



CONSTRUCTION INDUSTRY COUNCIL  
建造業議會

# 針對高空工作安全的 工作綱要

建造業議會建造安全專責委員會主席  
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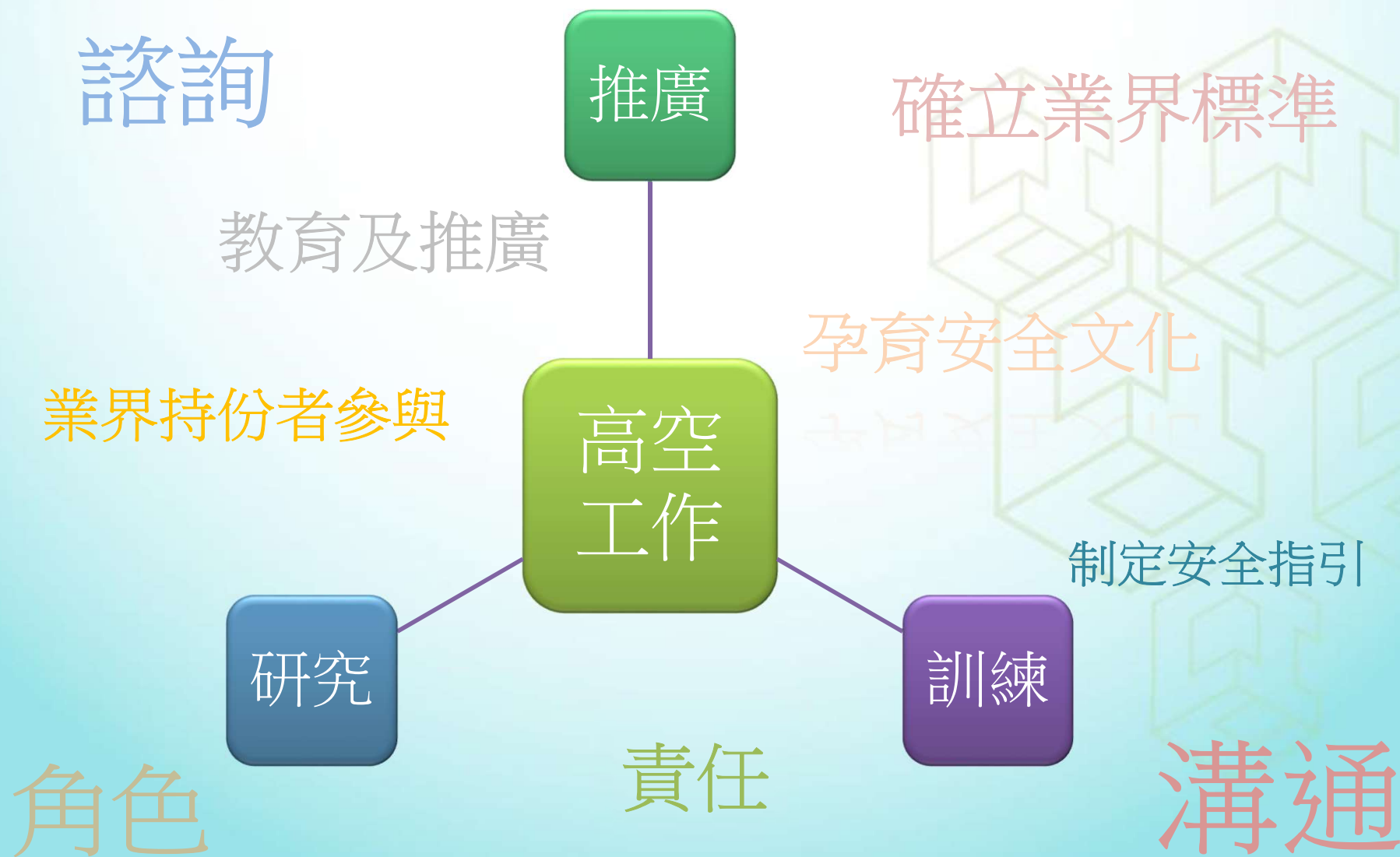
# 1. 簡介 - 建造安全專責委員會



