



CITFDIGEST



CITF 建造業 創科基金

二零二三年十二月 Dec 2023 / 第十八期 ISSUE 18

融匯科技 創建香港 WE INNOVATE, WE BUILD

安全智慧工地系統 Smart Site Safety System

多達 65 種預先批核的 SSSS 產品可供選擇
Up to 65 pre-approved SSSS products for selection

CITF 資助業界使用
安全智慧工地系統
每位申請者最高 \$750 萬!
CITF supports the industry to adopt
"Smart Site Safety System"
Max. \$7.5M funding per applicant!



香港特別行政區政府一向十分重視工地安全，不時檢討工務工程的安全管理系統，包括在工程設計、標書審批、合約條款、工程監管、科技應用、承建商規管和工地安全宣傳推廣等方面採取多管齊下的措施，提升工地安全水平。

The Government of the Hong Kong Special Administrative Region has always attached great importance to construction site safety and reviewed the safety management system of public works projects from time to time, including the adoption of a multi-pronged approach in aspects such as project design, tender approval, contract terms, project supervision, technology application, contractor regulation, and construction site safety promotion to improve construction site safety.

2023年年初發展局全力推展「安全智慧工地」系統，在2月制定了有關「安全智慧工地」系統的技術通告，列明在超過三千萬元的工務工程中，承建商必須全面採用「安全智慧工地」系統。

至於私營工程項目方面，自2023年4月1日起，「建造業創新及科技基金」（基金）額外向每間申請公司提供150萬元的資助，以鼓勵業界應用「安全智慧工地」系統。除了建築信息模擬及創新建築科技原有的港幣600萬元資助額，基金加碼150萬元資助業界購買或租賃「安全智慧工地」系統。換言之，合資格申請者可享有750萬元資助採用該系統，加強工地安全。

At the beginning of 2023, the DEVB made further effort to promote SSSS. In February, DEVB issued the Technical Circular on SSSS, which specified that SSSS must be fully adopted in public works projects exceeding HK\$30 million.

As for private construction sites, with effect from 1 April 2023, the "Construction Industry Innovation and Technology Fund" (CITF) has provided an additional subsidy of HK\$1.5 million to each applicant company to encourage the industry to adopt SSSS. On top of the original subsidy of HK\$6M for Building Information Modeling and Advanced Construction Technologies, the CITF has increased funding by HK\$1.5M to encourage the industry to adopt SSSS by either procurement or rental. In other words, eligible applicants can apply up to HK\$7.5M subsidy to implement SSSS to enhance construction safety.



安全智慧工地系統 (SSSS)
Smart Site Safety System

<https://www.citf.cic.hk> CITF 建造業創新及科技基金 [citf.cic.hk](https://www.citf.cic.hk)



發展局
Development Bureau



CONSTRUCTION INDUSTRY COUNCIL
建造業議會

「安全智慧工地」系統是甚麼？ What is SSSS?

「安全智慧工地」系統通常由三個主要組成部分組成，i) 用於監察活動的智慧安全設備，ii) 用於現場收集智慧安全設備數據的通訊網絡，以及 iii) 用於資料分析、報告和發放警報的中央管理平台。「安全智慧工地」系統透過採集即時數據並將其傳輸至中央管理平台，讓工地管理團隊能夠掌握整個施工現場的安全狀況。當偵測到潛在危險時，系統會立即向安全管理人員和前線工作人員發出警報提醒。



SSSS generally comprises three major components, i) smart safety devices for monitoring activities, ii) on site communication network for data collection of smart safety devices, and iii) a centralised management platform for data analysis, reporting and alert generations. The system enables the project team to grasp the safety situation of the construction site by collecting and transferring real-time data to a centralised management platform. Whenever a potential hazard is detected, the system will immediately alert the safety management staff and worker on site.

安全智慧工地系統 10 個主要類別 10 Main Categories of SSSS Products :

1 中央管理平台 Centralised Management Platform

2 數碼化追蹤系統 (工地機械、電動工具及梯架) Digitised tracking system for site plants, powered tools and ladders

3 數碼化工作許可系統 (高風險工作) Digitalised permit-to-work system for high risk activities

4 危險區域進出管制 (電子鎖系統) Hazardous areas access control by electronic lock and key system

5 移動設備操作區域的不安全行為/危險情況警報 Unsafe acts / dangerous situation alert for mobile plant operation danger zone

6 天秤吊運區域的不安全行為/危險情況警報 Unsafe acts / dangerous situation alert for tower crane lifting zone

