

機電傳聲 VOICELINK

二零一七年十二月 DECEMBER 2017 第四十五期 ISSUE 45



成就創科
Facilitating
Innovation
& Technology

機電工程署
EMSD



機電工程署（機電署）致力研究和開發創新技術，為客戶提供工程解決方案，提升生產力及效率，加強公共服務質素。作為業界與客戶之間的橋樑，我們積極與各界同行協作，鼓勵業界進行更多創新科技研發項目，並支持初創企業的發展及大學的科研項目，提供試驗場地及技術支援，以迎接未來種種機遇及挑戰。

The Electrical and Mechanical Services Department (EMSD) is dedicated to researching and developing innovative technology for provision of engineering solutions for clients, raising productivity and efficiency to enhance service quality for the public. As a link between the trade and our clients, we proactively connect and collaborate with different parties. We encourage the trade to develop more research projects on innovation and technology, and support development of start-ups and university researches by providing testing grounds and technical support to meet different opportunities and challenges ahead.

支援初創科研項目 開拓共享試驗平台

Supporting Start-up I&T Projects by Developing Shared Testing Platforms

在行政長官於2017年10月發表的《施政報告》中，其中一個施政重點是創新及科技。機電署積極配合這項政策，支持初創企業的創新科技項目發展。為此，機電署以支援初創企業為主題，於2017年11月28日舉行了傳媒聚會。機電工程署署長薛永恒先生在傳媒聚會上宣布推行試驗計劃，以總部大樓及其設施為試點，為與機電業及節能有關的初創企業，提供共享試驗場地作實際環境測試。除總部大樓外，機電署亦會為初創企業物色其他試用場地，盡快促成有關項目的實地試驗。試驗期間，我們亦會為研發機構提供專業意見，並協助量度和驗證科技的效用。

由於未來將推出更多支援創新科技的新措施，我們正構思成立「創新辦公室」，專責統籌相關事宜，以加快本地科技技術轉移的步伐。機電署亦正計劃開設網上創新科技協作平台，臚列政府與機電及節能有關的科技發展需求，以及初創企業提供的創新科技方案，以供配對。

創新科技日

2017年12月12日，機電署與香港科技園公司首次合辦「創新科技日」，邀請了多個政府部門、公營機構，以及12間來自科技園「科技創業培育計劃」的初創公司參與，並由初創公司以專題形式介紹它們的最新研發成果，包括樓宇智能化管理系統、能源效益風機組、再生能源發電機組、綜合三維技術、智能數據駕駛安全系統、機器人應用系統等。

「創新科技日」吸引逾200人參與，包括超過30位來自機場管理局、建築署、香港海關、懲教署、醫院管理局、立法會秘書處、海事處及運輸署等客戶部門的代表，會場座無虛席。與會者反應熱烈，踴躍查詢展出產品的設計原理及應用方法。我們期望透過這項活動，促進客戶部門、初創企業和機電署之間的相互交流，並探討初創企業的研發成果應用於客戶部門的可行性，與客戶共同支持和推動香港的創新科技發展。



參加者對創新科技產品及它們的設計原理及應用極感興趣。

Participants show keen interest in the I&T products and their design principles and applications.

我們樂意為客戶尋求合適的創新科技方案，如有興趣，請致電2808 3703與高級工程師李錦鴻先生聯絡。



機電署署長薛永恒先生在傳媒聚會時向記者介紹與機電署合作的初創項目。
Mr. Sit Wing-hang, Director of Electrical and Mechanical Services, introduces to the media the start-up projects jointly developed with EMSD.

機電署最近與數間大學及初創企業磋商合作試驗科研項目，其中一個例子是支持一間本地大學研發先進智能實時監測電池狀態系統。該產品於2017年11月22日發布，本署派出代表出席以示支持。The EMSD has been supporting universities and start-ups in collaborating on I&T projects recently. An example was the advanced and smart real-time battery monitoring system developed by a local university. The product was unveiled on 22 November 2017 and our representative attended its launch event to show our support.



