

Hong Kong Housing Authority Site Safety Seminar for Capital Works New Works Contract

17 April 2013

Strategic Safety Management for
Low and Medium Work at Height
低及中高度工作的安全策略及控制



ZEROHARM
MAKE SAFETY PERSONAL

Presented by :
Bread LIN
Divisional Safety Manager
Gammon Construction Limited

演說內容 Presentation



- 死亡意外數字分析 Fatal Accident Figure Analysis
- 安全策略 Strategic Safety Management
- 統一各種用具的行業名稱
Standardize Trade Name for different equipments
- 選擇之優先層次 Hierarchy of Selection
- 用具的標準 Equipment Standard
- 其他有關高空工作的事項 Work at Height : Other Issues
- 低及中高度工作：其他可用工具
LWH and MWH : Other Equipment

死亡意外數字

Fatal Accident Figure



持份者 Stakeholder	死亡意外 Fatal	高空墮下 Fall from Height	百份比 %
Year 2011 年			
香港 - 所有行業 HKSAR – All industries	29	11	38
香港 - 建築業 HKSAR – construction	23	10	44
香港發展局工務科 HKSAR - Works Branch	7	2	29
新加坡 Singapore – All industries 所有行業	61	26	43
新加坡 Singapore Construction 建築業	22	9	41
2012 香港 - 建築業 HKSAR – Construction	24	12	50

LWAH

界訂”低高度工作“ Define Low Level Work at Height

工作高度 < 2米 Working Height < 2M

Low Level Work At Height

MWAH

界訂”中高度工作“ Define Medium Level Work at Height

2米 < 工作高度 < 6米 6M < Working Height < 2M

Medium Level Work At Height

Apply Different Control

使用不同控制措施

統一各種用具的行業名稱，確保溝通
Standardize Terms of Equipment for communication

制定選擇之優先層次
Define Hierarchy of Selection

認識市場，訂立各種用具的可行標準
Understand the market, Establish Practical
Standard for different equipments

