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機電傳聲 Voicelink

機電工程署
EMSD



機電工程署(機電署)一直持續改進，致力發展創新科技(創科)，推動機電數碼化和培育優秀團隊，為客戶部門提供嶄新的機電工程服務。我們亦積極發揮「促成者」和「推廣者」的角色，致力推動創科應用，以打造香港成為智慧之都。

首先，我們在新成立的客戶服務中心和互動學習中心分別應用數碼化系統及創科訓練設施，以提升維修保養效率和學員的技術水平。我們又設立機電創科專區及網上創新科技協作平台，加強與大學和初創企業在創科上的協作，為他們提供項目試驗場地及技術支援，並於不同範疇引入和測試先進的系統和設備(包括於總部大樓設立「洞穴式自動虛擬環境」系統)，以及推行多個先導試驗項目，如人臉識別系統、立體泊車系統等等。我們希望透過不同措施配合客戶在服務市民上的發展需要，與客戶及機電業界同心共創智慧香港。

The Electrical and Mechanical Services Department (EMSD) is committed to seeking continuous improvement. We promote E&M digitisation and establish an excellent work team, striving to provide electrical and mechanical (E&M) engineering services to our client departments with innovation and technology (I&T). We proactively play the role of a “facilitator” and a “promoter” to drive the application of I&T with a view to building Hong Kong into a smart city.

First, digitised systems and I&T training facilities have been applied in our newly established Customer Service Centre (CSC) and Interactive Learning Centre (ILC) to enhance maintenance efficiency and the technical capability of trainees. We have also set up the E&M InnoZone and E&M InnoPortal to collaborate with universities and start-ups in I&T and provide testing grounds for their projects with technical support. Furthermore, advanced systems and equipment in various areas have been introduced and tested, including installation of the Cave Automatic Virtual Environment (CAVE) system in the headquarters building and the implementation of several pilot projects, e.g. the facial recognition system and puzzle parking system, etc. We hope that we can cater to the development needs of our clients in serving the public through various initiatives and co-create Hong Kong into a smart city with our clients and the E&M trade.

機電設施數碼化

機電署積極支持政府近年打造本港成為智慧城市的政策，為此，我們積極推動機電設施數碼化。機電署署長薛永恒先生在2018年12月4日舉行的傳媒聚會中表示，機電署總部大樓設立的新客戶服務中心，配備先進的遙控監測系統，對全港約1 800組交通燈和約200條行人隧道的機電系統進行實時監控，提高系統的可用性和可靠性，並加強客戶連繫。

同時，我們一直投放資源發展數碼化資產管理系統，包括「建築信息模擬—資產管理」(BIM-AM)系統，優化機電設施的維修保養效率。另外，機電署正逐步為400多幢每年耗電量超過50萬度電的政府建築物，於其機電設施加裝數碼化設備，提升有關資產的運作效率和環保表現。

除此以外，為加強工程項目的管理，協助客戶有效地審視不同的設計方案，我們於建築及改善工程的前期規劃採用「建築信息模擬」，並且利用「洞穴式自動虛擬環境」技術，事先進行模擬，讓客戶在比例

接近一比一的虛擬實境中親身體驗不同的設計方案，這不但可節省製作實體模型的時間和資源，更可迅速評估和修訂設計，有效提升工作效率。

培訓團隊

為配合新的發展趨勢，機電署在總部大樓設立互動學習中心，除了能讓學員在虛擬實境中接受訓練，以提升學員的維修技術水平外，亦期望創新科技的互動方式能吸引年輕人入行。虛擬環境讓學員無須到達現場(特別是受管制場地(如手術室)或隱蔽的危險地方(如升降機槽))而能夠虛擬作業，多元的學習模式可進一步令學員熟習運作和維修程序，從而為客戶提供更優質可靠的服務。

今年9月，我們更結合BIM-AM系統及「洞穴式自動虛擬環境」設施，並應用於建立香港兒童醫院和天水圍醫院的虛擬環境，進一步加強對機電署維修人員的培訓。

善用創科

作為創科的「促成者」和「推廣者」，機電署積極引入新科技，並鼓勵業界協作同行，共同制訂創新方案。我們的網上創新科技協作平台致力促進業界交流經驗和技術，為政府部門配對合適的創科項目。由今年3月至今，共收到超過100個「創科願望



人臉識別系統
The facial recognition system

機電署署長薛永恆先生在傳媒聚會時向記者介紹網上創新科技協作平台，並表示該平台為政府部門成功配對合適的創科項目。他亦即場示範最新的「洞穴式自動虛擬環境」技術如何與我們研發的「建築信息模擬—資產管理」系統結合應用。

Mr. Alfred Sit, Director of Electrical and Mechanical Services, introduced to journalists the E&M InnoPortal at the media gathering, and said that the platform had successfully matched suitable I&T projects for government departments. He also demonstrated on the spot how the latest CAVE technology could be integrated with the BIM-AM system we developed for application.