In the Chief Executive's Policy Address delivered in October 2017, one of the policy initiatives is innovation and technology (I&T). The EMSD is actively implementing this policy by supporting the start-up projects on I&T. To this end, in the media gathering held on 28 November 2017 with the theme of supporting start-ups, our Director Mr. Sit Wing-hang introduced a pilot plan whereby our headquarters building and its facilities will be used by start-ups of the E&M trade and energy efficiency related industry as shared testing grounds to field-test novel technologies. In addition to its headquarters building, EMSD will also identify other trial venues for start-ups, so as to facilitate and expedite field tests of related projects. During the field tests, we will provide professional advice to research and development organisations and assist in measuring and verifying the effectiveness of the technologies.

To cope with the new measures for supporting the development of I&T projects in the future, we are preparing to establish an "Innovation Office" to co-ordinate related issues to speed up the pace of technology transfer in Hong Kong. The EMSD is also planning to set up an online I&T collaboration platform, listing the technology development needs of the Government in relation to E&M and energy efficiency as well as the I&T proposals from the start-ups for matching.

Innovative Technology Day

On 12 December 2017, EMSD and Hong Kong Science and Technology Parks Corporation (HKSTP) co-organised the first Innovative Technology Day, in which various government departments, public organisations and 12 start-ups from HKSTP's Incu-Tech Programme were invited to participate. Each start-up presented its latest research work on a range of different specialised subjects, such as smart building management system, energy-efficient fan coil unit, renewable energy generator unit, integrated 3D technology, smart data driving safety system, robotic application system, etc.

The Innovative Technology Day was packed with more than 200 participants, including over 30 representatives from client departments such as Airport Authority Hong Kong, Architectural Services Department, Customs and Excise Department, Correctional

Services Department, Hospital Authority, Legislative Council Secretariat, Marine Department and Transport Department, etc. Participants were eager to find out about the design principles and applications of the products on display. Through this activity, we hoped to promote experience exchanges among ourselves, our client departments and the start-ups. Together, we also explored the feasibility of applying the start-ups' fruits of research to our client departments – a joint effort to support and promote I&T development in Hong Kong.

We are delighted to explore appropriate I&T solutions for our clients. If you are interested, please contact Mr. Lee Kam-hung, Senior Engineer, at 2808 3703.



「創新科技日」會場座無虛席。
The Innovative Technology Day draws a full house.



引入先進科技 助客戶培訓人才

Help Client Train Maritime Talents with Advanced and Integrated Technology

機電署致力協助客戶部門培訓海事專才，提升他們的技術及為保障海上安全做好準備。我們為海事處訓練中心引進先進的科技和設備，並透過更新全功能船舶模擬器和船隻航行監察服務模擬器，幫助客戶部門訓練同事熟習海港交通控制及管理，以至應付緊急海上交通情況，保障本港水域安全。

我們和海事處訓練中心攜手合作，把不同品牌的模擬器內多個軟件系統和硬件設備整合。此舉除了使模擬器更可靠穩定外，還能充分發揮它們的功能和效用，用以培訓本地和國際學員操

控不同種類的船隻，提升香港在海事訓練領域的國際地位。

更新後的全功能船舶模擬器軟件，可同時整合和支援三組模擬船舶，提供不同情境的互動模擬訓練。當中影像投影機使用的LED光源不但環保、省電，其工作壽命更可長達10萬小時，是以往所用燈泡的25至30倍，還可節省維修時間和成本，大大增強系統的可用性能。

我們亦應用融合技術，將船隻航行監察服務模擬器軟件與全功能船舶模擬器服務軟件連結起來，讓兩個不同功能的模

擬器能夠實時互動和協同操作，為使用者提供複雜的綜合海事模擬訓練。

海事處訓練中心整個系統的更換及升級服務由四個合約項目組成，當中影像投影及顯示系統項目在少於一年半的時間內完成技術研究、招標、安裝及測試等工序。客戶部門對新系統和設備非常滿意，更對團隊的合作精神和項目管理深表讚賞。

我們樂意為客戶提供創新技術方案，如有任何查詢，請致電3757 6027與高級工程師彭國強先生聯絡。



一號訓練駕駛台：船舶模擬器透過軟件控制七台投影機，投射出210度視角的無縫接合外景影像，讓駕駛台的學員仿如在真實的海洋環境中駕駛。
Full Mission Bridge 1: The seven projectors controlled by the simulator via its software project 210-degree seamless panoramic images, giving trainees at the bridge an immersive sailing experience.

