



A Casebook of Fatal Accidents Related to Work-at-Height



Occupational Safety and Health Branch
Labour Department



Occupational Safety and Health Council

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**A Casebook of
Fatal Accidents Related to
Work-at-Height**

Foreword	1
Case 1	
A scaffolder fell while climbing a bamboo scaffold	2
Case 2	
A worker fell while dismantling a truss-out bamboo scaffold	4
Case 3	
A worker fell through a shabby roof	6
Case 4	
A worker fell while erecting a tubular scaffold	8
Case 5	
A cleaner fell from a tilted suspended working platform	10
Case 6	
A worker fell from an A-ladder	12
Case 7	
A bar-fixer fell from a floor edge	14
Case 8	
A worker fell through a hoistway	16
Case 9	
A worker fell while pruning a tree	18
Case 10	
A cleaner fell from a retaining wall	20
Summary	22
Enquiries	26
Complaints	26

Foreword

In accidents related to work-at-height, workers may fall from a height, resulting in serious injury or death. Victims and their families are not the only ones who suffer. Employers, contractors and the community will also have to pay a high price arising from criminal liability, employees' compensation, civil claims, delays in works, and the negative impact on staff morale and corporate image.

Over the past few years, there were a number of serious accidents related to work-at-height. The Labour Department (LD) has kept reminding those working at height to be aware of safety at work and stay alert. Employers and contractors are obliged to comply with safety legislation and implement a safe system of work, including a comprehensive risk assessment by a competent person before the commencement of work, a work method statement setting out the necessary safety measures and safe working procedures, as well as the provision of necessary safety information, instruction, training and supervision, so as to ensure strict compliance with the relevant safety procedures and codes of practices by the workers. Workers should comply with laws and the safe work methods laid down by the employers, in order to avoid putting themselves and other workers at risk.

This casebook includes a number of fatal accidents related to work-at-height happened in recent years. After analysis and collection of the information, the circumstances of the accidents and their main causes are explained with simple illustrations. It is hoped that the management and the frontline staff at the workplace will learn the lessons and take appropriate measures to ensure that similar accidents will not recur. The casebook may also serve as teaching material on case study by safety training institutions.

Case 1

A scaffolder fell while climbing a bamboo scaffold



Failure to fasten the safety belt

Accident Brief

A worker fell from a bamboo scaffold to the ground while climbing to another place of work, resulting in fatal injury.

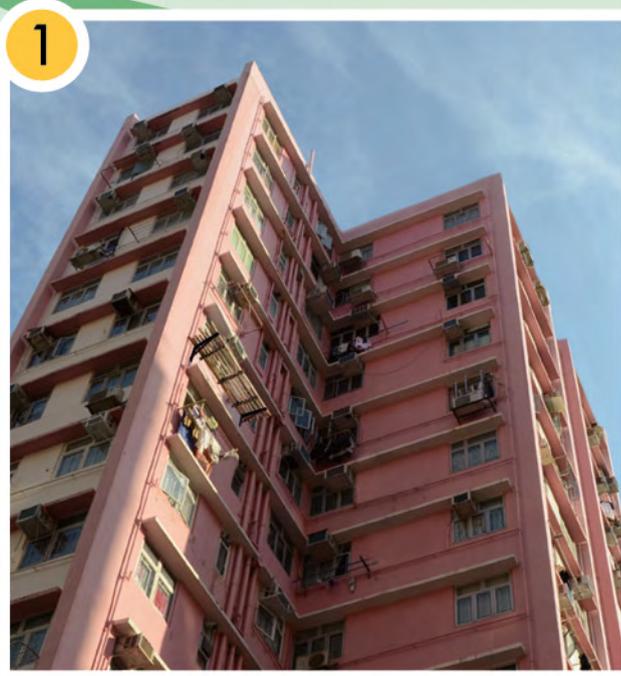
Prevention Method

- ✓ If workers are required to work on or move along a bamboo scaffold, appropriate fall protection devices should be provided, and it should be ensured that these devices are properly used by workers.
- ✓ Appropriate and adequate safe access to and egress from the scaffold should be provided.



Case 2

A worker fell while dismantling a truss-out bamboo scaffold



The angle bracket was fixed by one bolt only

Accident Brief

A worker fell to his death as a result of the sudden detachment of an angle bracket with only one anchor bolt while he was dismantling a truss-out bamboo scaffold.

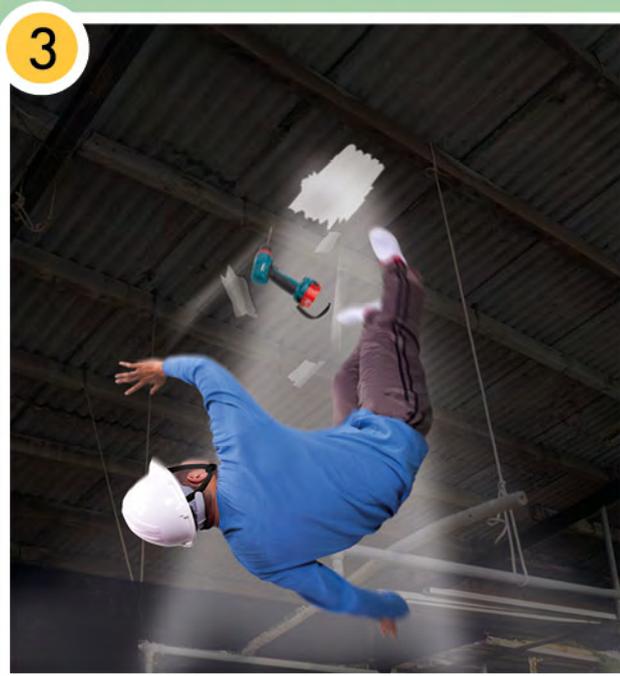
Prevention Method

- ✓ An angle bracket supporting a truss-out bamboo scaffold should be securely fixed onto the external wall with three anchor bolts.
- ✓ Workers engaged in dismantling a truss-out bamboo scaffold must wear full body harnesses and attach to fixed anchorage points or independent lifelines.
- ✓ The scaffold must be dismantled by trained scaffolders with sufficient experience under the supervision of a competent person.