7 前線工人智能監控設備 Smart monitoring devices for workers and frontline site personnel

8 人工智能安全監察系統 Safety Monitoring System using Artificial Intelligence

9 密閉空間監控系統 Confined Space Monitoring System

10 虛擬實境安全培訓 Safety Training with Virtual Reality Technology

安全智慧工地系統資助範圍 SSSS Funding Scope

安全智慧工地系統的申請框架

適用於2023年4月1日或之後遞交的基金申請

每位申請者的總資助上限(創新建築科技和建築信息模擬)為港幣750萬元(當中的港幣150萬元額外資助只限於2023年4月1日後購買/租賃的安全智慧工地系統)

資助模式: 採購可獲70%配對資助(本地開發的創新技術或產品可獲80%配對資助); 租賃可獲50%配對資助

合資格工程項目: **私營**工程項目

備註: 當用於安全智慧工地系統產品的港幣150萬元上限耗盡時, 申請者仍可在每位申請者原有合併資助上限港幣600萬元使用餘額申請基金購置安全智慧工地系統產品。

SSSS Application Framework

Applicable to new funding applications submitted on or after 1 April 2023

Overall funding ceiling (ACT+ BIM) per applicant: HK\$7.5M (HK\$1.5M of which is the additional subsidy designated solely for SSSS products procured / rented on or after 1 April 2023)

Funding Mode: 70% for procurement (80% for locally developed innovations or products); 50% for rental

Eligible Projects: **Private** Works Sites

Remarks: When the extra HK\$1.5M funding for SSSS is depleted, applicants could continue to apply for CIT for procuring/rental SSSS products, using their remaining funding balance within the original overall ceiling (ACT+ BIM) of HK\$6M



歡迎登入以下網址了解申請程序及提交申請

Welcome to log in to the following website to learn about the application procedures and apply

<https://bit.ly/3S014Xs>

**即將推出
UPCOMING**

為促進業界，特別是中小型企業，了解安全智慧工地系統的應用，基金即將推出三個針對不同建築項目的SSSS產品預設清單。該清單羅列的產品主要針對 **避免高處墮下、危險區域工作、及起重吊運工序**等有關的意外。

To facilitate the uptake of the industry, particularly SMEs, on SSSS implementation, the CITF will soon introduce three standard SSSS packages targeting different building projects. The SSSS product packages mainly help prevent accidents in connection with **Falling From Height, Dangerous Zone and Lifting Operation**.



專訪SSSS產品基金申請者，問與答及真實案例分享 Interview with SSSS funded applicants Q & A with real case sharing

在12月初，基金外展隊對成功申請基金的申請者進行了訪問，以進一步了解他們在工地中如何採用「安全智慧工地」產品，並與我們分享使用經驗。

In early December, CITF Outreach Team has conducted interviews with the successful fund applicants to understand how they adopt SSSS products in project sites and invite them to share the adoption experience with us.

建業建築有限公司 Chinney Construction Co Ltd

應用工程項目 PROJECT NATURE :

工地清理、工地平整、興建主建築物及相關工程，包括水管、排水和排污系統工程、機電工程等等

Site Management, Site Formation, Construction of Main Structural and related building works, including water supply, drainage and sewage system works, M&E works etc.

Q1 貴公司正在使用什麼類型的SSSS產品？ 有關產品的主要特點是甚麼？ What SSSS products are you using? What are the main features of the product?

本公司使用的SSSS產品為一套綜合了外置鏡頭智能監測系統、中央管理平台以及智能安全帽的安全系統。監測系統可以讓機械操作人員在駕駛艙內360度環顧機械外的特定範圍實時監察。中央管理平台則可讓負責人在不同地點於線上即時產生不同工地區域通行所需的二維碼，並於現場線上提交各種安全許可證。智能安全帽則可以實時監察工地人員的生命體徵。

The SSSS product we are using is a safety system that combines a monitoring system with externally installed cameras on heavy machinery, with a centralised management platform and smart safety helmets. The cameras of the monitoring system enable the operators to monitor the surroundings of the machines in a real-time-360-degree view without any blind spot, during their operation. The centralised management platform allows the responsible personnel to generate essential QR codes to access different zones and submit various safety permits online on-site. Smart safety helmets enable real-time monitoring of health vitals of different site personnels.



Q2 以上SSSS產品如何改善工地安全？ 貴公司可以與我們分享一下實際案例嗎？ How do the SSSS products help improve site safety? Can you give us some examples?

我們在機場第三跑道的警察行動基地工程上應用了我們的安全系統。由於智能安全帽的重量下降了以及續用力提升了，工作人員更願意佩戴它們。因此，工作人員的健康狀態能夠更準確地及有效地在中央管理平台的監察中顯示。即使受傷、暈厥及中暑等意外甚少發生，如當有情況出現時，相關的監工及管理層會實時收到警報信號和電子郵件通知，提供有效地及時跟進措施。

We deployed the safety system in our 'Three-Runway Projects', namely the construction of the Operational Base for the Hong Kong Police Force. With decreased weight and increased sustainability of the helmets, workers are more willing to wear them. Workers' health conditions are hence more accurately and effectively monitored in the control panel of the management platform. Accidents such as injuries, faint, and heatstroke though happening in rare occasions and if these happen, these will be feedbacked to related supervisors and management via real-time alert signals and email notifications, and to facilitate timely follow-up actions.