為了令操控更加靈活，現今的超大型郵輪都裝設這些先進的推進器。海事處訓練中心與時並進，是目前香港唯一設有這種360度迴轉推進器的地方，方便學員掌握最新的船舶操控知識。

Modern mega cruise ships are all equipped with advanced azimuth thrusters for better manoeuvring. Keeping up with the times, the Marine Department Training Centre is currently the only place in Hong Kong where such kind of 360-degree propulsion system can be found. It allows trainees to acquire the latest knowledge about steering vessels.





二號訓練駕駛台：由15台高清液晶顯示屏組成接合外景影像的船舶模擬器，提升海洋環境的仿真度，讓受訓者更有效學習。

Full Mission Bridge 2: An array of 15 high-resolution plasma display panels forms the simulator which stitches the panoramic images together to create a near real-life at-sea experience, making learning for trainees more effective.

The EMSD is committed to assisting our client department in training maritime professionals to enhance their skills and preparing them for maintaining safety at sea. By introducing advanced technology and equipment to the Marine Department Training Centre and updating its Full Mission Ship Simulator and Vessel Traffic Services Simulator, we helped our client department train and acquaint their staff with knowledge about harbour traffic control and management and emergency handling to ensure safety in Hong Kong waters.

In collaboration with the Marine Department Training Centre, we integrated multiple software systems and hardware equipment within the simulators of different brands. The integrated technology not only makes the simulators more reliable and stable, but also gives full play to their functionalities and achieves the highest efficacy, enabling local and international trainees to learn to control different types of vessels. These integrated simulators

have elevated Hong Kong's international status in the field of maritime training.

The upgraded Full Mission Ship Simulator software can simultaneously integrate and support three training bridges to perform interactive simulation training in different scenarios. The LED light sources in the video projectors are environmentally friendly and power saving. They can last up to 100 000 hours, 25 to 30 times that of the conventional bulbs used in the past. They save time and cost in maintenance, greatly strengthening the usable capacity of the systems.

We also applied integration technology to link the software of the Vessel Traffic Services Simulator and Full Mission Ship Simulator together. These two simulators with different functionalities can interact in real time and work in co-ordination to provide users with complex and comprehensive scenario simulation training.

The replacement and upgrade exercise of the entire system at the Marine Department Training Centre consists of four contract projects, of which the video projection and display system project - encompassing procedures from technical study, tendering, installation to system testing - was completed in less than one and a half year. Our client department was very satisfied with the new system and equipment and greatly appreciated our team's collaboration spirit and project management quality.

We are happy to provide our clients with innovative technical solutions. For any enquiry, please contact Mr. Pang Kwok-keung, Senior Engineer, at 3757 6027.



創新技術應付工程挑戰 勇奪顧問工程師協會年獎

EMSD Recognised by ACEHK Annual Awards for Innovative Techniques to Overcome Engineering Challenges

機電署採用創新的專業技術來應付工程期間的種種挑戰，順利克服為啟德發展區區域供冷系統鋪設海底管道的困難，並憑此在香港顧問工程師協會的首屆年獎比賽中勇奪「整體最佳大獎」。這既是對我們卓越工作的認可，亦是對團隊解難能力的肯定。頒獎禮在2017年11月20日舉行，當日邀得運輸及房屋局局長陳帆先生及發展局常任秘書長（工務）韓志強先生分別作主題演講和頒發獎項。

啟德發展區區域供冷系統第三期（組合甲）的工程項目在建造過程中遇到不少挑戰，包括如何將冷凍水由系統的南廠輸送至位於啟德明渠進口道另一岸邊的香港兒童醫院。我們利用全港直徑最大的隧道鑽挖機，以無坑頂管法於海牀下放置兩條直徑2.8米的套筒，再在裏面鋪設兩條冷凍水水管。這項全港首創的海底工程的最大挑戰，在於我們須在整個鑽挖過程中不斷密切監測鑽挖方向及進度，並確保前方沒有任何障礙物，工程技術要求極高。我們在項目中首次引入製冷量高達5 000冷噸（17.5兆瓦）的製冷機組，規模屬全港最大。

在整個啟德發展區區域供冷系統完成後，每年料可節省高達8 500萬度電，相當於減少排放59 500公噸二氧化碳。樓宇接駁這系統後，亦可節省安裝製冷機組的建設費用，估計約佔總建築成本的5至10%。美國、新加坡，以及歐洲和中東多國已廣泛採用區域供冷這項技術，特區政府亦正積極研究於本港其他新發展區加以採用。



香港顧問工程師協會頒授的「整體最佳大獎」表揚我們團隊的專業解難能力。

The ACEHK "Overall Best Award" recognises our team's professional problem-solving capability.