清單」及70多個創新解決方案，涵蓋物聯網、自動化科技、人工智能等範疇。目前，我們正協助大約40個項目於不同政府場地和設施進行試驗。

其中一個我們的創科項目，是為客戶部門提升人流管理效率。我們率先在總部大樓推行先導項目，在部分員工出入口閘機安裝智慧人臉識別裝置，測試於大樓出入口管理上應用人臉識別技術的成效，以及市場上有關供應商所提供技術的計算準確度。視頻內容分析技術日趨成熟，並具有一系列的功能對視頻進行智慧分析(人臉識別屬其中一項)。就智慧人臉識別技術而言，系統會把拍攝所得影像與資料庫記錄進行比對，有效識別出已登記人士的身分，加強大樓內保安。我們將陸續測試視頻內容分析技術的其他功能，例如人數統計、錯誤方向檢測、排隊長度監控等等，並會把分析結果與客戶分享，以推廣並應用該技術於不同的客戶部門。

另外一個創科項目，可提高道路的使用效率。我們早前與客戶部門組織考察團，到粵港澳大灣區考察最新的創科項目，其中高三層的「升降橫移式立體泊車系統」可增加泊車地點的泊車位數目，於是我們主動引入該系統，並以總部大樓作為試驗場地，進行先導項目，預計系統於2019年年中完成安裝，稍後再向運輸署提供有關測試結果以作參考。另外，為預防交通事故，加強道路安全，我們與初創企業合作試行「4S智能駕駛安全方案」，透過安裝在車頭的感應器及視像鏡頭，監察路面情況，並通過收集行車記錄的大數據，分析駕駛行為，識別交通黑點，以實現「路上零意外」的願景。我們將會向其他客戶部門推廣相關技術的應用。

E&M Digitisation

The EMSD actively supports the Government's policy of building Hong Kong into a smart city in recent years. To this end, we proactively promote digitisation of E&M facilities. Mr. Alfred Sit, Director of Electrical and Mechanical Services, said at a media gathering held on 4 December 2018 that the new CSC established in the EMSD Headquarters Building is equipped with the advanced remote monitoring system, which can monitor around 1 800 sets of traffic light and the E&M facilities of around 200 pedestrian tunnels across the territory in real time, improving the system

availability and reliability, as well as connection with customers.

In addition, we have been investing resources in the development of digitised asset management systems, such as the Building Information Modelling - Asset Management (BIM-AM) system, which enhances efficient maintenance of E&M facilities. Besides, the EMSD has been carrying out the installation of digitised equipment for the E&M facilities at more than 400 government buildings with annual electricity consumption exceeding 500,000 kWh to enhance operational efficiency and environmental performance of the buildings.



「洞穴式自動虛擬環境」技術結合BIM-AM系統，能讓使用者融入現場環境，親身體驗利用BIM-AM系統為機電設施進行維修保養以實現智慧保養的目標。智慧保養是我們為客戶提供的重要增值服務之一。

By integrating the CAVE technology with the BIM-AM system, users can assimilate into the on-site environment and personally experience the repair and maintenance works for E&M facilities with the BIM-AM system to achieve the goal of smart maintenance. This is one of the most important value-added services we provide to clients.



在機電署支持下獲創新及科技基金資助的「4S智能駕駛安全方案」，可發出不同提示，例如顯示車輛距離相撞的剩餘時間及前方有行人橫過馬路的提示，有助減少交通意外發生。

The 4S Solution, which is funded by the Innovation and Technology Fund with the support from the EMSD, sends out different reminders, such as showing the remaining time before a car crash happens and the presence of pedestrians crossing the road, which help reduce the number of traffic accidents.

Furthermore, to enhance the management of engineering projects and assist clients in reviewing different design proposals effectively, we have adopted the Building Information Modelling and CAVE technology to create a virtual environment in advance at the early planning stage of construction and improvement works. Clients can personally experience different design proposals in a virtual reality (VR) setting with ratio close to 1:1. This not only saves time and resources for producing an actual mock up, but also enables prompt assessment of and revision to the design, which can effectively improve work efficiency.

Excellent Work Team

To tie in with the new development trend, the EMSD has set up in our headquarters building an ILC, which not only enables training in a VR setting to enhance trainees' maintenance skills, but is also expected to attract young people to join the trade through an interactive training mode with innovative technology. The virtual environment allows trainees to further familiarise themselves with operation and maintenance procedures under a diversified mode of learning without being on-site, particularly in places under control (such as operating theatres) or dangerous locations (such as lift shafts), thereby providing clients with better and more precise services.

We combined the BIM-AM system with CAVE facilities in September 2018, and applied them to simulate the environment of the Hong Kong Children's Hospital and Tin Shui Wai Hospital, to further strengthen training of the EMSD's maintenance staff.

I&T Application

As an I&T "facilitator" and "promoter", the EMSD takes the initiatives to bring in advanced technologies, and encourages the industry to collaborate and work out innovative solutions. Our E&M InnoPortal is dedicated to experience and technology exchange, and matching suitable I&T projects for government departments. Since March this year, we have received a total of more than 100 "I&T Wish Lists" and over 70 innovative solutions, covering such areas as Internet of Things, automation technology and artificial intelligence. At present, we have been helping to test more than 40 projects in different government venues and facilities.

One of our I&T projects is to improve the efficiency of crowd management for client departments. We have taken the lead to implement a pilot project in our headquarters building by installing intelligent facial recognition devices at certain staff entry and exit gates to test the effectiveness of the application of facial recognition technology in access management of the building, as well as the accuracy of the algorithm developed by the supplier. Video content analytics technology is becoming increasingly mature, with a series of functions for smart analysis of videos, facial recognition being one of them. The facial recognition system automatically compares the captured images with records in the database, which can effectively identify the identity of registered persons to enhance security. We will test other features of the video content analytics technology one by one, such as statistics on the number of

people, detection of wrong direction and monitoring of queue length, and will share the results of the analysis with clients to promote the application of the technology to different client departments.

