CONSTRUCTION
INDUSTRY COUNCIL
建造業議會

屋宇裝備工程安全手冊

BUILDING SERVICES SAFETY HANDBOOK

第二版
Version 2

免責聲明
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簡 介
INTRODUCTION

近年建造業有關屋宇裝備工程及保養維修的工作時有發生死亡意外，意外多涉及離地及電力安裝/維修等工作。當中包括利用“假天花”作為站立位置而導致人體下墮或於狹窄的工作環境下觸電等情況。建造業議會認為要防止意外發生，各持份者須明白有關的安全角色及責任並於建造週期的不同階段，盡早就工作安全作出相應的考慮及行動。

建造業議會希望透過製作此安全手冊，為業界各持份者提供參考資料，內容包括屋宇裝備工程及保養維修工作的常見意外成因，於設計、建造及維修階段的良好工作實例等。希望各持份者可因應不同情況及早制定及實施相關的安全措施以減低工作風險。工友亦可透過此安全手冊，進一步了解於工作時可能遇到的風險藉此加強自身的安全意識。

The number of fatality cases in the construction industry related to building services and maintenance operation has increased in recent years. Most cases are related to workers falling from height when using “false ceiling” as a working platform and workers suffering from electrical shock when working inside a narrow space. The Construction Industry Council (CIC) believes stakeholders should understand clearly their roles and responsibilities, and take necessary considerations and actions at different stages of the project as early as possible to prevent accidents.

The CIC would like to provide relevant information to the industry on some common accidents in the industry and the good practices that should be adopted Stakeholders shall take note to the safety measures as recommended and implement them to minimize works related risks. Frontline workers could also make reference to the content details provided and further enhance their safety awareness.

目 錄
TABLE OF CONTENTS

工友站立在木梯上於假天花內進行工作，不慎從高處下墮。

Worker fell from a wooden A-ladder while carrying out work inside false ceiling.

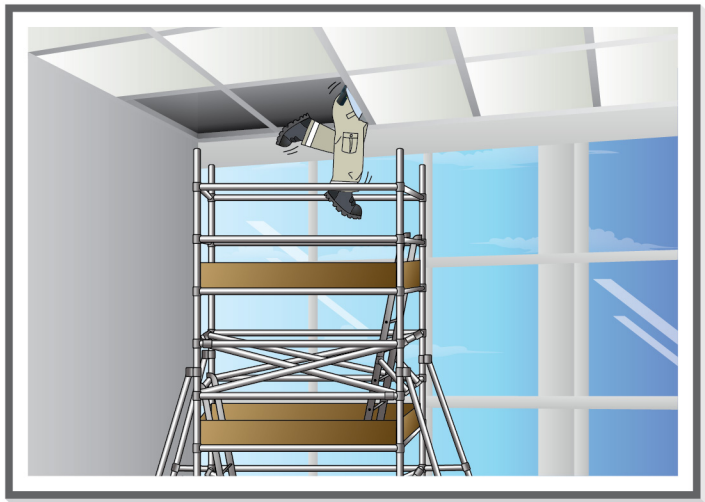
職安警示(動畫)
Work Safety Alert (Animation)

常見的意外
COMMON ACCIDENT

工友使用假天花作為工作平台期間，從高處下墮。

Worker fell from height, when using false ceiling as a working platform.

職安警示(動畫)
Work Safety Alert (Animation)



工友於假天花內工作時，不慎接觸因線路故障而帶電的外露金屬導電部分，導致觸電意外。

Worker received electric shock when touching the live exposed conductive part in carrying out work inside false ceiling.

職安警示(動畫)
Work Safety Alert (Animation)

工友因踏上天花結構，導致從高處下墮。

Worker fell from height when stepping on the ceiling structure.

職安警示(動畫)
Work Safety Alert (Animation)

常見的意外
COMMON ACCIDENT

工友在流動工作台上，過份伸展身體進行工作，不慎從高處下墮。

Worker overstretched his body outside the working platform and fell from the platform.

常見的意外
COMMON ACCIDENT

工友沒有跟從生產商的操作指引，將工作台下降至指定位置，引致流動工作台於行駛期間翻側。

Worker did not follow manufacturer's instruction manual to lower the mobile elevated working platform (MEWP) before moving it leading to overturning of the platform.

