

# Site Safety Seminar for Capital Works New Works Contracts



## Work at Height Safety

**Present by:**  
**TAM Chiu-kwong Wesley**  
**Divisional Occupational Safety Officer**



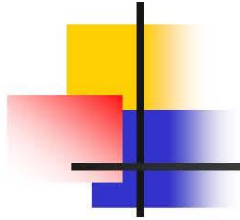
**LABOUR DEPARTMENT**



# Content

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- General Information
- Common Hazards and Causes
- Legislation
- Preventive Measures
- Case Study



# General Information



# General Information

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- Definition of “Fall of Person from Height”
  - Includes:
    - A fall from ground level to below ground level
    - Landing awkwardly after a jump from a height
    - Falling off an animal such as horse, donkey
    - Other falls with vertical distance involved



# General Information

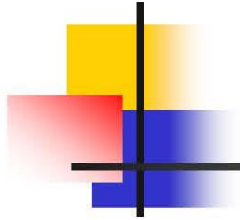
## ■ Accident Statistics

	2008	2009	2010	2011	2012	2012 1st Half	2013 1st Half
Construction Industry	3033 (20)	2755 (19)	2884 (9)	3112(23)	3160 (24)	1470 (7)	1439 (3) -2.1%
Fall of Person from Height	388 (8)	397 (15)	406 (6)	390 (10)	423 (12)	186 (3)	201 (2) +8.1%

\* ( ) fatal case

**Among the 24 fatal industrial accidents in the construction industry last year (2013), 11 involved RMAA works and seven fall-from-height fatal accidents were related to erection or dismantling of bamboo scaffolds. Moreover, five construction workers fell to death from ladders or unsafe means of support last year.**

**Press Release January 12, 2014** 5



# Common Hazards and Causes



# Common Hazards

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- Serious injury or death caused by:
  - Human Fall from Height
  - Falling Object
  - Others:
    - Fire
    - Electric Shock
    - Allergic to Paint
    - Eye Injury
    - Injury from Manual Handling Operation

# Common Hazards

- Climbing on a bamboo scaffold



Source: 高處工作意外致命個案集, April 2013



# Common Hazards

- Working on floor edge of construction site



Source: 高處工作意外致命個案集, April 2013

# Common Hazards

- Working on the edge of retaining wall



Source: 高處工作意外致命個案集, April 2013

# Common Hazards

- Working on A-ladder



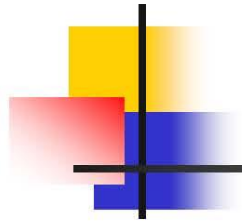
Source: 高處工作意外致命個案集, April 2013



# Common Causes of Accident

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- Failed to provide / use suitable working platform
- Failed to provide safe access to and egress from working platform
- Collapse of working platform
- Failed to provide guard-rails / barriers / toe-boards / fences / covering for openings
- Failed to provide / use suitable personal protective equipments



# Legislation



# Legislation

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- Cap 59 Factories and Industrial Undertakings Ordinance & Cap 509 Occupational Safety and Health Ordinance
  - ◆ Sections 6A and 6B: General Duties



# Legislation

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- Factories and Industrial Undertakings Ordinance
  - ◆ Cap 59I Construction Sites (Safety) Regulations
    - **Part VA: Scaffolds, Working Platform and Ladders, etc.**



# Construction Sites (Safety)

## Regulations: Part VA

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- Reg 38A: Safety of Places of Work
- Reg 38B: Prevention of Falls
- Reg 38C: Safe Means of Support
- Reg 38D: Construction and Maintenance of Scaffolds
- Reg 38E: Trained Workmen to Erect Scaffold under Supervision
- Reg 38F: Inspection of Scaffolds



## CSSR – 38A(2) & 38AA(2)

- Safe Suitable and adequate safe access to and egress from every place of work on a construction site shall be provided.
- Every safe access to and egress from every place of work on a construction site shall be properly maintained.