Another I&T project is to enhance the efficiency of road utilisation. We organised a delegation with client departments earlier to the Guangdong-Hong Kong-Macao Greater Bay Area to study the latest I&T projects there, among which the three-storey Puzzle Parking System could increase the parking capacity of parking locations, we therefore took the initiative to bring in this parking system and made our headquarters building a testing ground for the pilot project. The system installation is expected to be completed in mid-2019, and the testing results will be provided to the Transport Department for reference later. In addition, to prevent traffic incidents and strengthen road safety, we have co-operated with a start-up company for trial run of the Safematics Smart Safety System (4S) Solution. Traffic conditions are monitored through sensors and video cameras installed in the front of vehicles. By collecting the big data of driving records, the system can analyse drivers' driving behaviour and identify traffic blackspots to achieve the vision of "Zero Accidents on the Road". We will promote the application of such technology to other client departments.

客戶如對創科項目有興趣，請與我們的高級工程師林鑫駿先生聯絡(電話：2808 3879)。

If you are interested in I&T projects, please contact Mr. Tommy Lam, Senior Engineer, at 2808 3879.

創科之旅展示機電創科設施

Showcase Innovative Facilities through InnoTours



「洞穴式自動虛擬環境」系統讓參觀者猶如置身實境，從而理解學員如何在互動環境中受訓，掌握相關的維修程序。

With the Cave Automatic Virtual Environment system, visitors feel as if they are in an actual setting, understanding how trainees are trained in an interactive environment and master the relevant maintenance procedures.

機電署秉承持續創新的精神，運用嶄新科技，在總部大樓闢設了創科設施，包括互動學習中心、客戶服務中心及機電創科專區。在今年10至12月期間，我們安排了超過40次參觀上述新設施的活動，作為機電署70周年典禮的延伸活動。來自逾70個客戶部門、公共機構、業界、本港和內地相關團體的超過500名訪客參加創科之旅，了解機電署如何應用創新科技於員工培訓、客戶服務及受惠市民各範疇。

創科之旅吸引了多個客戶部門和組織的代表參加，例如建築署、建造業議會、公務員事務局、懲教署、衛生署、渠務署、創新及科技局轄下的效率促進辦公室、食物環境衛生署、政府化驗所、民政事務總署、香港天文台、香港警務處、醫院管理局、康樂及文化事務署、海事處、政府資訊科技總監辦公室、規劃署、郵政署、庫務署、氣體安全諮詢委員會、香港機電業推廣工作小組、電梯業協會、智慧城市聯盟、香港空調及冷凍商會、廣州市人力資源和社會保障局等。

In the spirit of continuous innovation, the EMSD has set up innovative facilities in our headquarters building with the application of the latest technology. These include the Interactive Learning Centre, the Customer Service Centre and the E&M InnoZone. As an extended engagement activity of the EMSD 70th Anniversary Ceremony, more than 40 visits to these new facilities were arranged between October and December this year. Over 500 visitors from some 70 client departments, public organisations, the trade, and local and mainland organisations participated in the InnoTours, during which they gained a better understanding of the new technology employed by the EMSD in talent training and customer service, as well as betterment for the community.

The InnoTours attracted representatives from a number of client departments and organisations, such as the Architectural Services Department, the Construction Industry Council, the Civil Service Bureau, the Correctional Services Department, the Department of Health,



參觀者親身體驗以虛擬實境技術輔助的操作訓練，了解我們用以培訓學員的新設施。

Visitors try out operational training aided by virtual reality technology so as to gain a better understanding of our new facilities for talent training.

the Drainage Services Department, the Efficiency Office of the Innovation and Technology Bureau, the Food and Environmental Hygiene Department, the Government Laboratory, the Home Affairs Department, the Hong Kong Observatory, the Hong Kong Police Force, the Hospital Authority, the Leisure and Cultural Services Department, the Marine Department, the Office of the Government Chief Information Officer, the Planning Department, the Post Office, the Treasury, the Gas Safety Advisory Committee, the Hong Kong E&M Trade Promotion Working Group, the Lift & Escalator Contractors Association, the Smart City Consortium, the Hong Kong Air Conditioning and Refrigeration Association, and the Guangzhou Municipal Human Resources and Social Security Bureau, etc.



客戶部門和組織的代表參觀本署客戶服務中心。
Representatives from client departments and organisations visit our Customer Service Centre.

機電工程署研討會2018

EMSD Symposium 2018

為配合香港發展成為智慧城市，並且積極推動機電行業持續創新，機電署經常舉辦不同活動促進與各界交流。今年11月15日，我們假香港科學園舉辦「共創智慧未來」研討會，邀請多位海外和本地專家、學者就有關議題分享經驗和研究成果。

主禮嘉賓發展局局長黃偉綸先生在致開幕辭時，鼓勵與會者及有關持份者積極引進創新科技、研發技術解決方案，並培訓年青技術員學習新技術，以迎接數碼年代的種種挑戰和支持政府未來的大型基建項目。機電工程署署長薛永恒先生在致歡迎辭時，呼籲與會者加強合作，優化城市管理，實現更智能化的生活方式，並期望是次研討會能啟發新思維，為智慧城市的發展作出貢獻。研討會分別在能源管理、應對氣候變化、營造創新環境等議題上，探討如何創造更美好的綠色未來。

為促進綠色建築及低碳發展，我們與香港綠色建築議會、屋宇設備運行及維修行政人員學會、澳門機電工程師學會、華南理工大學廣東省城市空調節能與控制工程技術研究開發中心、清華大學建築節能研究中心及上海市建築科學研究院，於研討會上簽署《粵港澳大灣區建築物重新校驗（再調適）合作備忘錄》，以推動建築物重新校驗在粵港澳大灣區的應用。環境局局長黃錦星先生亦有出席並見證簽署儀式。重新校驗是指透過定期檢查建築物的能源



發展局局長黃偉綸先生(左四)與機電署管理層及協辦機構代表合照留念。

The Secretary for Development, Mr. Michael Wong (4th left), takes a group photo with the management of EMSD and the co-organisers' representatives.