## 專責小組

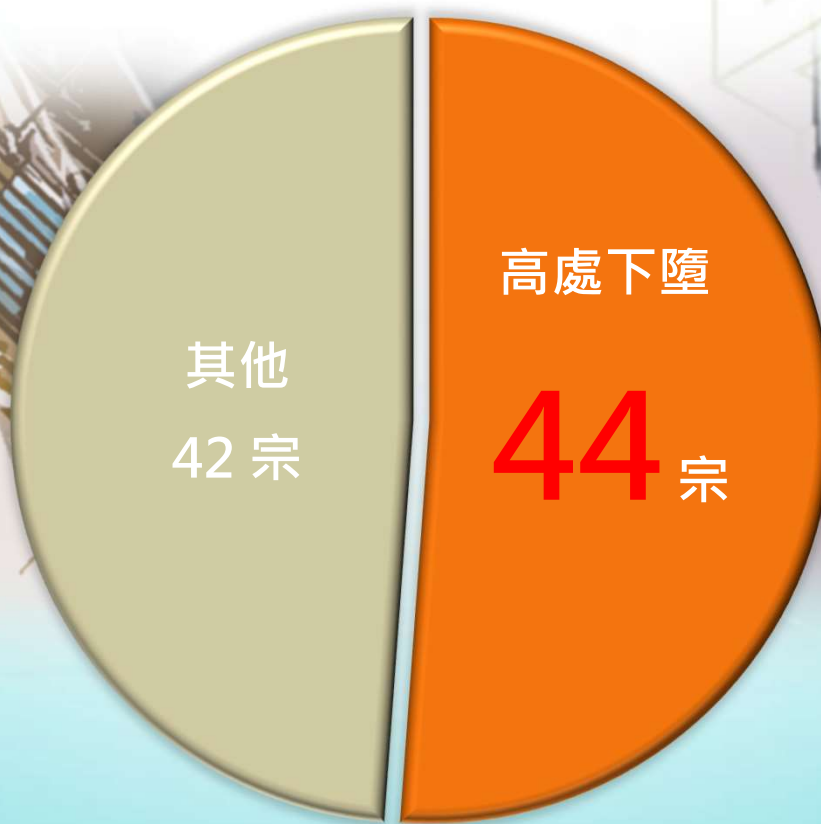
- 貨車式起重機工作安全專責小組
- 竹棚架工作安全專責小組
- 檢討主要持份者安全責任及角色專責小組
- 工地安全事故專責小組
- 維修、保養、改建及加建工地之工作安全專責小組
- 升降機槽工作的工地安全專責小組

### 3. 針對高空工作安全的工作方向



## 2. 建造業意外統計

### 建造業死亡意外數字 (2014 – 2018)





## 3.1 懸空式棚架

過去數年因懸空式棚架引致的意外屢有發生，於2018年至2019年4月，一共有15宗人體下墮的死亡意外而當中3宗涉及懸空式棚架工作，建造安全專責委員會認為必須就懸空式棚架的工作安全作出檢討。

安全專責委員會及安全技術事宜小組在2019年第1季召開了特別會議討論有關可行的改善措施，以減少懸空式棚架致命意外。

**9/1/2019 鑽石山悅庭軒工人26樓棚架墮下送院亡**

一名建築工友突然失足從棚架高處墮下，倒臥於屋苑平台位置。救護人員接報到場，男子昏迷送往聯合醫院搶救，其後宣告不治。警員在場調查，地面上遺有事主的血跡、鞋及袋。

警方將案件列作工業意外處理，正調查男子墮樓原因。據悉，死者為玻璃工，於大廈26樓的棚架墮下。



**拆棚工墮斃鄰廈平台**

深水埗發生工業意外，一名拆棚工人在一樓大廈樓層平台墮下，疑因正欲強拆平台重疊，送院不治。警方發現事主沒有繫上安全帶，案件列作工業意外，交由工處處理。

據悉，這名工人是在拆卸位於一樓大廈樓層平台的一塊玻璃時，因平台重疊，導致工人失足墮下。警方在現場發現了工人的遺體、工具及衣物。目前，警方正調查事故原因，並對現場進行了封鎖。



