

# Smart Construction Solution 智能建築方案

An integrated solution to enhance construction workers' health, safety and operational efficiency

提升建築工人健康、安全及營運效率的綜合方案

Combining technology and humanity  
結合科技與人性

- Promote worker safety and health  
宣揚工人安全及健康的訊息
- Increase operation efficiency  
提升營運效率
- Enhance environmental performance  
改善環境質素



CITF Pre-approved Product

Pre-approved Smart Site Safety  
System Solution (SSSS) of Construction  
Innovation and Technology Fund  
建造業創新及科技基金預先批核的  
SSSS安全智慧工地方案

Pre-approved Code & Product Name  
預先批核名單編號及產品名稱

PA20-025  
SmartWorks  
智安健

PA20-033  
SmartWorks - Safely  
Alert System for  
Temporary Lift  
Shaft Gate  
臨時升降機閘門  
警報裝置



Winner of CIC Construction Innovation Award 2019  
Construction Safety 1st Prize



ESG Recognition Scheme  
可持續發展嘉許計劃

Subsidy List of  
ESG Recognition Scheme



## Safety Monitoring 安全監控

### Safety Alert System for Temporary Lift Shaft Gate 臨時升降機槽閘門安全警報系統

An end-to-end workflow solution empowered by mobile-IoT technology together with sensors, web portal and the SmarTeam mobile app, it provides additional safety control to mitigate the risk of the persons falling from lift shaft openings.

利用流動物聯網技術連接感應器、網絡平台及SmarTeam手機應用程式的全面工作流程解決方案，提供額外安全控制措施以減低工人從升降機槽下墮的風險。

### AI Safety Monitoring 人工智能安全管理

Improve safety and reduce accidents by setting up danger zone or AI camera monitoring driver behaviors & ensure the workers wear the safety equipment properly.

透過設定不同的警報區域或使用AI鏡頭監察駕駛員狀態及確保工人已正確配戴防護裝備以減少事故發生。

### Danger Alert & Access Control 安全預警系統及進出管制

Ensure workers' safety by triggering alarm when someone is approaching a moving machine likes crane. Facial recognition technology ensures only authorized workers with helmet can access the restricted area.

人面識別技術確保只有佩戴頭盔的授權工人方可進入限制區域。在工人靠近移動中的重型機械時發出警報，以確保工人安全。

### Confined Space Toxin & Flammable Gas Monitoring System 密閉空間毒素和易燃氣體監測系統

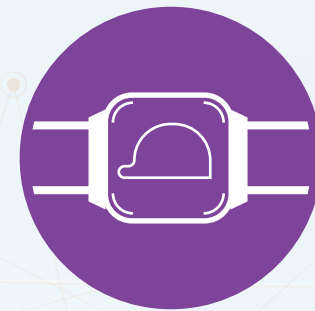
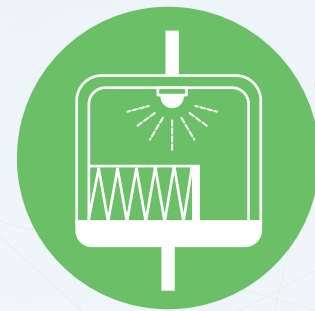
Collect different toxin & flammable gas level and provide alert when reading exceed threshold. Camera set at entrance of confined space to count and manage workers entering and leaving confined space.

收集不同的毒素和可燃氣體水平，在讀數超過預設值時發出警報。設於密閉空間入口的鏡頭，可統計及管理進出密閉空間的人員。

### Smart Padlock 智能電子鎖

Ensure the restricted area is unlocked by an authorized person with the Smart Padlock App and real-time lock status monitoring with alerts.

確保只有授權工人可使用智能電子鎖手機應用程式解鎖進入指定區域，並可實時監察智能電子鎖的狀態。



Dump truck status  
泥頭棄置進度



### Integrated Dashboard for Efficient Management 綜合版面提升管理效率

A single platform provides management  
a full and instant view  
管理人員可透過一站式平台獲取  
完整的即時資訊

Danger alert  
危險警報



Workers' real time location  
工人即時位置



Environment condition  
環境情況



## Smart Wearable Technology 智能穿戴技術

### Smart Watch & Smart Helmet 智能手錶及智能頭盔

Utilize IoT and GPS technology to monitor worker's real-time location and health status. IoT sensor reads and collects workers' body temperature and heart rate to personalize heat stress alerts. Alert when worker's body temperature or heart rate is abnormal. It also improves worker safety. Instant alert is triggered when it encounters a sudden fall. Workers can also press the SOS button if needed. Broadcasting function of the helmet can be used for making urgent announcement. Smart Watch even provides voice call function so that workers can communicate with others anytime anywhere.

利用IoT感應器及GPS定位技術實時監測工人位置及健康狀況。IoT感應器還會讀取並記錄工人的體溫及心跳率，實時因應員工的健康狀況而發出警報。當工人意外跌倒時也會發出警報，更配備SOS緊急按鈕。頭盔更配備廣播功能方便發出緊急通知。智能手錶更提供語音通話功能，方便工人隨時隨地保持聯繫。

## Health And Environment Station 健康與環境站



### SmartHealth Station 健康監察站

Regular check on worker's health condition  
such as body temperature, heart rate, blood  
pressure and weight.

工人可定期量度體溫、心跳率、血壓及體重，不時了解個人身體狀況。



### Environment Station 環境監察站

Ensure a safe working condition by measuring  
temperature, humidity, PM2.5/10, noise level, wind  
speed and direction with smart IoT sensors. The  
collected figures from IoT sensor helps supervisors  
evaluate the risk of heatstroke under unfavourable  
conditions and take relative actions.

以智能IoT感應器量度氣溫、濕度、空氣質素、音量、風速及風向，確保工作環境良好。記錄之數據更可用作評估工人在惡劣環境下的中暑風險。

## Construction Management 施工管理

### Dump Truck Management 泥頭車管理

Monitor dump trip with detour alert. Digitalized dumping  
process provides dumping progress report and facilitates  
dump receipt management; ensures conformity and  
efficiency.

泥頭車管理監察棄置泥頭過程，如泥頭車沒有根據  
預定路線行駛，會發出提示。數碼化的程序能確保  
泥頭棄置合規性及效率。



# Reliable Connectivity as the Foundation of Smart Construction 可靠穩定網絡作為智能建築的基礎

Construction Site  
工地

Site Office / Headquarter  
工地辦公室 / 總部

SmarTone 5G

WiFi  
SUPER WI-FI



LoRa



NB-IoT

5G Router  
路由器

Server  
伺服器

PoE Switch  
供電

5G Router  
路由器

Server  
伺服器

Desktop &  
Mobile Device  
電腦及流動裝置

Rural Area 郊外地區



Tunnel Area 隧道區域



Confined Space 密閉空間



Seamless Connectivity for  
Different Site Locations  
為不同位置的地盤提供穩定網絡

High Location 高處位置



Mountain Side 山坡範圍



Remote Area 偏遠地區



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For more information  
please scan the QR code

請掃描二維碼 了解更多