副署長/規管服務賴漢忠先生（左一）及總工程師/能源效益B陳柏祥先生（左二）代表本署出席香港顧問工程師協會的頒獎禮，並從發展局常任秘書長（工務）韓志強先生（左三）手上接過獎項。

Mr. Lai Hon-chung, Deputy Director/Regulatory Services (1st left), and Mr. Chan Pak-cheung, Chief Engineer/Energy Efficiency B (2nd left), attend the ACEHK Annual Awards Presentation Ceremony on behalf of EMSD and receive the award from Mr. Hon Chi-keung, Permanent Secretary for Development (Works) (3rd left).

In the inaugural Annual Awards of the Association of Consulting Engineers of Hong Kong (ACEHK), EMSD was awarded the "Overall Best Award" for our effort in adopting innovative and professional techniques to successfully tackle numerous challenges and problems encountered in the laying of the subsea pipelines for the District Cooling System (DCS) at Kai Tak Development (KTD). This is a recognition of our excellent work and an affirmation of our team's problem-solving capability. The Annual Awards Presentation Ceremony was held on 20 November 2017. Mr. Frank Chan, Secretary for Transport and Housing, and Mr. Hon Chi-keung, Permanent Secretary for Development (Works), were invited to deliver a keynote speech and present the awards respectively.

The DCS at KTD Phase III (Package A) project met with a host of challenges, one of which was to supply chilled water from DCS South Plant to the Hong Kong Children's Hospital on the other side of the Kai Tak Approach Channel. By employing the city's largest tunnel boring machine, two sleeve pipes measuring 2.8m in diameter were laid below the seabed by trenchless pipe jacking method, with two chilled water pipes installed within each sleeve pipe.

The biggest challenge of this first-of-its-kind subsea pipe jacking work is that close monitoring of the direction of advancement and progress is required throughout the entire jacking operation, and that it must be ensured that the path of the tunnel boring machine should be clear of obstacles, a task that necessitates an exceptionally high level of engineering technique. In addition, we installed a chiller plant of 5 000 refrigeration tonnes (17.5 megawatt of refrigeration cooling capacity) for the first time in the project, the largest of its kind in Hong Kong.

Upon the completion of the entire DCS at KTD, an estimated 85 million kWh in electricity consumption can be saved every year, that is equivalent to a reduction of 59 500 tonnes of carbon dioxide emission per annum. By connecting to the DCS, user buildings can save on installing their own chillers and the associated equipment, which accounts for 5 to 10% of the total building cost. DCS has been widely adopted in other parts of the world, such as the United States, Singapore, and many European and Middle Eastern countries. The SAR Government is also actively studying the possibility of adopting the DCS in other new development areas in Hong Kong.

「建築信息模擬 — 資產管理」系統 獲歐美國際會議讚賞

BIM-AM System Wins Unanimous Acclaim in Europe and US International Conferences

機電署一直投入大量資源研發和推廣創新科技，與業界一起朝高科技方向發展。我們研發的「建築信息模擬 — 資產管理」(BIM-AM) 已於較早前取得香港專利，並且獲得國際組織的重視和肯定。繼去年參加美國得克薩斯州的「自動化科學與工程會議」後，我們今年再遠赴歐洲和美國，出席國際會議發表論文，並與外國專家互相交流，藉以推廣BIM-AM項目，提高香港機電業在國際市場的地位。

今年10月，國際知名的技術會議BILT EUR (Building Infrastructure Lifecycle, supported by Technology Europe) 於丹麥舉行，機電署在會議上發表題為《建築信息模擬和資產管理在有效操作和保養方面開創新局面》的論文，獲與會嘉賓一致讚賞。BILT EUR 致力發展 BIM 在工程和建築行業的應用，只有高水平並且原創的技術論文才會獲邀發表。

