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# VoiceLink

## 銜接 數碼化時代 *Connecting to the Digital Era*





# 推動新科技應用 銜接數碼化時代

## Promoting Application of New Technology Connecting to the Digital Era

**機**電工程營運基金(營運基金)一直致力擔當客戶的可靠合作伙伴，共同創造更大的公眾價值。我們積極聆聽，了解客戶需要，並持續努力應對挑戰。

早於2013/14年度，我們已主動制訂第一份為期五年的企業策略發展計劃，涵蓋需要提升機電工程服務的範圍，積極落實措施，務求精益求精，並致力應用新科技，以幫助客戶應對時代急劇轉變的挑戰，與時並進。

今年，營運基金綜合過往的經驗以及檢視未來的長遠發展，並且建基於第一個策略計劃的佳績，再制訂第二個五年策略計劃。我們會以創新科技持續革新，迎接數碼化時代的挑戰，期望營運基金未來能夠再創新景象，並以客戶需要為前提，以社會利益為依歸，創造最大的公眾價值。

**T**he Electrical and Mechanical Services Trading Fund (EMSTF) is committed to serving as our clients' reliable partner, working together to create even greater public value for community betterment. To this end, we listen proactively to understand clients' needs and try every effort to make continuous improvements.

Starting from 2013/14, we have taken the initiative to formulate our First Five-year Strategic Plan, covering the necessary scope for enhancement of electrical and mechanical (E&M) services. We have been working in full swing on the implementation of various measures and application of new technology to help clients meet the ever-changing challenges of the new era and keep pace with the times.

This year, EMSTF consolidated our past experience and reviewed the future long-term development. Based on the fruitful results of the first strategic plan, we formulated our Second Five-year Strategic Plan. We will make continuous improvements through innovation and technology (I&T), meeting the challenges in the digital era. We hope that EMSTF will scale new heights and create public value for community betterment on the premise of meeting clients' needs and in the interest of our community.

### 第一個五年策略計劃 成效顯著

我們的第一個五年策略計劃以應用新科技為基礎，加強服務質素，帶動行業發展，建立員工才能與關懷文化，優化知識管理及提倡應用環保節能科技。這些策略方向在過去五年為營運基金取得豐碩成果，讓客戶得到全面、優質及物有所值的工程服務。

### 優化客戶服務

營運基金通過應用流動數碼技術，設立「顧客為本電子平台」，並於今年3月底在接近300個政府場地全面使用，支援維修工作管理，提供實時工作狀況；再配合即將落成的全新「客戶服務中心」，便可為客戶提供一個更有效率的資訊溝通平台，加強與客戶聯繫。我們亦優化合約管理，確保服務質素，協助客戶提供更佳的服务惠及廣大市民。

### 應用新科技 推動創新

我們不斷為客戶引入新科技設施，以節省能源和提高效能，例如無油磁浮式製冷機

和用以檢視電力系統狀況的紅外線熱能探測器等。目前，一些客戶的重要場地所裝置的機電設備，已經應用實時遙距監察技術，再配合綜合樓宇管理系統，便能更有效地監察系統運行狀況，確保設備正常運作。我們亦制訂合適的維修及保養計劃，為客戶提供快速應變、高效可靠的技術支援服務。

### 加強資產管理

我們早於2014年已引進ISO 55001資產管理標準，近年亦協助客戶為不同的機電系統取得認證，完善資產管理。在機電系統技術方面，我們成立了不同的工作小組訂定機電資產所需採納的技術標準，目前四類機電系統（空調、電力、自動梯和升降機、照明）的技術指引已經推出並應用於客戶場地，使這些機電資產獲得適切管理，時刻保持最佳運作狀態。



### 培訓人才配合客戶發展需要

我們聯同業界組成香港機電業推廣工作小組，推動行業發展及吸引年青人加入；同時為業界培訓人才，推行「合作培訓技術員先導計劃」，讓學員到不同的機構實習，學習跨範疇的知識。此外，我們又制訂和施行才能矩陣、成立卓越中心暨優才訓練基地、建立知識管理平台，透過這些人才培訓措施，讓機電業得以平穩發展，以配合客戶與時並進的需要，協助客戶為業務未來的機遇和挑戰作好準備。

### 推動綠色政府建築的先鋒

機電工程署總部大樓於2016年獲香港綠色建築議會頒發「綠建環評既有建築」最終鉑金級證書，是第一幢獲得這項最高評級的現有政府大樓，為香港現有建築物實踐綠色作業起示範作用。一直以來，營運基金積極協助客戶採用創新的節能減排方案及引入更多高能效的機電設備，務求所有政府建築物，以2013/14年度為基準，於2019/20年度能夠達成減省5%耗電量的目標。



優化客戶服務  
Enhancing Services  
to Clients

培訓人才配合客戶發展需要  
Training Talents  
to Meet Clients'  
Development Needs



應用新科技 推動創新  
Applying New Technology  
to Promote Innovation



加強資產管理  
Enhancing Asset  
Management



推動綠色政府建築的先鋒  
Pioneering Role in the  
Promotion of Green  
Government Buildings

## The First Five-year Strategic Plan Achieving Prominent Results

Our First Five-year Strategic Plan, based on the application of new technology, aims to strengthen the quality of our services, lead trade development, build staff capacity and caring culture, enhance knowledge management and promote the use of green and energy saving technologies. These strategies have helped EMSTF achieve excellent results in the past five years, providing comprehensive, high-quality and value-for-money engineering services to our clients.

