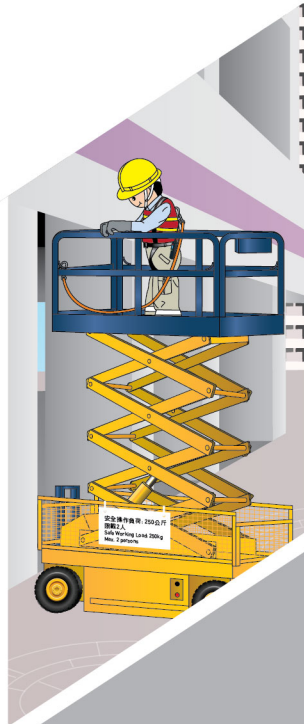




CONSTRUCTION  
INDUSTRY COUNCIL  
建造業議會

# 屋宇裝備工程安全手冊

## BUILDING SERVICES SAFETY HANDBOOK



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儘管我們建造業議會已盡合理努力以確保本刊物所載列資料均屬準確，我們仍鼓勵讀者須在可能的情況下，向其專業顧問尋求適當獨立意見，並且讀者不應將本刊物視作採取任何相關行動之專業意見的替代，亦不應依賴本刊物作所述用途。

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## 局限 LIMITATIONS

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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.

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## 常見的意外

### COMMON ACCIDENT

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.

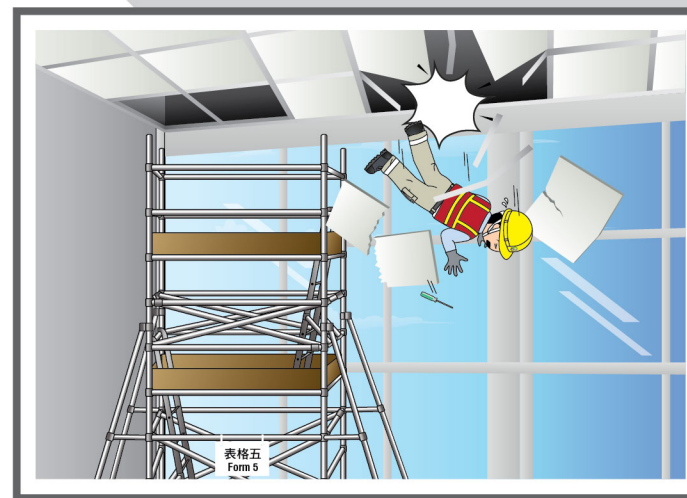
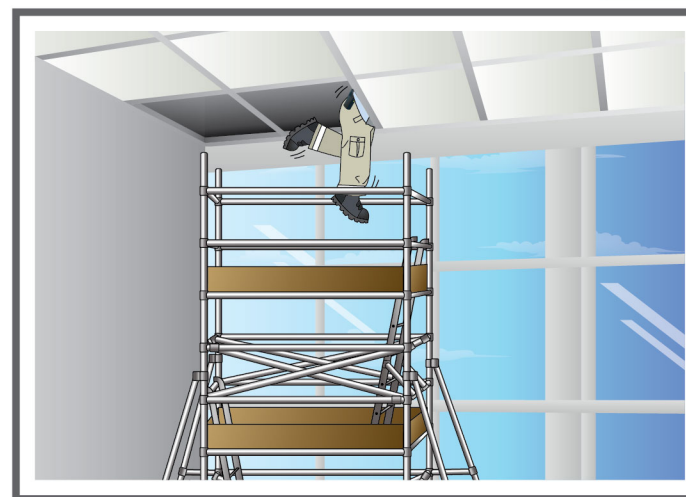


## 常見的意外

### 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.



## 常見的意外

### COMMON ACCIDENT

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，引致流動工作平台於行駛期間翻側。

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平台撞倒。

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.

The diagram illustrates various safety practices during the design stage:

- 用梯台 Using step platform**: Shows a red step ladder.
- 用升降台 Using mobile elevated working platform**: Shows a yellow scissor lift.
- 提供全方位合用的工作平台給不同行頭的工友使用**: Shows a complex metal structure with multiple levels and ladders, labeled as providing universal working platforms for different trades.
- 透過使用DfMA (裝配式建築方法) 減少高空工作**: Shows a 3D model of a building structure with prefabricated components, labeled as adopting DfMA to reduce the need for working at height.
- 透過使用MIC「組裝合成」建築法將工序由地盤轉到廠房內安裝**: Shows a large prefabricated module being lifted by a crane, labeled as adopting MIC to transfer operations from the site to the factory.