統一各種用具的行業名稱

Standardize Trade Name for different equipments

ZEROHARM
MAKE SAFETY PERSONAL



Ladder Platform

梯台 *

* No Trade Name at present

暫時沒有行業統稱

統一各種用具的行業名稱

Standardize Trade Name for different equipments

ZEROHARM
MAKE SAFETY PERSONAL



Access Ladder

直爬梯*

* No Trade Name at present
暫時沒有行業統稱

統一各種用具的行業名稱

Standardize Trade Name for different equipments

ZEROHARM
MAKE SAFETY PERSONAL



Step Ladder

踏板梯 *

* No Trade Name at present

暫時沒有行業統稱

統一各種用具的行業名稱

Standardize Trade Name for different equipments

ZEROHARM
MAKE SAFETY PERSONAL



Podium Step

踏板架*

*

No Trade Name at present

暫時沒有行業統稱

統一各種用具的行業名稱

Standardize Trade Name for different equipments

ZEROHARM
MAKE SAFETY PERSONAL



**Tower
Scaffold**
通架

統一各種用具的行業名稱

Standardize Trade Name for different equipments

ZEROHARM
MAKE SAFETY PERSONAL



**Mobile
Scaffold**
流動通架

統一各種用具的行業名稱

Standardize Trade Name for different equipments

ZEROHARM
MAKE SAFETY PERSONAL



KFP *

Kung Fu Platform

功夫檯

*

No Trade Name at present

暫時沒有行業統稱

統一各種用具的行業名稱

Standardize Trade Name for different equipments

ZEROHARM
MAKE SAFETY PERSONAL



MEWP

Mobile Elevated
Working Platform

全電升降台*



*

No Trade Name at present

暫時沒有行業統稱



統一各種用具的行業名稱

Standardize Trade Name for different equipments

ZEROHARM
MAKE SAFETY PERSONAL



MMPL *

Manual Maneuver Power Lift *

手推電升降台 *

* No Trade Name at present

暫時沒有行業統稱

統一各種用具的行業名稱