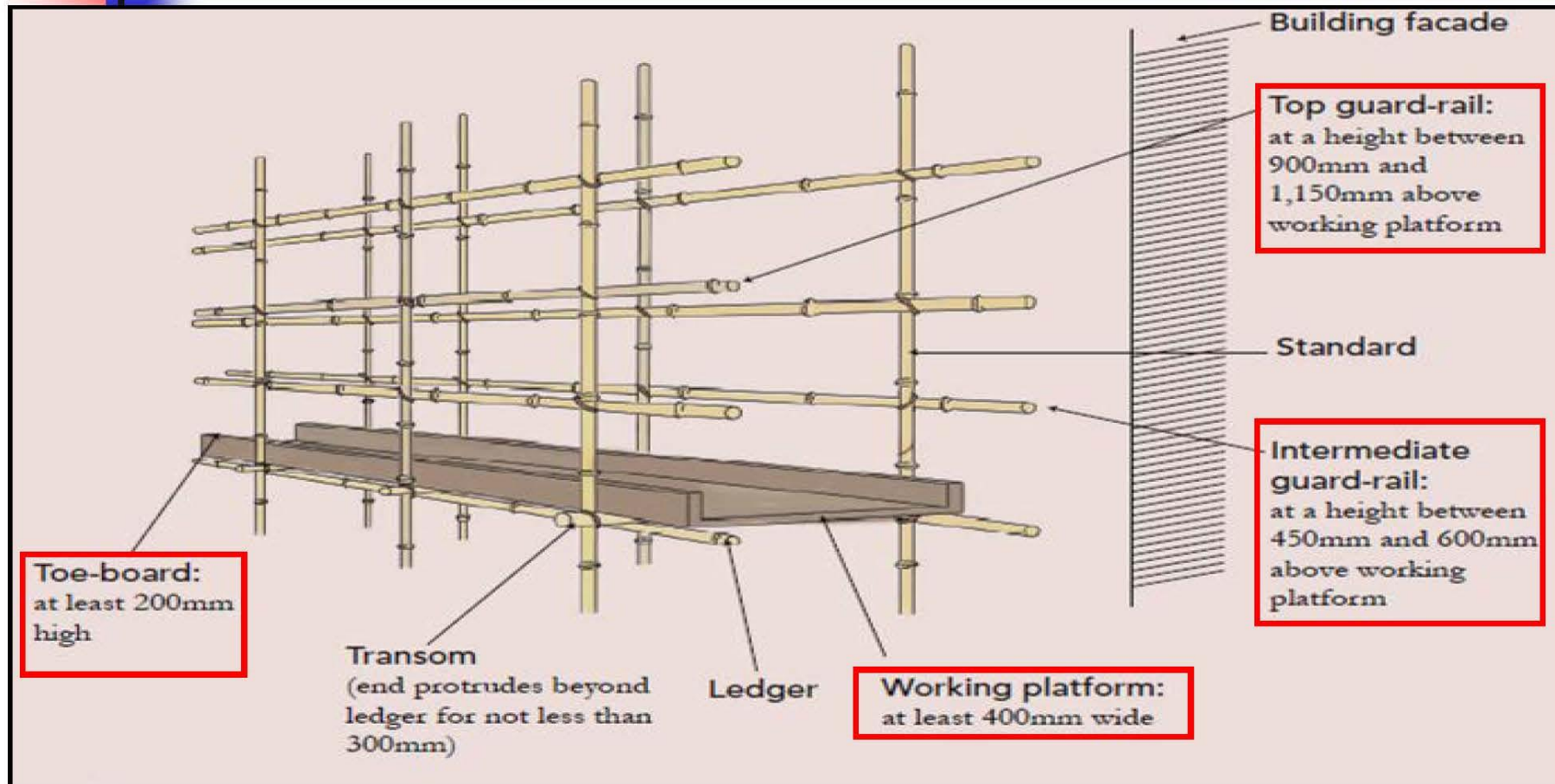


## CSSR – 38B(1), 38B(1A) & 38B(2)

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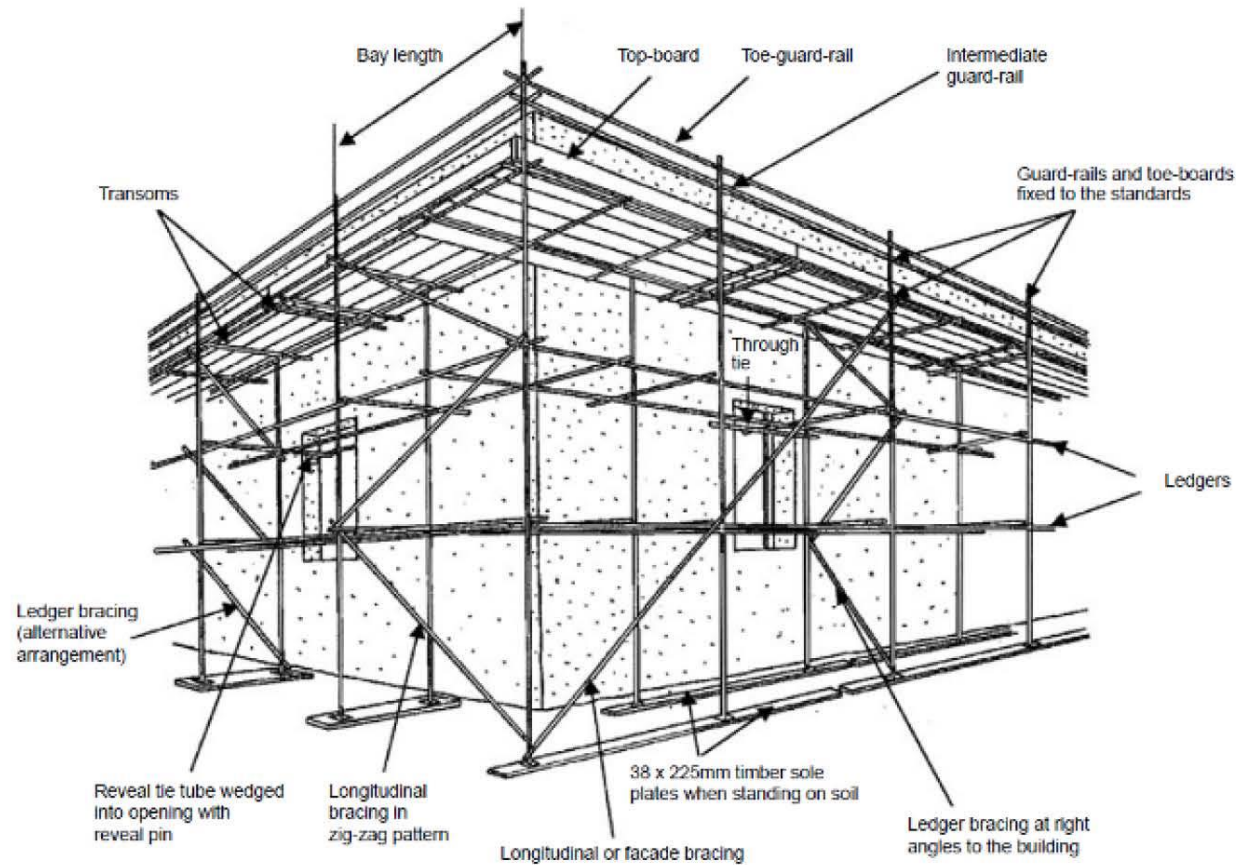
- Adequate steps, including the provision, use and maintenance of working platforms, guard-rails, barriers, toe-boards, fences, coverings for openings, gangways and runs, shall be taken to prevent any person on a construction site from falling from a height of 2 metres or more.