**首天開工搭棚工九樓墮下傷重亡**

新界西貢某全日發生奪命工業意外，一名首天開工搭棚工人，與同事在二樓樓外邊架安裝鋼骨架進行工程期間，突然由九樓直墮一樓平台重傷昏迷。同事聞聲叫聲發現警署，消防及救護人員到場為傷者急救及送院，惟經院搶救重傷送院。警方初步調查後列工業意外，通知勞工處跟進意外原因。

現場為建築公司後港海濱，據悉，大廈新街樓層於裝修大堂外牆有石屎剝落，屋苑早前聘請工人進行高樓維修，亦在剛起機，昨午一時許，數名工人到大廈準備量外牆維修工程，其間一名近三十歲姓印搭棚工人，舉由九樓電梯大堂外，舉鋼骨架對準樓架及玻璃。

消息稱，疑昨日為首天開工，其間有兩名安全顧問及安全帶。當檢查九樓工作期間，未幾有同事突然聽到陣陣叫聲，發現搭棚工墮下。鄰平台重疊昏迷，其鋼骨的安全帶則鬆脫跌在地面，立即報警，消防及救護員到場為傷者急救及送院。惟經醫院搶救無效，傷者死亡。警方在現場九樓電梯大堂外發現一條斷開的尼龍繩，初步調查後將工人舉由九樓電梯大堂外墮到現場調查原因。

勞工處表示，該場建築裝修工業意外後，已即時派員到場，現正做意外原因調查。



## 3.2 成立懸空式棚架工作安全專責小組

專責小組成員的組成包括以下持份者及機構:

政府部門 / 業主 / 承建商及分包商 / 相關聯會及工會  
職業安全及健康相關機構 / 物業管理 / 保險業界 /  
專業團體 / 建造業工人註冊委員會

### 建議 討論方向

- 設立政府部門通報機制 (LD) ?
- 加強執法, 巡查 及檢討罰則 (LD) ?
- 設立登記合資格工人及合資格人士制度 (CWRB及物管) ?
- 加強防墮裝置及繫穩螺絲的檢驗 (CIC 及LD) ?
- ➔ 草擬懸空式棚架工程的安全指引 (CIC及各持份者) ?
- ➔ 加強廣泛宣傳工作 (CIC及各持份者) ?

## 3.2 成立懸空式棚架工作安全專責小組

### 工作路線圖

各持份者及機構  
就專責小組成員  
進行提名

就工作安全指引  
內容與業界諮詢

向業界及公眾  
人士推廣及宣傳

工作路線圖

專責小組成員  
進行會議討論  
工作方向內容

整合業界意見  
指引出版, 及其他  
工作



## 3.3 檢討主要持份者安全責任及角色研究

### 檢討主要持份者安全責任及角色研究

#### 第一階段研究

比較不同城市主要持份者的安全責任及角色  
將於2019年6月完成

#### 第二階段研究

就第一階段研究結果作出建議  
報告中會包括建議及發展一套系統性的管理制度並以實際有效的設備及措施減低高空工作的風險  
將於十一月完成





## 3.3 檢討主要持份者安全責任及角色研究

### 研究目標

1. 研究建造業各主要持份者的安全責任及角色。
2. 借鑒及比較其他相對先進國家的安全法例，標準及其他持份者的安全角色及責任。
3. 尋找法例，行業標準及作業上的不足並就以上不足作出建議。
4. 就建造業工地死亡事故及減低工地施工風險的預防措施作建議。

