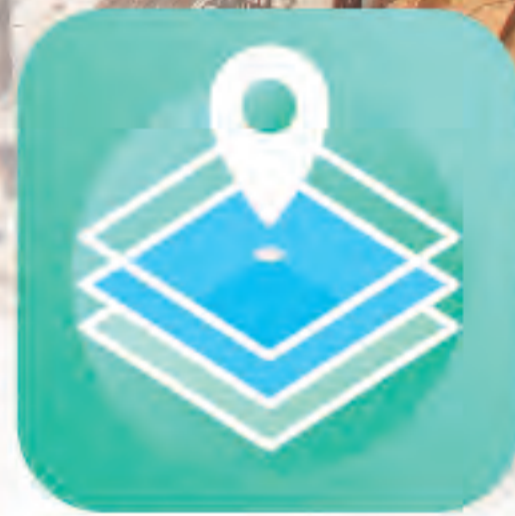


SmartTone SOLUTIONS



SmartWorks 智安建



SmartWorks is an award-winning solution to enhance construction workers' safety, health and operational efficiency. It strengthens precautionary measures onsite, instant response to emergency and formulate post-incident solutions.

智安建是一個提升建築工人安全、健康及營運效率的獲獎方案。加強地盤的安全措施，並在緊急情況下發出警報，從而作出即時跟進。

A Solution Integrates Technology and Humanity 結合科技與人性的方案

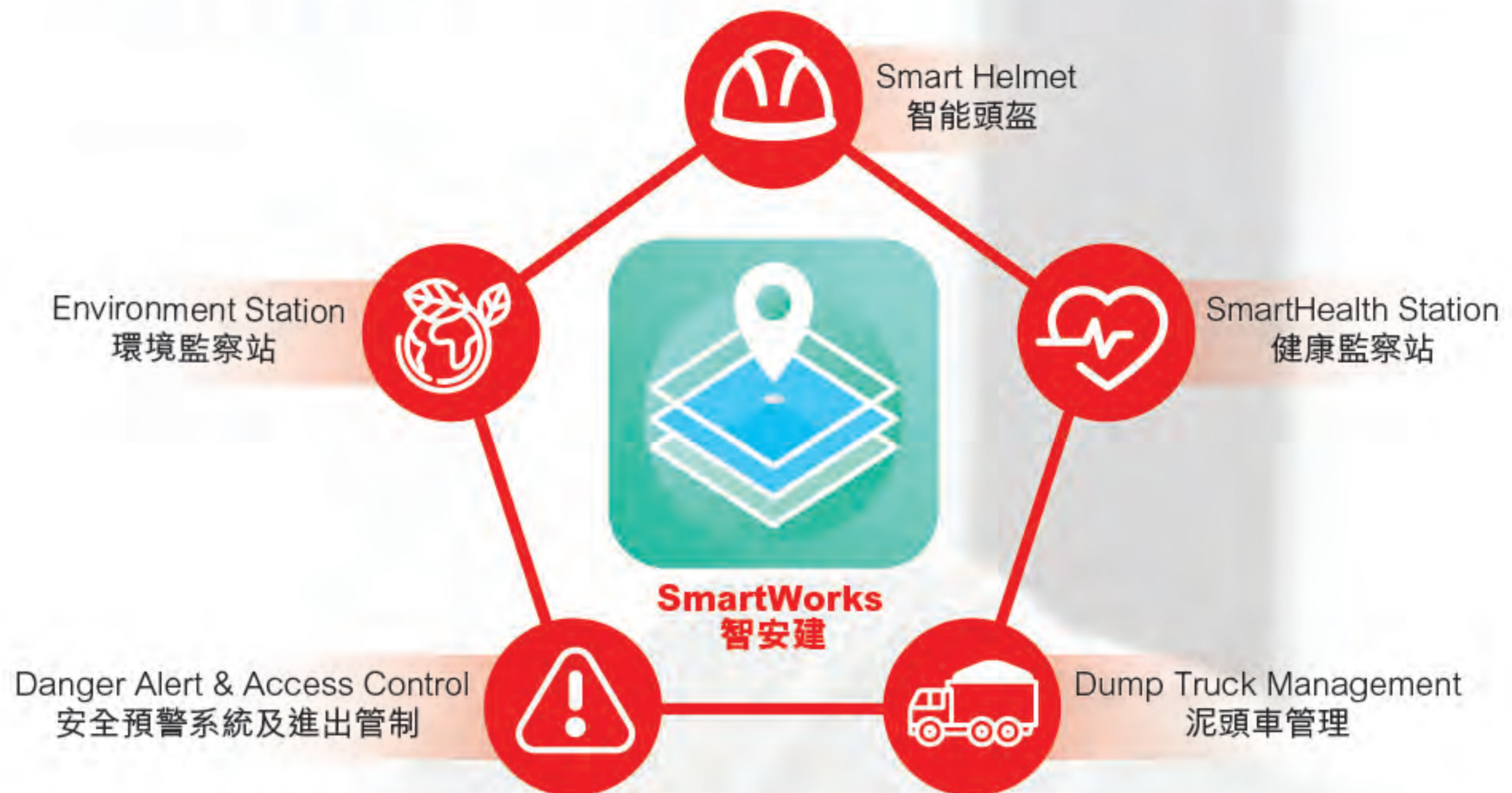
- Enhance operational safety
提升營運安全
- Promote workers' health
宣揚工人健康
- Strengthen management efficiency
加強管理效率
- Improve environmental performance
改善環境質素