另外，我們早前發布的白皮書《新世代綜合資產管理系統與建築信息模擬》獲美國歐特克大學青睞。該大學從數以百計的BIM項目中挑選了我們研發的BIM-AM項目，並邀請我們出席今年11月舉行的「歐特克大學拉斯維加斯2017」會議，跟與會者分享我們的寶貴經驗。

在這兩次國際會議中，我們亦率先發布新訂的BIM-AM標準及指引。有關標準及指引已於今年11月正式推出，並上載於以下網頁供業界及客戶參考：

[http:// www.emsd.gov.hk/en/engineering_services/project_management_consultancy/highlights_of_work/bim_am/index.html](http://www.emsd.gov.hk/en/engineering_services/project_management_consultancy/highlights_of_work/bim_am/index.html)

透過參加這些活動，我們的BIM-AM項目給國際專家和業界留下深刻印象，這對如何在資產管理上應用建築信息模擬有積極推動作用。

客戶如欲知道更多關於BIM-AM系統的資料，歡迎致電2808 3593與我們的高級工程師陳賀賢先生聯絡。



BIM-AM 團隊代表在BILT EUR 2017上發表論文。
Our BIM-AM team representative delivers a presentation at BILT EUR 2017.

The EMSD has been devoting considerable amount of resources in the development and promotion of innovative technologies, and working with the trade to move towards advanced technology. Our Building Information Modelling – Asset Management (BIM-AM) System, which was granted a patent in Hong Kong earlier, has been well received and highly recognised by various international organisations. Subsequent to the "Conference on Automation Science and Engineering" held last year in Texas, the United States, we presented papers at different international conferences in Europe and the United States this year. Through exchanges with foreign experts, we were able to promote the BIM-AM project and help elevate the profile of Hong Kong's E&M industry in the international market.

At the BILT EUR (Building Infrastructure Lifecycle, supported by Technology Europe) held in Denmark in October 2017, EMSD presented a paper entitled "Breaking New Ground in BIM and Asset Management for Efficient Operations and Maintenance", winning unanimous acclaim from all participants. The BILT EUR is an internationally renowned technical conference dedicated to the development of BIM applications in the engineering and construction sectors. Only original and technical papers of high standard will be invited to be presented at the conference.

Earlier we published a white paper entitled "Next-Generation Integrated Asset Management System with Building Information Modelling" and caught the eye of the Autodesk University of the United States. Our BIM-AM project was then selected from among hundreds of other BIM projects, and we were invited to attend the "AU LAS VEGAS 2017" Conference held in November 2017 to share our valuable experience with the participants.

In both conferences, we also shared our newly developed BIM-AM Standards and Guidelines, which were officially released in November 2017 and uploaded to the following webpage for reference by the trade and our clients:

[http:// www.emsd.gov.hk/en/engineering_services/project_management_consultancy/highlights_of_work/bim_am/index.html](http://www.emsd.gov.hk/en/engineering_services/project_management_consultancy/highlights_of_work/bim_am/index.html)

By participating in these events, we have impressed international experts and the trade with our BIM-AM project. This brings about a positive effect on promoting application of building information modelling in asset management.

For more information on BIM-AM System, please feel free to contact Mr. Steve Chan, Senior Engineer, at 2808 3593.

全天候機電服務 隨時候命

E&M Services Always There

機電署事事未雨綢繆，做好防禦工作，時刻把機電系統維護得宜。憑着可靠穩妥的公共機電設施，市民的生命財產和安全都能得到保障。每當遇到緊急事故，我們的緊急事故控制中心便會發揮積極作用，密切監察機電設施的運作，並迅速作出應變。今年8月，超強颱風「天鴿」吹襲本港，緊急事故控制中心靈活調動內部工程隊伍，並與其他政府部門通力合作，應對挑戰。有賴各同事緊守崗位，克盡己職，損毀的公共機電設施在颱風後已迅速恢復正常運作。

「天鴿」襲港期間，本港曾懸掛十號颶風信號。雖然市面看似平靜，但是風暴潮碰上天文大潮，令水位大幅上升四米，本港不少機電設施因而遭受不同程度的破壞，當中包括繁忙街道的交通燈、七條嚴重水浸的行人隧道，以及六個位於港九、新界及離島渡輪碼頭的可升降登船舷梯。

