



🕨 1. 意外數字統計

> 2. 地盤車輛流動防撞警報裝置介紹

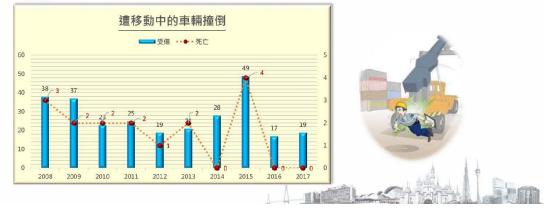




1. 意外數字統計

> 1.1建造業涉及遭移動中的車輛撞倒意外統計

根據勞工處統計數字·由2008年至2017年10年間·建造業共有16宗涉及遭移動中的車輛撞倒的致命意外(見圖表)。

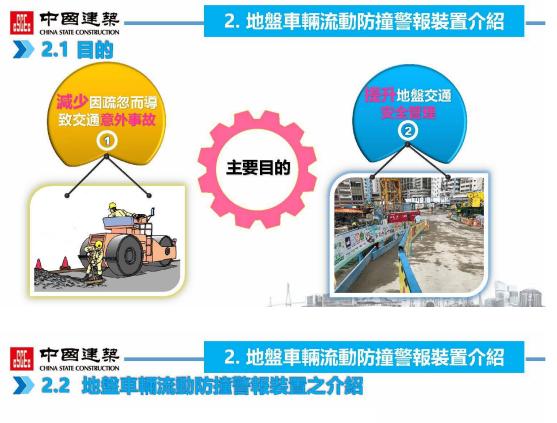


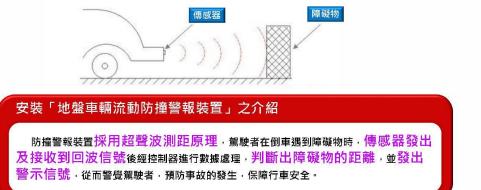


發生日期	倒車意外的報導
2020-01-13	鰂魚涌太古坊一個重建地盤,一名57歲男工人,被起重機 <mark>尾部</mark> 與附近圍欄之間夾到,昏迷送東區醫院後證實 <mark>死亡</mark> 。
2019-12-19	太子道西一名地盤工被挖泥車撞倒並輾過,送院搶救後證實不治。
2019-11-21	航天城東路發生一宗交通事故, 一名年約60歲的地盤女工, 被洗街車撞倒, 並輾過頭部, 當場證實 <mark>死亡。</mark>
2019-04-04	屯門內河碼頭,一名女工人在工作期間,突被貨櫃起卸機 <mark>輾斃</mark> 。
2018-12-06	上水沙頭角一地盤,一名男雜工被 <mark>溜後</mark> 的貨車 <mark>撞斃</mark> 。
2018-04-03	葵涌貨櫃碼頭亞洲貨櫃物流中心,一名58歲男工人,遭一輛鏟車 <mark>倒後</mark> 時撞倒,致腳部受傷,受傷工人清醒,事後 由工友陪同送院治理。
2018-04-19	港珠澳大橋香港段地盤發生工業意外,一名姓黃(31歳)女工在人工島地盤工作期間,姓鄒(56歲)男子駕駛一輛泥頭 車突然駛至,疑收掣不及,將她撞倒,女事主腰部、腳部受傷,在場工友見狀立即報警。

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2. 地盤車輛流動防撞警報裝置介紹





この 中国連禁 CHINA STATE CONSTRUCTION	2. 地盤車輛流動防撞警報裝置介紹		
> 2.3 防撞警報裝置規格			
規格	裝置內容		
尺寸	感應器 閃燈警報器		
	長:24厘米 長:20厘米		
	闊:12厘米 闊:16厘米		
	高:7.5厘米 高:20厘米		
電量			
感應距離	0.3 – 5.0米		
感應角度	水平80度 垂直75度		
工作溫度	-20-+80度		
無線感應器與警報器距離	<10米 (利用WiFi頻段 2.4GHz band)		
防水等級	IP67		
準確度誤差			
距離	<3厘米		
時間誤差	<1秒		
角度誤差	<3度		
反射時間	<1/3秒		