表現，調整相關樓宇系統和設備，以達致最佳運作效率，減低營運成本。

今次研討會共吸引逾350名來自客戶部門、業界及公眾人士參與。發展局常任秘書長(工務)林世雄先生在致閉幕辭時總結研討會討論的議題，並呼籲各界攜手合作，為香港「共創智慧未來」。

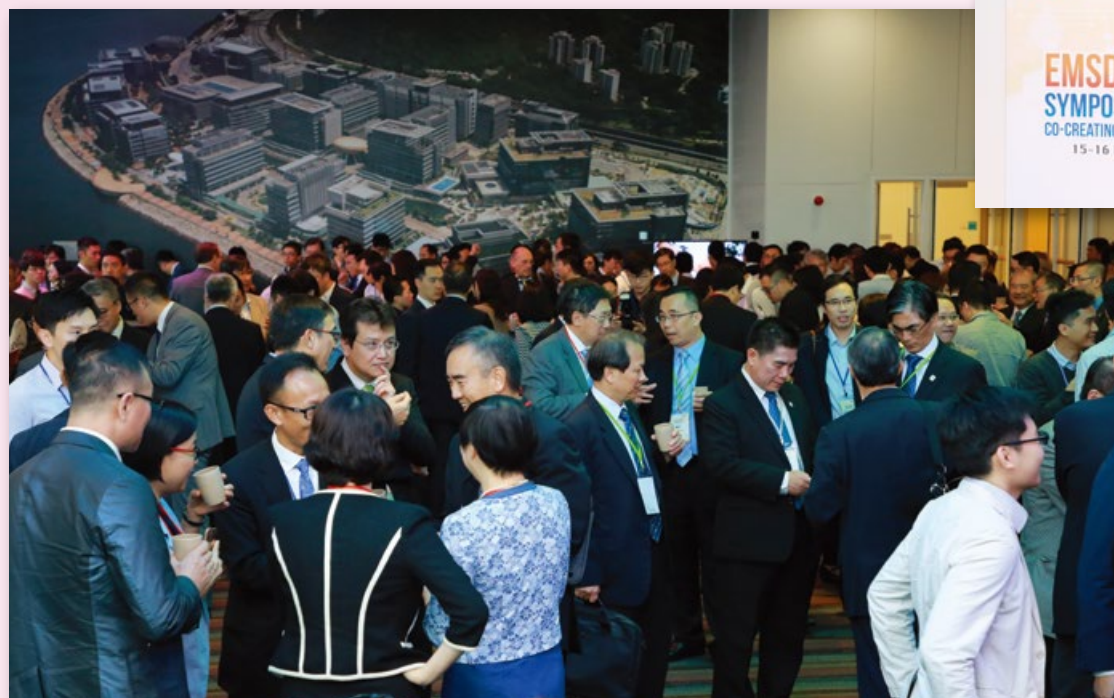
為促進技術交流，我們在研討會翌日舉辦技術參觀活動，透過參觀WEEE·PARK廢電器電子產品處理及回收設施、廣深港高

速鐵路石崗列車停放處的車務控制中心和港珠澳大橋主橋，讓參加者進一步了解本港「轉廢為材」和基礎建設的運作、效益及發展。



發展局常任秘書長(工務)林世雄先生致閉幕辭。

Mr. Lam Sai-hung, Permanent Secretary for Development (Works), delivers the closing address.



眾多客戶部門和業界代表參與研討會，交流經驗和心得。

Representatives from client departments and the trade share their experiences and insights at the Symposium.

To tie in with the development of Hong Kong into a smart city and to actively promote continuous innovation in the E&M industry, EMSD often holds various activities to foster sharing and exchanges. On 15 November this year, we organised the “Co-creating a Smart Future” Symposium at the Hong Kong Science Park, bringing together a number of overseas and local experts and academics to share their experiences and research results on related topics.

Delivering an opening address at the Symposium as an officiating guest, the Secretary for Development, Mr. Michael Wong, encouraged all participants, trade members and other stakeholders to introduce innovative technologies, develop technology solutions, as well as train young technicians on new technologies, so as to meet the challenges brought by the digital era and support the Government’s mega infrastructure projects in the future. Mr. Alfred Sit, Director of Electrical and Mechanical Services, in his welcoming remarks, called on all participants to strengthen co-operation to optimise city management and achieve a smarter way of living. He hoped that this Symposium would inspire innovative thinking and contribute to the development of smart cities. The Symposium explored ways to create a better green future through discussions about such issues as energy management, combating climate change, and fostering an environment for innovation.