Winner of CIC Construction Innovation Award 2019 - Construction Safety 1st Prize
榮獲 2019 建造業議會創新獎 - 建造安全組第一名

SmartWorks adopts the latest technologies with 5 smart services to enhance worksite safety.

智安建整合最新科技，以五項智能服務提升地盤安全。



5 Smart Services 五項智能服務



Smart Helmet consists of Internet of Things (IoT) sensors and GPS trackers that collect worker's live location and vital signs. The data will be used for personalized heat stress assessment and offer emergency assistance. Smart Helmet can trigger alerts while worker wears helmet improperly, sudden falls or presses SOS button.

智能頭盔採用IoT感應器及GPS追蹤技術，監察工人實時位置及健康狀況。資料可用作個人高溫作業的壓力評估，在需要時提供協助。智能頭盔會在工人未正確配戴頭盔時、意外跌倒或按動緊急按鈕時，發出警報。



SmartHealth Station allows workers taking measurement on different health indicators such as body temperature, heart rate, blood pressure and weight; giving them a good idea of their physical condition.

健康監察站讓工人可定期量度各項健康指數，包括體溫、心跳、血壓及體重，讓他們可了解個人身體狀況。



Environment Station continuously monitors environmental ambient readings, including temperature, humidity, PM2.5/10, noise level, wind speed and direction with IoT sensors. The ambient temperature and relative humidity are also used by AI-engine to predict the risk of heatstroke under unfavorable conditions.

環境監察站以IoT感應器持續量度地盤工作環境讀數，包括環境溫度、濕度、空氣質素、噪音、風速及風向。記錄之環境溫度及濕度數據更配合人工智能，評估工人在惡劣環境下的中暑風險。



Danger Alert & Access Control allows supervisors to predefine controlled area for safety and operation concerns. Radar app installed in crane compartment will set off a loud alert to give operators an early warning when someone is getting too close. Facial recognition and video analytic technology ensures only authorized workers wearing helmet can access the restricted area.

安全預警系統及進出管制容許主管設定限制區域，確保工作流程符合安全準則。安裝在重型機械的雷達系統在工人靠近時發出響鬧警報。人面識別及智能影像分析技術亦可確保只有佩戴頭盔的授權工人才可進入限制區域。



Dump Truck Management digitalizes the dump process. Image recognition technology is used for car plate recognition and check if the dump cover is properly in place. Together with the dump receipt, it creates a meticulous record of every dump trip and ensure the wastes are dumped at the right place. Also, trackers installed in dump truck facilitate dump truck monitoring with instant detour alert on integrated dashboard.

泥頭車管理將棄置泥頭過程數碼化，以圖像識別技術記錄車牌及檢查泥頭是否已覆蓋妥當。配合泥頭棄置收據，為泥頭處理提供仔細清晰的記錄，確保棄置位置正確。裝有追蹤器的泥頭車如沒有根據預定路線行駛，綜合平台會發出即時提示。



What's More? 更多特點

Integrated Dashboard for Efficient Management 綜合平台提升管理效率

A single interface provides management full and instant data
管理人員可透過一站式平台獲取完整的即時數據