安全智慧工地系統(SSSS)
Smart Site Safety System

Q3 貴公司員工和旗下分包商所僱用的員工對產品有甚麼評價？
What is the feedback from the personnel of your company and sub-contractors' workers after using SSSS products?

我們同意SSSS系統能有效提升工地安全，工人們和其家人亦可更安心。

We agree that the SSSS system can effectively improve construction site safety, provide workers and their families with greater peace of mind.

Q4 貴公司會否向同業推介該SSSS產品？
Will you recommend the SSSS products to your counterparts?

我們建議同業根據各自所需採用SSSS相關產品。他們可以在考慮使用SSSS系統時參考十大分類的定義。當合適地使用SSSS產品時，地盤工作安全肯定會有所改善。

We recommend the industry to adopt SSSS products based on their corresponding needs. They can refer to the definition of 10 categories of SSSS systems before implementation. With suitable use, site safety can definitely be improved.



寶登建築有限公司
Bordon Construction Co Ltd

應用工程項目 PROJECT NATURE :

興建整棟大樓及相關工程，包括供水、排水和排污系統工程、機電工程、裝修等等

Building Construction works, including water supply, drainage and sewage system works, M&E works, Fitting Out Interior Works etc.

Q1 貴公司正在使用什麼類型的SSSS產品？
有關產品的主要特點是甚麼？
What SSSS products are you using?
What are the main features of the product?

本公司採用的SSSS產品為一套將防撞傳感器連接至智能安全帽配合使用的安全系統。該系統可以於特定位置（危險區域）偵測到進入機械操作範圍的不同工地人員，並實時透過安全帽發出震動訊號提醒該人員已進入操作範圍。該系統亦會同時語音訊號通知提醒機械操作人員有未經授權的工地人員進入其機械操作區域，提示他們加倍注意，防止意外發生。

The SSSS product that our company utilises is a safety system which integrates the use of anti-collision sensors and smart safety helmets. The system can detect different personnels while they enter the operational areas of machines at specific locations (danger zone). The system will then proceed to send a warning/alert to the individual through vibration signals of their helmets. It will also notify the operators of the machines through voice signals that an unauthorised person is walking by the operational area of their machines so that they need to pay extra attention to avoid accidents.



電話查詢 Enquiry: (852) 2100 9000 (請於選擇語言後，按選項“7”以聯絡基金秘書處 Please select option “7” for the CITF after the language selection)



(852) 2100 9000
 (852) 2100 9090
 enquiry@cic.hk
<https://www.citf.cic.hk>



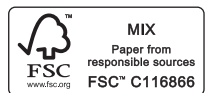
Follow & Like us



CITF 建造業創新及科技基金



citf.cic.hk



Q2 以上SSSS產品如何改善工地安全？貴公司可以與我們分享一下實際案例嗎？ How do the SSSS products help improve site safety? Can you give us some examples?

本公司於中大藝術博物館工地應用此安全系統，透過智能安全帽內置的晶片在工地入口處的拍卡閘機每日記錄及更新每個工人的專業行業及工種，並將這些數據連接到中央管理平台。透過部署多達100個智能安全帽，管理人員可於後台有效地查看和翻閱工人於各個危險區域的出入紀錄，記錄和報告工地操作中的任何異常情況。且能提供可靠的工人日常工作狀況記錄。該系統最顯著的優勢是提高了對分包商的監管和危險區域監控。

Our company deployed such system at our Chinese University Art Museum site. Through the implanted electronic chips in the safety helmet, we record and update each worker's industry trade and job type when they enter the site with their registered safety cards at the access gate entrance, and such data will be sent to the online management platform. With up to 100 smart safety helmets deployed, this allows management to check entrance records effectively for each danger zone accordingly, record and report any irregularity during site operation, and obtain solid record of worker conditions according to daily operation. The most significant advantage of the system is to raise the efficiency in supervision of subcontractors and monitoring of danger zones.

Q3 貴公司員工和旗下分包商所僱用的員工對產品有甚麼評價？ What is the feedback from the personnel of your company and sub-contractors' workers after using SSSS products?

一般來說，工地人員的態度是接受以及正面。部分員工在剛開始使用智能安全帽時擔心其重量以及對私隱表達關注。隨日常應用增加，工地人員慢慢認識了系統的敏感度有助在事故發生時有效地保障其安全，明白該安全系統只會對工地上指定危險區域作出監察。

In general, workers are expressing acceptance and positive feedback. Some reflected concerns about the weight of the helmets and privacy in the beginning. However eventually they recognise the sensitivity of the safety system helps ensure their safety and understood the fact that such safety system performs surveillance in danger areas onsite only.