在環境局局長黃錦星先生(後排右四)、機電工程署署長薛永恒先生(後排左四)和一眾簽署機構代表見證下，機電署與香港、澳門、大灣區及其他內地城市的六個機構在研討會上共同簽署《粵港澳大灣區建築物重新校驗(再調適)合作備忘錄》，以加強合作和分享經驗，攜手促進綠色建築物的機電系統能效發展。

Witnessed by Mr. Wong Kam-sing, Secretary for the Environment (back row, 4th right), Mr. Alfred Sit, Director of Electrical and Mechanical Services (back row, 4th left), and representatives from signing institutions, EMSD and six organisations from Hong Kong, Macao, Greater Bay Area and other Mainland cities jointly signed a Memorandum of Co-operation on Retro-commissioning of Buildings in the Guangdong-Hong Kong-Macao Greater Bay Area at the “Co-creating a Smart Future” Symposium, so as to strengthen co-operation and experience sharing as well as jointly promote the energy efficiency development of E&M systems in green buildings.

To facilitate green building and low-carbon development, EMSD signed a Memorandum of Co-operation (MOC) on Retro-commissioning of Buildings in Guangdong-Hong Kong-Macao Greater Bay Area at the Symposium with the Hong Kong Green Building Council, the Building Services Operation and Maintenance Executives Society, the Macao Institution of Electrical and Mechanical Engineers, the City Air-conditioning Energy Conservation and Control of Guangdong Project Technology Research Exploitation Center of the South China University of Technology, the Building Energy Conservation Research Center of Tsinghua University and the Shanghai

Research Institute of Building Sciences for promoting the development and application of retro-commissioning (RCx) of buildings in the Guangdong-Hong Kong-Macao Greater Bay Area. Mr. Wong Kam-sing, Secretary for the Environment, also attended the ceremony to witness the signing of the MOC. Through conducting regular “health checkups” of buildings’ energy performance, RCx is a solution for building owners to fine-tune their building systems and equipment with a view to achieving optimal operation efficiency and reducing operating costs.

The Symposium attracted more than 350 participants from the client departments, the trade and the public. In giving his closing address, Mr. Lam Sai-hung, Permanent Secretary for Development (Works), summarised the issues discussed at the Symposium and called for close collaboration of all stakeholders in “co-creating a smart future” for Hong Kong.

To enhance technical exchanges, we conducted technical visits on the day following the Symposium. During the visits to the Waste Electrical and Electronic Equipment (WEEE) Treatment and Recycling Facility at WEEE · PARK, the Operations Control Centre of the Guangzhou-Shenzhen-Hong Kong Express Rail Link – Shek Kong Stabling Sidings, and the Hong Kong-Zhuhai-Macao Bridge Main Bridge, participants learned more about the operation, effectiveness and development of the waste-to-resources and infrastructure facilities in Hong Kong.



主講嘉賓美國能源工程師協會會長Clint Christenson先生(左)、美國麻省理工學院能源倡議組織項目主任 Robert Armstrong教授(中)，以及香港科技園公司董事局主席查毅超博士(右)分別就能源管理、可持續能源的未來及創新的環境發表演說。

Keynote speakers Mr. Clint Christenson, President of the Association of Energy Engineers, USA (left), Professor Robert Armstrong, Director of the Massachusetts Institute of Technology Energy Initiative, USA (middle), and Dr. Sunny Chai Ngai-chiu, Chairman of the Board of Directors of the Hong Kong Science and Technology Parks Corporation (right), speak on energy management, the future of sustainable energy, and an environment for innovation respectively.

推動樂齡科技

Promoting Gerontechnology

機電署一直積極推動和支持樂齡科技。我們於今年11月參加「樂齡科技博覽暨高峰會」，藉此推廣樂齡科技的研發成果，加深公眾對有關科技的認識和關注，讓業界和市民體驗如何利用創新技術提升長者的生活質素。

我們的展覽攤位展示多項科技，包括以虛擬實境體驗「建築信息模擬—資產管理」系統的應用、病人信息及娛樂系統、「老友愛旅行」虛擬實境應用程式、全息投影技術、智能體溫檢查系統、創新電動輪椅及自主移動機械人等項目。其中智能體溫檢查系統是我們與香港科技大學共同研發的技術。相比舊有的體溫檢查系統，新系統既能更準確地實時自動識別和追蹤疑似發燒人士，更支援大數據分析，有助提升各出入境管制站進行檢疫的效率。此系統亦可應用於醫院、診所和復康中心等場地。

當中展覽的創新電動輪椅「樂齡輪」，是機電署與香港社會服務聯會合辦的「樂齡科技顯愛心」比賽的中學組金獎作品。手推輪椅只要安裝了獲獎同學所設計的動力裝置，便能變成電動輪椅，更可遙控操控。

The EMSD has been actively promoting and supporting gerontechnology. We participated in the Gerontech and Innovation Expo cum Summit this November to promote the R&D results of the gerontechnology so as to raise public awareness of and concern about this technology, thereby enabling the trade and members of the public to experience how innovative technology can be applied to enhance the quality of life of the elderly.



政務司司長張建宗先生(前排左三)、機電署署長薛永恒先生(前排右一)與設計「樂齡輪」的佛教黃允畋中學學生合照。

Mr. Matthew Cheung, Chief Secretary for Administration (front row, 3rd left), and Mr. Alfred Sit, Director of Electrical and Mechanical Services (front row, 1st right), take a photo with students from Buddhist Wong Wan Tin College who designed the "iWheel".