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## 2. 地盤車輛流動防撞警報裝置介紹



經過多日測試,防撞警報裝置安裝容易,駕駛員亦反 映安裝此裝置後更有效提高警覺,特別在倒車操作時可 更安心及安全。

其實任何地盤意外事故一宗都嫌多,就今次「地盤車 輛流動防撞警報裝置」的介紹,地盤安裝及使用後,不 但可減少因疏忽而導致交通意外事故,亦有效提升地盤 的安全管理,雙得益彰。







## Title: Site Safety Seminar for Capital Works New Works Contracts

Site Safety Seminar for Capital Works New Works Contracts 16 July 2020	
Here is the footage from Site Safety Seminar for Capital Works New Works Contracts which was held on 16 July 2020	
Deputy General Manager, Safety & Environmental Protection Department, China State Construction Engineering (Hong Kong) Ltd. Dr. Ben HO Chi Wai His presentation topic is "Mobile anti-collision system for site vehicles"	
The speaker is Dr. Ben Ho Chi Wai Deputy General Manager, Safety & Environmental Protection Department China State Construction Engineering (Hong Kong) Ltd His presentation topic is "Mobile anti-collision system for site vehicles"	
<ul> <li>Hello, everyone</li> <li>On behalf of the</li> <li>China State Construction Engineering (Hong Kong ) Limited</li> <li>I will share the use of an ordinary device on construction sites</li> <li>That is the mobile anti-collision system for site vehicles</li> <li>My sharing today is simple</li> <li>First, we will focus on some incidents involving</li> <li>site vehicles in the construction industry</li> <li>Then, I will introduce the mobile anti-collision system</li> <li>for site vehicles invented by our company</li> <li>According to statistic figures from the Labour Department</li> <li>For construction industry in the decade from 2008 to 2017</li> <li>there were 16 industrial fatal accidents</li> <li>involving being struck by moving vehicles</li> <li>And there were also numerous injuries</li> <li>Look at the data again</li> <li>From 2018 to now, there were 7 related accidents</li> <li>in construction industry</li> <li>For example, on a site on Hong Kong Island in January 2020</li> <li>a worker was trapped between the rear part of a crane</li> <li>and the railings nearby</li> <li>This was an industrial fatal accident</li> <li>There were also 3 industrial fatalities in 2019</li> <li>which involved site workers being struck by an excavator</li> </ul>	
a street washing vehicle and a container handling crane (貨櫃的起卸機)	

You may know that there are various kinds of anti-collision system for site vehicles in construction industry Why do we need to develop a new mobile anti-collision system? I would share the answer with you later In the second part of my sharing I would like to focus on the achievement of the mobile anti-collision system for site vehicles Obviously, we wish to reduce the number of traffic accidents caused by negligence We hope to enhance safety management on site traffic by technology Look at this picture. Anti-collision device is common for private cars However, it is not commonly found on construction sites Let us see this mobile anti-collision system for site vehicles Basically, it used ultrasonic wave to measure distance When a driver drove or reversed the vehicle on site and met obstacles the sensor emitting ultrasonic wave would detect a return signal A processor would process the data to gauge the distance of the obstacles and send a warning signal to the driver for preventing accidents and ensuring safety traffic of site vehicles The configuration of this system was quite simple The sensor was a box of 24 cm long, 12 cm wide, and 7.5 cm high There was also an alarm with flash light which could produce warning sound and flash light with dimension of 20 x 16 x 20 cm A special feature of this device was that no wiring was needed by the sensor or the alarm for power supply It used rechargeable batteries After 4-hour charging, the system could work for 8 hours which was enough for working in one day on site The sensor could detect distances from 0.3 to 5 metres and the sensing distances was adjustable It covered 80 degrees in horizontal plane and 75 degrees in vertical plane Its working temperature and waterproofing property was very suitable for use on construction sites The detection range of the sensor and alarm was within 10 metres so it could cover from the driver's compartment to the rear part of the vehicle It used a Wi-Fi frequency rate of 2.4GHz for transmission You could see the obvious outcome of the accuracy in the data I have mentioned a special feature of this sensor and alarm