# Working Platform



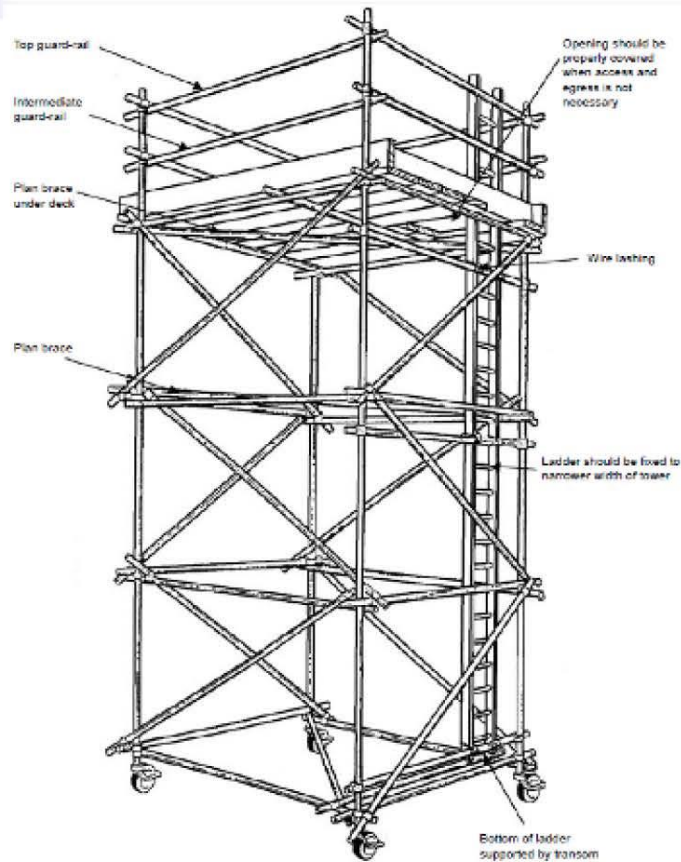
## General Requirements

# Working Platform



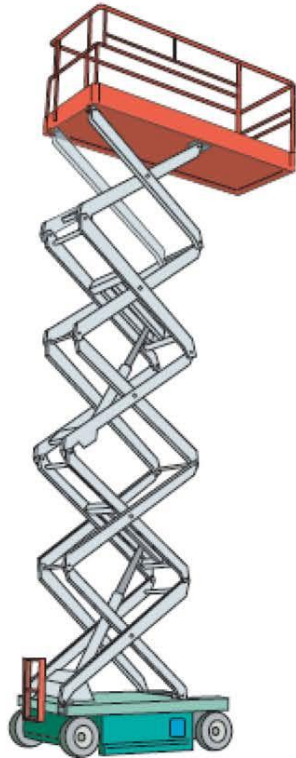
## Fixed Working Platform

# Working Platform

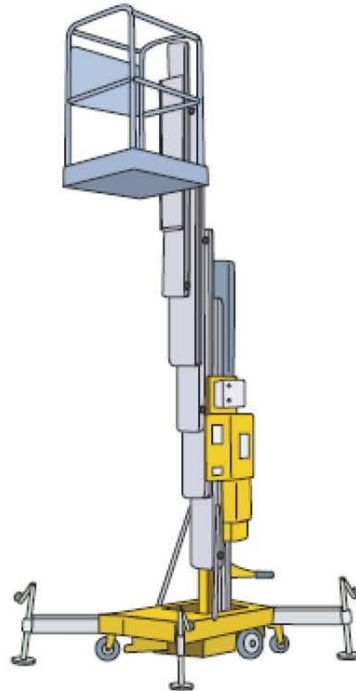


## Mobile Working Platform

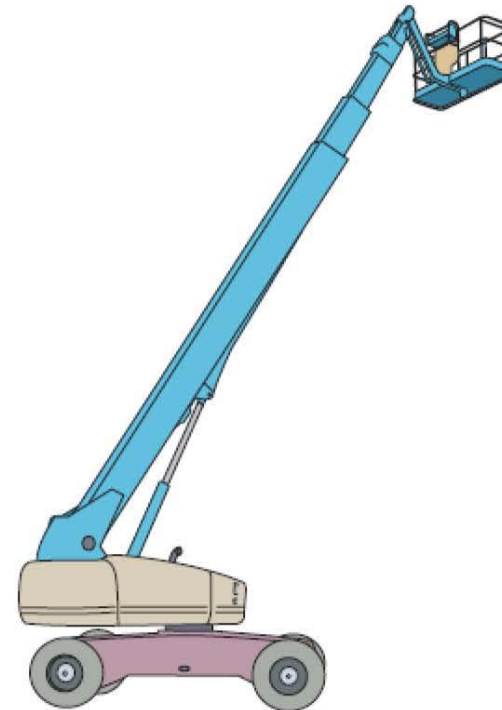
# Working Platform



The scissor type



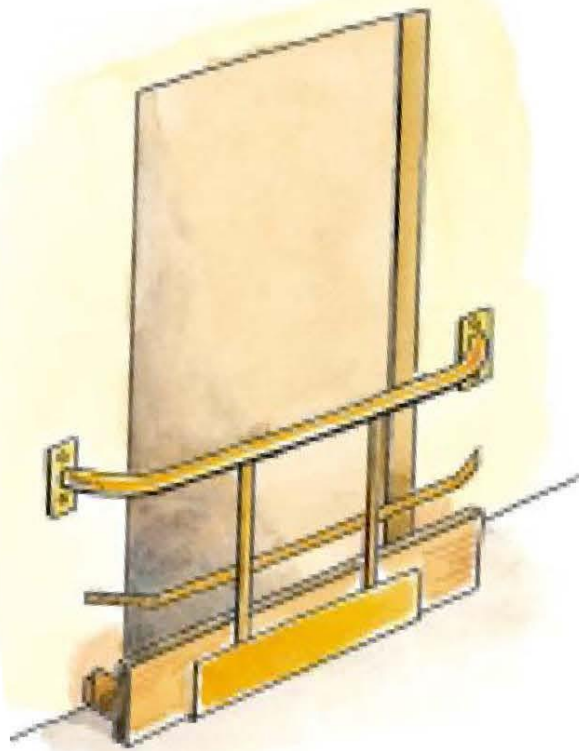
The vertical mast type



The telescopic boom type

## Elevated Working Platform

# Guard-rails, Barriers, Toe-boards and Fences



# Coverings for Openings





**Substandard working platform**  
In contravention of Regulation 38B of the  
Construction Sites (Safety) Regulations



No guard-rails, toe-boards,  
outriggers or access and  
egress are provided on the  
working platform



## CSSR – 38C

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- Provide, and ensure the use of, a scaffold, ladder or other means of support, all of which shall be safe for the purpose, having regard to the work to be done, where work cannot be safely done on or from the ground or from part of a permanent structure.

# Work at Height by Ladder

*Usage?*

*Suitable?*





# Safe Use of Ladder

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- Ladder is for access and egress purpose only.
- **Should have :**
  - Three-point contact with it.

# Safe Use of Ladder

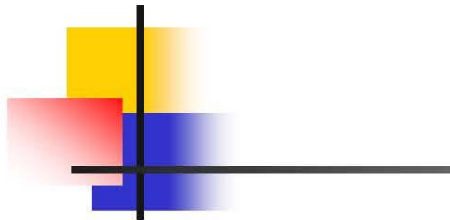
- Use the right type of ladder and ensure it is structurally sound.
- Inspect the ladder before use and regularly afterwards.
- Ensure the ladder is stable and resting on an even and solid ground. Fasten the ladder properly with ropes whenever necessary, or have a fellow worker to stabilise the ladder with hands.



# Safe Use of Ladder

- For straight ladders, the top of the ladder should be at least one metre above the resting place to provide for the handrail