參觀者體驗智能體溫檢查系統這項新技術。此系統結合熱能顯像、彩色影像及人工智能技術，能準確地實時自動檢查體溫。

Visitors experience the new technology of the Smart Fever Screening System, which combines thermal imaging, colour imaging and artificial intelligence technology to accurately check body temperature automatically in real time.

Our exhibition booth showcased technologies such as, the virtual reality (VR) experience integrated with Building Information Modelling - Asset Management system, the Patient Information and Entertainment System, "The Elderly Love Travel" VR application, the holographic display technology, the Smart Fever Screening System, the innovative electric wheelchair and the autonomous mobile robot, among which the Smart Fever Screening System is a technology jointly developed by the EMSD and the Hong Kong University of Science and Technology. Compared with the old temperature screening system, the new one not only can more accurately and automatically identify and track febrile suspects in real time, but also support big

data analysis, thus improving the efficiency of quarantine at various boundary control points. The system can also be applied to hospitals, clinics and rehabilitation centres, etc.

The innovative electric wheelchair showcased, "iWheel", won the gold prize in the secondary school group of the Gerontech Youth Challenge, a competition jointly organised by the EMSD and the Hong Kong Council of Social Service. Simply by installing a power device designed by the winning team to the manual wheelchair, it can then be turned into an electric one, and can be remotely controlled.



品質及安全日2018

Quality and Safety Day 2018

機電署持續改善品質、環境及職安健，以提升服務質素和效率，協助客戶部門為公眾提供卓越服務。今年11月26日，我們於香港科學館演講廳舉辦「品質及安全日2018」，主題為「品質、安全、創新、傳承」。是次活動邀得香港科技園公司首席科技總監戴紹龍先生和中華電力有限公司安全隊長潘日明先生作為主禮嘉賓，分享他們在創新和安全方面的寶貴經驗，有超過200位嘉賓和同事出席，欣賞各隊伍簡介其得獎個案。

助理署長/3陳志偉先生致開幕辭時表示，今年的品質及安全日加入了「創新」和「傳承」兩個重要元素，目的是促進機電創科的研發，鼓勵同事應用創科改善為部門和客戶提供的服務。為促進知識的管理、發展和傳承，今年新設最佳知識貢獻獎，鼓勵員工透過「睿智小組」與同事分享經驗和知識。「睿智小組」是為推動互相學習和交流而成立的知識群體。

品質及安全日簡介同事在最佳改善個案、最佳職安健改善個案和最佳環保個案比賽中得獎個案，而當中最佳改善個案比賽的冠軍「遙距高桅杆照明裝置故障監測系統」，更獲得最佳增值服務個案金獎。該項目利用自行研發的遙距數據收集器及流動數據技術，監測高桅杆照明系統的狀況，分析各個電箱的電流，以及時更換有潛在問題的高壓鈉燈。這不但節省巡查人手和資源，提高工作效率，亦使市民受惠於表現更穩定的照明裝置。所有改善個案均凸顯同事力求進步，以提供優質工程方案，贏得客戶的信任和支持。

The EMSD makes continuous improvement to the quality, environment, occupational health and safety (OHS) of work to enhance the quality and efficiency of its services, thus facilitating the delivery of outstanding services to the public by client departments. We organised the



機電署署長薛永恒先生(左三)及管理層代表與香港科技園公司首席科技總監戴紹龍先生(右三)及中華電力有限公司安全隊長潘日明先生(左二)主持開幕儀式。

Director of Electrical and Mechanical Services, Mr. Alfred Sit (3rd left), representatives of the EMSD management, Chief Technology Officer of the Hong Kong Science and Technology Parks Corporation, Mr. George Tee (3rd right), and Safety Leader of CLP Power Hong Kong Limited, Mr. Poon Yut-ming (2nd left), officiate at the opening ceremony.

Quality and Safety Day 2018 (Q&S Day) with a theme of "Quality, Safety, Innovation, Succession", at the Lecture Hall of the Hong Kong Science Museum on 26 November 2018. Mr. George Tee, Chief Technology Officer of the Hong Kong Science and Technology Parks Corporation, and Mr. Poon Yut-ming, Safety Leader of CLP Power Hong Kong Limited, were invited as our officiating guests to share their valuable experiences on innovation and safety respectively at the Q&S Day. More than 200 guests and colleagues attended the event to appreciate the presentation of award-winning projects by various teams.

Mr. Richard Chan, Assistant Director/3, said in his opening address that two important elements of "innovation" and "succession" had been added to this year's Q&S Day with a view to promoting the research and development of E&M innovative technology and encouraging the application of I&T by colleagues to improve the services we provide to the Department and our clients. To facilitate the management, development and

succession of knowledge, the Best Knowledge Contributor Award was added this year to encourage experience and knowledge sharing among colleagues via the "Interest Groups" (IG) of the Knowledge Communities. The IG was set up to promote mutual learning and exchange.

The Q&S Day shared the awarded Best Improvement Projects, the Best OHS Enhancement Projects and the Best Green Projects. The Best Service Delivery Enhancement Award goes to the champion of the Best Improvement Projects, Remote Fault Monitoring System of High Mast Lighting Devices. By utilising self-developed remote data collection device and mobile data technology, this system can monitor the condition of high mast lighting systems, and analyse the current of power boxes for prompt replacement of high-pressure sodium lamps with potential problems. This not only saves manpower and resources for inspection and enhances work efficiency, but also enables members of the public to benefit from lighting installations with more stable performance. All improvement projects highlighted our colleagues' efforts to strive for improvement on delivering quality engineering solutions for winning clients' trust and support.