### Enhancing Services to Clients

With the application of mobile technology, we have established the Customer Centric e-Platform (CCeP). Since the end of March 2018, CCeP has been put into full operation in nearly 300 government venues to support maintenance work management with real-time job status. Together with the upcoming Customer Service Centre (CSC), we are able to offer our clients a more efficient information and communication platform, and strengthen our ties with clients. We have also enhanced contract management to ensure EMSTF's service quality, enabling our clients to provide better services to the public.

### Applying New Technology to Promote Innovation

We have constantly introduced new technology for clients to save energy and improve efficiency. Examples are the magnetic oil-free chillers and the infrared thermal scanners for power system

inspection. At present, we have applied real-time remote monitoring technology to E&M equipment at some of our clients' major venues. Coupled with the integrated Building Management System (iBMS), the E&M systems can be monitored more effectively, ensuring their proper operation. We have also formulated appropriate maintenance plans, providing clients with agile, efficient and reliable technical support services.

### Enhancing Asset Management

As early as 2014, we introduced ISO 55001 asset management standard for our works. In recent years, we have also helped our clients improve their asset management and acquire various certifications for their E&M systems. As for E&M system technology, we have set up different working groups to define technical specifications for different types of E&M assets. At present, we have promulgated technical guidelines for four types of E&M assets, namely air-conditioning, electrical, lift and escalator, and lighting systems. The guidelines are applied to clients' venues to ensure that the related E&M assets are properly managed and kept in optimal operating conditions at all times.

### Training Talents to Meet Clients' Development Needs

Together with trade partners, we formed the Hong Kong E&M Trade Promotion Working Group to promote trade development and attract young people to join the industry. Meanwhile, we launched the Pilot Cooperative Apprentice Training Scheme to facilitate

trainees to undergo internship in different organisations and acquire cross-discipline knowledge. In addition, we developed and implemented competency matrix, established Centres of Excellence cum Talent Training Base and set up a knowledge management platform. Through these talent development initiatives, we can ensure a steady development of the E&M trade, and also address our clients' needs to keep pace with the times, getting them well-prepared for future opportunities and challenges.

### Pioneering Role in the Promotion of Green Government Buildings

The EMSD Headquarters attained Final Platinum Rating in BEAM Plus Existing Buildings by Hong Kong Green Building Council in 2016. It is the first existing government building to receive this highest rating, serving as a role model for existing buildings implementing green practices. All along, EMSTF has been proactively assisting clients in adopting innovative energy saving and emission-control solutions and introducing more energy-efficient E&M equipment, such that all government buildings will achieve the target of 5% reduction in electricity consumption by 2019/20, using the consumption in 2013/14 as the baseline.







## 第二個五年策略計劃 以創新科技銜接數碼化時代

憑藉過去應用新科技的經驗，營運基金未來五年將以「創新及科技」為核心元素，致力為客戶提供創新的機電工程方案，並培育機電團隊和重整企業架構，滿足客戶的業務需要。我們還會培養新的機構文化，運用創新科技及推動機電數碼化。我們期望以第二個五年策略計劃為藍圖，達致「透過與不同持份者的伙伴關係，創造公眾價值及改善社會」的企業目標。

### 利用相關數據制訂數碼化工程方案

為配合發展智慧城市和應對氣候變化的政策，營運基金會持續為客戶提供數碼化機電工程及創新方案。為了制訂最適切的數碼化機電工程方案，我們將為客戶的重要機電資產進行數碼化，包括提升感應裝置、數據傳輸、數據儲存、數據分析等。這些數碼化機電工程方案不但有助提升客戶機電資產至最佳運作狀態，而且有效達致預測性維修保養，提升設備的可用性及其系統的可靠性。此外，為強化監察數

碼化資產管理的工作，我們將設立區域數碼監控中心，透過互聯網協調各區的數碼化系統，例如綜合樓宇管理系統、地理資訊平台、顧客為本電子平台等，以便優化客戶服務中心的服務流程，全天候遙距監控場地的實時操作數據，以提升機電資產的運作效率和建築物能源表現。

### 深化與業界的協作

我們會建立協作平台，與業界交流經驗和技術，深化彼此間的協作，並參考數碼化資產管理系統收集到的數據分析，訂定最佳操作和維修作業守則，引領行業實踐數碼化機電工程方案，使客戶在不同層面都能獲得嶄新的機電服務體驗。



## 培育掌握數碼化作業的卓越團隊

為建立一支能提供高效應變方案、具備國際視野的卓越團隊，我們將成立機電學院，開發獲資歷架構認可的課程及訓練，並促進與本地、國內及外國的技術交流和擴展培訓領域，為各數碼化作業團隊提供適切的培訓，配合客戶長遠發展需要。



### 成為推動機電數碼化的機構

為推動機電數碼化，我們將重整企業架構，成立創新辦公室，聯繫創科機構及各個客戶部門，共同制訂創新方案。為提升各持份者的參與度，我們將開發部門應用程式及更新電腦系統、建立資訊分享平台及共融空間、優化辦公室環境，以促進交流，培養創新、靈活、協作和透明的機構文化。

如欲了解我們第二個五年策略計劃的詳情，歡迎致電2808 3806與高級工程師陳明義先生聯絡。



## The Second Five-year Strategic Plan Utilising Innovation and Technology to Get Connected in the Digital Era



With our experience in applying new technologies in the past, EMSTF will proceed with the work with “Innovation” and “Technology” as core elements in the next five years. We are committed to providing customers with innovative E&M engineering solutions, nurturing professional and technical teams, and adopting new organisational structures to meet clients’ business needs. We will also develop new corporate culture leveraging on innovative technology and promoting digitisation of E&M services. By means of the Second Five-year Strategic Plan, we hope to achieve our corporate goal of “creating public value for community betterment through partnership with various stakeholders”.

