

CIC Webinar on N&P Worker Caring Programme

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Smart Construction Solution – SmartWorks

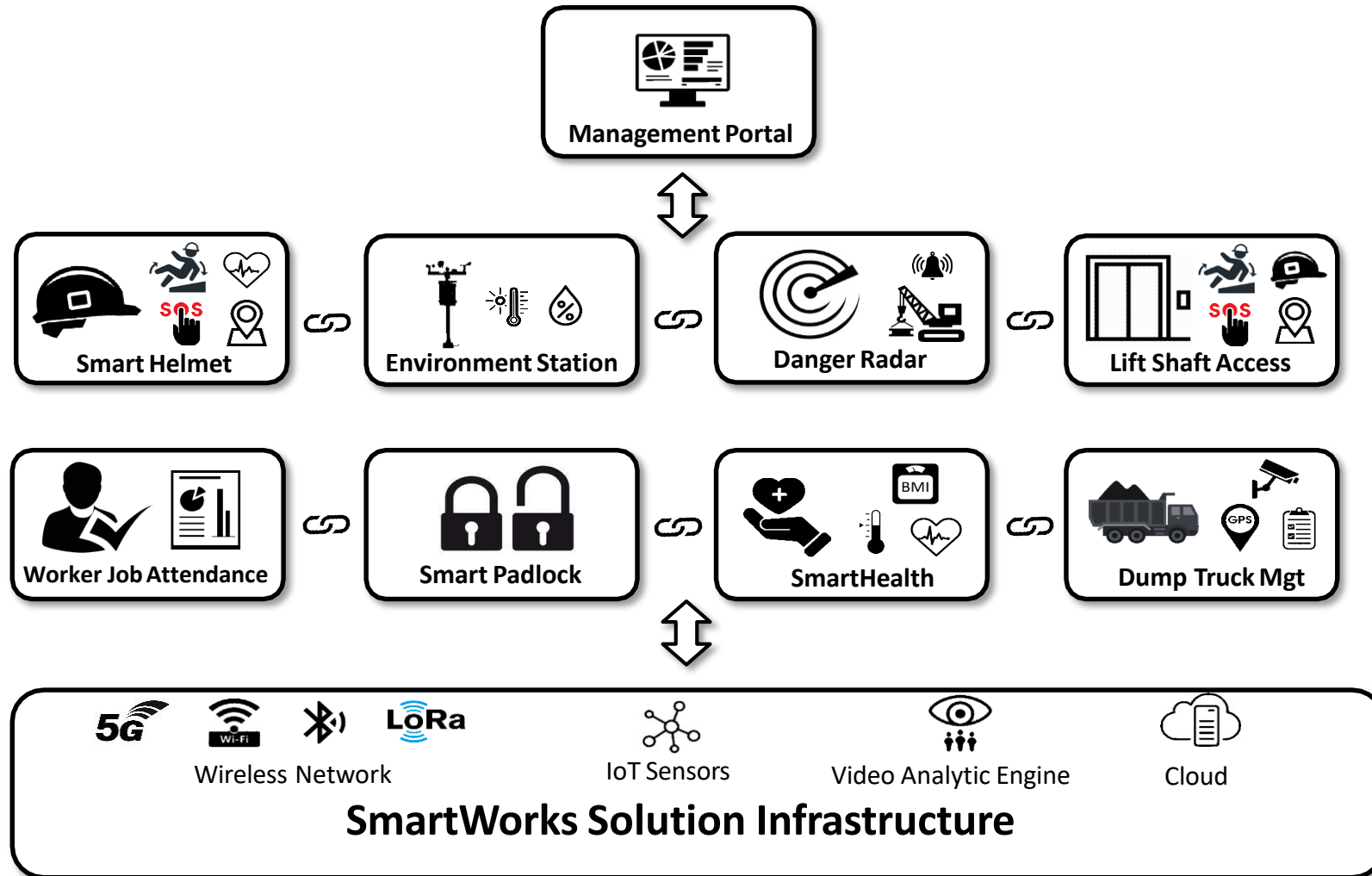
An Award-Winning Solution to Enhance Safety & Efficiency