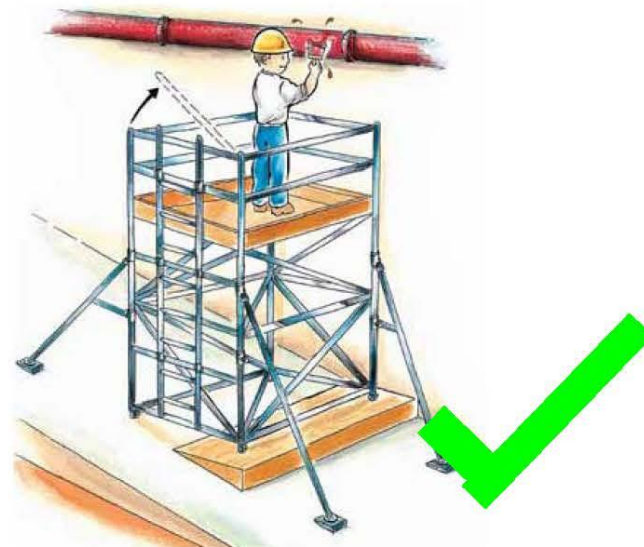
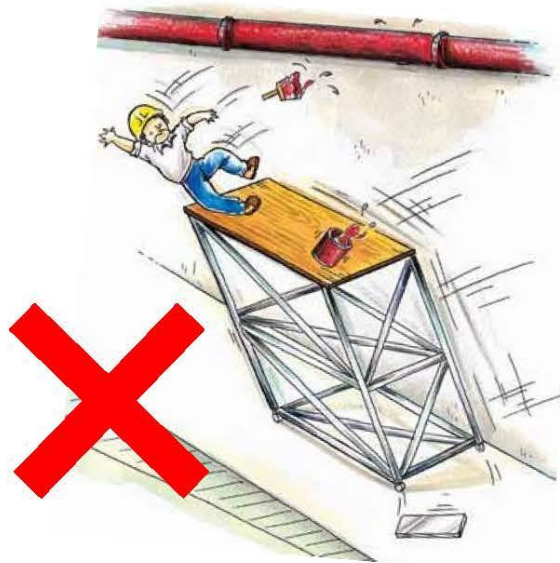
## Unsafe means of support

In contravention of Regulation 38C of the Construction Sites (Safety) Regulations



## CSSR – 38D(a)

- Every scaffold, ladder or other means of support shall be so designed and constructed that it does **not** collapse, overturn or move accidentally.





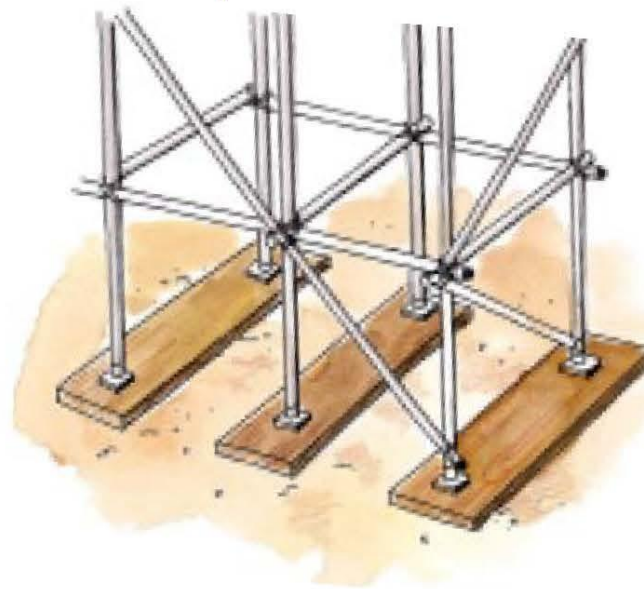
## CSSR – 38D(b)

- Every scaffold, ladder or other means of support shall be of suitable and sound materials of sufficient strength and capacity for the purpose for which it is to be used.



## CSSR – 38D(c)

- Every scaffold, ladder or other means of support shall be properly maintained and every part thereof kept so securely supported or suspended as to ensure that it is stable.



# CSSR – 38E

- Adequately trained and possess adequate experience of such work.
- Under the immediate supervision of a competent person.





## CSSR – 38F

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- Inspected by a **competent person**:
  - Before **first use**;
  - **Addition, partial dismantling or other alteration**;
  - After any exposure to **weather conditions** likely to have affected its strength or stability or to have displaced any part;
  - At regular intervals **not exceeding 14 days**.



# CSSR – 38F

[規例第 38F(1)條]  
[reg. 38F(1)]

**表 格 五**  
**F O R M 5**

**建築地盤(安全)規例**  
**棚 架**  
**每十四日一次或在其他場合執行的檢查結果報告**  
本表格乃由勞工處處長為施行建築地盤(安全)規例第 38F(1)條而認可

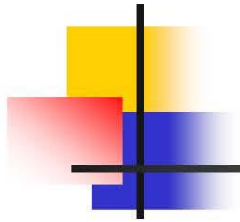
**Construction Sites (Safety) Regulations**  
**SCAFFOLDS**  
**REPORTS OF RESULTS OF FORTNIGHTLY OR OTHER INSPECTIONS**

Form approved by the Commissioner for Labour for the purposes of regulation 38F(1) of the Construction Sites (Safety) Regulations

有關棚架的說明或所在地點 Description or location	檢查日期 Date of inspection	檢查結果 註明該架棚架是否處於安全操作狀態 Result of inspection State whether the scaffold is in safe working order	檢查者簽署及職稱 Signature and designation of person who made the inspection
(1)	(2)	(3)	(4)

任何合資格檢驗員或合資格的人，如向承建商交付他明知有任何要項屬虛假的證明書或報告，即屬犯罪。一經定罪，可處罰款二十萬元及監禁十二個月。  
Any competent examiner or competent person who delivers to a contractor a certificate or makes a report which is to his knowledge false as to a material particular shall be guilty of an offence and shall be liable on conviction to a fine of \$200,000 and to imprisonment for 12 months.  
CSSR-F5