### Formulating Digitised Engineering Solutions with Relevant Data

To cope with the government policies to develop a smart city and respond to climate change, EMSTF will continue to provide clients with digitised E&M engineering and innovative solutions. To formulate the most appropriate digitised E&M engineering solutions, we will speed up digitalisation of our clients’

critical E&M assets, including upgrading of sensors, data transmission, data storage and data analysis. The solutions will not only enhance clients’ E&M assets to the optimal operating conditions, but also strengthen predictive maintenance and improve the assets’ availability and system reliability. On the other hand, to enhance monitoring of digitised asset management, we will establish regional digital monitoring and control centres to coordinate various digital systems such as the iBMS, the Geographic Information System, CCeP, etc. through the Internet for enhancing the service flow of the new CSC. Through continuous monitoring of the real-time operation data, we can improve the operation efficiency of E&M assets and the energy performance of buildings.

### Deepening Collaboration with Trade Partners

We will establish a collaborative platform for exchanging experience and technology with trade partners to deepen our collaboration. With reference to the data collected and analysed by the digitised asset management system, we will develop the best practices for operation and maintenance of E&M assets, leading the trade to implement digitised E&M engineering solutions so that our clients can enjoy new E&M service experience at different levels.



## Equipping Professional Work Teams with Best Practices for Digitisation



To build an excellent work team with global vision and capability to provide emergency support, we will set up the E&M Academy and develop accredited courses and training under the Qualifications Framework. We will also foster technical knowledge exchanges with our local, Mainland and overseas counterparts, and expand areas of training so as to provide appropriate training for the digitisation work team to address our clients’ long-term development needs.

### Being an Organisation Promoting E&M Digitisation

To promote E&M digitisation, we will implement organisation restructuring, and set up the Innovation Office to connect with start-up companies and different client departments in jointly creating innovative solutions. To encourage greater participation of various stakeholders, we will develop departmental applications, upgrade corporate computer systems, set up information sharing platforms and communion space, and ingenious office environment so as to promote communication and cultivate a corporate culture which embraces innovation, flexibility, collaboration and transparency.

For more information on our Second Five-year Strategic Plan, please contact Mr. Chan Ming-ye, Senior Engineer, at 2808 3806.





# 成立創新辦公室 開設網上創新科技協作平台

## Establishing Inno-Office and E&M InnoPortal

**機**電工程署(機電署)一直積極支持初創企業的發展，鼓勵把其研發的創新科技項目轉化為產品推出市場。為全力支援初創企業，繼早前宣布機電署總部大樓用作機電初創公司的共享試驗場地後，我們在本年2月成立「創新辦公室」，專責統籌一系列支援創新科技的措施，並且開設網上創新科技協作平台E&M InnoPortal，以加強與大學及初創的合作。

為發掘更多具潛力的初創項目，E & M InnoPortal會彙列各政府部門、公共機構和機電行業的技術開發需求清單，讓各大學和初創企業提供與機電相關的創新和技術解決方案。我們希望以E & M InnoPortal作為配對平台，由機電署作橋樑聯繫雙方，把具潛質的技術安排在總部大樓以至其他設施試驗，共同協作和推動產品的研發和應用。

網上創新科技協作平台讓各大學和初創企業按機電需要提供相關的創新和技術解決方案。  
The E&M InnoPortal enables universities and start-ups to offer their I&T solutions for the E&M needs.

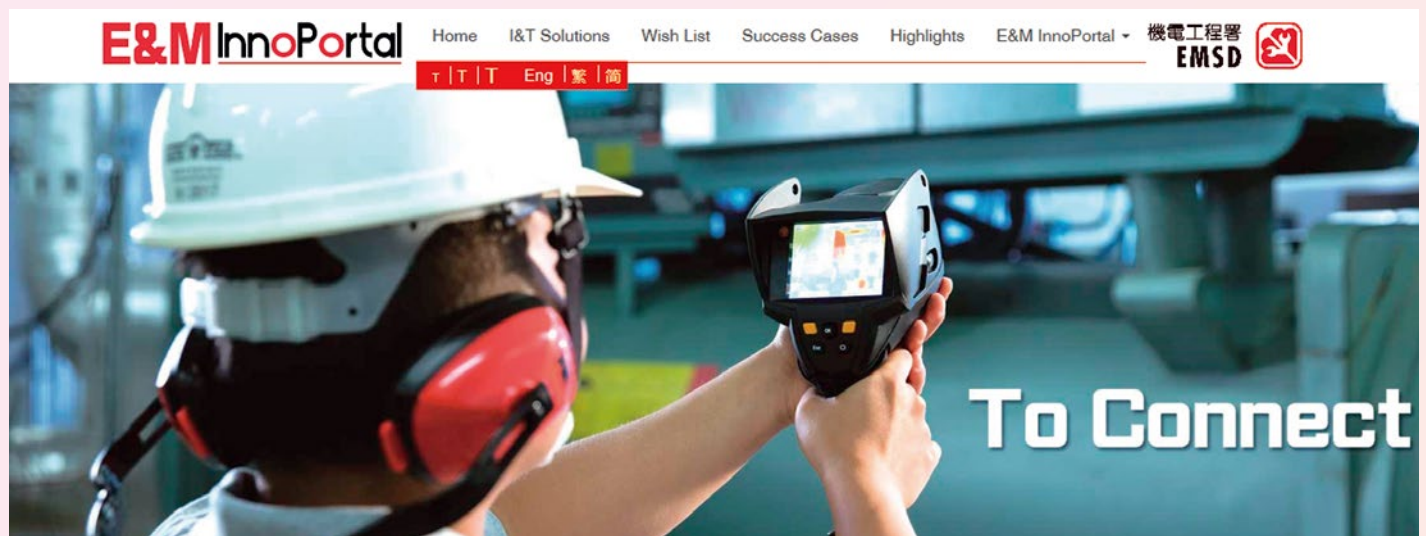
The EMSD has been actively supporting the development of start-ups and encouraging them to turn their research and development projects on innovation and technology (I&T) into products for launching in the market. Following our earlier announcement on opening up the EMSD Headquarters Building as a common testing ground for E&M start-ups, the “Inno-Office” was established in February this year to coordinate a series of measures in fostering the development of I&T. In addition, an online I&T collaboration platform “E&M InnoPortal” has been set up to help enhance cooperation with universities and start-ups.