貴公司會否向同業 推介該SSSS產品？ Will you recommend the SSSS products to your counterparts? Q4

我們會推介該SSSS產品。該安全系統可大幅提升安全性及效率。

Yes. Such a system can raise safety and efficiency by a huge step.

中國建築工程(香港)有限公司 China State Construction Engineering (Hong Kong) Limited

應用工程項目 PROJECT NATURE :

土木工程、跑道鋪設瀝青、建造行車隧道和其他基建等
Civil Works, Asphalt paving on runways, Tunnels construction works and other infrastructure works etc.

Q1 貴公司正在使用什麼類型的SSSS產品？有關產品的主要特點是甚麼？ What SSSS products are you using? What are the main features of the product?

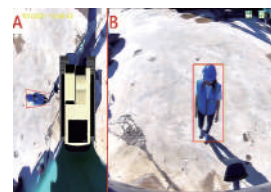
本公司使用的SSSS產品為一套綜合了智能外置鏡頭監測系統以及中央管理平台的安全系統。監測系統安裝在挖泥機上，配備了AI人工智能鏡頭來進行人臉識別，並於有人員闖入機械操作範圍時觸發實時聲音警報。該系統亦可在機械運行的過程中啟動即時監察，這大大提高了安全性。而中央管理平台容許監工、管工及工人於線上提交並獲取電子安全許可證，從而省卻了攜帶紙本文件的麻煩。

Our company adopts a safety system comprising a monitoring system with externally installed AI cameras on machinery and a centralised management platform online. The monitoring system is installed on our excavators, each equipped with AI cameras for human facial recognition and a real-time sound alert would be triggered when a person enters the operating areas. Real time monitoring is also activated during operations of the machines. This has uplifted the safety precaution significantly. The centralised management platform enables supervisors, foremen and workers to submit and obtain electronic safety permits online, eliminating their trouble of bringing bunch of paperwork with them.

**Q₂ 以上SSSS產品如何改善工地安全？
貴公司可以與我們分享一下實際案例嗎？
How do the SSSS products help improve site safety?
Can you give us some examples?**

本公司在挖掘機械上安裝了智能安全監測系統。由於我們的第三跑道工程工地十分之巨大，以往主力依靠人力的傳統監察挖掘過程，對我們造成很沉重的人力資源負擔以及很容易出錯。有了自動感應系統，我們能在有人員闖入挖掘機械操作區域時更有效地提醒操作人員。

We deploy our safety system on our excavating machinery. Since our Three-Runway Project sites are enormous in size, traditional monitoring approach, which heavily relies on human resources, imposes a huge demand on our workforce and is more error-prone. With the new automatic sensor system, operators can be notified more effectively when individuals enter the operating areas of said machines.



**Q₃ 貴公司員工和旗下分包商所僱用的員工對產品有甚麼評價？
What is the feedback from the personnel of your company and sub-contractors' workers after using SSSS products?**

來自操作人員及監工的意見是非常正面。我們在單一工地上安裝了超過10部挖掘機的自動感應系統，令操作人員可以更順暢和安全地進行操作。我們的電子許可證系統則令監工更有效地工作及節省了大量時間。

The feedback from our operators and foremen is incredibly positive. With an automatic sensor system installed on more than 10 machines on our site, operators can operate more smoothly and safely. Our electronic permit system allows foremen to work efficiently and time can be saved significantly.

**Q₄ 貴公司會否向同業推介該SSSS產品？
Will you recommend the SSSS products to your counterparts?**

會。像這樣的安全系統對公司來說是很有價值的資產，並可增加我們的競爭力。

Yes. Such a system is an valuable asset which increases our competitiveness



安全智慧工地系統(SSSS)
Smart Site Safety System

基金統計數字

Funding

Statistics

獲批項目及總金額名單 (截至2023年11月30日)

List of Approved Projects and Amount (as at 30 November 2023)

	獲批項目及總金額名單 (截至2023年11月30日) List of Approved Projects and Amount (as at 30 November 2023)	數量 Numbers	獲批總金額(港元) Amount(HK\$)
	建築信息模擬培訓 Building Information Modelling (BIM) Training	762	3,180 萬
	建築信息模擬軟件及硬件 BIM Software and Hardware	1052	1.1 億
	創新建築科技 Advanced Construction Technologies	1404	5.8 億
	「組裝合成」建築法 Modular Integrated Construction	75	1.8 億
	預製鋼筋 Prefabricated Steel Rebar	190	1.7 億
	人力發展 Manpower Development	38	1,460 萬
	總數 Total :	3521	10.8 億