Case 3

A worker fell through a shabby roof



The roof was fragile

Accident Brief

A worker fell to his death through a shabby asbestos roof while repairing it.

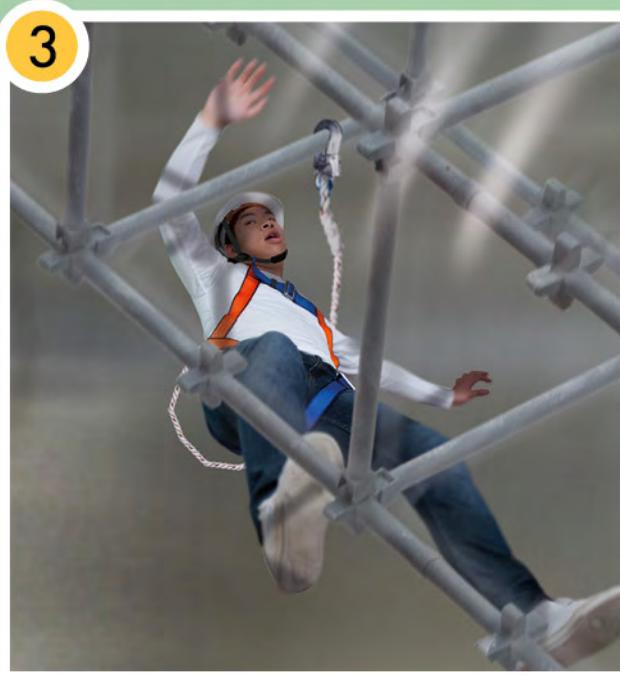
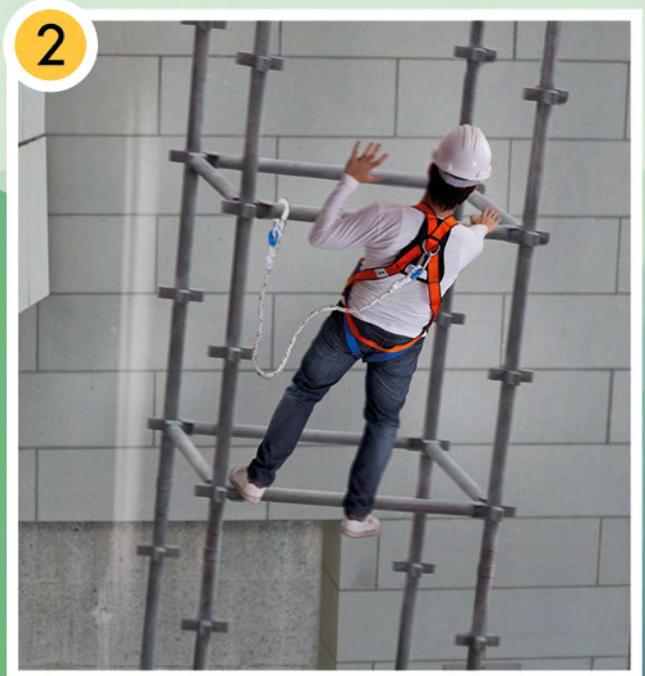
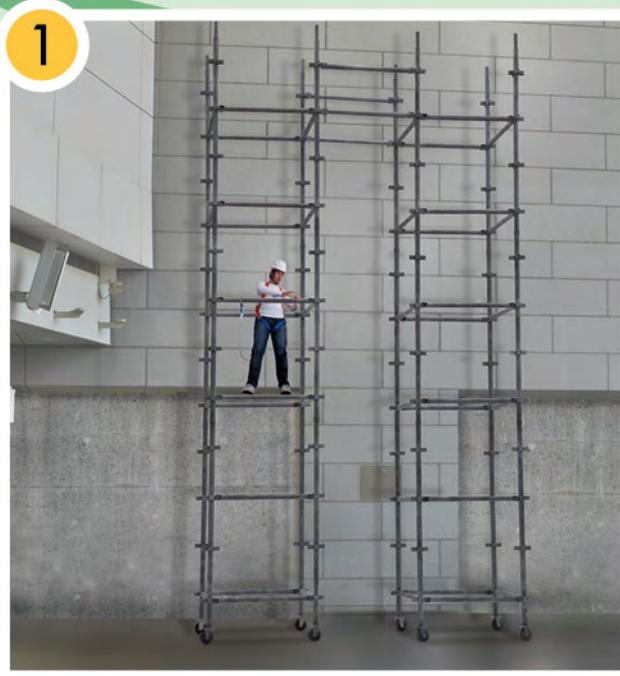
Prevention Method

- ✓ Use appropriate elevated working platforms for the repair of fragile roofs.



Case 4

A worker fell while erecting a tubular scaffold



The tubular scaffold was lack of support

Accident Brief

An untrained scaffolder fell to his death when the tubular scaffold he was erecting on a construction site suddenly overturned.