To identify more start-up projects with good potential, E&M InnoPortal will maintain a list of the technology development needs of various government departments, public bodies and the E&M trade, enabling various universities and start-ups to offer E&M related I&T solutions. With the E&M InnoPortal as a matching platform,

EMSD plays a bridging role between both parties in a partnership, and facilitate trial application of technologies with good potential in our headquarters building or other facilities, with a view to jointly promoting and driving the development and application of new products.

E&M InnoPortal已經正式啟用，有興趣的客戶部門、大學和初創企業請致電2808 3879與高級工程師林鑫駿先生聯絡，亦可掃描以下二維碼或登入網址[www.emsd.gov.hk/inno](http://www.emsd.gov.hk/inno)，以獲取更多相關資訊。

The E&M InnoPortal is officially launched. For more information, interested clients, universities and start-ups may contact Mr. Tommy Lam, Senior Engineer, at 2808 3879. You may also scan the QR code on the right or visit [www.emsd.gov.hk/inno](http://www.emsd.gov.hk/inno).



## 首個試驗項目率先展開

### First Pilot Project Kicks Off

**自**去年11月宣布機電署總部大樓用作機電初創企業的共享試驗場地後，在短短數月間，我們已選出具有潛力的初創節能項目「智能風機盤管控制器」，並率先在總部大樓內採用。把研發項目轉化為真正的產品，將有助初創企業發展，同時亦向客戶和業界展示節能環保的新機會，達到雙贏的效果。

傳統冷氣機風機盤管的電動馬達以「高」、「中」和「低」三種速度推動風扇運行。「智能風機盤管控制器」是一個節能裝置，透過調節電壓，控制風機馬達的速度，能降低中央冷氣機內風機的用電量，為總部大樓節約能源之餘，還可延長風機馬達的壽命。

目前，我們正進行試行，並且持續進行現場勘測和安裝，目標是在大樓內多個場地安裝該節能控制器，預計整項工程在年中完成。我們將持續監察控制器的運行，收集和對比數據，以確定節能成效。





安裝「智能風機盤管控制器」後(見圖示)，當風機馬達以低速運行時，控制器的節能效果尤其明顯。  
After installing the Fan Coil Unit Energy Saver (see photo), the energy saving effect is especially noticeable when the fan motor is running at a low speed.

Last November, we announced the use of the EMSD Headquarters Building as a common testing ground for E&M start-ups. In the subsequent few months, a potential energy saving start-up project, Fan Coil Unit Energy Saver, has been selected and being deployed in our headquarters building. Converting research projects into real-life products not only helps the development of start-ups, but also demonstrates new opportunities for energy saving and environmental protection to our clients and the trade, achieving a win-win outcome.

In a conventional fan coil unit, the electric motor operates in three discrete speed settings: high, medium, and low. The Fan Coil Unit Energy Saver is an energy saving device. By varying the voltage to control the fan motor speed, the overall electricity consumption of the fan motor in a central air-conditioning system can be reduced. Besides saving energy for the headquarters building, the device also extends the life of the fan motor.

Currently, we are conducting trial tests, on-going site surveys and installations. Our goal is to install this energy saving device at multiple locations within the building. The entire project is expected to be completed in the middle of the year. We will continue to monitor the operation, collect and compare data to evaluate its effectiveness.

## 開拓節能新領域

## Explore New Frontiers for Energy Saving

**機**電署不但支持初創企業的創新科技項目發展，而且積極為客戶部門研究和尋求創新技術。為鼓勵客戶部門開拓能源效益和節能減排的新領域，機電署提出了新意念，設計和研製行人天橋「智能調光照明控制系統」，為客戶及市民提供安全可靠、環保及合乎成本效益的公共照明系統。

我們研發的行人天橋「智能調光照明控制系統」採用自動調光，當運動傳感器探測到行人接近時，發光二極管燈具會自動調節至符合《公共照明設施設計手冊》的亮度標準。這個智能省電設計系統靈活、富彈性，在行人不易察覺的情況下，既可符合設計標準，又可根據個別天橋的行人流量而設計不同智能調光的操作模式，例如改變燈的光暗度和時間長短，以照顧市民的實際需要，達到節能效果。

首個試驗項目在人流相對較低的彩虹斧山道橫跨龍翔道行人天橋展開，在應用新的「智能調光照明控制系統」和採用發光二極管燈具後，用電量較以往節省高達50%。由於節能效果理想，我們已經在元朗、彩虹、葵涌、太古城及銅鑼灣等地區的行人天橋安裝這個系統，並相繼投入服務。展望未來，我們會繼續物色合適的行人天橋供安裝「智能調光照明控制系統」，並持續監測以優化系統設計。

如客戶對「智能風機盤管控制器」和「智能調光照明控制系統」感興趣，歡迎致電3757 6134與我們的高級工程師鄧偉豪先生聯絡。

The EMSD not only supports the development of I&T projects by start-ups, but also proactively conducts studies and searches for new technologies for our client departments. To encourage clients explore new frontiers for energy efficiency, energy saving and emission reduction, EMSD introduced a new concept in designing and manufacturing a Smart Footbridge Lighting Dimming Control System. It provides safe, reliable, environmentally friendly and cost-effective public lighting, benefiting both our clients and the public.