緊急事故控制中心採取有效的應變措施，例如統籌內部工程隊伍，協調人手及工作；與運輸署協調，在八號熱帶氣旋警告信號仍然生效期間，爭分奪秒維修受損的交通燈；提供抽水設施，協助路政署在水浸的行人隧道抽走積水，以盡快修復隧道內的照明系統；以及派遣工程人員趕赴各個碼頭，日以繼夜進行搶修。



23.8.2017

「天鴿」襲港期間，多個渡輪碼頭的可升降登船舷梯損毀嚴重，我們在翌日早上市民上班前迅速修復，使渡輪服務得以回復正常運作。

The boarding gangways at a number of piers were severely damaged under typhoon Hato. Our colleagues worked diligently to restore them so that the ferry service could resume in the next morning before people went to work.



24.8.2017

機電署有能力應付任何緊急事故，而且具備所需的工程技巧和經驗，可就各大小事故作出判斷，採取最迅速和適當的應變措施，保障市民的生命安全。

The EMSD always plans ahead and prepares for the worst. We keep the public E&M systems properly maintained at all times. With reliable E&M facilities, public safety as well as people's lives and properties are well protected. In case of emergency, our Emergency Control Centre plays an active role in closely monitoring the operation of E&M facilities and making prompt responses. In August this year when super typhoon

機電署獲頒亞太區「區域能源項目獎」

EMSD Wins the Regional Energy Project of the Year Award for the Asia-Pacific Region

機電署一直透過應用新科技，為客戶部門推行不同的節能減排方案，以減少能源消耗和提升能源效益。今年9月，機電署聯同醫院管理局（醫管局）獲美國能源工程師學會頒發亞太區「區域能源項目獎」；另外，機電署亦獲得亞太區「區域能源管理機構獎」，表揚我們在能源管理方面的傑出成績。

要達到《香港氣候行動藍圖2030+》減少碳排放的目標，政府牽頭至為重要。自2015年起，我們與醫管局合作引入創新的能源管理項目，把多間醫院的老化冷氣機組更換為磁浮式變頻製冷機，並委託香

港科技大學核實有關項目的成本效益，結果顯示每年可節省超過1 300萬千瓦小時的耗電量。

是次獲獎能鼓勵業界考慮採用高效能製冷機，我們亦會繼續推動業界引入高效能機電設備，共同實現節能目標，為環保出力。

客戶如欲了解更多有關高效能製冷機的應用及成效的資料，歡迎致電3155 4003與高級工程師張敏婕女士聯絡。

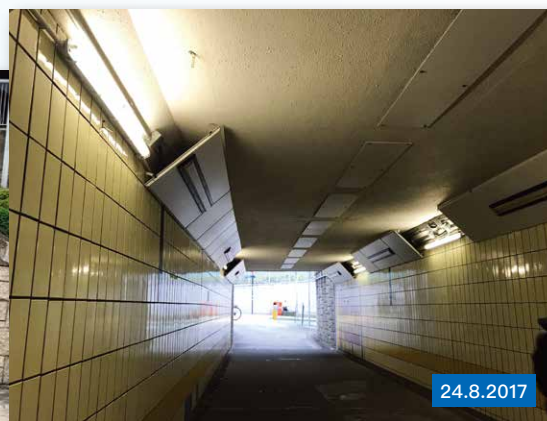
Over the years, EMSD has been helping our client departments implement different energy-saving and emission-reduction solutions through the application of new technology so as to reduce energy consumption and enhance energy efficiency. In September this year, EMSD and the Hospital Authority (HA) jointly received from the Association of Energy Engineers the Regional Energy Project of the Year Award for the Asia-Pacific region. Also, EMSD won the Regional Institutional Energy Management Award for the Asia-Pacific region, commending our outstanding performance in energy-management programme.



23.8.2017



24.8.2017



24.8.2017

+10

Hato hit Hong Kong, our Emergency Control Centre mobilised our internal engineering teams effectively and collaborated closely with other government departments in rising to the challenges. Thanks to the dedication and perseverance of various colleagues, the damaged public E&M facilities were quickly restored after the typhoon.