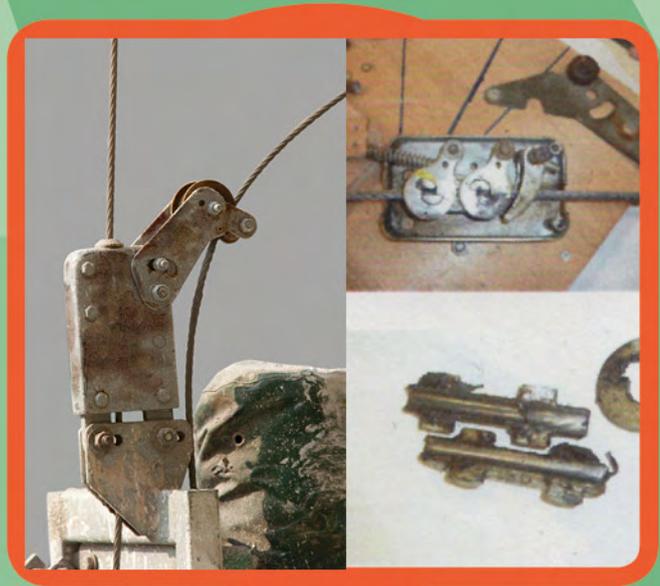
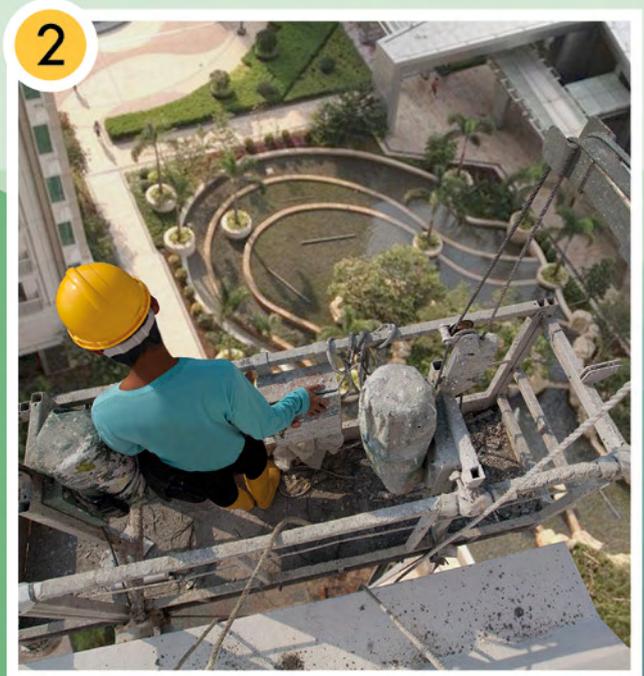
Prevention Method

- ✓ Tubular scaffolds should be secured with appropriate out-riggers.
- ✓ Appropriate working platforms should be provided for workers to carry out their work.
- ✓ The tubular scaffold must be erected by trained scaffolders with sufficient experience under the supervision of a competent person.



Case 5

A cleaner fell from a tilted suspended working platform



The anti-tilt device of the suspended working platform was ineffective

Accident Brief

A cleaner who held a certificate for operating suspended working platforms fell to the ground when the suspended working platform he was working on suddenly tilted, causing his death.

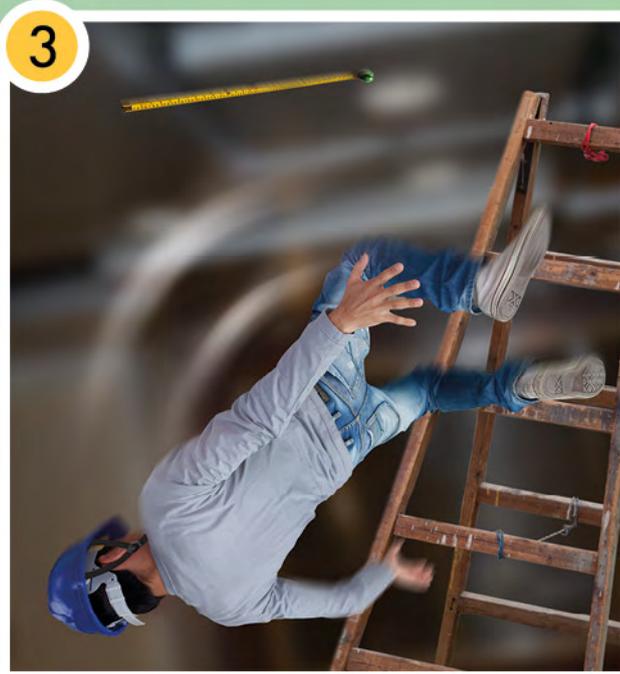
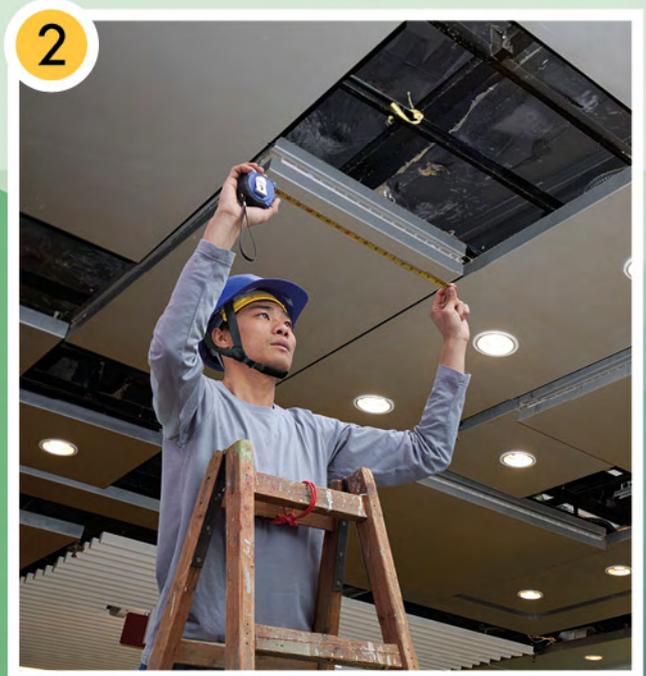
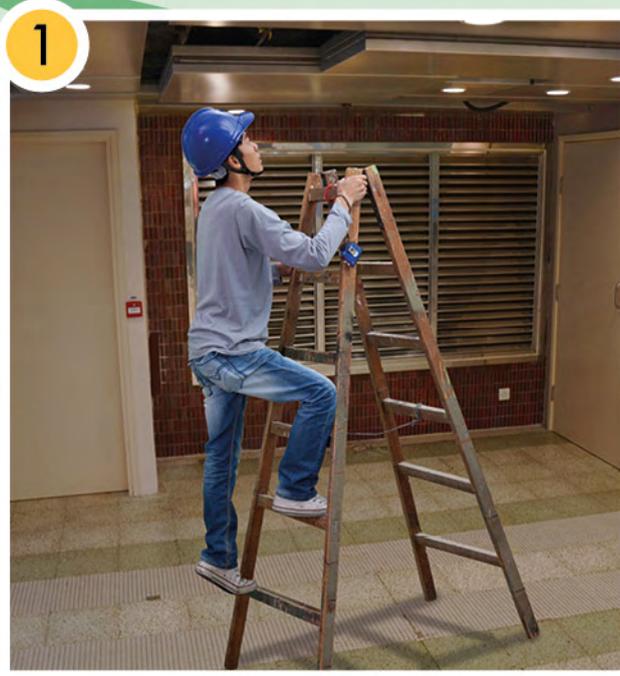
Prevention Method

- ✓ Suspended working platforms should be equipped with effective anti-tilt devices to prevent tilting.
- ✓ Every worker on the suspended working platform must wear a safety harness and attach it to an independent lifeline with a fall arrestor.