- ✓ Enhance operational safety
- ✓ Strengthen management efficiency
- ✓ Promote workers' health
- ✓ Improve environmental performance



SmartWorks - Solution Overview



Key challenging for Infrastructure design – site locations



1. Rural area



2. Confined space



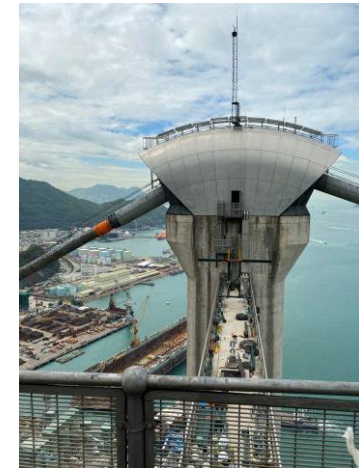
3. Tunnel area



4. Remote area

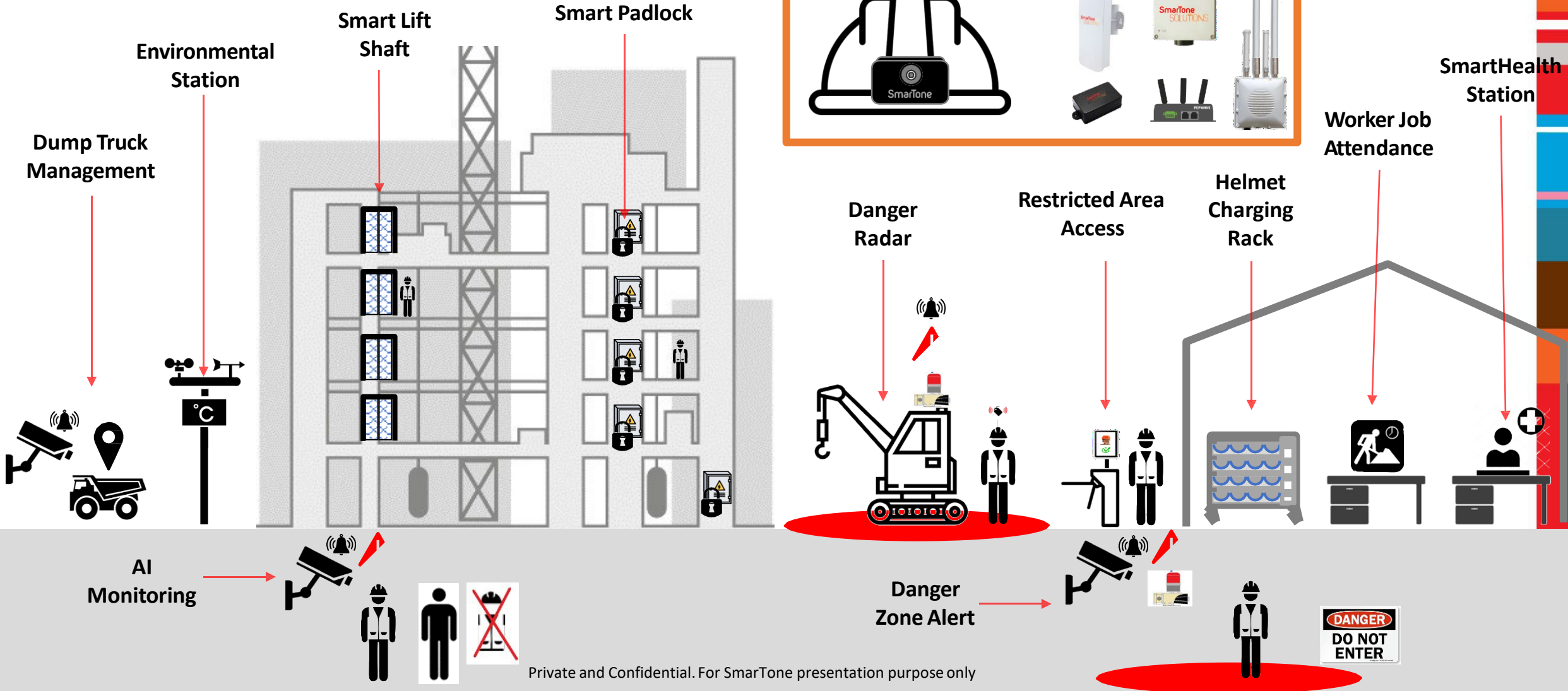


5. Mountain side

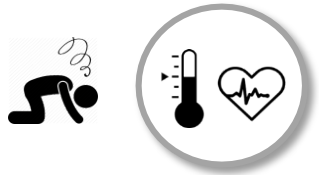


6. High location

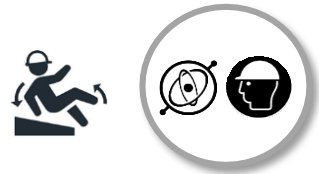
Smart Construction



Smart Helmet



Environmental **heat stress** monitoring and alert



Falling and wearing status detection



SOS button for emergency calling



Whereabout for job attendance and safety



Smart Helmet



Smart Gateway (Wi-Fi)



Smart Gateway (POE)