Worker's real time location and status
工人即時位置及狀況



Dump trip
泥頭棄置路線



Sudden fall & SOS alert
危險警報及緊急求助按鈕



Work site environment condition
地盤環境情況

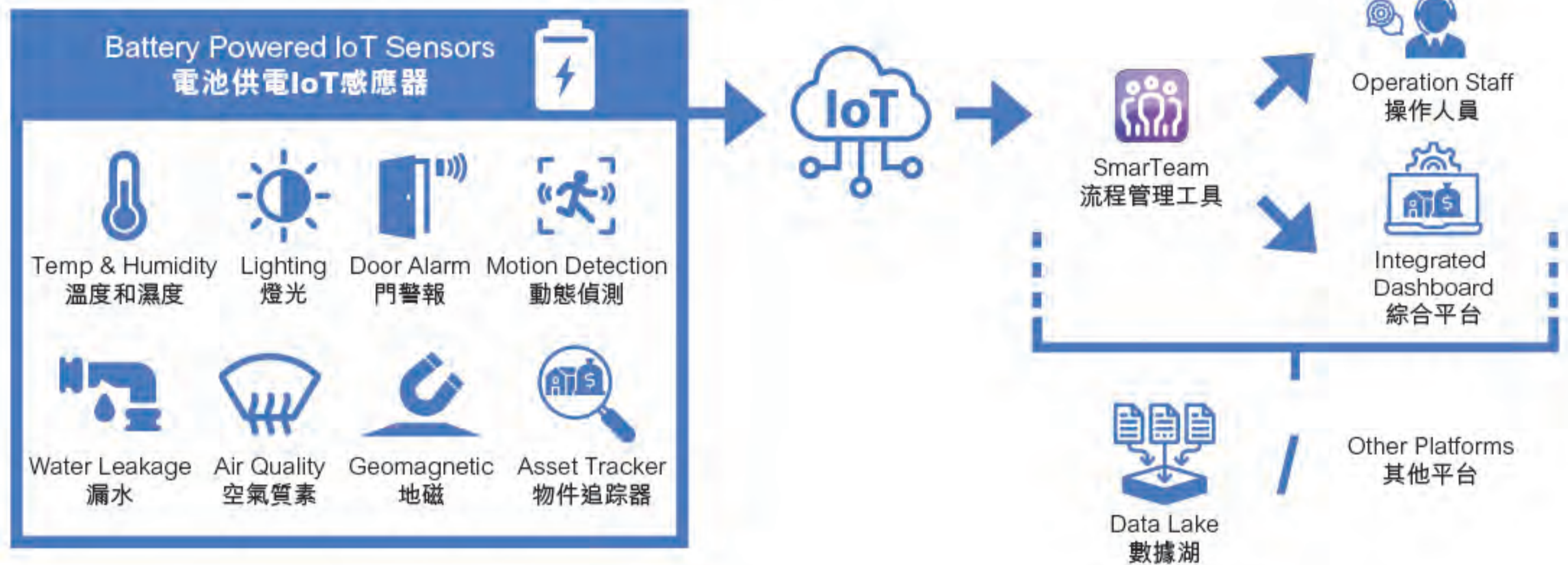


Internet of Things (IoT) for Safety Enhancement 物聯網(IoT)提升安全水平

SmartWorks provides various of IoT sensors to monitor preventable problem and improve safety at construction sites. For example, water sensor to monitor water leaking at electricity supply area, motion detection sensor to avoid someone break into restricted area.

智安建提供各種IoT感應器，監察可避免的問題並提升地盤安全。例如漏水感應器可避免在供電位置出現漏水，而動態偵測感應器則可避免工人進入限制區域。

Monitor and Operate Automatically by IoT Sensors IoT感應器自動監控及操作



How IoT Sensors Work at Construction Sites IoT感應器如何在建築工地運作



Deploy air quality sensor in confined space to monitor oxygen level.

於密閉空間安裝空氣質素感應器，監察氧氣水平。

Inadequate oxygen will trigger instant alert to supervisors' mobile and integrated dashboard.

如氧氣不足，主管會於手機及綜合平台收到即時警報。

The sensors keep tracking oxygen level and prevent loss of consciousness of workers in confined space.

感應器持續監察氧氣水平，避免工人於密閉空間內失去意識。



Deploy door alarm sensor at the lift shaft, to ensure the gate is closed.

於升降機閘門安裝門警報感應器，確保閘門關上。

When the gate is opened, supervisors will get alert message immediately. He can then follow up.

如升降機閘門開啟，主管會立即收到通知，並可即時採取相關行動。

Door alarm sensors will alert for lift shaft openings, to prevent workers falling from lift shaft and cause fatal accidents.

門警報感應器會提示閘門開啟，避免工人從高空墮下及發生致命事故。

Learn More
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