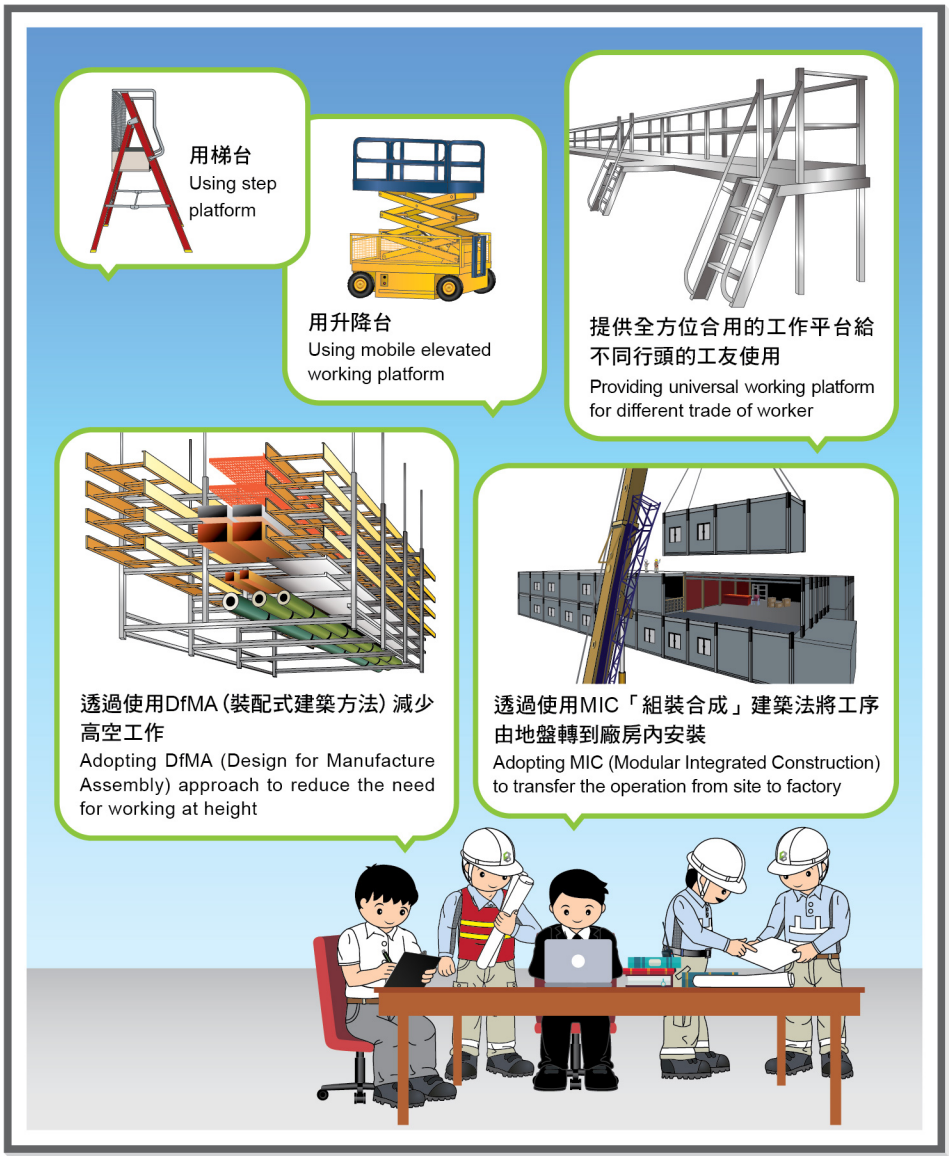
工友被行駛中的流動工作台撞到。

Worker was struck by a moving mobile elevated working platform.

良好工作事例 - 設計階段
GOOD PRACTICE EXAMPLE - DESIGN STAGE

於工程設計階段詳細考慮合適的安裝的方法，以減低發生意外的風險。

Installation method should be considered in design stage.

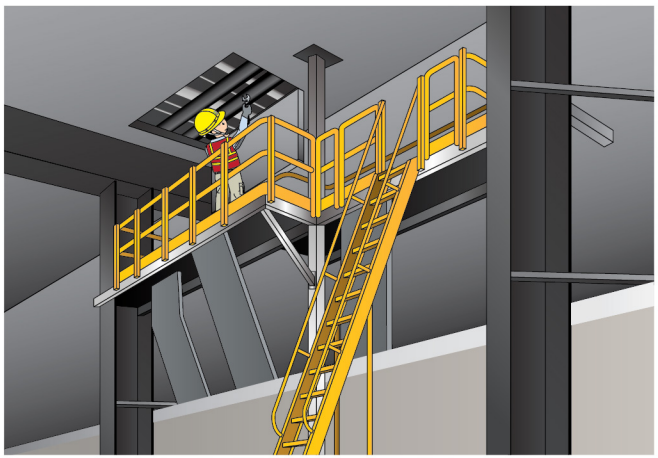


良好工作事例 - 設計階段

GOOD PRACTICE EXAMPLE - DESIGN STAGE

於設計階段須考慮於日後需要進行的測試及維修工作的安全。

Safety aspects of future testing and maintenance works should be considered in design stage.