Standardize Trade Name for different equipments

ZEROHARM
MAKE SAFETY PERSONAL



MTP *

Manual Telescopic Platform *

手攪升降台 *

* No Trade Name at present
暫時沒有行業統稱

選擇之優先層次

Hierarchy of Selection

ZEROHARM
MAKE SAFETY PERSONAL

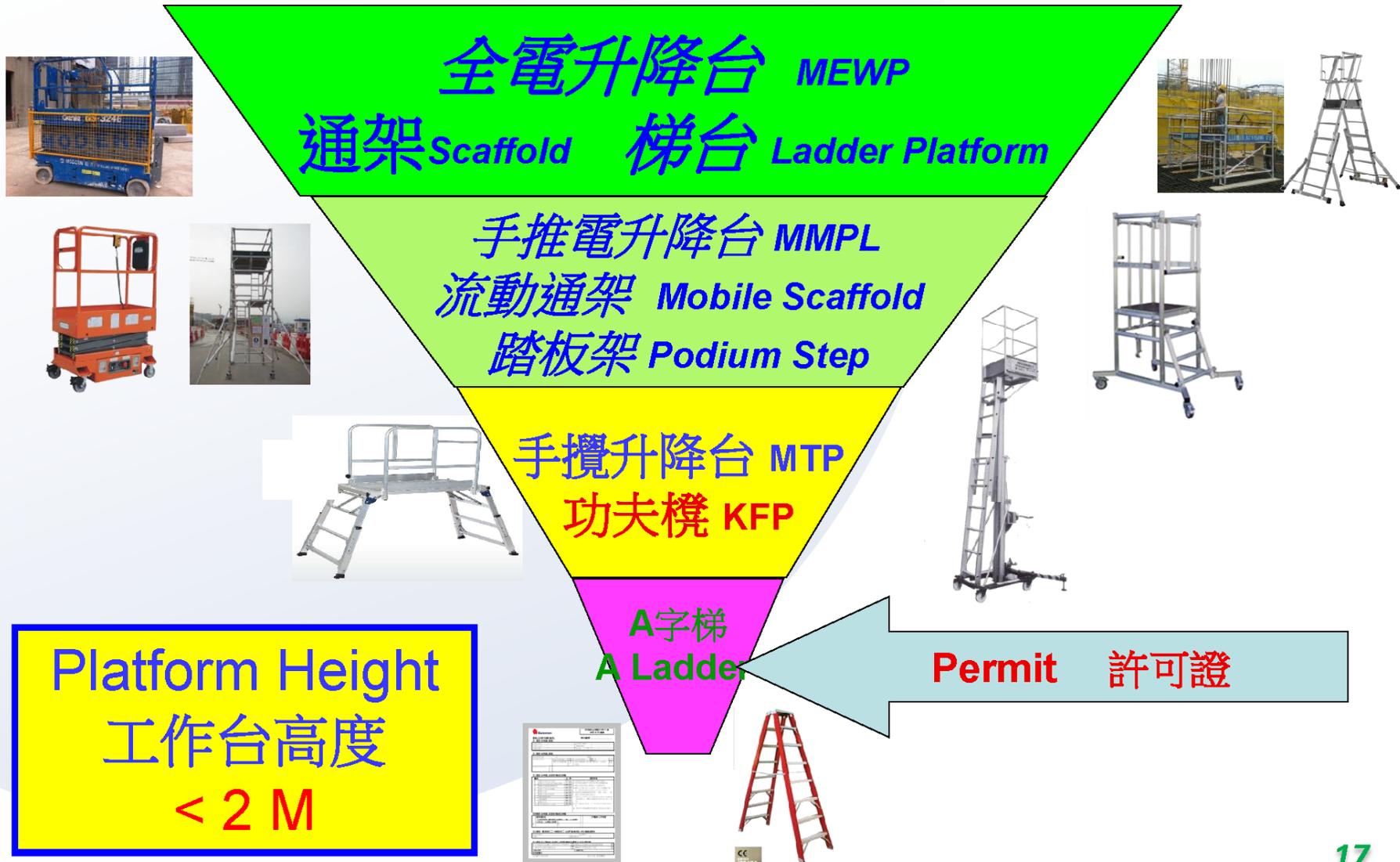
選擇原則 Principle of Selection

防止墮下 > 墮下後保護

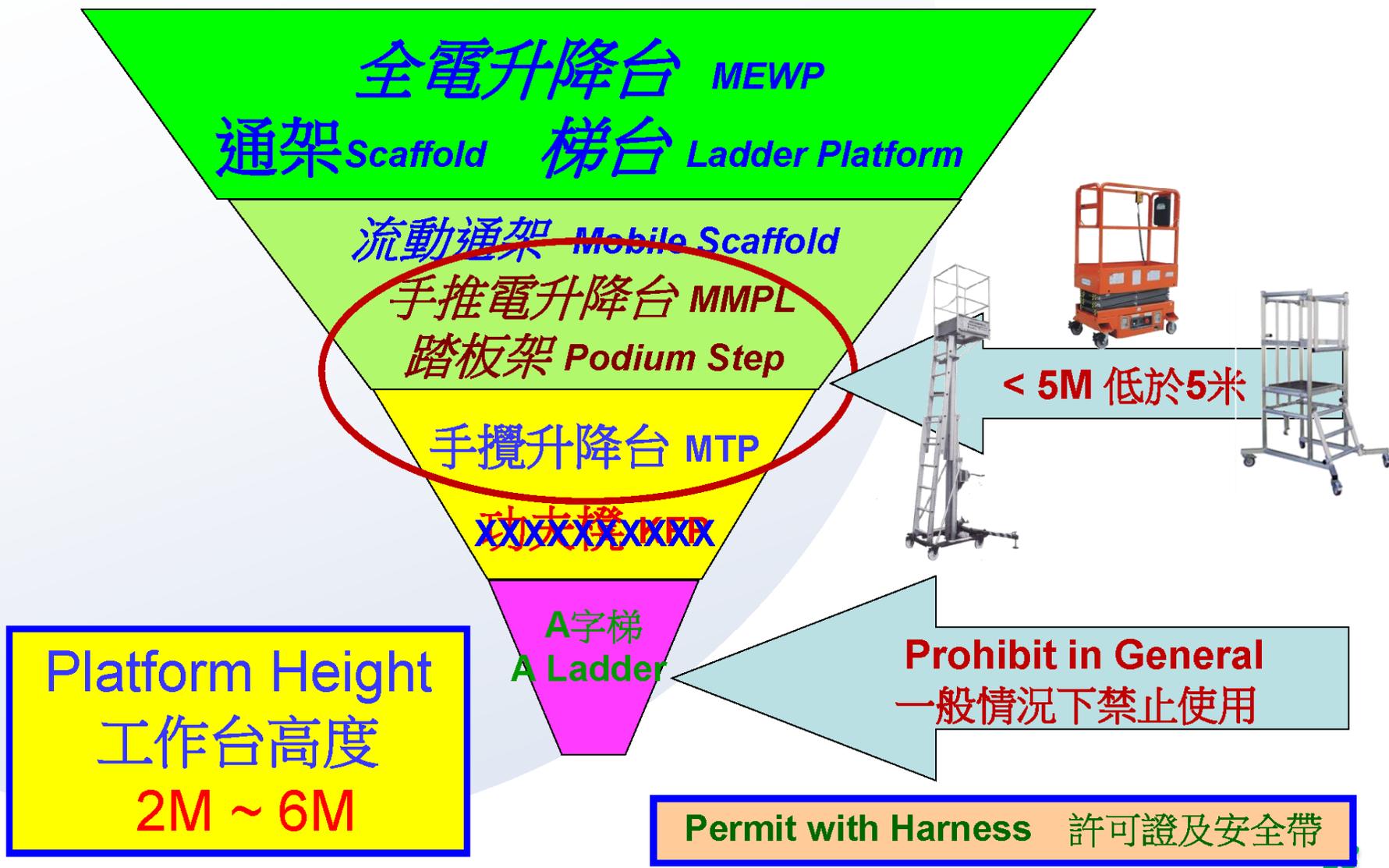
Prevent Fall > Fall Arrest

LWAH 選擇之優先層次 Hierarchy of Selection

ZEROHARM
MAKE SAFETY PERSONAL



MWAH 選擇之優先層次 Hierarchy of Selection



用具的標準 Equipment Standard

ZEROHARM
MAKE SAFETY PERSONAL



用具的標準 Equipment Standard

MEWP 全電升降台

- ✓ 金門關鍵部件檢查及註冊專業工程師檢查

Gammon CPI & RPE Inspection

- ✓ 每週檢查及檢查清單

Weekly Inspection with Checklist

- ✓ 製造商發出的操作員訓練員證書

Trainer Certificate issued by Manufacturer

- ✓ 較剪台防夾傷金屬網

Scissor Platform : Anti-trap Mesh

- ✓ 操作員現場技術評核制度

On-site Operator's Assessment System

- ✓ 登記及標準化告示板

Registration and Standard Board

ZE
MAKE



Genie P/N 76755
AERIAL TRAINER CARD
The following individual has satisfactorily completed the trainers course for Mobile Elevating Work Platform Safety Training
I acknowledge that I have received trainer training on the equipment listed on the back of this card and will comply with Genie Industries operator safety training requirements and all applicable Employer, State, Federal, Provincial Regulations and National Standards (CSA or ANSI)
ISSUE DATE
2011-1-17