Case 6

A worker fell from an A-ladder



Accident Brief

A worker fell to the ground while installing a false ceiling on an A-ladder.

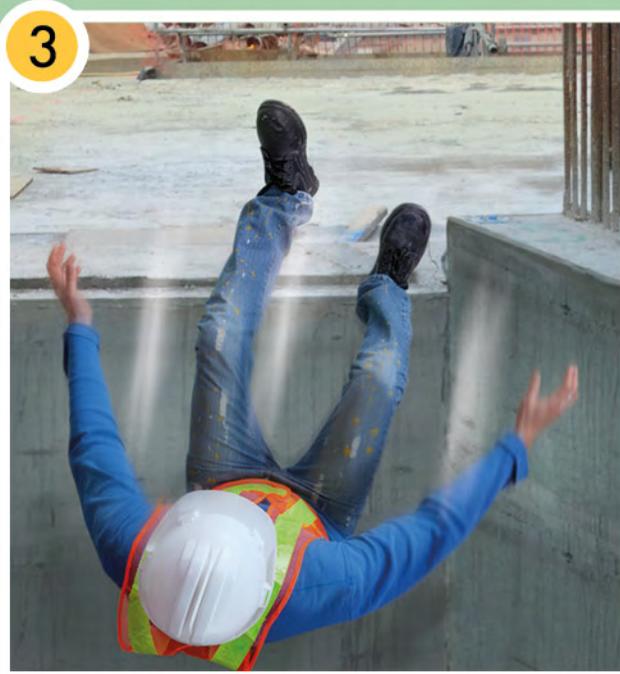
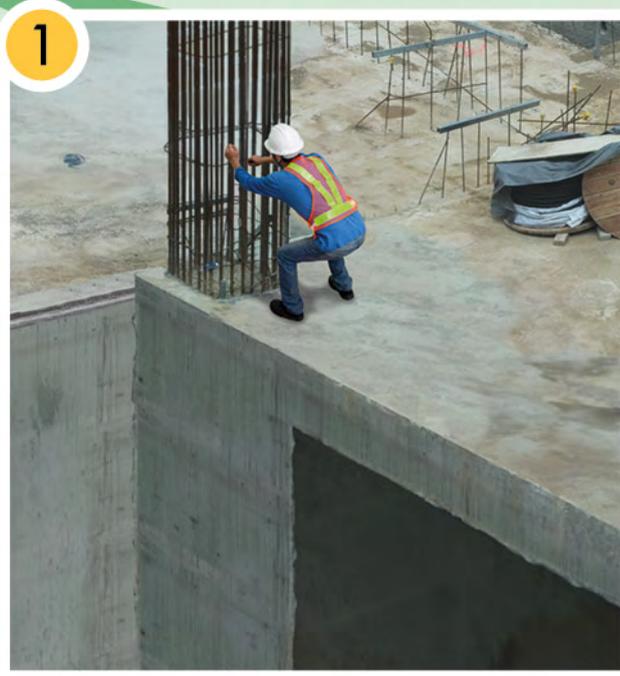
Prevention Method

- ✔ Use appropriate working platforms for work-at-height.



Case 7

A bar-fixer fell from a floor edge



The floor edge was unfenced

Accident Brief

A bar-fixer fell to his death from an unfenced floor edge while working at a building under construction.

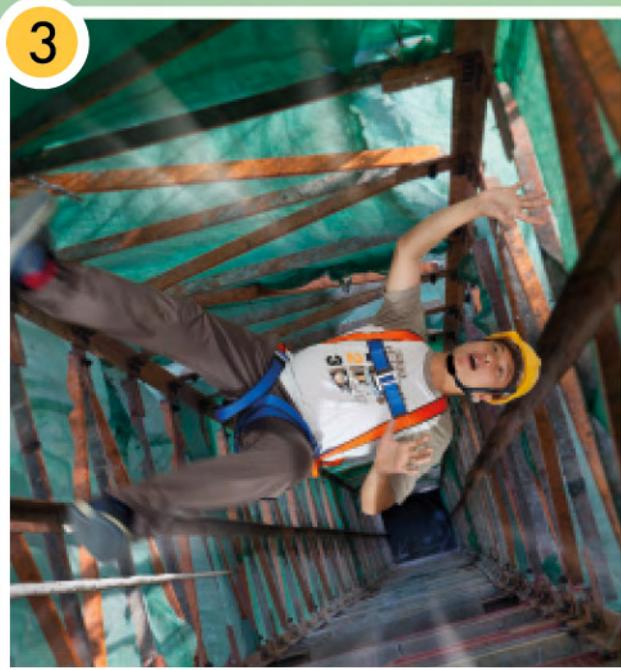
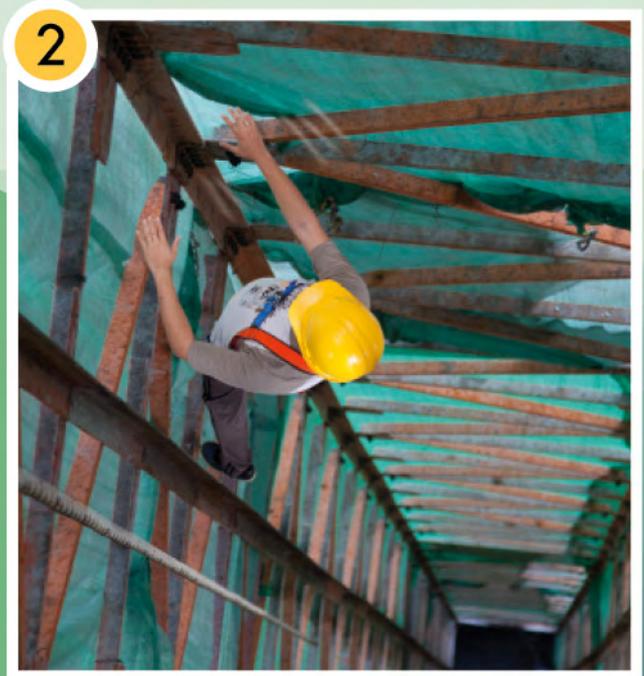
Prevention Method

- ✓ Appropriate fences should be provided along floor edges.



