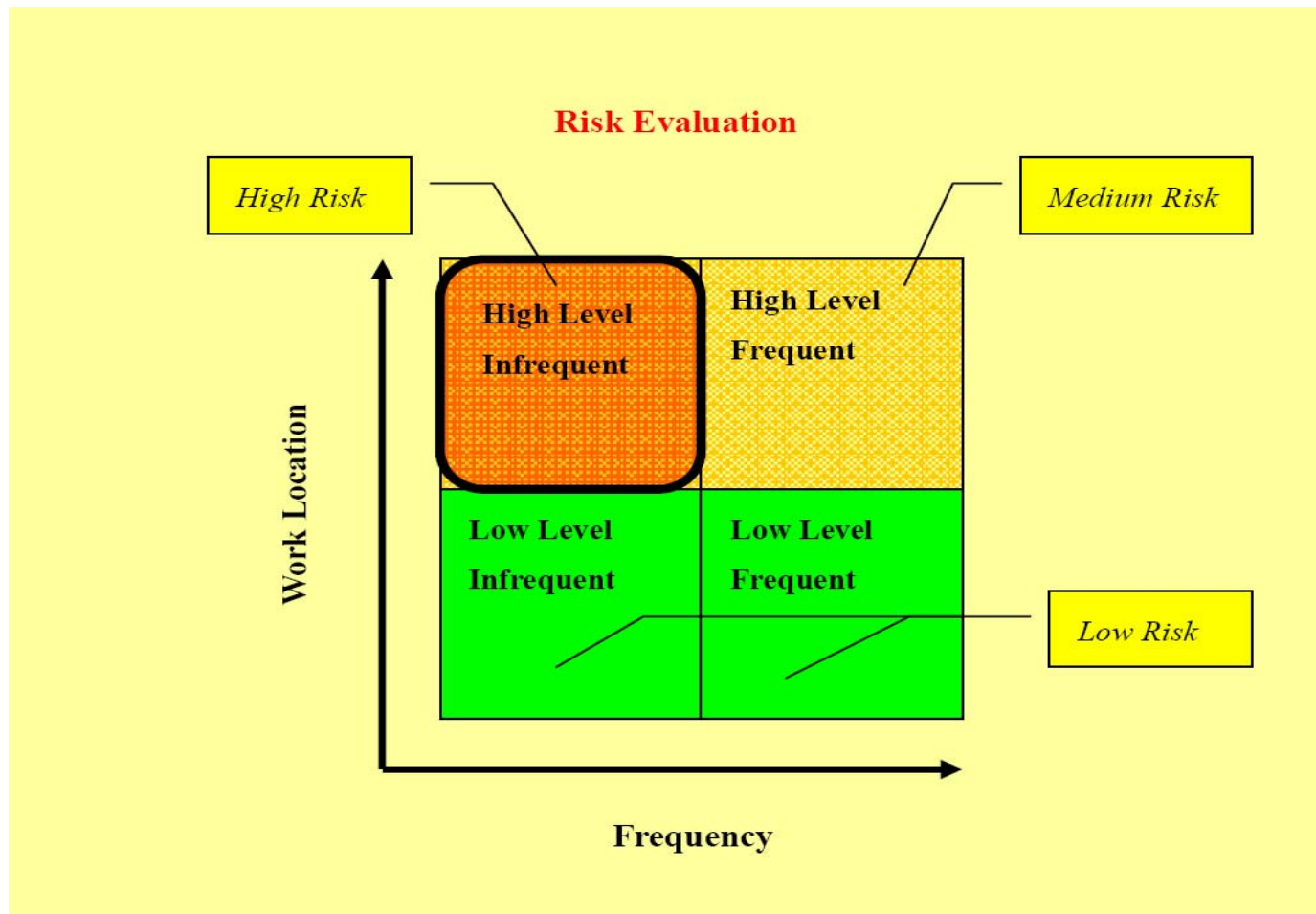
- In line with findings of Labour Department
- Inadequate safety precaution
- Lack of effective safety work procedure

➤ Ignorance is inexcusable

➤ Proper method is important

➤ Are risks the same at all work places?