NAME (PRINT)
LEUNG KAM MING
CLASS TRAINER (PRINT)
SKY Xie
TRAINING ORGANIZATION (PRINT)
Genie Club

TO BE FILLED OUT BY TRAINER
DATE TRAINER
2011-1-5 SKY
2011-1-6 SKY
2011-1-5 SKY

用具的標準 Equipment Standard

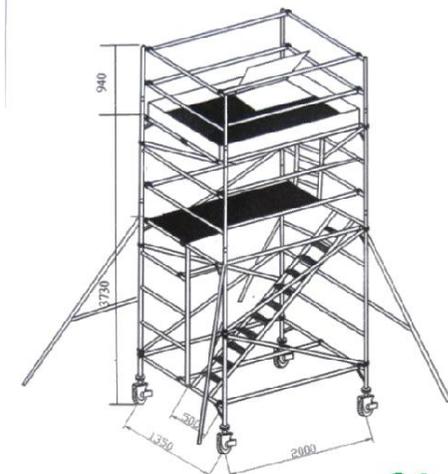
Mobile Scaffold 流動通架

- ✓ 禁止使用“紅架，橙架”作流動工作台
Ban Toyo or alike as Mobile Scaffold Material
- ✓ 每10日檢查一次 10-day Inspection Cycle
- ✓ 遞交通架圖則 Submit Scaffold Design Drawing
- ✓ 使用全身式安全帶 Wear full body harness
- ✓ 登記制度及編號 Registration and Scaffold ID

ZERO HARM
MAKE SAFETY PERSONAL



Mobile Scaffold		流動通架	
100		Company Name 公司名稱	Gammon
		Contact Person 負責人	Wilson LI
Height From Platform to Ground 工作台至地面高度		Contact No. 聯絡電話	6159 9893
Identification No. 工具識別號碼		Competent Person 合資格人士	Contact No. 聯絡電話
Issue Date 發出日期		余振光	6627 1321
Issue By 發出人		俞其兵	5412 8152
		甄國揚	9325 7023
		Welltech Aerial Engineering Co., Ltd. 宏達高空工程有限公司	
5 th , 15 th and 25 th of each month: Scaffolding inspection by Nominated Competent Person and sign Form 5 每月5、15、25號：由已委任合資格人士檢查及簽署欄架(表格5)			



用具的標準 Equipment Standard



Mobile Scaffold 流動通架

- ✓ 超過二米高流動通架，無障礙出入口連踏板梯

Platform Height > 2M Free Stair Ladder Access



用具的標準 Equipment Standard

Kung Fu Platform 功夫橈

- ✓ 不可超過1.5米高 Platform Height < 1.5M
- ✓ 超過1.2米高，必須加安裝圍欄
Platform Height > 1.2M → Guardrails
- ✓ 橈面闊度 > 300 mm
Platform width > 300mm
- ✓ 登記制度及編號 Registration and KFP ID
- ✓ 橡膠絕緣腳 Rubber Insulation pad