At the bottom, an illustration shows a group of five people (three men and two women) in professional attire sitting around a table, reviewing documents and using a laptop, representing a collaborative design team.

## 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.

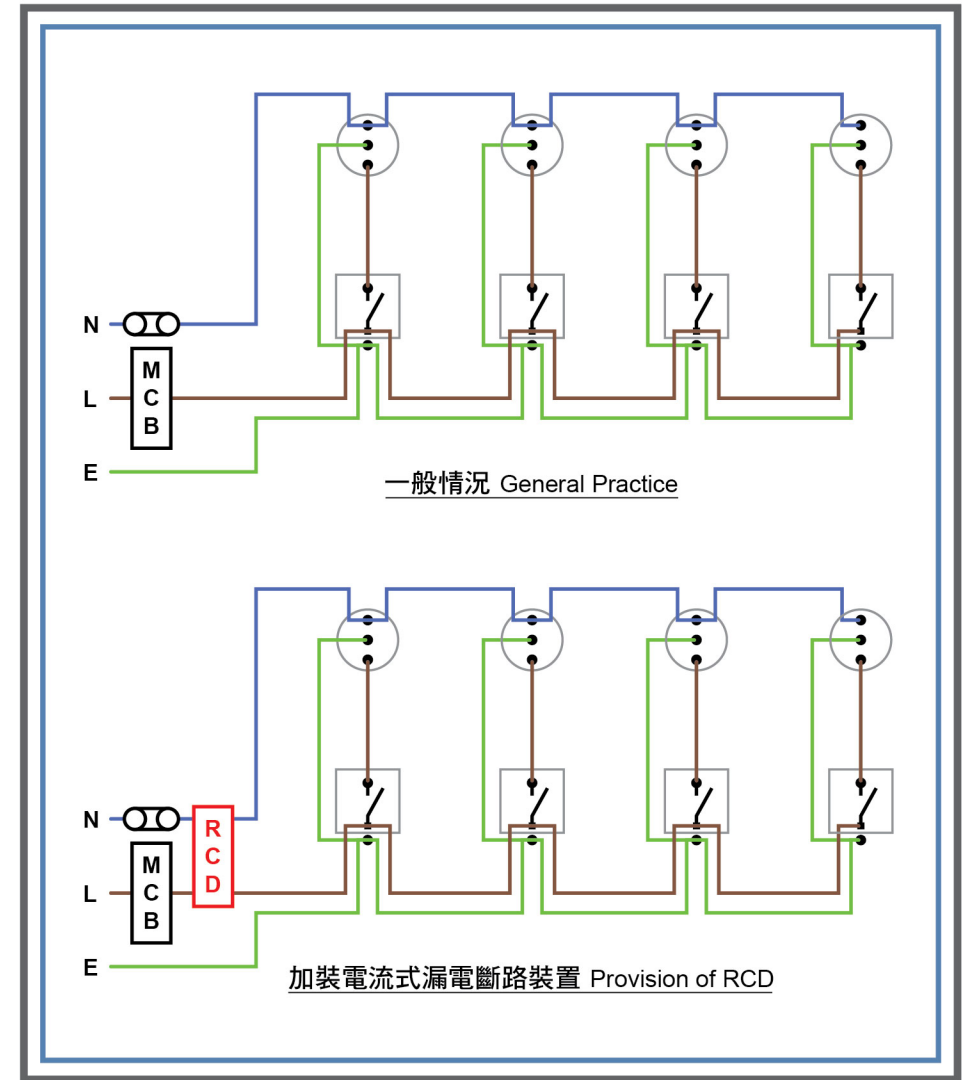


## 良好工作事例 - 設計階段

### 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.

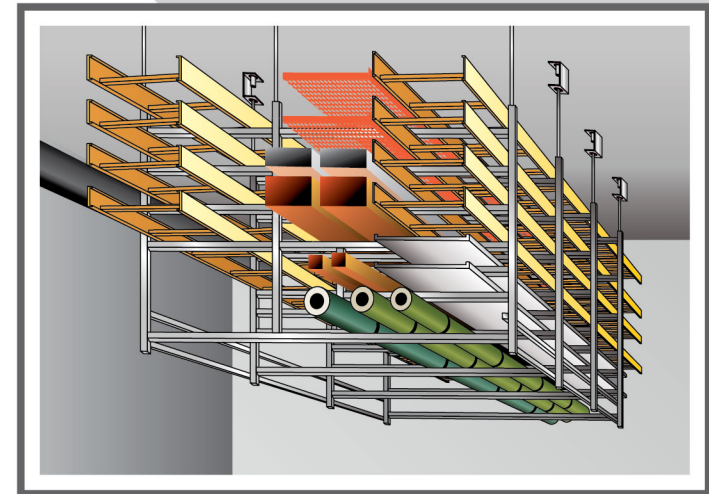
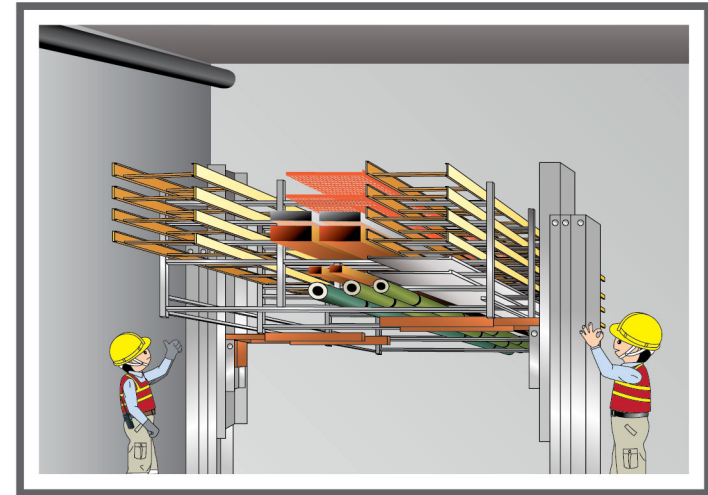


## 良好工作事例 - 安裝階段

### 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.



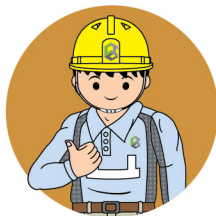