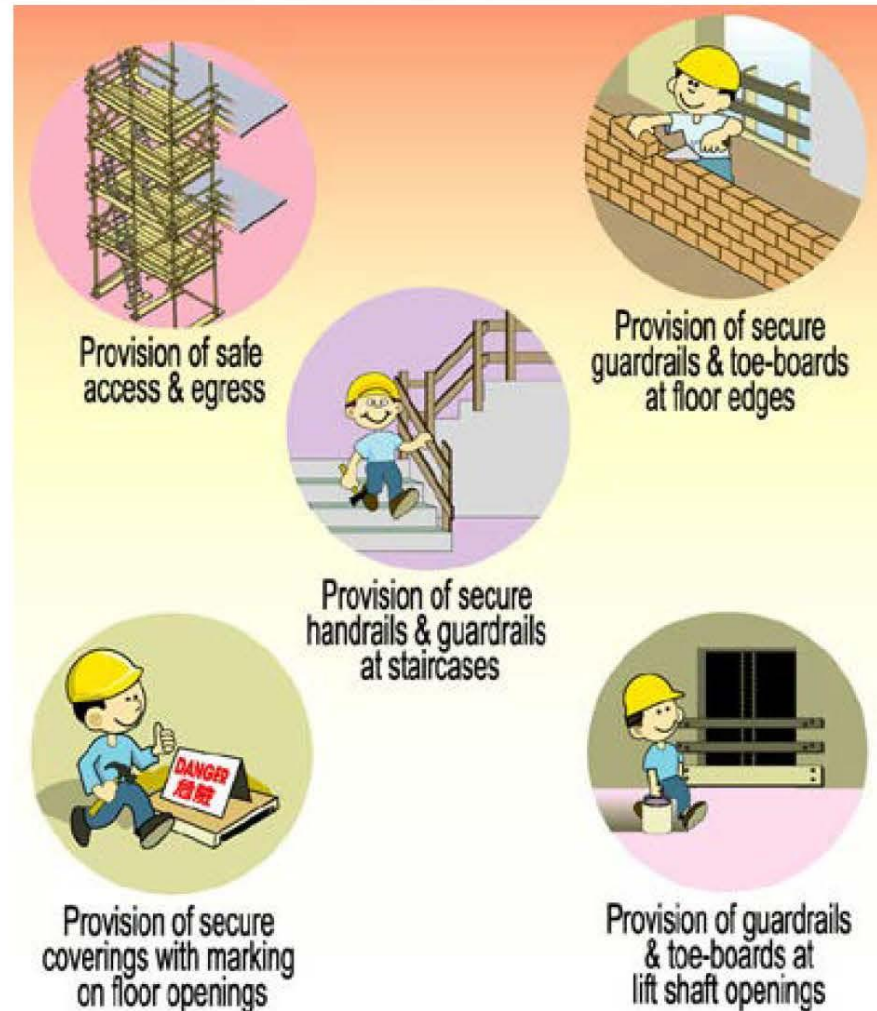
- A report (**Form 5**) should be made and signed by the person carrying out the inspection in an approved form containing the prescribed particulars which include a statement to the effect that the scaffold is **in safe working order**.