During Hato's visit, Hurricane Typhoon Signal No. 10 was hoisted. Although Hong Kong looked calm, the storm surge was further intensified by the

astronomical tide, raising the sea water level by four metres. As a result, many of the E&M facilities were damaged to varying degrees. They included traffic lights on busy streets, seven severely flooded pedestrian subways, and boarding gangways at six ferry piers across the territory.

The Emergency Control Centre took such effective contingency measures as liaising with our internal engineering teams to co-ordinate manpower and work; collaborating with the Transport

颱風令一條逾2.5米高的行人隧道幾乎被水淹沒，裏面的照明系統完全浸壞。我們抽走積水後，為市民提供緊急照明服務。

Due to the typhoon, a 2.5-metre high pedestrian subway was almost completely submerged and the whole lighting system inside was damaged. We pumped out the water and provided emergency lighting to serve the public.

Department to race against time to repair damaged traffic lights while the Tropical Cyclone Warning Signal No. 8 was still in force; providing pumping facilities to assist the Highways Department in clearing water from flooded pedestrian subways so as to repair the lighting inside as quickly as possible; and sending engineering staff to various piers to carry out urgent repairs around the clock.

The EMSD is capable of coping with any emergency. Equipped with the necessary engineering skills and experience, we are able to make sound judgements in response to any emergency, no matter big or small, and take the most appropriate actions in no time to protect public safety.

To achieve the carbon emission reduction target set out in Hong Kong's Climate Action Plan 2030+, it is essential that the Government takes a leading role. Since 2015, we have been co-operating with HA to introduce innovative energy-management projects. We replaced the aged air-conditioning units in a number of hospitals with magnetic bearing variable speed chillers and engaged the Hong Kong University of Science and Technology to verify the cost-effectiveness of the projects. It is concluded that an annual electricity consumption of around 13 million kWh has been saved.

The award encourages the trade to consider the use of high-efficiency chillers, and we will continue to promote the adoption of high-efficiency E&M equipment by the trade to achieve energy-saving targets and contribute to environmental protection.



For more information on the application and effectiveness of high-efficiency chillers, please contact Ms. Jovian Cheung, Senior Engineer, at 3155 4003.

機電工程署署長薛永恒先生（右三）聯同醫管局高級行政經理（工程）源柏樑先生（左二）出席在美國亞特蘭大舉行的頒獎典禮，接受亞太區「區域能源項目獎」。

Mr. Sit Wing-hang, Director of Electrical and Mechanical Services (3rd right), and Mr. Yuen Pak-leung, Senior Manager (Engineering) of HA (2nd left), attended the presentation ceremony in Atlanta, the United States and received the Regional Energy Project of the Year Award for the Asia-Pacific region.

為飛機庫更換消防系統 成效顯著

Replacement of Hangar's Fire Services System Achieves Remarkable Results

機電署致力提升工程技術服務，匯聚不同專才組成各個智囊團，協助同事積極回應客戶的需要。我們熟悉客戶的場地和設施，因此亦能提供可行的工程解決方案。以政府飛行服務隊總部飛機庫的消防系統為例，為了減少系統誤鳴的頻率，我們秉持以客為本的原則提出解決方案，並於兩個多月內完成安裝新的消防系統。該套系統安裝至今約半年時間，並沒有出現誤鳴，成效顯著，贏得客戶信賴。

上述飛機庫處於通風的開放式環境，消防系統原來使用普通的點式熱力感應器容易受天氣影響，曾於去年發生多次誤鳴事故，而在春季天氣潮濕時，誤鳴情況尤為頻密，對政府飛行服務隊的運作造成影響。我們的機場及車輛工程部與消防裝置智囊團一同研究，最後提出改用線式熱力感應器的專業建議，順利協助客戶圓滿解決問題。

線式熱力感應器安裝於高達15米的飛機庫頂部，並連接飛機庫牆身的控制箱，以收發訊號。感應器表層的防水塑膠物料可抵禦潮濕天氣，而裏面的導電體則作為傳感元件，能探測沿線任何位置的熱力。當溫度達到攝氏68度或以上，感應器的絕緣體便會熔化，使連接的控制箱立即傳送火警警報訊息到中央消防控制板，從而發出火警警報。安裝新的消防系統後，誤鳴事故已顯著減少，足見我們能為客戶提供更優質的服務。

客戶如欲了解更多有關使用線式熱力感應器的消防系統的資料，歡迎致電 2183 6558與高級工程師廣輝先生聯絡。



我們為政府飛行服務隊總部飛機庫安裝的線式熱力感應器可靠耐用，特別適合通風的開放式環境。

The linear heat detectors installed in the hangar of the GFS Headquarters are reliable and durable, especially fit for open and ventilated environment.