Case 8

A worker fell through a hoistway



No working platforms were provided

Accident Brief

A worker fell to the bottom of a hoistway and died while fencing up a material hoist.

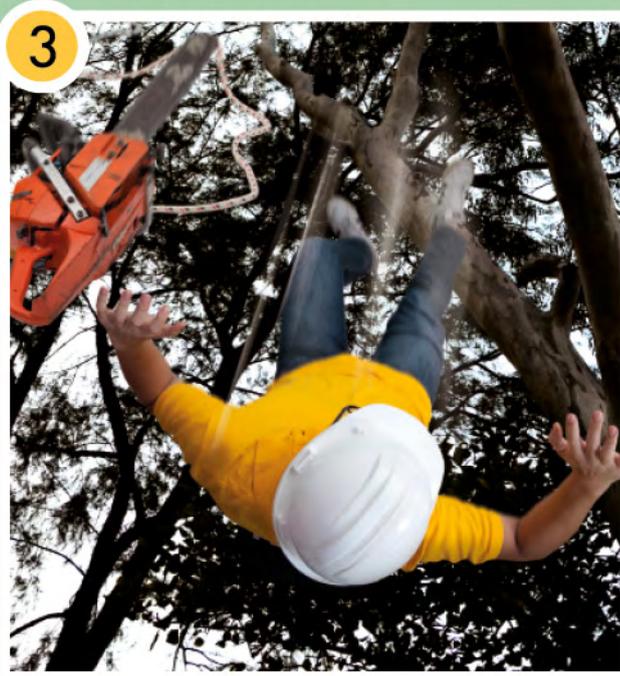
Prevention Method

- ✓ Use appropriate working platforms.
- ✓ Workers must wear safety belts and attach them to independent lifelines with fall arrestors.



Case 9

A worker fell while pruning a tree



Failure to use working platforms or scaffolds

Accident Brief

A worker fell from a height of nine metres to his death while pruning a tree with a portable chain saw.

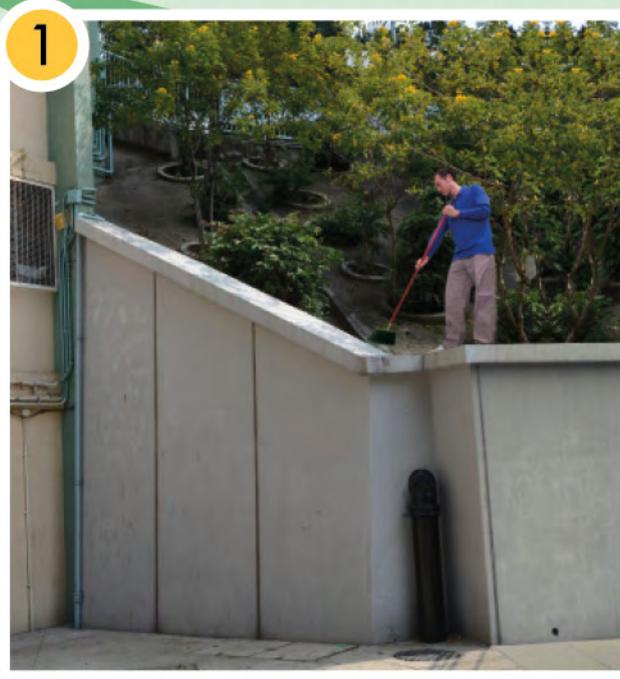
Prevention Method

- ✓ Use elevated working platforms or appropriate scaffolds for tree pruning.
- ✓ Appoint a tree work supervisor to carry out risk assessment and develop safety measures for tree work, so as to ensure that the work is carried out in accordance with good arboricultural practice.
- ✓ Tree work should be carried out by trained and experienced personnel.