於設計階段考慮提供永久的維修工作平台。

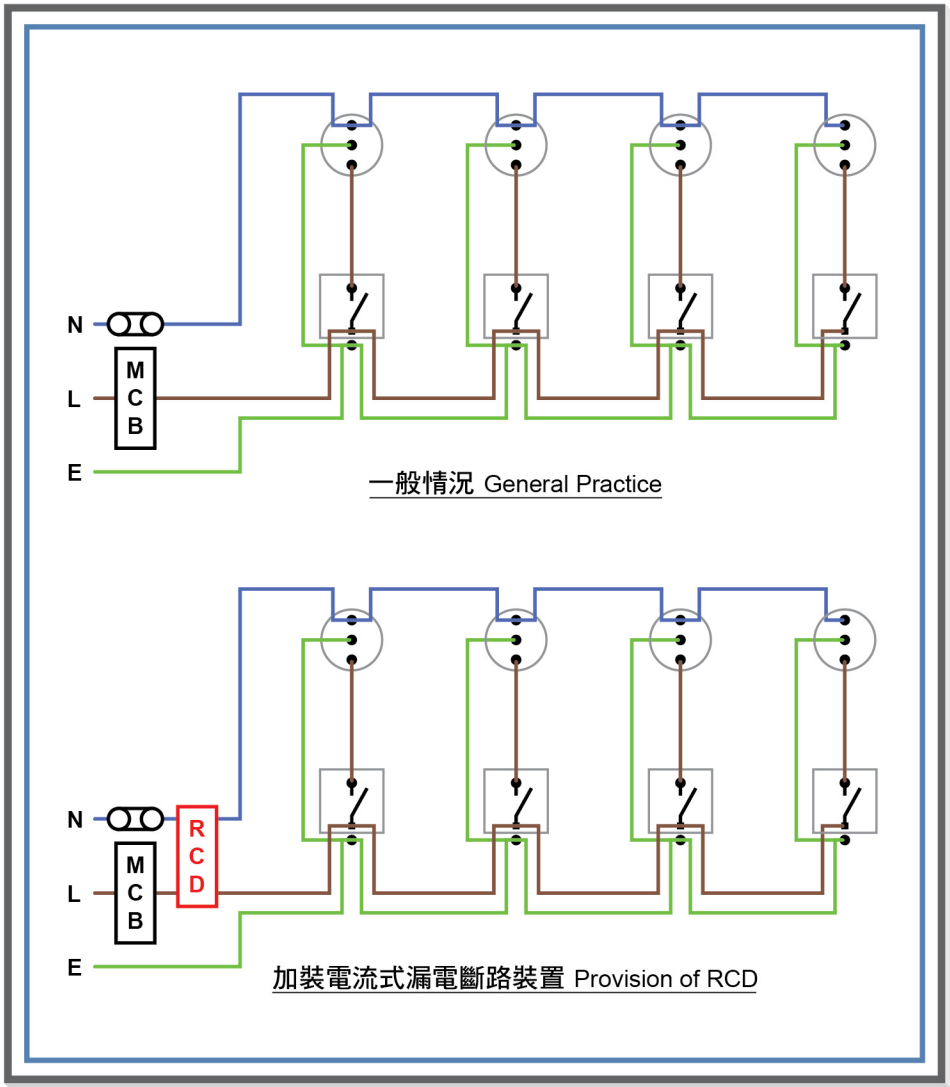
Providing permanent working platform for maintenance in design stage.

良好工作事例 - 設計階段

GOOD PRACTICE EXAMPLE - DESIGN STAGE

於設計階段考慮於電燈線路安裝電流式漏電斷路裝置，防止因線路故障引起的觸電意外。

Provision of Residual Current Device (RCD) to lighting circuit should be considered in design stage to prevent electric shock due to circuit fault.