The Smart Footbridge Lighting Dimming Control System will automatically adjust the lighting level. When the motion sensor detects a pedestrian passing nearby, the LED light will be adjusted automatically to meet the lighting level specified in the Public Lighting Design Manual. This Smart Footbridge Lighting Dimming Control System is flexible and easily configurable. Without making noticeable difference to pedestrians, the system allows further design of different lighting modes, for example, by varying the lighting brightness and duration to suit different pedestrian flows of individual footbridge while meeting the lighting standards. It takes care of the practical needs of the public and saves energy.



我們率先在彩虹斧山道橫跨龍翔道的行人天橋裝設新的「智能調光照明控制系統」，安裝後用電量較以往節省多達50%。  
The new Smart Footbridge Lighting Dimming Control System was first installed at the footbridge at Hammer Hill Road, Choi Hung, across Lung Cheung Road. The electricity consumption was then saved by as much as 50%.

The first pilot project was launched at the footbridge at Hammer Hill Road, Choi Hung, across Lung Cheung Road. The pedestrian flow there is relatively low. After application of the new Smart Footbridge Lighting Dimming Control System and LED lamps, the saving on electricity consumption was up to 50%. In view of the satisfactory result, we have started installing this system at footbridges in Yuen Long, Choi Hung, Kwai Chung, Tai Koo Shing and Causeway Bay. Looking forward, we will continue to identify suitable footbridges for installation of the system, and to monitor its performance with a view to optimising the system design.

If clients are interested in the Fan Coil Unit Energy Saver and Smart Footbridge Lighting Dimming Control System, please contact Mr. Tang Wai-ho, Ronald, Senior Engineer, at 3757 6134.



# 引入全港首輛五軸重型拖車

## Hong Kong's First Five-axle Heavy Recovery Vehicle

**機**電署一直緊貼時代步伐。我們率先為運輸署引入全港首輛五軸重型拖車，以提升在政府日後落成的新隧道(例如位於港珠澳大橋香港連接路的觀景山隧道)、現行青馬管制區內不同大橋和其他現有隧道進行重型車輛救援的能力，加快移走因交通意外而阻塞路面的重型車輛。首批七輛五軸重型拖車已順利驗收並交付客戶。

全新五軸重型拖車的外殼主要選用較輕的鋁合金物料製造，車輛除採用歐盟六型環保引擎外，亦新增提供額外負載能力的第五軸，令車輛的總負載重量達46公噸，能掛載8公噸軸重及拖行重達70公噸的重型壞車，例如貨櫃車、吊臂車和重型特別用途車輛等。為配合香港各大橋和隧道的實際環境，拖車的第一、第二和第五軸採用同時動力轉向設計，令車輛在狹窄的地方操作時能夠保持靈活性。此外，集吊重和拖車功能於一身的設計，可協助迅速清理道路和拖走壞車，令交通恢復正常運作。

在緊急救援中靈活調配車隊可以發揮關鍵作用，因此，我們為運輸署設計新型救援拖車時，已將小型、中型和重型拖車標準化，讓各大橋、管制區及隧道在有限空間運作有關車輛時有更大靈活性，而此舉亦有助運輸署及不同地區的營辦商在使用時更容易掌握和適應政府拖車的特性。我們將積極向運輸業界推廣這個新的拖車設計概念，讓公私營車隊能一起提升車輛救援效率，縮短交通事故所需的救援時間，便利市民。

全新設計的五軸重型拖車，能提升不同大橋、管制區和隧道的車輛救援能力。

The newly designed five-axle recovery vehicle can enhance the vehicle recovery capability at different bridges, control areas and tunnels.



五軸重型拖車上的兩台絞車能同時獨立運作，吊起一輛翻側的雙層巴士及在負載下慢慢把它放下，無需其他拖車協助。  
The two winches of the five-axle recovery vehicle can be operated separately at the same time. Each one can lift an overturned double-decker and lower it slowly under load without the assistance of another recovery vehicle.

The EMSD always keeps pace with the times. We have taken the lead in introducing the first five-axle heavy recovery vehicle in Hong Kong for the Transport Department (TD) to strengthen the heavy vehicle recovery capability in future new government tunnels (e.g. the Scenic Hill Tunnel along the Hong Kong Link Road of the Hong Kong-Zhuhai-Macao Bridge), the existing bridges in Tsing Ma Control Area and other existing tunnels with a view to expediting the removal of heavy vehicles obstructing road traffic due to traffic accidents. The first batch of seven five-axle heavy recovery vehicles has successfully been accepted and handed over to the clients.

The body of the new five-axle heavy recovery vehicle is mainly made of light weight aluminum alloy. Equipped with the Euro VI environmentally friendly engine, the vehicle also has a new fifth axle providing it with extra loading capacity and bringing the total loading weight to 46 tonnes. This allows the vehicle to carry out suspended towing or direct

towing for a broken-down heavy vehicle, such as container truck, crane truck and heavy special purpose vehicle, with a single axle weight up to eight tonnes or total vehicle weight up to 70 tonnes. To tie in with the actual environment of major bridges and tunnels in Hong Kong, the first, second and fifth axles are power-steered simultaneously, enabling the vehicle to manoeuvre in narrow spaces dexterously. Besides, the design of combining recovery and lifting functions can help quickly clear up the road and tow away the broken-down vehicles for resumption of normal traffic.