Case 10

A cleaner fell from a retaining wall



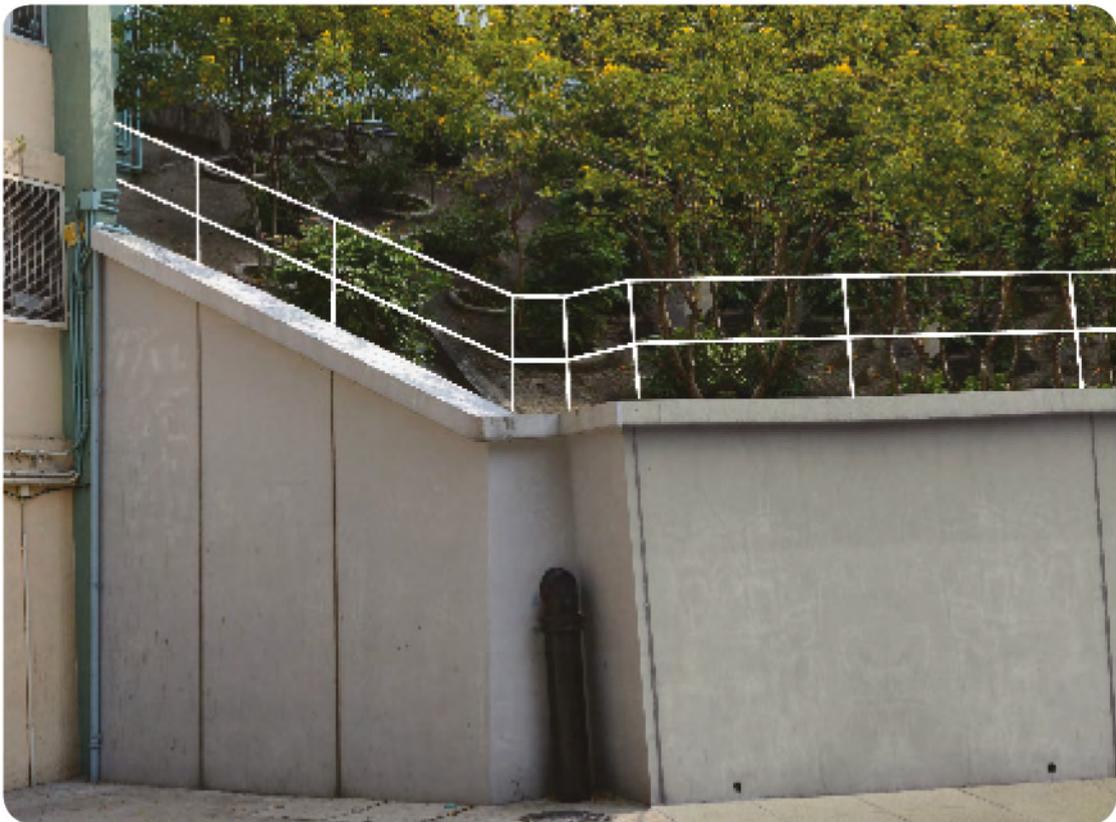
No suitable fences were provided

Accident Brief

A cleaner fell to his death from a retaining wall while cleaning stormwater drains on the wall.

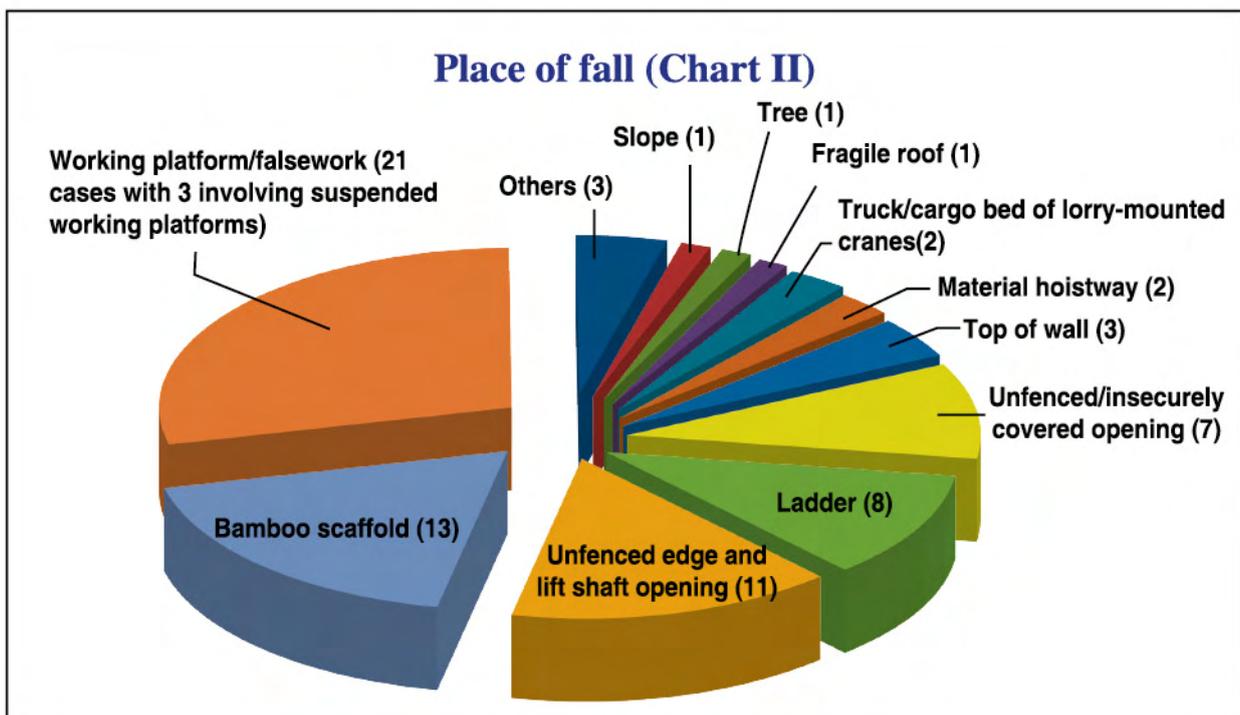
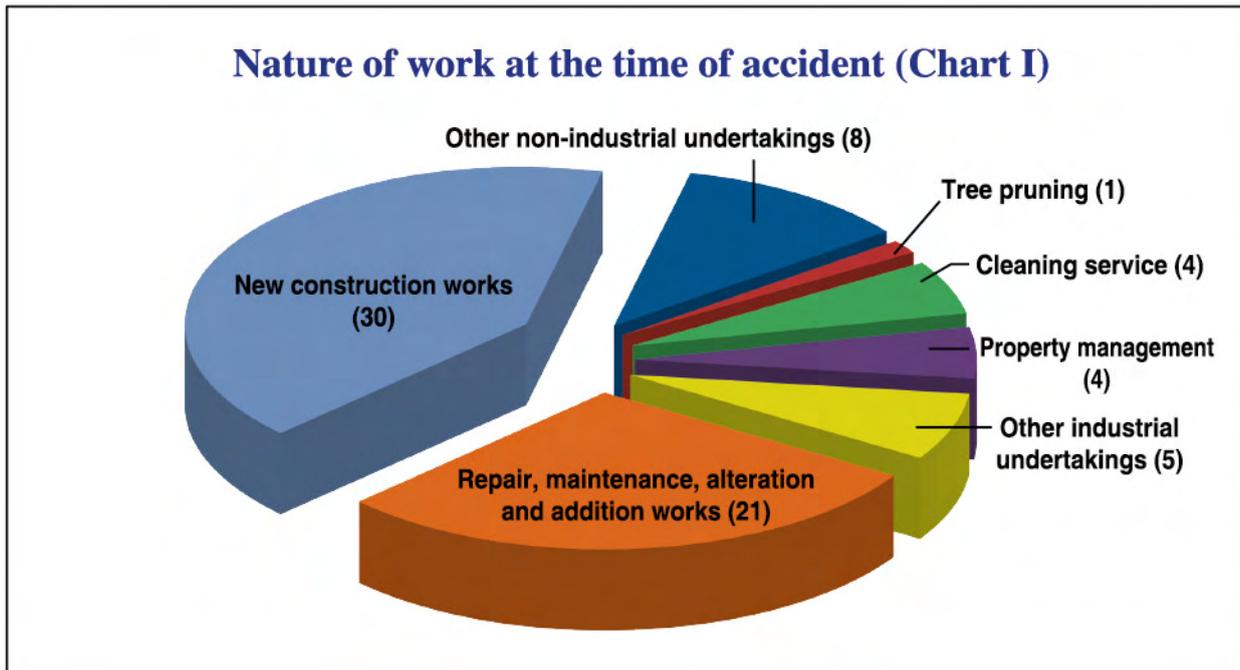
Prevention Method