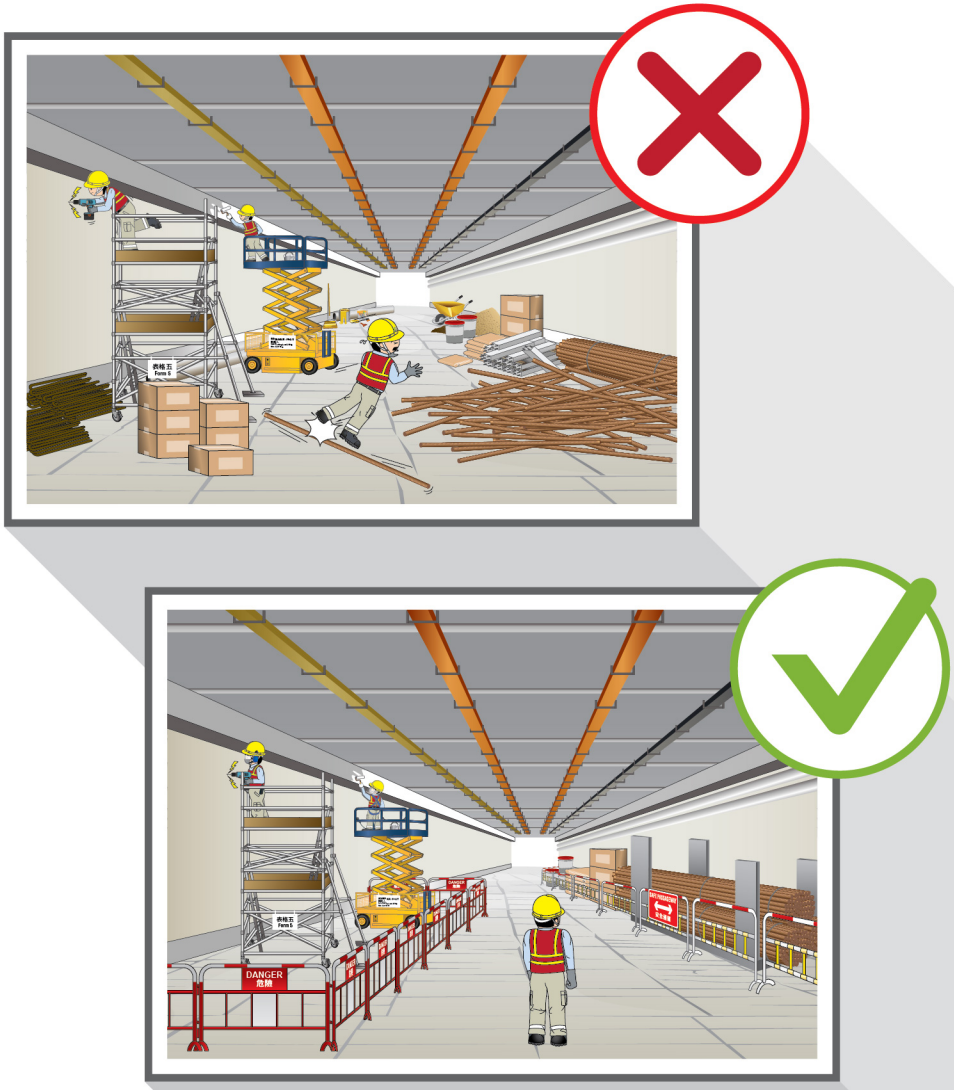


良好工作事例 - 安裝階段

GOOD PRACTICE EXAMPLE - INSTALLATION STAGE

應妥善安排安裝次序，以確保工友有足夠空間進行安裝。

Installation sequence should be planned to ensure sufficient space for installation.

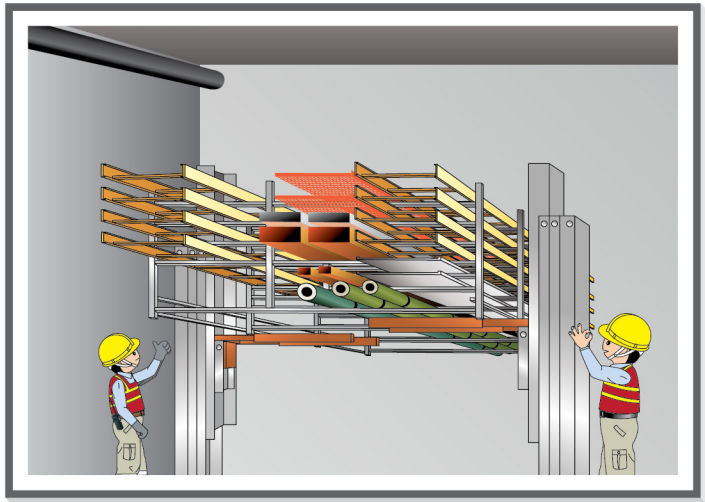


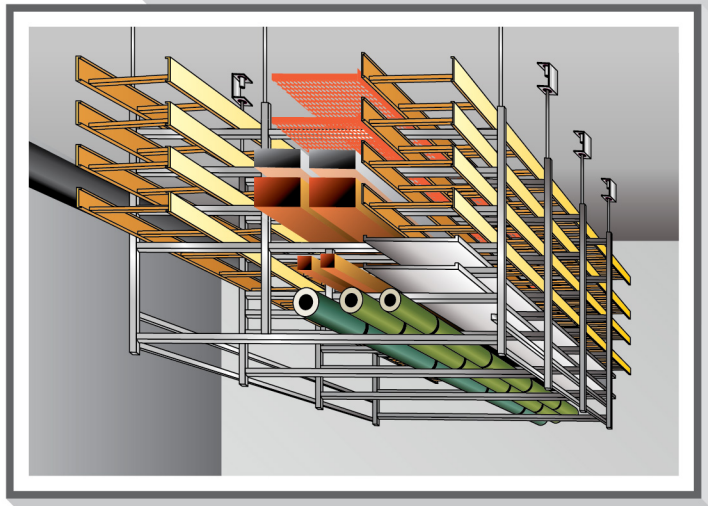
良好工作事例 - 安裝階段

GOOD PRACTICE EXAMPLE - INSTALLATION STAGE

運用裝配式建築方法 (DfMA) 以減少高空工作的需要。

Design for Manufacture and Assembly approach should be used to minimize the need for working at height.





良好工作事例 - 安裝階段

GOOD PRACTICE EXAMPLE - INSTALLATION STAGE

所有安裝工作，應安排於未通電的時候進行。

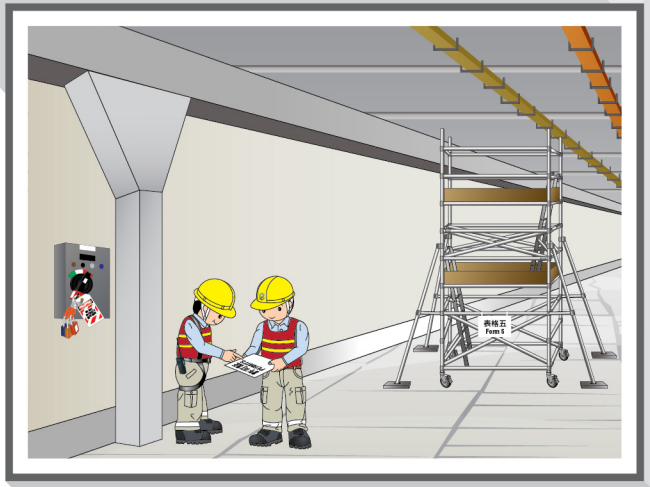
All installation works should be carried out before energization.