## 3.3 檢討主要持份者安全責任及角色研究

### 研究方法

1. 檢視過去90多宗於香港建造業發生的死亡事故。
2. 以“主要持份者模型”(stakeholder model)找出個別人士於每宗事故就其角色及責任的不足。

Case ID	CCDI-116/2014	Private / Public Works	Private
Type of works <sup>1</sup>	Building	Date of accident	16.11.2013
Personnel involved			
Age	54	Gender of worker	M
Registration category of worker <sup>2</sup>	General worker	Occupation	Casual worker
Experience <sup>3</sup>	No information	Service <sup>4</sup>	194 days
Worker's official duty	Miscellaneous work on site		

#### Details of Accident

Activity at the time of accident	Clearing of debris accumulated on the bamboo platform located at 2/F level				
Type of Accident <sup>5</sup>	Fall of person from height (inadequate protection)				
Contractual link	<pre> graph TD     Client --&gt; PrincipalContractor[Principal contractor]     PrincipalContractor --&gt; ScaffoldingWork[Scaffolding work]     PrincipalContractor --&gt; CasualWork[Casual work]     ScaffoldingWork --&gt; Subcontractor1[Subcontractor (1st tier)]     CasualWork --&gt; Subcontractor2[Subcontractor (1st tier)]     CasualWork --&gt; Subcontractor3[Subcontractor (2nd tier) Employer of deceased]             </pre>				
Critical process	Work above ground with inadequate protection				
Controls at time of accident	No. Incomplete set of fall arresting system. Only independent lifeline without fall arrester and safety harness.				
Direct cause of accident	<table border="0"> <tr> <td>From facts of case</td> <td>• Working on unsafe means of support</td> </tr> <tr> <td>From facts by deduction</td> <td>• Strength of the scaffold was inadequate due to wear and tear or vibration induced by power tool</td> </tr> </table>	From facts of case	• Working on unsafe means of support	From facts by deduction	• Strength of the scaffold was inadequate due to wear and tear or vibration induced by power tool
From facts of case	• Working on unsafe means of support				
From facts by deduction	• Strength of the scaffold was inadequate due to wear and tear or vibration induced by power tool				

<sup>1</sup>ABA / Building / Civil / Demolition / Foundation / RM (Small scale)

<sup>2</sup>Trade as defined by CIC's List of Designated Trade Division

<sup>3</sup>Worker's years of experience as indicated in the Investigation Report by Labour Department

<sup>4</sup>Worker's service period as indicated in the Investigation Report by Labour Department

<sup>5</sup>Type of Accident as defined by Labour Department's Type of Accident

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#### I. Circumstances

On the day of accident, the deceased was assigned to clear the debris accumulated on a bamboo catch platform located at 2/F level. That morning at 0745 hours, site in-charge of C instructed the deceased and two others to remove the debris on the catch platform of Block 10. The deceased used an electric hammer to break the hardened concrete lumps into smaller pieces while his co-workers to remove them by using spades and brooms. At around 0930 hours, site in-charge of C came around and reminded them to work safely. The deceased worked fast in the morning and thus he became working ahead but alone. At around 1643 hours, two foremen of principal contractor when touring around Tower 10 heard a loud noise nearby. They rushed to the scene and discovered the deceased lying on the ground with scattered debris and building materials all around him. Directly above the deceased, there was a void formed by a broken scaffold at 10.4M above the ground. (Photos 1)

#### II. Factual Findings

There were catch platforms erected at 2/F, 7/F, 12/F, 17/F and 22/F of Tower 10. The debris collected by the catch platform included hardened cement plaster, concrete debris, external tiles and other miscellaneous construction wastes. Sometimes, electric breaker might have to use to break down the hardened cement plaster before removal. To prevent this platform from overloading, this platform has to clear once a week by manual labour.

At the material time, the deceased was assigned to remove debris from the platform at 2/F. This catch platform was not supported from the ground. In fact it was rested on 3 balconies and 3 steel channels fixed to the structural elements of the building. The structure of this catch platform was formed by bamboo members at the base and covered by nylon mats and metal sheets on top to detain the debris falling from above. (Sketch 1) Technical Report from Labour Department revealed that the collapsed portion of the catch platform was hung by vertical members at floor level of 2/F. It appeared that one of the horizontal members detached from the vertical members under the weight of the deceased and the weight of the platform and the concrete debris. The weight was then redistributed to other horizontal members. As a result, these horizontal members also detached from the vertical members causing the collapse of the portion of the catch platform.