- ✓ Suitable fences should be provided along the edges of retaining walls.

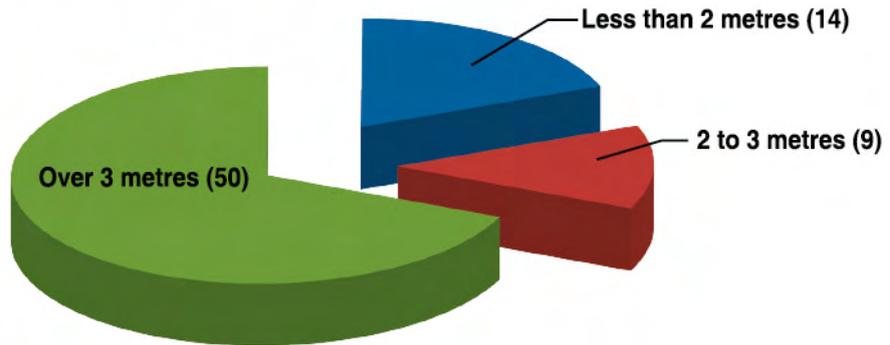


Summary

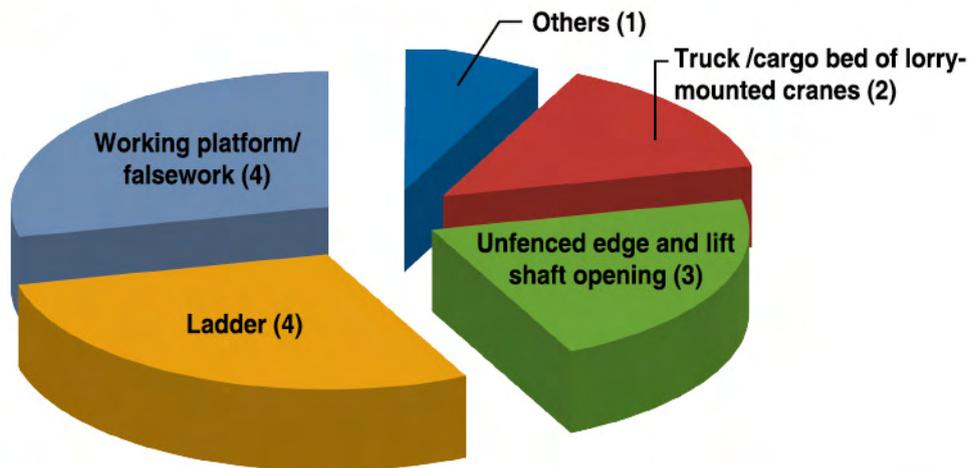
From 2008 to 2012, there were 73 fatal occupational injuries and accidents caused by “fall of person from height”. LD has made an analysis of the 73 fatal accidents by nature of work (Chart I), place of fall (Chart II), falling height (Chart III, IV and V) as well as main cause of accidents (Chart VI). Precautionary measures are proposed to prevent the recurrence of similar accidents.



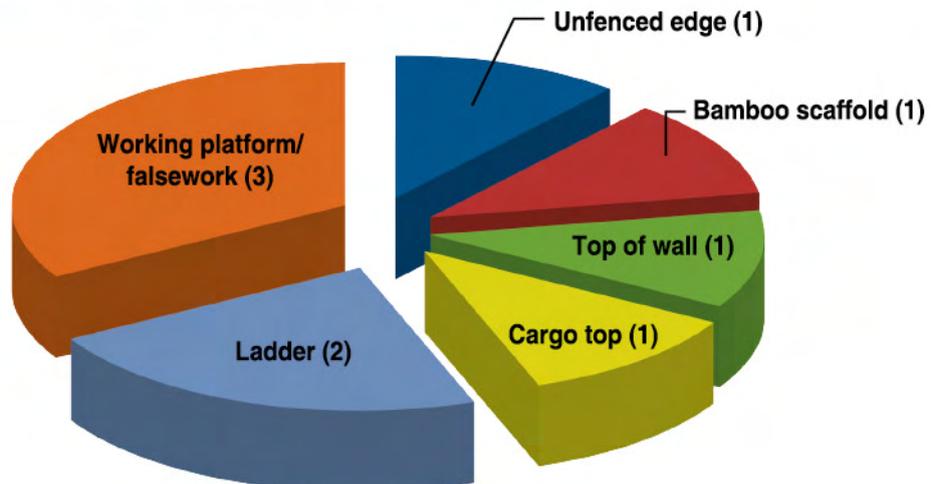
Falling height of the accident (Chart III)