Flexible deployment of vehicle fleets plays a critical role in case of emergency recovery. Therefore, in designing heavy recovery vehicles for TD, EMSD has standardised the specifications for light, medium and heavy recovery vehicles, so that they can be operated with greater flexibility under different space constraints for bridges, control areas and tunnels. This also helps users of TD and various regional operators grasp and adapt to the characteristics of government recovery vehicles more easily. We will actively promote this new recovery vehicle design in the transportation industry so that both public and private fleets can work together to enhance the efficiency of vehicle recovery and to shorten the recovery time required for incident handling, thus bringing convenience to the public.





# 協助醫管局大樓獲取「綠建環評」卓越評級

## Achieving BEAM Plus Excellent Grading in Energy Use Certification for Hospital Authority Building

**機**電署是首個榮獲「綠建環評既有建築(1.2版)」最終鉑金級證書及「綠建環評社區」鉑金級證書的政府部門。我們憑着這些豐富的經驗，向客戶推廣可持續發展，並且協助為其他政府大樓申請有關認證，而既有建築物與新建築物相比，面對的挑戰更大。經過兩年時間的籌備，我們協助醫院管理局(醫管局)大樓獲得「綠建環評既有建築(2.0版)自選評估計劃」的「能源使用」範疇卓越評級。這次認證讓我們進一步協助客戶提升既有建築物可持續發展的表現，而所獲的卓越評級更肯定了我們和客戶共同努力的成果。

在自選評估計劃的六大範疇中，我們選擇了「能源使用」來評級，結果整體表現得分高達90%，更獲香港綠色建築議會認同「這項成就標誌着機電署在香港推動可持續建築方案的承諾」。

醫管局大樓落成至今20年，我們持續監察大樓的能源使用，一直為機電設施進行更新，並引入先進的節能科技，以提升能源效率，例如使用高效能無油磁浮式製冷機、為風櫃機安裝變頻器和二氧化碳傳感器、發光二極管照明裝置等；加上不斷強化環境及能源管理措施，以推動建築物的良好運作及管理，減少浪費能源，因此我們很快達到目標，為客戶取得認證。透過上述高效節能措施，醫管局大樓在2016年的用電量較2012年下降逾18%，成效顯著。

我們樂於與客戶分享「綠建環評」認證的經驗，如客戶有興趣，歡迎聯絡高級工程師莊國基先生(電話：3155 4000)。



我們與醫管局共同努力，獲得「綠建環評既有建築自選評估計劃」的「能源使用」範疇卓越評級。圖為機電署與醫管局代表的合照。

We worked collaboratively with the Hospital Authority to attain the Excellent Grading in the "Energy Use" aspect under BEAM Plus Existing Buildings Selective Scheme. Pictured is a group photo of EMSD and HA's representatives.

The EMSD is the first government department to attain the Final Platinum Rating Certification under BEAM Plus Existing Buildings (V1.2) and the Platinum Rating Certification under BEAM Plus Neighbourhood. By leveraging this rich experience, we proactively promote sustainable development among our clients and help other government buildings apply for similar certification. Compared with the accreditation process for new buildings, the challenges are much greater for existing buildings. After two years of strenuous preparation, we successfully assisted the Hospital Authority (HA) Building in achieving the Excellent Grading in the "Energy Use" aspect under BEAM Plus Existing Buildings (V2.0) Selective Scheme. Through this exercise, we went the extra mile to help our client enhance their performance in sustainable development of the existing building. Obtaining the Excellent Grading further affirmed the collaborative efforts by EMSD and our client.

Among the six aspects under the Selective Scheme, "Energy Use" was selected for certification. We attained an extremely high score of 90% and earned recognition from the Hong Kong Green Building Council, which stated that "This achievement signifies the EMSD's

commitment in promoting solutions for sustainable buildings."

The HA Building has been in service for 20 years. All along we have been monitoring its energy use, renewing its E&M facilities and introducing the latest energy saving technologies to enhance its energy efficiency. Examples include the adoption of more energy-efficient oil-free chillers, installation of variable frequency drives and CO<sub>2</sub> detectors for air-handling units, application of LED lighting, etc. Meanwhile, we have been constantly strengthening the environmental and energy management measures to ensure proper operational management and reduce energy waste of the HA Building. Ultimately, we managed to reach our targets quickly and helped our client obtain the certification. Through implementation of the above salient energy saving measures, the electricity consumption at the HA Building in 2016 dropped significantly by more than 18% as compared with that in 2012. The result is exhilarating and remarkable.

We are happy to share with our clients the experience of BEAM Plus accreditation. If you are interested, please contact Mr. Chong Kwok-kee, Senior Engineer, at 3155 4000.

我們在醫管局大樓安裝節能的發光二極管照明裝置，以提升能源效益。  
We installed energy saving LED lighting in HA Building to enhance its energy efficiency.