最佳職安健改善個案比賽(高空工作)的冠軍隊伍憑藉生動的介绍，贏得「最佳演繹大獎」。

The champion team of the Best OHS Enhancement Project Competition (Working at Height) won the Best Presentation Award with its lively presentation.

穗港合作促進機電人才發展

Guangzhou and Hong Kong Co-operate in Fostering Electrical and Mechanical Talent Development

機電署致力培訓機電人才，傳承專業技術，以提升客戶服務和機電資產維護的質素。繼今年6月與廣州市工貿技師學院簽訂機電人才培訓合作備忘錄後，機電署再於11月6日與廣州市人力資源和社會保障局(人社局)簽訂《機電人才發展合作備忘錄》，加強雙方在促進機電人才發展方面的合作。

機電署署長薛永恒先生在簽署儀式上表示，這份備忘錄有助兩地在機電行業人才培訓作更深入和廣泛的協作交流，包括製冷及空調、機電一體化、升降機維修保養、新能源應用和汽車維修等方面。他期望兩地加強交流合作將有助提升本港以至整個粵港澳大灣區的機電服務質素及水平，並促進城市可持續發展及節能減排。

這份備忘錄為機電署與人社局在機電行業人才發展方面制訂了共同目標和合作方向，並確立了雙方在未來三年的合作框架，包括為兩地機電業界提供經驗交流平台和實習機會及舉辦有關先進科技發展和應用培訓課程等。

出席簽署儀式的百多位嘉賓來自粵港兩地不同部門及機構，包括廣州市工貿技師學院、廣州市機電技師學院，以及本地專業學會及機電相關機構。

The EMSD is committed to training E&M talents for passing on professional skills, with a view to raising the quality of client services and maintenance of E&M assets for customers. Following the signing of the Memorandum of Co-operation on training E&M talents with the Guangzhou Industry and Trade Technician College (GITTC) in June this



在發展局局長黃偉綸先生(後排中)、機電署署長薛永恒先生(後排右)和人社局局長郭志勇先生(後排左)見證下，機電署副署長彭耀雄先生(前排右)和人社局副局長何士林先生(前排左)代表雙方簽署了《機電人才發展合作備忘錄》。Witnessed by the Secretary for Development, Mr. Michael Wong (back row, middle), the Director of Electrical and Mechanical Services, Mr. Alfred Sit (back row, right), and the Director of the HRSSGZ, Mr. Guo Zhiyong (back row, left), the Memorandum of Co-operation on E&M Talent Development was signed by the Deputy Director of Electrical and Mechanical Services, Mr. Pang Yiu-hung (front row, right), and the Deputy Director of the HRSSGZ, Mr. He Shilin (front row, left).

year, the EMSD signed the Memorandum of Co-operation on E&M Talent Development with the Guangzhou Municipal Human Resources and Social Security Bureau (HRSSGZ) on 6 November to enhance collaboration in the development of E&M talent in both places.

Addressing the signing ceremony, the Director of Electrical and Mechanical Services, Mr. Alfred Sit, said the memorandum will facilitate more in-depth and extensive co-operation in personnel training in the area of refrigeration and air-conditioning, mechatronics, lift maintenance, new energy applications and vehicle maintenance. He also expressed the hope that the professional exchanges will enhance the service quality and standards of the E&M sector and promote sustainable development and energy saving in both Hong Kong and the Guangdong-Hong Kong-Macao Greater Bay Area.

This memorandum sets out the common goals and co-operation direction for E&M talent development for the EMSD and the HRSSGZ, and establishes a co-operation framework for the two parties in the next three years. The area of collaboration includes experience-sharing platforms, internship opportunities and training courses on advanced technology development and applications for the E&M sector in Hong Kong and Guangzhou.

More than 100 guests from different departments and institutions in Guangdong and Hong Kong attended the signing ceremony. They are representatives from the GITTC, the Guangzhou Electromechanical Technician College, and the professional bodies and related E&M institutions in Hong Kong.

雙方代表與一眾嘉賓合照留念。
Representatives of both parties are pictured with guests.



增設保安設施 加強保護法定古蹟

Additional Security Facilities to Strengthen Protection for Declared Monument

機電署致力為客戶部門提供切合需要的工程方案，其中一個具挑戰性的項目，是為康樂及文化事務署(康文署)轄下的香港鐵路博物館安裝閉路電視系統，以加強對博物館的保安。由於館內的一座車站大樓為法定古蹟，因此在這古蹟上施工難免受到諸多掣肘。儘管如此，我們仍無懼挑戰，經過周全考慮後，針對客戶的要求(包括保育需要)而度身定制施工方案，並同時為博物館引進現代化設備，在保育與建設之間取得平衡，令歷史建築物得以保持原貌，繼續服務市民。

由於受《古物及古蹟條例》保護，在法定古蹟上施行工程必須符合康文署自發展局取得的工程許可證所載的規定。誠然，我們在這幢百年古蹟內安裝閉路電視系統，而不得影響建築物及其展品的文物價值，包括建築物及其內外面貌的風格，尤具挑戰性。