# Preventive Measures

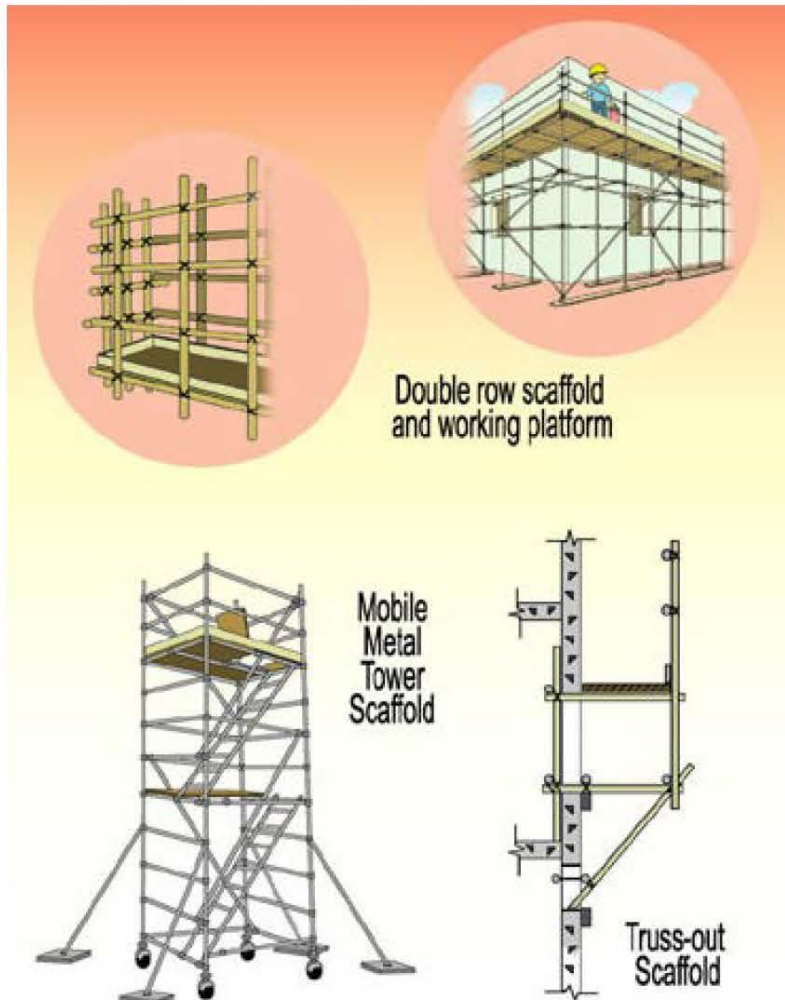
# Preventive Measures

- Examples of safety measures for work on ground, building or other permanent structures.



# Preventive Measures

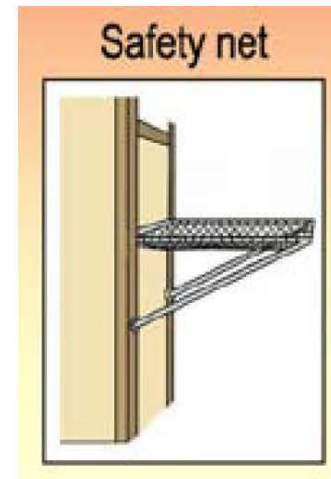
- Examples of safe working platforms.



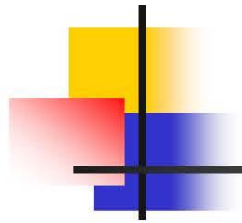


# Preventive Measures

- Personal protective equipments only be used when provision of safe place of work or working platform is not possible in all circumstances.