According to the competent person who erected this catch platform, this platform was designed for debris collection but not for persons working on it. Since no one informed him that this platform would be used for person working on it, no specification and requirements to satisfy this change of use was provided.

Although there was an independent lifeline provided next to the work area of the deceased, no harness and fall arrester was being worn by the deceased during the work. No warning notice as a reminder was displayed.

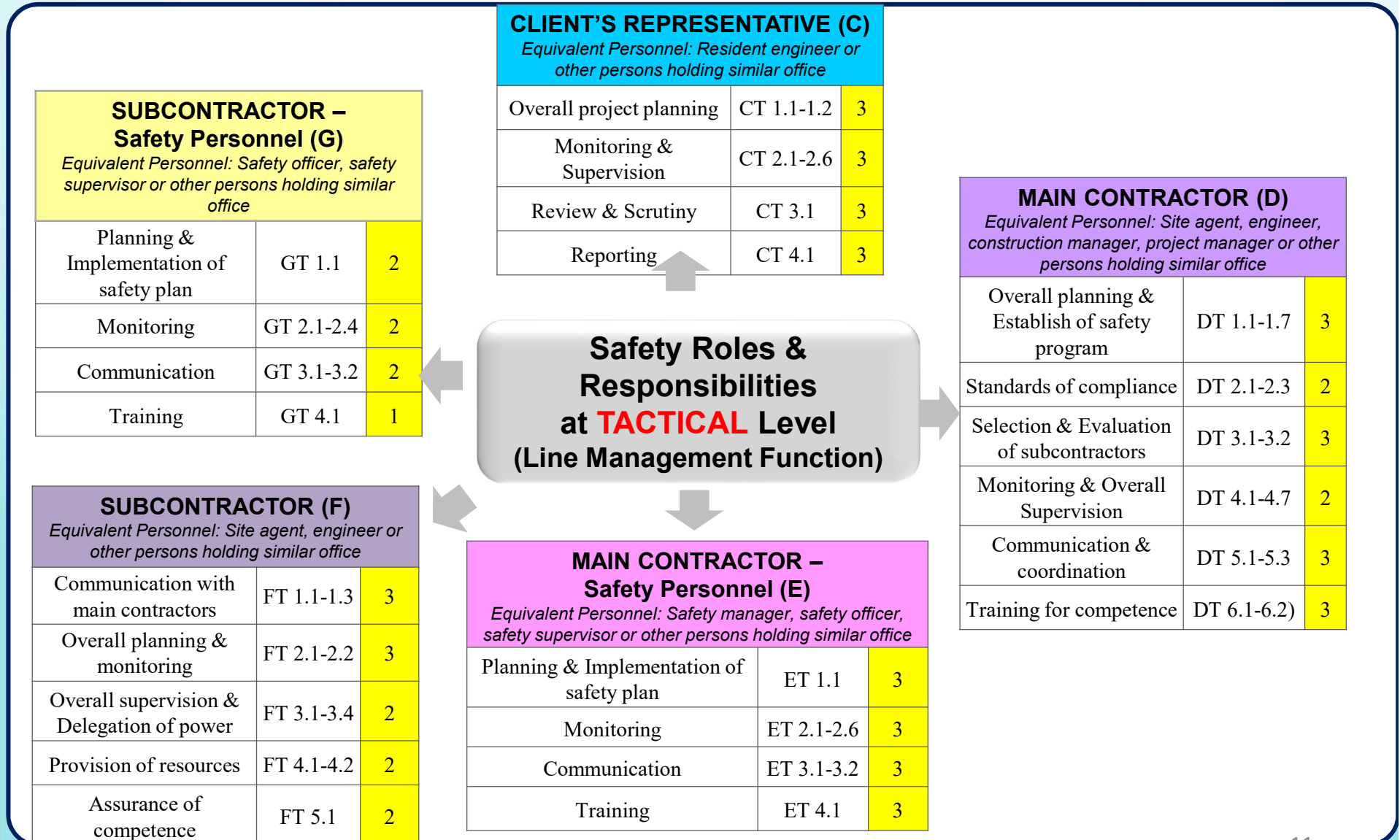
#### III. Causes of the Accident

1. The catch platform was not built from the ground. It was suspended by vertical members at 2/F level and was not designed to withstand the load of a person. The nylon strips connecting the vertical and the horizontal members were susceptible to vibration in particular when breaking of concrete by power tool was involved.
2. There was no safe system of work provided and maintained for debris removal work on the catch platform.
3. No risk assessment had been conducted to identify, evaluate and control the hazard of collapse of platform by safe working procedures or permit-to-work.
4. When the deceased was deployed to work on the catch platform, no specific safety information, instruction and training were provided to him and his co-workers.

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# 3.3 檢討主要持份者安全責任及角色研究

## 主要持份者模型(stakeholder model)



Legend: 0 = Not relevant; 1 = Done; 2 = Should have done (Direct Cause); 3 = Should have done (Indirect Cause)

## 3.4 安全體驗訓練中心





## 3.4 安全體驗訓練中心(SETC)

### 離地工作 安全訓練



懸吊安全帶模擬器

#### 研習目的

- 體驗安全帶作為防墜最後防線的重要
- 學習正確穿著安全帶

#### 研習方式

- 學員親自體驗

#### 延伸思考

- 腰式安全帶為何被淘汰

#### 研習目的

- 體驗站於梯具上工作時的危險，例如梯具晃動或斷腳

#### 研習方式

- 學員親自體驗

#### 延伸思考

- 如果地面有突出鐵枝.....
- 如果在梯上觸電.....