良好工作事例 - 安裝階段

GOOD PRACTICE EXAMPLE - INSTALLATION STAGE

於假天花內進行安裝工作前，應將附近設施截電、隔離及採用上鎖掛牌措施，並實施工作許可証制度。

All services adjacent to the installation works inside the false ceiling should be shut down and isolated. A lockout tagout system and the application of permit-to-work system should be adopted.

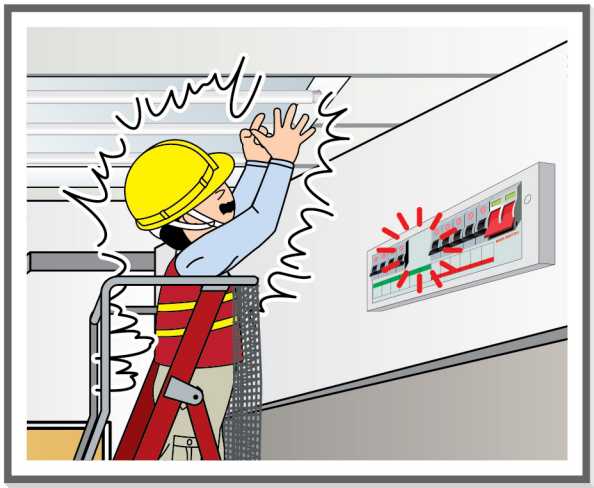


良好工作事例 - 安裝階段

GOOD PRACTICE EXAMPLE - INSTALLATION STAGE

如於設計上未有要求安裝電流式漏電斷路裝置，可於安裝階段加裝電流式漏電斷路裝置，防止工人於測試期間觸電。

Residual Current Device (RCD) should be installed to protect worker from getting electric shock when carrying out testing works if it was not considered in design stage.

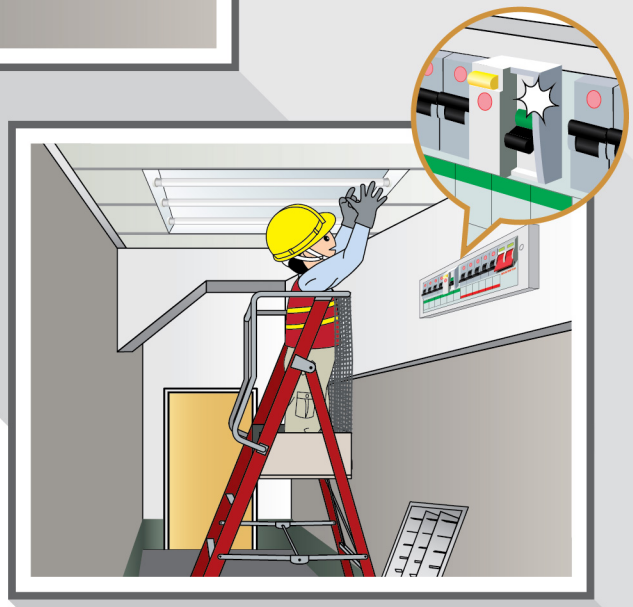


沒有電流式漏電斷路裝置的線路發生漏電時，工友有機會觸電。

Without the protection of Residual Current Device (RCD), worker may get electric shock if there is a circuit fault.

電流式漏電斷路器會於線路漏電時啟動，以防止工友觸電。

Residual Current Device (RCD) will be triggered to prevent worker from getting electrical shock if there is a circuit fault.



良好工作事例 - 安裝階段

GOOD PRACTICE EXAMPLE - INSTALLATION STAGE

工友於移動流動工作台之前必須確保:

1. 路線沒有障礙
2. 工作台下降至托架上
3. 在看守員協助下，才可行駛流動工作台

Before moving the MEWP, operator must ensure:

1. the path is free from obstruction
2. the working platform is in cradle position for travelling
3. lookout man is engaged in the operation

GOOD PRACTICE EXAMPLE - INSTALLATION STAGE

在鋪設電纜工程開展前，承建商 / 僱主須制定一套安全施工程序，向所有相關人員介紹該程序，並明確分配各人的安全責任。

Prior to the commencement of cable laying works, contractor / employer shall develop safe working procedures, brief all relevant staff about the procedures and clearly assign individual safety responsibilities.