# 機電嘉年華推動安全智慧城市

## E&M Carnival Promotes a Safe and Smart City

**機**電署一直致力推動香港發展成為環保及安全的智慧城市。由署方與香港工程師學會合辦及業界協辦的「機電嘉年華2018」，於今年1月20及21日在機電署總部舉行，吸引近一萬二千名市民參加。這個大型宣傳教育活動不僅讓市民更全面了解機電署的規管服務和營運服務兩大範疇的工作，以及機電業對香港的貢獻，還有效地宣傳機電安全、節能環保和科技應用的信息，對推廣智慧城市起積極作用。

環境局常任秘書長唐智強先生在開幕禮上表示，香港的機電安全表現一直穩居世界前列，而過去十年香港的能源強度下降超過26%，是政府、業界和市民共同努力的成果。機電嘉年華正好喚起市民關注環保和機電安全，對傳承這份信念十分重要。

除了遊戲攤位、展覽和舞台表演外，嘉年華現場還設置「機電業歷史展廊」，回顧機電署和機電業界在過去數十年為香港機電發展作出的貢獻。



大會安排多姿多彩的表演項目，例如魔術、花式跳繩、兒童舞蹈等，教市民目不暇給。

The Carnival features a wide variety of spectacular performances, such as magic show, rope skipping, children dancing, etc.

The EMSD is committed to developing and promoting Hong Kong as an environmental friendly, safe, and smart city. Jointly organised by EMSD and the Hong Kong Institution of Engineers and with support of the trade, the E&M Carnival 2018 was held at the EMSD Headquarters on 20 and 21 January 2018, which attracted nearly 12 000 visitors. This large-scale educational programme not only enhanced public understanding of the work of our Regulatory Services and Trading Services, as well as the contributions of the E&M trade to Hong Kong, but also effectively disseminated the message of E&M safety, energy efficiency, environmental protection and application of technologies, playing an active

role in promoting Hong Kong as a smart city.

Officiating at the opening ceremony, Permanent Secretary for the Environment, Mr. Donald Tong, said that Hong Kong has always been at the forefront of E&M safety performance across the globe. Over the past decade, the energy intensity in Hong Kong has been reduced by more than 26%, which is the fruit of joint efforts of the Government, the trade and the public. The E&M Carnival has successfully aroused public concern over environmental protection and E&M safety, which is of great help in passing on this belief.

In addition to game booths, exhibitions and stage performances, the Carnival also featured E&M Trade Historical Collections to review the contributions made by EMSD and the trade to the development of E&M services in Hong Kong over the past few decades.



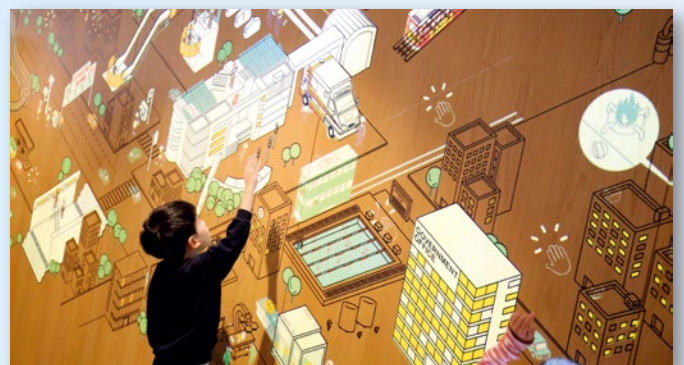
遊戲攤位以「機電安全、節能環保和科技應用」為主題，深受市民歡迎。With the theme of E&M safety, energy efficiency, environmental protection and technology application, the game booths are well-received by the visitors.

## 「機電·夢飛翔」展覽館開幕 Grand Opening of EMSD Gallery

**嘉**年華首日，位於機電署總部大樓的「機電·夢飛翔」展覽館亦正式開幕。展覽館設有不同主題的展區，並利用一系列生動有趣的互動展品和遊戲，讓參觀人士遊歷機電旅程，從而認識機電署與城市發展的歷史和關係，以及機電署為市民、各政府部門及公營機構提供的服務，同時獲取機電安全、能源效益及機電行業的就業情況等資訊，廣收宣傳教育之效。

The first day of the Carnival also saw the official opening of the EMSD Gallery at the EMSD Headquarters. The Gallery

features a variety of themed exhibition areas, utilising interesting interactive exhibits and games to take visitors on an E&M journey, exploring the history of and relationship between EMSD and the urban development, as well as understanding EMSD's services provided for the public, various government departments and public organisations. The Gallery also provides information on E&M safety, energy efficiency and career information of the E&M trade for publicity and education purposes.



公眾人士可於「機電·夢飛翔」展覽館開放時間（星期一至五：上午9時30分至下午4時30分，公眾假期除外）內參觀設施，享用自助導賞服務。

The EMSD Gallery is now opened to general public during Mondays - Fridays from 9:30 a.m. - 4:30 p.m. (except public holidays) for self-guided tour.



# 機電業博覽2018吸納生力軍

## “E&M Gear Up!” at Electrical and Mechanical Trades Expo 2018



在博覽會上，機電署署長薛永恒先生(中)呼籲業界積極推動創新科技及為行業注入新活力。

At the Expo, Mr. Sit Wing-hang (middle), the Director of Electrical and Mechanical Services, urges the trade to actively promote the development of innovation and technology, and to inject new vitality into the industry.

隨着創新科技迅速發展、嶄新技術廣泛應用，機電業的工作範疇日趨多元化，加上未來將持續進行多項大型基建工程，機電業的發展潛力巨大，正是年青一代投身這個行業的最佳時機。

為推動香港機電業發展，機電工程署聯同香港機電業推廣工作小組於2月1日至4日在教育及職業博覽中舉辦機電業博覽2018，並在2月2日的「機電工程日」舉行「機電工程新力量」系列講座，邀請業界代表介紹機電業最新的培訓、職業發展前景和晉升機會，為行業吸納新血。

機電工程署署長薛永恒先生在講座開幕禮致辭時表示，政府提出大力發展創新科技，加上國家的「一帶一路」和「粵港澳大灣區」建設，香港的大型基建工程將日益蓬勃。他鼓勵有志的年青人加入機電行業，共同構建香港的未來。