# Preventive Measures



Independent lifeline

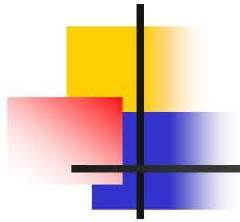
Fall Arrester

Safety harness

Gloves



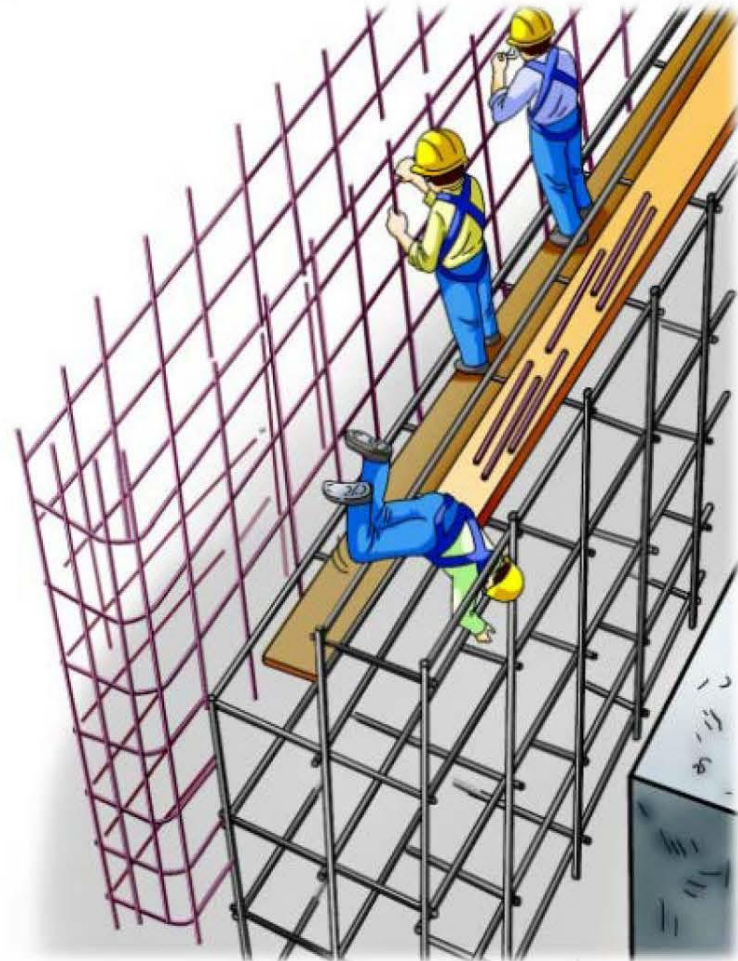
Personal protective equipment



# Case Study

# Scenario

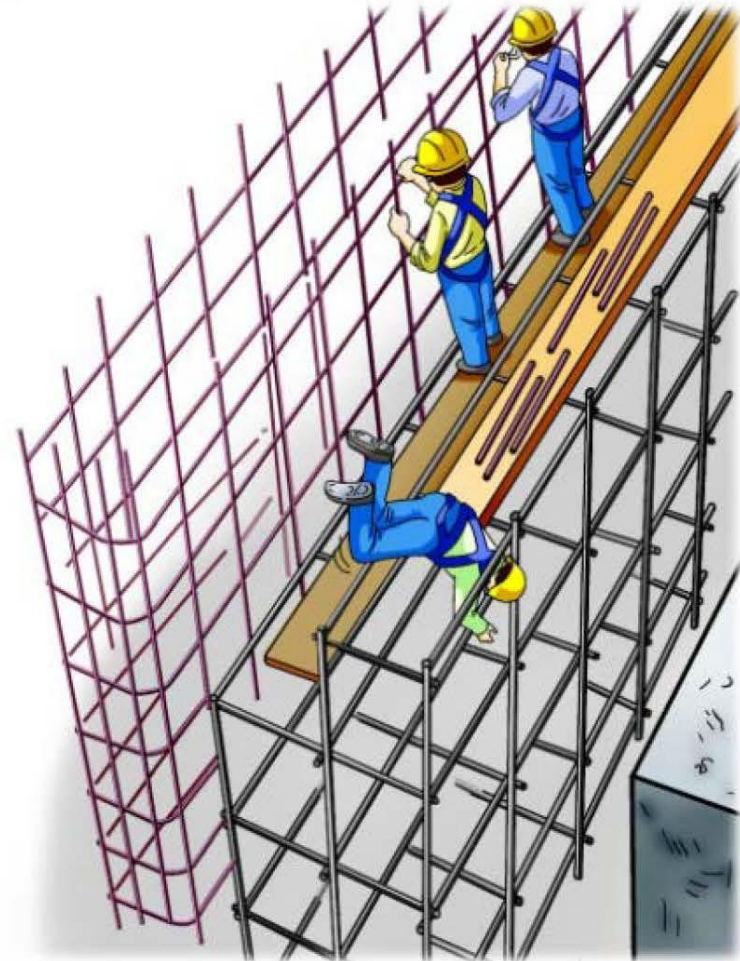
- Accident happened on Level 5 of the building under construction.
- A substandard working platform was erected on the top of the the scaffold to support the deceased and the three coworkers to fix the steel bars.



Source: An Analysis on  
Occupational Fatalities  
Casebook Vol. 4, March 2008

# Scenario

- At the time of the accident, while a bar-fixing worker was taking a steel bar from the upper level of the scaffold, he lost his balance and fell to death from the substandard working platform.



Source: An Analysis on  
Occupational Fatalities  
Casebook Vol. 4, March 2008



# Case Analysis

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- The working platform on which the deceased and his co-workers worked was not closely boarded.
- Neither toe-board nor guard-rail was erected on the working platform.
- The upper level of the scaffold was also not fully covered.
- The deceased and his co-workers had all worn a safety belt. However, there was no suitable anchorage or independent lifeline on the scaffold for them to anchor their safety belts.



# Case Analysis

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- No safety net was erected underneath the working platform on the tubular scaffold.