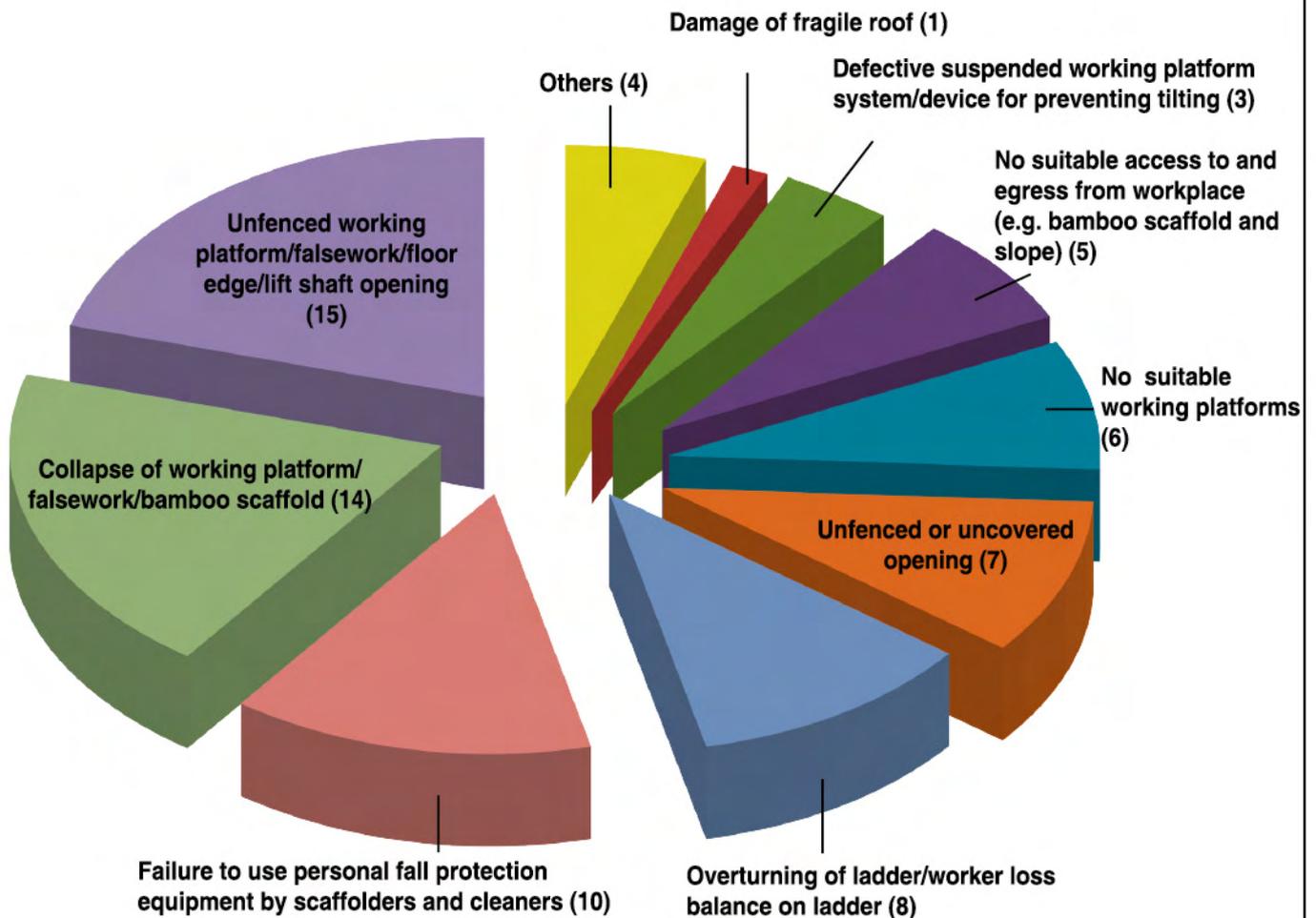
Falling from a height less than 2 metres (Chart IV)



Falling from a height of 2 to 3 metres (Chart V)



Main cause of accidents (Chart VI)



A detailed analysis of the 73 accident cases above shows that each of the cases is related to one or more unsafe working conditions or unsafe practices. More than half of these fatal accidents are directly caused by the four factors below:

1. Unfenced working platform/falsework/floor edge/lift shaft opening
2. Collapse of working platform/falsework/bamboo scaffold
3. Failure to use personal fall protection equipment by the workers
4. Overturning of ladder/worker loss balance on ladder

Precautionary Measures

1. Do not use ladder for work-at-height. Suitable working platforms, scaffolds or suspended working platforms should be used regardless of the height of the work.
2. Temporary structures such as scaffolds and working platforms should be designed by a competent person or a professional engineer to ensure that they are securely constructed with sufficient working load. They should also be erected, altered, dismantled and used in accordance with the Code of Practice for Bamboo Scaffolding Safety and Code of Practice for Metal Scaffolding Safety issued by LD.
3. The edges of working platforms and structures should be provided with secure guard-rails and toe-boards (or be properly fenced).
4. Any openings should be fitted with secure guard-rails or coverings and marked with clear signs.
5. Suitable and adequate access to and egress from the workplace should be provided.
6. Where the use of working platforms is impracticable, workers must wear safety belts attached to fixed anchorage points or independent lifelines.
7. A suspended working platform should only be used after being tested, inspected and examined by a qualified examiner and a competent person and issued with the relevant certificate under the Factories and Industrial Undertakings (Suspended Working Platforms) Regulation. Moreover, only those with adequate training should be allowed to operate a suspended working platform. Workers on a suspended working platform must wear safety belts attached to independent lifelines or secure anchorage.

Furthermore, employers and contractors should also develop and implement a safe system of work for working at height, taking into account the particular circumstances of the work. This includes appointing a competent person to carry out a comprehensive risk assessment before the commencement of work, devising a work method statement setting out the necessary safety measures and safe working procedures, as well as providing the necessary safety information, instruction and training. Strict monitoring and supervision should be provided in the course of the work to ensure compliance with the relevant safety procedures and codes of practices by the workers.

Enquiries

If you wish to enquire about this casebook or require advice on occupational safety and health matters, please contact the Occupational Safety and Health Branch of the Labour Department through:

Tel : 2559 2297 (auto-recording service available outside office hours)

Fax : 2915 1410

Email : enquiry@labour.gov.hk

Information on the services offered by the Labour Department and on major labour legislation is also available on our website at <http://www.labour.gov.hk>.

For details of the services offered by the Occupational Safety and Health Council, please call 2739 9000.

Complaints

If you have any complaints about unsafe workplaces and work practice, please call the Labour Department's occupational safety and health complaint hotline at 2542 2172. All complaints will be treated in the strictest confidence.



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Occupational Safety and Health Branch