## 良好工作事例 - 安裝階段

### 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



## 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.

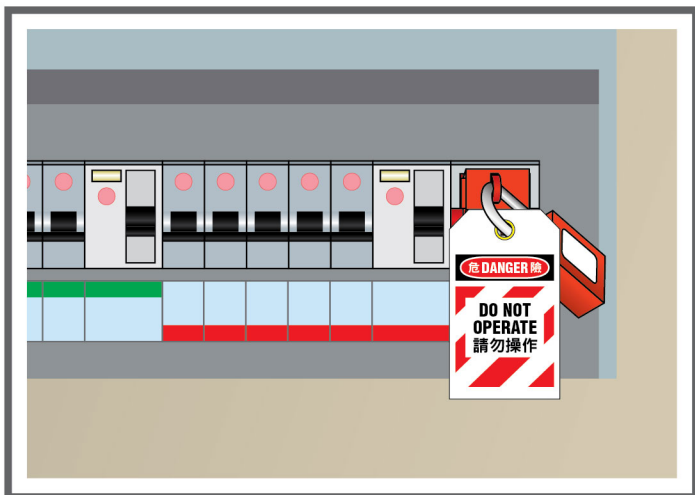


## 良好工作事例 - 保養維修階段

### GOOD PRACTICE EXAMPLE - MAINTENANCE STAGE

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.

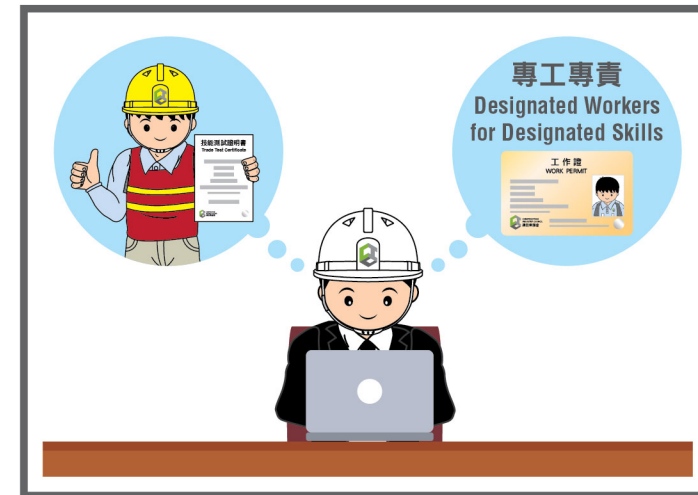


## 一般安全注意事項

### 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.



## 一般安全注意事項

### GENERAL SAFETY REQUIREMENT

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.



## 一般安全注意事項

### GENERAL SAFETY REQUIREMENT

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.)



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建造業安全錦囊  
Construction Safety App