- After erection of working platform, the site supervisory staff had not checked the working platform to see whether it was safe to use.
- No specific instruction, information and training were given to the bar-fixing workers that they needed to erect a closely boarded working platform with suitable guard-rails and toe-boards.



# Lessons to Learn

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- Working platforms of proper and safe construction are provided to prevent workers from falling from a height.
- The working platform is closely boarded and fitted with suitable guard-rails and toe-boards.
- Any openings on the working platform, through which a person is at risk of falling, are securely covered.



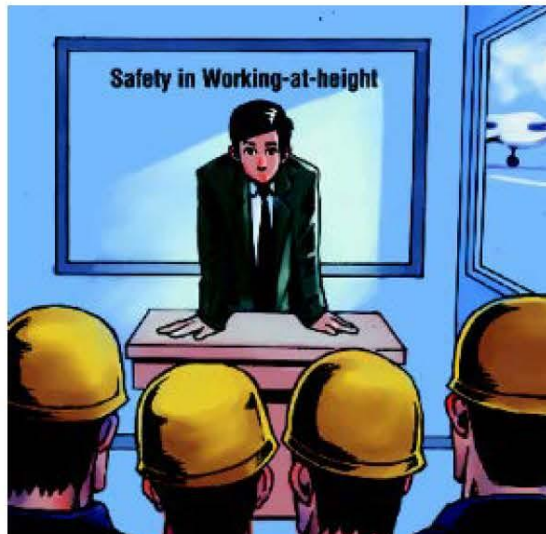
# Lessons to Learn

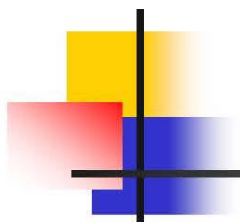
- A safe system of work for the bar-fixing work is provided. The safe system has included the following elements –
  - safe working procedures regarding the erection, inspection and use of the working platform;
  - a competent person appointed to inspect the working platform before use;



# Lessons to Learn

- all relevant supervisors and workers adequately trained in the safe procedures and subject to regular surveillance; and
- the provision of adequate information, training and instruction in respect of the system of work to the workers.





## Reference:

<http://www.legco.gov.hk/yr13-14/english/panels/mp/papers/mp1119cb2-279-5-e.pdf>

<http://www.info.gov.hk/gia/general/201403/16/P201403140854.htm>

<http://www.labour.gov.hk/eng/osh/content10.htm>

The End  
Thank You