that wiring for power supply was not needed For the case of installation on a site vehicle when two sensors were installed at the back of the vehicle and an alarm was installed in the driver's compartment the system was ready for use The installation was simple First, two sensors were attached to the metal part at the back of the vehicle by magnets Installation or removal was easy Second, activated the sensors attached the alarm with flash lights by magnets to a metal surface in the driver's compartment After activating the alarm the system could be used at once Afterwards, some field tests were carried out This sensor and alarm system were used on two of our HA sites and they were recognised as innovative and functional safety installation or safety measures by the OSHC Let us see the findings from the field tests In the first study, we used a rented skid-steer loader also known as a 'Bobcat' We placed a mannequin at a distance of around 5 m away from the rear part of the Bobcat Then, we switched on the system and started reversing the Bobcat to a pre-set distance The initial pre-set distance was 1.5 m and the alarm was buzzed automatically In the second study, a bobcat was stopped at a position and we asked a worker to walk from right to left around 1.5 m away from the back of the Bobcat as seen from the left photo on this slide The worker entered the detection zone at about 100 degrees of the back of the vehicle as shown in the protractor the alarm buzzed Then, other case studies were carried out including a worker walked towards the bobcat from a distance The alarm buzzed as he stepped into the preset distance zone of 1.5 m from the rear of the bobcat When he continued to walk closer to 1m from the bobcat the alarm would buzz louder to alert the driver From pictures on the bottom of the slide when the worker was closer to the bobcat the alarm buzzed louder Then we also installed this mobile anti-collision system

on a lorry mounted crane on site The installation was simple too Two sensors were installed at the rear part of the lorry and the alarm with flash light was installed in the driver's compartment Then we activated the sensors and the alarm We set different testing ranges for this lorry mounted crane the alarm could also alert the driver We did tests on obstacles at distances of 1.5m and 3m from the lorry and the results were good In conclusion, the advantages of this mobile anti-collision system were as follows: The devices could be attached easily by magnets to the metal parts of the vehicle's rear part The warning signals could gradually increase when the obstacles got closer, the alarm buzzed louder This system did not require electric cables for power supply to the sensors and the alarm It was not only rechargeable but also waterproof so that it could be used on rainy days or on construction sites Any disadvantages of this mobile anti-collision system? There were some disadvantages as follows: We found that the magnets were too powerful they could scratch the vehicle surface or crush our fingers We found that the sensors would work better if the detection distances and angles were fine-tuned Therefore, we had made some improvements First, we finetuned the detection angles of the two sensors so that the detection angles at the back could be wider We also added sponge cushions to the magnets so that they would not scratch the vehicle or crush installer's hands We also adjusted the alarm volume by making it louder because construction sites were quite noisy If the alarm volume was not loud enough it could not alert the driver or the operator Therefore, we adjusted the alarm volume louder We installed the alarm beside the operator previously Now we placed it before the operator inside the compartment if there were any obstacles in the detection zone of the vehicle the alarm with flash light could alert the operator on the site environment and people around the vehicle hence providing a safe protection I was approaching the end of my presentation and this was the last slide After many tests

we found that this mobile anti-collision system was easy to install The feedback from the user, i.e. the operators mentioned that it was effective While driving or reversing the vehicle on site especially during reversing, they felt more safe As I said, this kind of 'parking sensor' was commonly installed for private cars However in the construction industry when a site vehicle is being driven or reversed on site what was used to protect the people around the vehicle? Things come up in mind would be the rear camera flashlights and rear mirrors on site vehicles Up to now, I believed that every mobile vehicle on sites had the three anti-collision provisions But we should take into account if the drivers who drove or reversed a site vehicle on site did not look at the rear camera or mirror this might be dangerous to the people around the vehicle So this system could actively give a warning signal to drivers who were not paying attention Even the operators did not look at the rear camera or mirror the anti-collision system could actively alert them where there were people around the vehicle maybe within 3 m or 1.5 m detection distance Apart from ensuring the safety of site workers this also helped to manage site traffic and gave active alerts to operators I believed that this mobile anti-collision system could help the enhancement of safety management on site This is the end of my sharing today

VO: Thank You For Watching