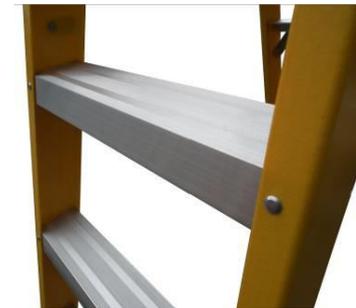


用具的標準 Equipment Standard



A字梯 A-Ladder

- ✓ 原則上不可使用A字梯 No A-frame step ladders in principle
- ✓ 不可超過二米高 Not over 2M High
- ✓ 禁止用木及金屬梯，使用EN131纖維梯
No timber / No metal, use EN131 fiber ladder
- ✓ 橡膠絕緣腳 Rubber Insulation pad
- ✓ 梯紙 (工作許可證) Ladder Permit



Gammon		所有器具必須符合 EN131 或 ANSI A14.5 標準	
梯紙 (工作許可證) (每天)		梯紙編號:	
第一部份 (由申請人填寫):		申請人姓名: 1	
第二部份 (由申請人填寫):		申請日期: 1	
第三部份 (由申請人及受用者簽名及日期):		受用者姓名: 1	
第四部份 (由申請人及受用者簽名及日期):		工作範圍 / 工作性質: 1	
第五部份 (僅供使用 / 不備使用) (由部門區域負責人對文檔簽名及日期):		1	
第六部份 (由申請人及受用者簽名及日期) 及 安全監察紀錄:		1	
簽名及日期:		日期: 24-3-2012	