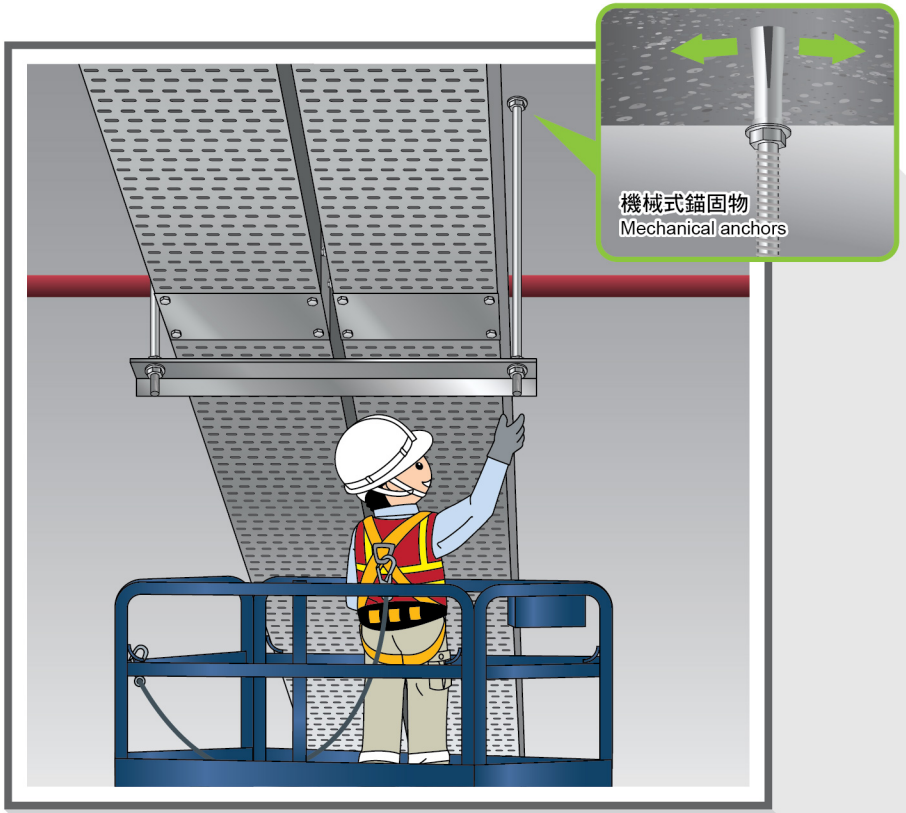
視察施工現場情況以確保現場環境適合進行鋪設電纜工作，並妥善圍封工程範圍，防止未經授權人士進入施工範圍。

Conduct the site inspection to ensure the site environment is suitable for cable laying works. Working Areas should be properly fenced off to ensure no unauthorised entry into the area.

GOOD PRACTICE EXAMPLE - INSTALLATION STAGE

委派合資格人士進行檢查，確保電纜托盆已按照設計完成並已穩固地安裝（包括所有錨固物和接駁）。

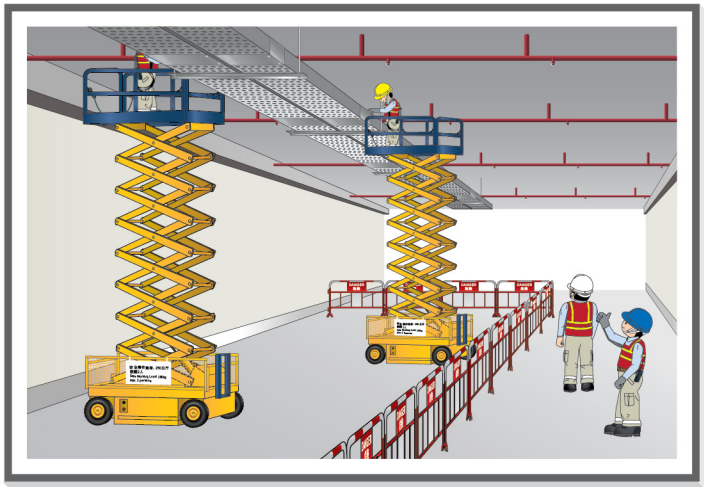
A competent person should be assigned to carry out inspection, to ensure that the cable tray has been completed in accordance with the design and securely installed (including all the anchors and connections).



GOOD PRACTICE EXAMPLE - INSTALLATION STAGE

應使用合規格的工作平台進行高空工作，如升降台或流動工作台等。儘量安排最少二人為一組工作，並提供通訊設備予相關工作人員。

Use suitable working platforms, such as mobile elevated working platform (MEWP) or mobile working platform, etc, for work at height. Arrange at least 2 people in a working group and provide relevant communication equipment.