在博覽會現場，我們利用不同的應用程式設計遊戲，包括本署成功研發的「建築信息模擬—資產管理」系統，讓參加者體驗科技如何協助維修保養醫院的中央空調系統。我們又透過機電常識問答遊戲，讓參加者獲取印有其肖像的機電飛虎隊隊員證，藉此提升他們對投身機電業的興趣和使命感。此外，展覽攤位吸引不少學生、家長及其他公眾人士參觀，他們踴躍查詢投身機電業的途徑。

香港機電業推廣工作小組由本署與業界18個機構、工會及商會組成，致力促進機電業的可持續發展。

With the rapid development of innovation and technology as well as extensive use of novel technologies, the scope of work in the E&M industry has become increasingly diversified. Meanwhile, a number of major infrastructure projects will continue to proceed in the coming years, showing huge potential for the development of the E&M industry. It is now the best time for young people to join the industry.

To promote the development of the E&M industry in Hong Kong, EMSD and the Hong Kong E&M Trade Promotion Working Group jointly hosted the E&M Trades Expo 2018 at the Education & Careers Expo between 1 and 4 February. A seminar series entitled “E&M Gear Up!” was also held on the E&M Day on 2 February. Representatives of the industry were invited to introduce the latest information on training, career

透過虛擬實境器材，參加者親身體驗由機電署自行研發的嶄新技術「建築信息模擬—資產管理」系統，以了解樓宇的各種資產管理和電子系統經整合後，如何提升故障維修的效率和質素。Through the virtual reality equipment, visitors experience the new technology of the BIM-AM system developed by EMSD, gaining a better understanding of how the integration of various asset management and electronic systems in a building enhances maintenance efficiency and quality.



prospects and promotion pathways of the E&M trade, with a view to attracting new talents to the industry.

Addressing the opening ceremony, the Director of Electrical and Mechanical Services, Mr. Sit Wing-hang, said that the Government was committed to the development of innovation and technology. With the country's Belt and Road Initiative and the Guangdong-Hong Kong-Macao Bay Area Development, there would be an increasing number of major infrastructure projects in Hong Kong. He encouraged aspiring young people to join the E&M industry to build the future of Hong Kong together.

At the Expo, we designed games with different applications, including the Building Information Modelling – Asset Management (BIM-AM) system that we developed, to enable audience experience how technology could help maintain the central air-conditioning system at a hospital. We also conducted E&M quizzes and awarded every participant an E&M A-Team membership card with his/her portrait printed on it. Through these activities, we hoped to arouse young people's interest in joining the industry and their sense of commitment. Moreover, the exhibition booth attracted a large number of students, parents and other members of the public who were eager to obtain information about ways of joining the industry.

The Hong Kong E&M Trade Promotion Working Group, formed by EMSD and 18 trade organisations, unions and associations, is committed to promoting the sustainable development of the E&M industry.



# 用心服務 同心共創 跨越70載

## Caring, Serving and Co-creating for 70 Years and Beyond

**機**電工程署與香港一起成長，邁步向前，至今70載。二次大戰後，香港百廢待興，當時政府基礎設施的維修工程由工務局負責，及至1948年，工務局轄下的機械處、電氣處和運輸處合併成為機電處，也就是機電工程署的前身。我們的工作範圍，包括為政府部門及公營機構提供機電工程服務，以及執行安全條例和規管工作。在1982年架構重組後，機電處正式成為今日的機電工程署。

今年是機電工程署成立70周年。我們會繼續努力，用心服務，精益求精，並以新思維、新科技，持續優化機電工程服務，與客戶和業界為市民同心共創，致力推動香港成為一個低碳智慧城市。早前，我們舉辦了70周年標誌及標語選舉、紀念影片拍攝及機電嘉年華，未來將陸續推出一連串慶祝活動，包括「尋根之旅」活動、機電青少年大使周年大會、機電青少年大使工作影子日、70周年紀念典禮暨顧客服務中心開幕、機電科技研討會等等，誠邀大家一起參與。

監督昂坪360纜車的安全運作  
Monitoring of safety in the Ngong Ping 360 operation



The Electrical and Mechanical Services Department (EMSD) has grown and moved forward with Hong Kong for 70 years. In the aftermath of World War II, Hong Kong had to be rebuilt from ruins. At the time, the Public Works Department was responsible for the maintenance works of the Government's infrastructure. In 1948, the Mechanical, Electrical, and Transport Offices under the Public Works Department merged to form the Electrical and Mechanical Office (EMO), the predecessor of EMSD. Work of the EMO covered engineering services for government departments and public organisations, safety monitoring of the E&M facilities through law enforcement and regulatory services. After the organisation restructuring in 1982, the EMO officially became today's Electrical and Mechanical Services Department.

This year marks the 70th anniversary of EMSD. We will continue to serve from the heart and strive for excellence,



同事維修供電掣櫃  
Staff repairing the power supply switchboard

optimising our E&M engineering services with new thinking and new technologies. We will work together with our clients and the trade to create and promote Hong Kong as a low-carbon smart city. Earlier on, the 70th anniversary logo and slogan selection, commemorative video production, and E&M Carnival were organised to kick-start our celebration for the anniversary. Very soon, we will launch a series of celebration activities, including the Root-seeking Journey, E&M Young Ambassadors annual meeting, E&M Young Ambassadors Job Shadow Day, the 70th Anniversary Ceremony cum Opening of Customer Service Centre, EMSD Symposium, etc. You are cordially invited to join us.



為員工提供鍋爐檢修訓練以提高他們的操作和維修保養知識  
On-site training in boiler maintenance enhances staff's O&M knowledge



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