24

其他有關高空工作的事項

Work at Height Other Issues

傳統釘板：金門標準 Traditional Formwork : Gammon Standard

ZEROHARM
MAKE SAFETY PERSONAL

釘板層下鋪密金屬橋板 *Fully Metal Planked Platform below soffit*



鳥瞰 *Top View*

仰視 *Bottom View*



傳統釘板：金門標準 Traditional Formwork : Gammon Standard

ZEROHARM
MAKE SAFETY PERSONAL

各種安全設計圍欄 *Pre-designed Safety Fencing System*



圍欄企棟 - 手榴彈
Pole Adaptor



專屬懸臂式圍欄 - 7 字架
Proprietary Cantilever Fencing



傳統釘板：金門標準 Traditional Formwork : Gammon Standard



各種安全設計圍欄

Pre-designed Safety Fencing System Standard Fencing

圍欄企棟 - 手榴彈

Pole Adaptor



其他 Other



樓孔保護標準

Floor Opening Protection Standard

ZEROHARM
MAKE SAFETY PERSONAL

超過 800mm x 800mm，安裝1.1米護欄網

Larger than 800mm x 800mm

→ 1.1M High Mesh Fencing



少於 800mm x 800mm，安裝呔板

黃黑警示，警告牌

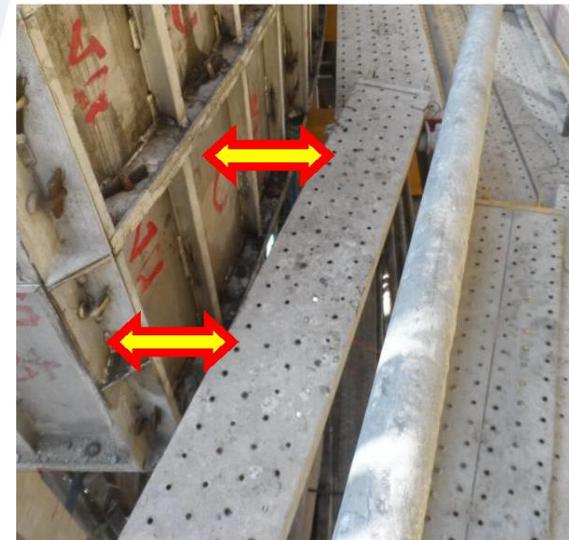
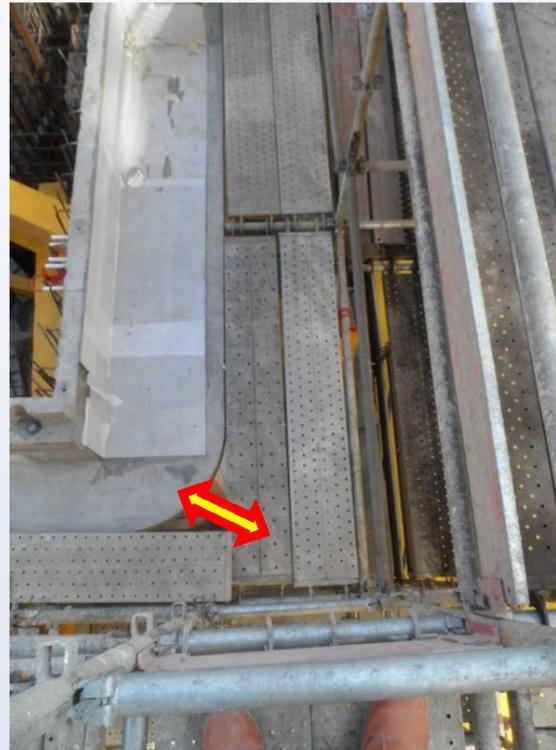
Less than 800mm x 800mm

Yellow/Black – Warning Sign

樓邊與棚架之間的距離 Gap between Building and Edge

ZEROHARM
MAKE SAFETY PERSONAL

盡量減少：不可大於 250 mm
As close as possible : Maximum 250mm



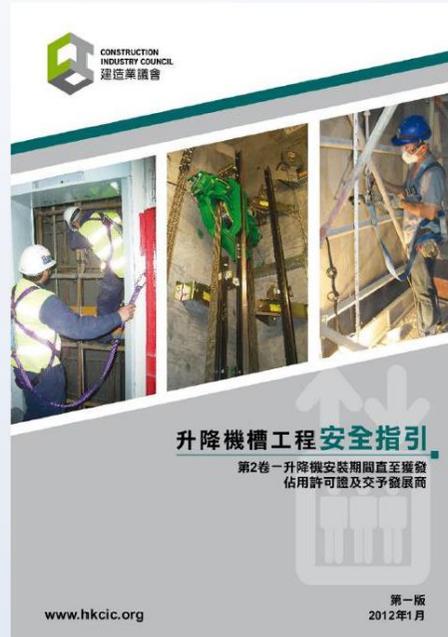
升降機槽保護及許可證

Lift shaft protection and Permit

ZEROHARM
MAKE SAFETY PERSONAL

建造業議會指引一，二冊

CIC Guideline Vol. 1 & 2



通道：金門標準

Access : Gammon Standard

ZEROHARM
MAKE SAFETY PERSONAL

深坑, 斜坡, 貨櫃上落通道
突出部份保護, 有圍欄, 扶手踏板梯, 黃黑警示

Access to Trench, Slope, Container
Flat Stair Access Ladder

Handrails on 2 sides, Sharp Edge Protected, Yellow/Black Indication



通道：金門標準
Access : Gammon Standard

通道設黃色網

Yellow Netting for Designated Access



紮鐵層雙金屬橋板

Double metal planking on Steel bars

ZEROHARM
MAKE SAFETY PERSONAL

告示顏色系統

Colour Code for Signage



人車路交界處設置黃黑間自動門

Yellow / Black Swing Gate at Traffic and Pedestrian Interface

低及中高度工作 其他可用工具

LWH and MWH
Other Equipments

750mm闊，360度自轉全電升降台
750mm wide self rotate MEWP (video)

ZEROHARM
MAKE SAFETY PERSONAL



Acknowledgement : Chi Shing Machinery Co. Ltd
鳴謝: 志成機械有限公司

使用儲電電鑽，升降工作台 Electric Drill Pop Up Platform (video)

ZEROHARM
MAKE SAFETY PERSONAL



Acknowledgement : MODERN (International) Access & Scaffold Ltd.
鳴謝: 現代(國際)棚架設備有限公司

ZEROHARM
MAKE SAFETY PERSONAL



Thank You

謝謝