在配戴全身式安全帶之前應檢查安全帶，以確保安全帶狀況良好可供使用。

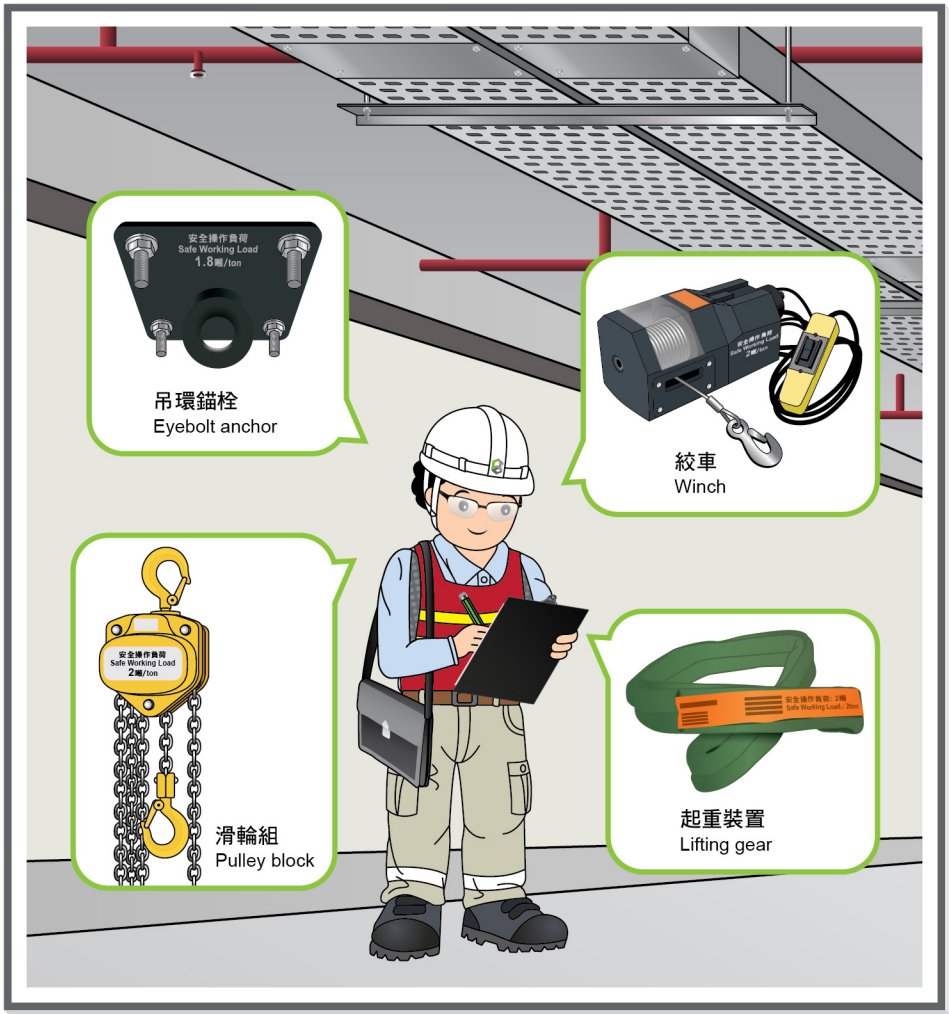
Make a visual inspection prior to using the safety harness to ensure that the safety harness is in a serviceable condition.

良好工作事例 - 安裝階段

GOOD PRACTICE EXAMPLE - INSTALLATION STAGE

吊環錨栓、絞車及滑輪組等輔助裝置須定期由合資格工程師檢驗，並定期於使用前由合資格人士檢查，以確保狀況良好可供使用。

Ensure assistive plants such as eyebolt anchors, winches and pulley blocks are regularly examined by qualified engineer and regularly inspected by qualified competent persons before use to ensure they are in good condition.



良好工作事例 - 保養維修階段

GOOD PRACTICE EXAMPLE - MAINTENANCE STAGE

僱主應採取措施，以加強工作地點的安全及健康，當中包括提供安全的進出通道、照明、合適的儀器、工具及個人防護裝備。

Employer should contribute safety and health in their workplaces by providing safe access and egress, suitable equipment, tools and personal protective equipment.

良好工作事例 - 保養維修階段

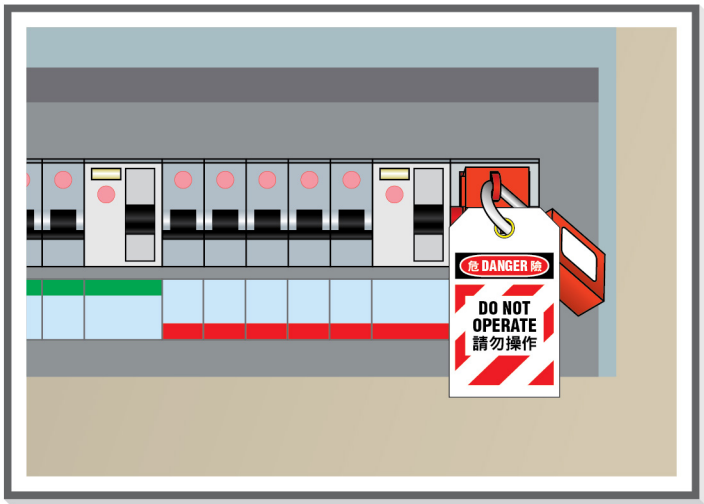
GOOD PRACTICE EXAMPLE - MAINTENANCE STAGE

所有保養維修工作，都不應在帶電情況下進行。

All maintenance works should not be conducted under live condition.

進行保養及維修時，必須將該線路截電及隔離，並使用上鎖掛牌制度，才可開始進行工作。

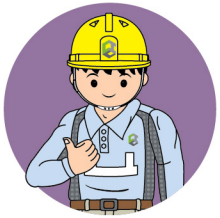
The circuit to be working on for maintenance must be isolated. A lockout tagout (LOTO) system must be applied prior to carrying out the work.



良好工作事例 - 保養維修階段
GOOD PRACTICE EXAMPLE -
MAINTENANCE STAGE

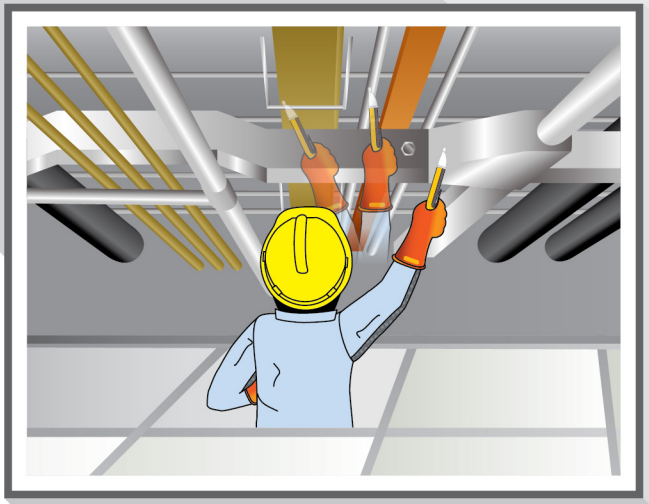
建議使用工作許可証制度，以監管於假天花內的保養維修工作。

A permit-to-work system to manage work inside the false ceiling should be applied.