團隊為客戶引進了應用互聯網規約技術和易於維修保養的閉路電視系統。在規劃和設計過程中，團隊實地考察並透過與項目持份者互動，從電線路線、物料和安裝方法等各個細節，與康文署及古物古蹟辦事處密切跟進和充分協商，以達成詳細、精準而又符合相關許可證規定(包括對保存古蹟的建築風格及特色的要求)的安裝方案。在不影響客戶日常運作下，安裝工程在半年內如期順利完成。

如對此系統有任何查詢，歡迎致電 2808 3407 與我們的高級工程師鄧毅民先生聯絡。

香港鐵路博物館
Hong Kong Railway Museum

The EMSD is committed in providing engineering solutions that suit clients' needs. One of the challenging projects we take up is the installation of a closed-circuit television (CCTV) system to strengthen security for the Hong Kong Railway Museum of the Leisure and Cultural Services Department (LCSD). As the museum includes an old station building which is a declared monument, the installation work was inevitably subject to severe constraints. Nevertheless, we managed to overcome the challenges. With careful planning, we worked out a tailor-made solution that met the client's requirements, including conservation needs, and at the same time equipped the museum with modern security facilities, striking a balance between conservation and development, so that this historical building could maintain its original appearance and continue serving the public afterwards.

Under the Antiquities and Monuments Ordinance, any works on this monument had to comply with the requirements of the work permit that the LCSD had obtained from the Development Bureau. Indeed, the installation of the CCTV system in this century-old monument without affecting the heritage value of the building and its exhibits, including the style of the building as well as its interior and exterior, was particularly challenging.

The team provided our client with a CCTV system that applied Internet Protocol technology and can be easily maintained. During the planning and design process, we conducted site visits and interacted with project stakeholders. We closely liaised and followed up with the LCSD and the Antiquities and Monuments Office and agreed with them on a precise and detailed installation plan that



我們在香港鐵路博物館範圍內不同位置安裝了閉路電視攝影機以加強保安。

We installed CCTV cameras at various locations within the Hong Kong Railway Museum to enhance security.

encompassed various aspects such as cable routes, materials and installation methods. Efforts were also made to ensure that the details as set out in the plan complied with the requirements of the relevant work permit, including the requirement that the architectural style and features of the monument be conserved. Without affecting the client's daily operation, the installation was successfully completed within six months.

For any enquiry about this system, you are welcome to contact Mr. Tang Ngai-man, Senior Engineer, at 2808 3407.

能源管理項目再獲國際獎項

Energy Management Project Receives Another International Award

機電署一直致力推動本地能源效益及使用可再生能源，以促進節能減排。今年10月，由機電署與香港中華煤氣有限公司(中華煤氣)、醫院管理局(醫管局)共同協作發展的能源管理項目，榮獲美國能源工程師協會頒發亞太區年度「區域能源項目獎」，這是部門去年獲該協會頒發兩項亞太區區域能源管理獎項後，今年再次獲得該協會頒發能源管理獎項。

今次獲獎項目是由醫管局及中華煤氣合作建造，並由機電署提供支援的本港首個在醫院應用的熱電聯產發電項目，利用沼氣為醫院發電，實踐轉廢為能。

The EMSD has been promoting energy efficiency and the adoption of renewable energy in Hong Kong to facilitate energy conservation and emission reduction. In October this year, the energy management project jointly developed under the collaboration of the EMSD, the Hong Kong and China Gas Company Limited (Towngas) and the Hospital Authority (HA) was awarded the Regional Energy Project of the Year Award for the Asia-Pacific region by the Association of Energy Engineers (AEE) in the United States. This is another award on energy management from the AEE, following the two regional energy management awards received last year.



機電署署長薛永恒先生(右三)、醫管局高級行政經理(工程)源柏樑博士(左五)及中華煤氣總經理(市務及營業)黃維安先生(右五)出席在美國北卡羅萊納州夏洛特舉行的頒獎典禮。

The Director of Electrical and Mechanical Services, Mr. Alfred Sit (3rd right), the Senior Manager (Engineering) of the HA, Dr. Yuen Pak-leung (5th left), and the General Manager of Marketing and Sales of the Towngas, Mr. Duncan Wong (5th right), attended the award presentation ceremony in Charlotte, North Carolina, the United States.

2018年 客戶意見調查 Customer Opinion Survey 2018

機電工程營運基金衷心感謝客戶部門對我們2018年客戶意見調查的支持。調查由獨立市場研究公司於10月至12月期間以問卷形式進行，現正就收集到的意見進行分析，調查結果可讓我們進一步提升對客戶的服務。

The Electrical and Mechanical Services Trading Fund would like to express its sincere gratitude to client departments for their support of the Customer Opinion Survey (COS) 2018. The COS was conducted in the form of questionnaire from October to December 2018 by an independent market research company. The opinions collected are being analysed, and the survey results will be used for further enhancement in our customer services.

This year's award-winning project was jointly developed by the HA and Towngas with support from the EMSD. It is the first combined heat and power electricity generation project in Hong Kong hospitals, utilising biogas to produce electricity for a hospital and thus turning waste into energy.

您的寶貴意見對我們非常重要！如大家對《機電傳聲》有任何意見或回應，請隨時聯絡我們，讓我們不斷改進。
如果您的同事有興趣收取本通訊及加入郵寄名單，歡迎以電郵 (cpsd@emsd.gov.hk) 或傳真 (傳真號碼：2882 1574) 方式通知我們。
如果您希望我們從郵寄名單中刪除您的名字，或更新您的資料，請透過電郵 (cpsd@emsd.gov.hk) 與我們聯絡。

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