# Differing Risks



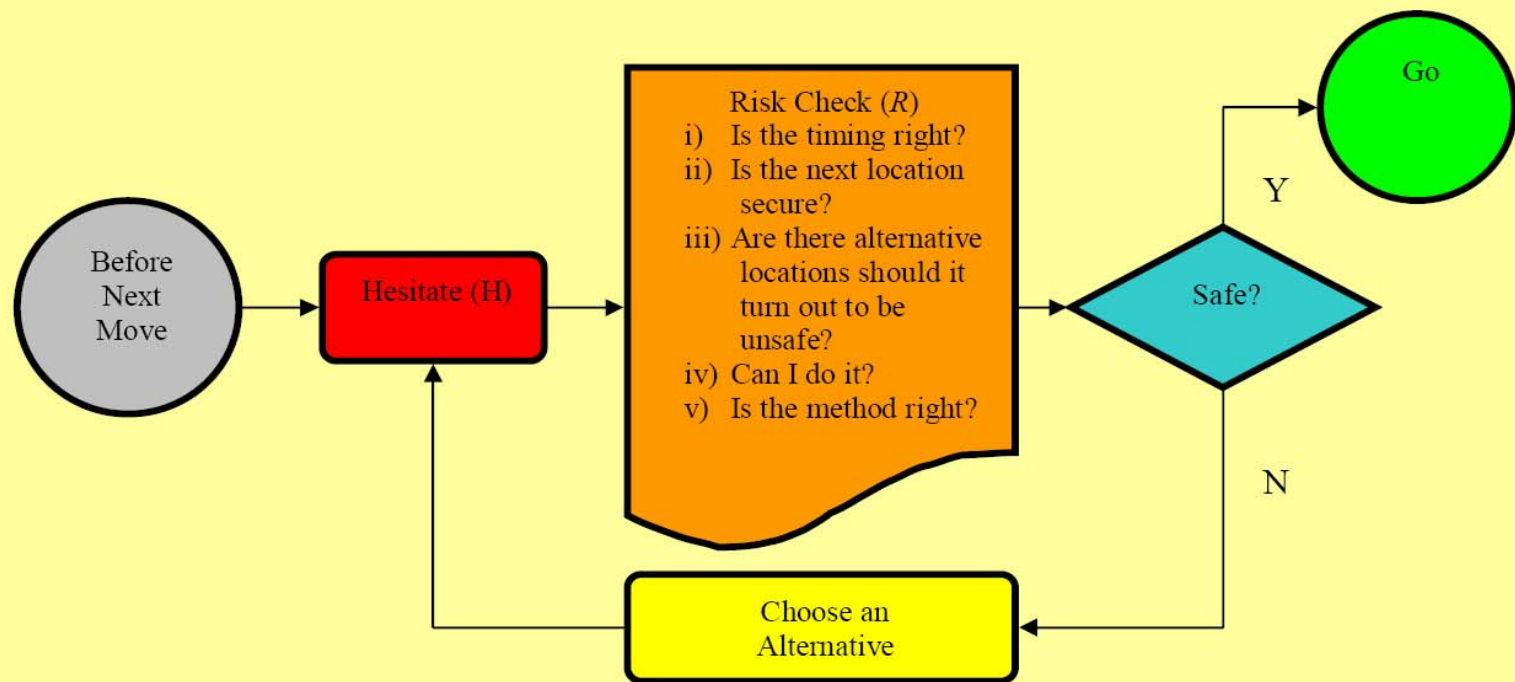
# Risk Prevention

- Learn from skilled workers of scaffolding
- Method:
  - ◆ Hesitate (H) +
  - ◆ Risk Check (R)
- i.e. 'H+R'



# Method of 'H+R'

Framework of Working Safe at Height- 'H+R'



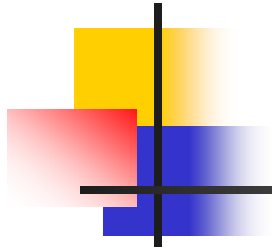




# Summary

---

- 1) Gravity is pulling
- 2) Recognize the fact that certain high work locations have higher risk
- 3) Pace work with risk to enhance safety
- 4) 'H+R' provides a simple yet practical framework to enhance safety of working at height
- 5) 'Fall of person from height' and 'Struck by falling object' are preventable



Q & A