iBeacon

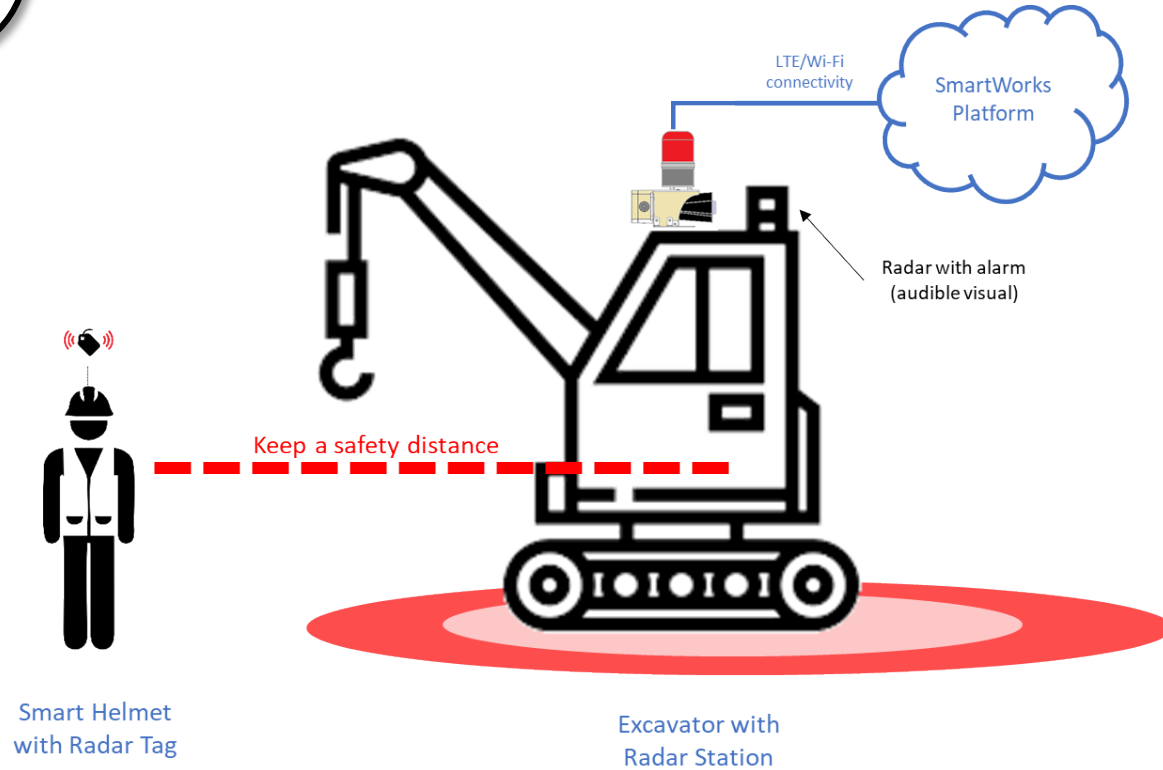


LoRaWAN Gateway

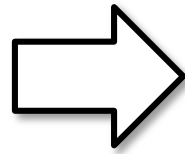
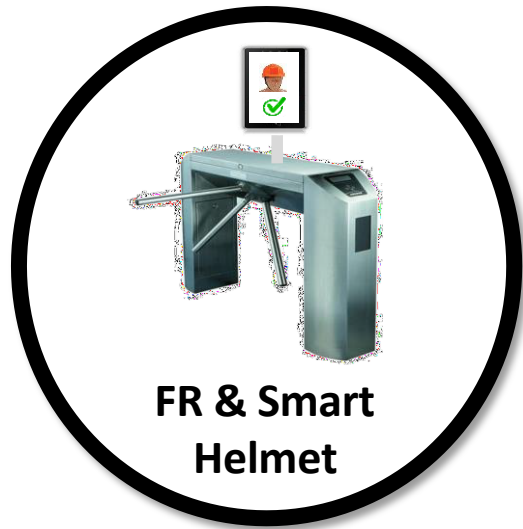
Danger Rader



Visual-audible alarm of close approaching worker



Access Control to Restricted Area



Authenticated by **facial recognition** and video analytic on wearing **personal Smart Helmet**



Safety Alert for Temporary Lift Shaft Gate

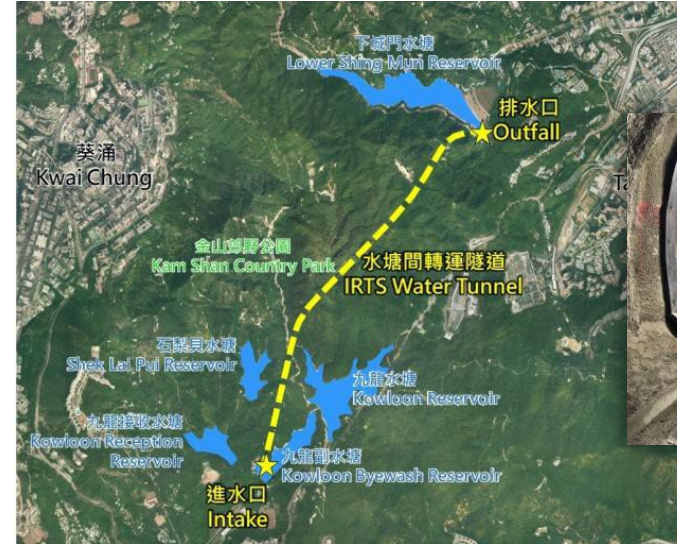
- Safety measures to mitigate risk
- Monitor the status of Lift Shaft Opening gate in a reliable and effective way



Reference cases

Reference Case – Inter-Reservoir Transfer Scheme (IRTS)

<p>Project</p>	<p>Construction of tunnel</p> <ul style="list-style-type: none"> - Across hills - 2.9 km in length
<p>SmartWorks</p>	<ul style="list-style-type: none"> - Smart Helmet 1.0 <ul style="list-style-type: none"> - Smart Gateway (PoE+Wi-Fi) + LTE router - Long-range Wi-Fi - SmartHealth Station - Access Control <ul style="list-style-type: none"> - Turnstile - Facial recognition
<p>Considerations</p>	<ul style="list-style-type: none"> - Progressive installation - Challenges <ul style="list-style-type: none"> - Enclosed space installation environment - Tough - Special Tunnel boring machine - Wi-Fi interference