摺梯意外模擬器



## 3.4 安全體驗訓練中心(SETC)

### 離地工作 安全訓練

#### 研習目的

- 學習雙扣安全帶的使用
- 學習使用伸縮式防墮器的使用
- 學習爬梯方法

#### 研習方式

- 學員親自體驗

#### 延伸思考

- 什麼時候要使用雙扣安全帶？



工作台及爬梯

## 3.4 安全體驗訓練中心(SETC)

### 虛擬實境 訓練

#### 研習目的

- 透過虛擬實境模擬不同工作環境，讓學員感受意外發生時的情況

#### 研習方式

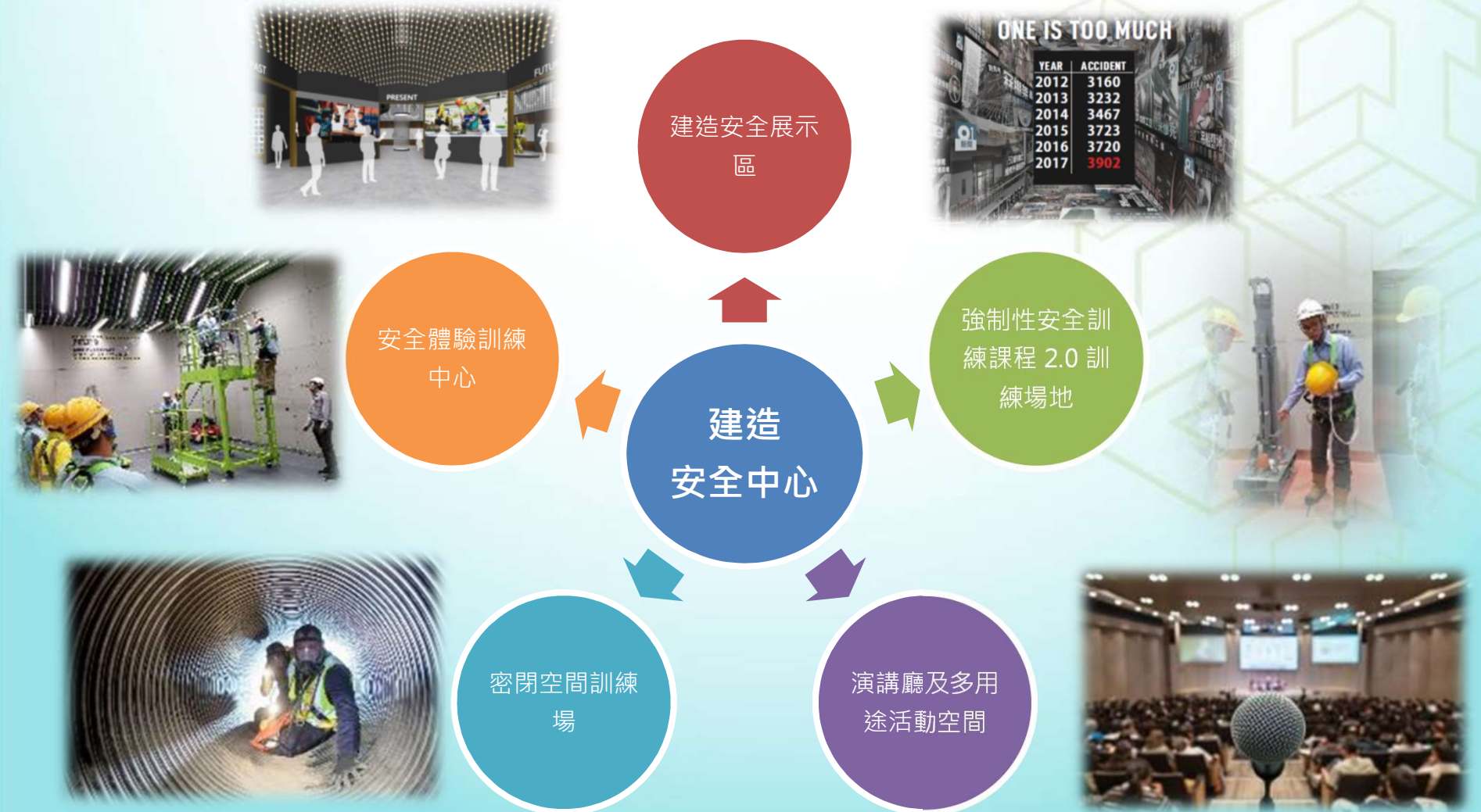
- 學員親自體驗



模擬吊運意外

# 3.5 建造安全中心 (Centre for Construction Safety)

建造安全中心將成為香港建造業界完備的安全中心，提供一體化的建造安全服務，包括安全創新意念展覽、訓練、及會議等





# 3.5 建造安全中心 (Centre for Construction Safety)

Introduction: HKCIC Time line & Milestone



## 建造安全展示區 (Safety Exhibit)



A.I. Technology for Site Monitoring



Face recognition, smoke/fire detection, productivity & safety monitoring

Smart Helmet



Face recognition, smoke/fire detection, productivity & safety monitoring

## 3.6 安全推廣



為持續及更有效推廣工地安全，主辦單位希望以“工地齊FUN享”作為**建造業安全周2019**的延續活動，於不同工地推廣，以便讓更多工友參與。

推廣期間: 2019年7月至2020年3月

預計參加單位: 100個工地



## 3.6 安全推廣

### 主要活動及日期

活動簡介會  
及派發安全  
資料包

7月2019

工地進行改善高空  
工作安全的良好作  
業方案推廣活動

9月30日前

第1次- 高空工作  
良好作業分享會

2019年第4季

參與單位及  
工友角逐安  
全大獎

2020年第2季

8月31日

工地齊分享  
啟動禮

2019年第4季 –  
2020年第1季

定期安全推廣

2020年第1季

第2次- 高空工  
作良好作業分  
享會

2020年第2季

於2020年建造業  
安全週或相關活  
動舉行頒獎典禮

完