進行工作前，應測試附近外露金屬導電部分是否帶電。

All exposed conductive parts adjacent to the works area must be proved dead before carrying out the work.



良好工作事例 - 保養維修階段

GOOD PRACTICE EXAMPLE - MAINTENANCE STAGE

保養維修工作完成後，在重新接駁電源前，應確保所有工友撤離相關線路。

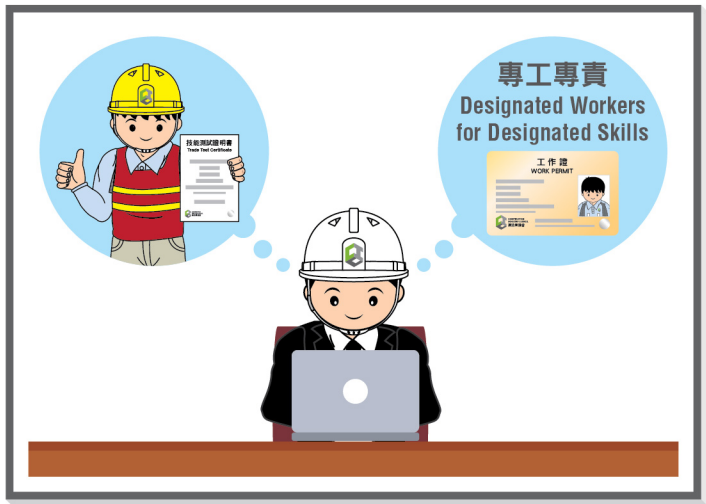
All workers should be cleared from the circuit before re-energization.

一般安全注意事項

GENERAL SAFETY REQUIREMENT

僱主在分派工作時，必須安排擁有足夠資歷及經驗人士進行。

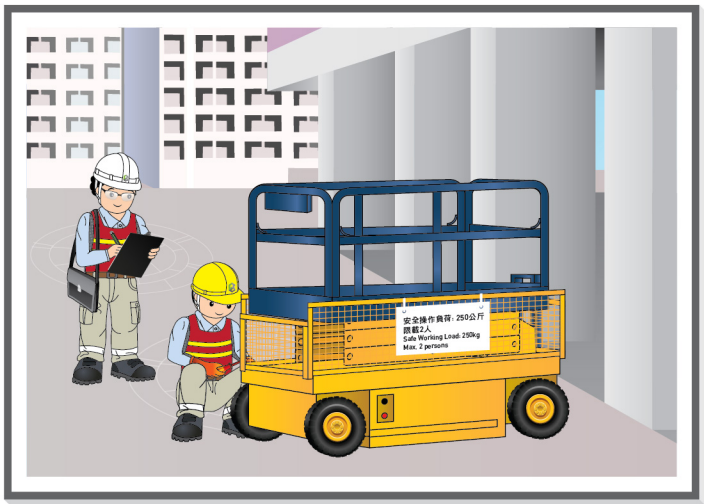
Employer should assign worker with sufficient ability and experience to carry out the work.



安排工作時，應盡量避免安排一人工作。

In planning out work, the arrangement of one worker working alone should be avoided.

機械及設備使用前，必須先檢查才可使用。
All plant and equipment should be checked before use.



僱主應向員工提供合適的工具。
(例如: 無線照明、電工具、絕緣手工具及測試儀器等)
Employer is responsible for providing suitable tools to workers.
(eg. cordless lighting and electric tools, insulated tools, testing Instrument, etc.)

一般安全注意事項

GENERAL SAFETY REQUIREMENT

僱主應向員工提供合適的個人防護裝備。
(例如: 附有帽帶的安全帽、眼罩、絕緣手套、安全帶、絕緣安全鞋及絕緣地墊等)

Employer is responsible for providing suitable personal protective equipment to workers. (e.g. safety helmet with a chin strap, goggles, insulated gloves, safety harness, safety shoes, insulation mat, etc.)

鳴　謝

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MTR Corporation Ltd

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2. 工廠及工業經營條例 (59章) 及其附屬規例
3. 金屬棚架工作安全守則，勞工處刊物
4. 建築地盤 (安全) 規例VA部有關安全工作地方的條文簡介，勞工處刊物
5. 慎防從高處墮下，勞工處刊物
6. 建築地盤工作安全及健康事項查核表，勞工處刊物
7. 安全帶及其繫穩系統的分類與使用指引，勞工處刊物
8. 安全使用動力操作升降工作台指引，勞工處刊物
9. 高處工作意外致命個案集，勞工處刊物
10. 高處工作安全概覽，勞工處刊物
11. 職安警示 (動畫)，勞工處網頁
12. 工地安全手冊，香港房屋委員會刊物
13. 高空工作實務指南：確保安全作業，香港房屋委員會刊物
14. 離地工作的安全指引，建造業議會刊物

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