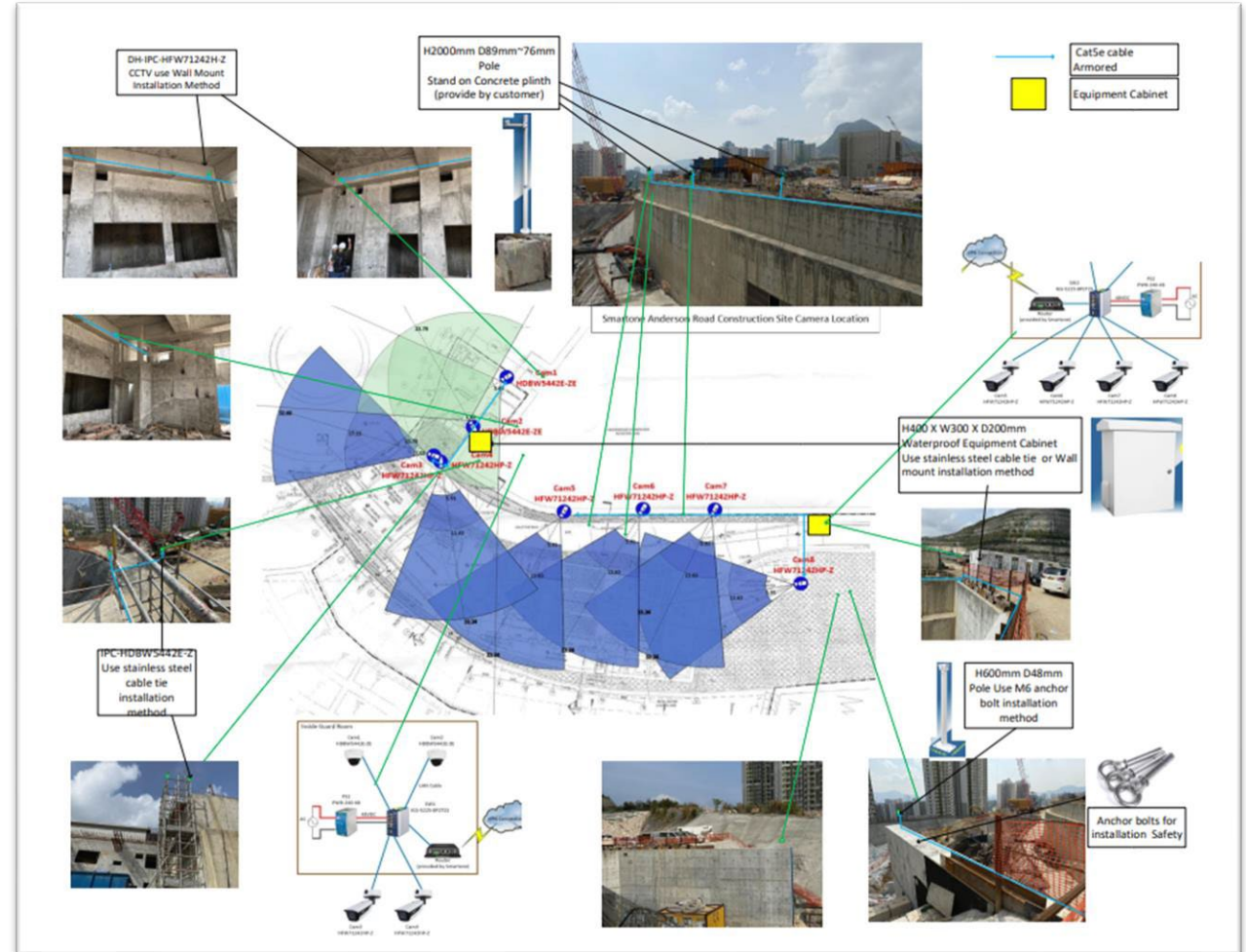
Reference Case – Tung Chung New Town Extension

Project	Reclamation of land works - about 130 hectares
SmartWorks	- Smart Helmet 2.0 - LoRaWAN Gateway - Helmet Charging Rack
Considerations	- Large areas to cover - Carefully planning of LoRaWAN Gateway followed by on-site coverage checking.



Reference Case – Development of Grey Water Treatment Plant

Project	Grey Water Treatment Plant
SmartWorks	<ul style="list-style-type: none"> - Smart Helmet 2.0 - LoRaWAN Gateway - Danger Radar - CCTV AI monitoring
Considerations	<ul style="list-style-type: none"> - Carefully planning of LoRaWAN Gateway followed by on-site coverage checking.



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SOLUTIONS

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