The EMSD is committed to enhancing the engineering and technical services provided. By forming various think tanks comprising experts from different disciplines, we are able to help our colleagues respond proactively to clients' needs. As we are familiar with clients' venues and facilities, we can also offer feasible engineering solutions. Taking the example of reducing the frequency of unwanted fire alarms in the hangar of the Government Flying Service (GFS) Headquarters, we adhered to the customer-oriented principle in providing solutions and completed the installation works of a new fire services system in an expedited period of two months. Now it has been about half a year since its putting into service, and there has been no more unwanted fire alarms. This significant achievement has earned the client's trust.

Located in an open environment with natural ventilation, the hangar used the conventional point-type heat detectors originally which are easily affected by weather. As a result, unwanted fire alarms occurred several times last year and took place frequently during humid spring season, affecting the operation of GFS. Our Airport and Vehicle Engineering Division worked closely with our Think Tank on Fire Services Installations to come up with a professional recommendation that linear heat detectors should be used, and thus helped the client solve the problem successfully.

The linear heat detectors are installed 15-metre high up on the ceiling of the hangar and connected to the controller mounted on the wall of the hangar so as to send and receive signals. The entire set of linear heat detectors are encased with waterproof polymer which resists humid weather. They also use conductors as sensing elements which can detect the heat at any point along their length. When the temperature reaches 68°C or above, the insulator of a linear heat detector will melt. Its connecting controller will immediately transmit a fire alarm message to the main fire control panel to set off the fire alarm. After installation of the new fire services system, the number of unwanted fire alarms has decreased significantly, demonstrating that we are able to provide better quality services to the client.



政府飛行服務隊總飛機工程師余力臻先生(左四)與機電署總工程師/機場及車輛工程高志聰先生(中)視察新的消防系統，該系統的成功獲客戶高度讚揚。
Mr. Yee Lek-chun (4th left), Chief Aircraft Engineer of GFS, and Mr. Ko Chi-chung (centre), Chief Engineer/Airport and Vehicle Engineering of EMSD, inspect the new fire services system. The client greatly appreciates the performance of the new system.

For more information on the fire services system using linear heat detectors, please contact Mr. Ching Kwong-fai, Senior Engineer, at 2183 6558.

為政府建築物定期檢測電力裝置讓客戶安心

Periodic Inspection, Testing and Certification for Government Building Electrical Installations Brings Peace of Mind

定期檢測固定電力裝置，有助確保電力的可靠供應，減少電力事故，防患於未然。根據《電力(線路)規例》的規定，公眾娛樂場所、製造或貯存危險品的處所、高壓固定電力裝置所在的處所等須每12個月最少作一次檢測(包括檢查、測試及發出證明書)，而規例所列的其他樓宇的固定電力裝置則須每五年最少作一次檢測。為保障公眾安全和客戶資產，機電署一向以身作則，除做好維修保養外，亦為政府建築物的固定電力裝置定期安排檢測，好讓客戶安心。

最近，我們為政府總部、機電署總部大樓和大埔空氣質素監測站完成固定電力裝置檢測。以政府總部為例，各大樓內有很多決策局和部門都年中無休，即使到晚上甚至假日還繼續為市民服務，所以要安排一個可以停電以進行電力裝置檢測的時段是非常困難的。為確保政府服務不受影響，我們早在兩年多前已開始策劃，詳細了解各電力裝置的設計和運行模式，與建築署和政府總部大樓內各部門代表舉行多次跨部門會議，並按風險評估制訂周詳的檢測計劃和應變方案，分階段、分區域進行電力裝置檢測，最終順利完成所有檢測，其間沒有對政府總部大樓、行政長官辦公室和立法會綜合大樓的運作帶來任何影響。

政府建築物是服務市民的場所，我們會主動配合客戶運作，定期為固定電力裝置安排檢測。此外，為預防電力意外和保障公眾安全，機電署亦一直積極向私人建築物業主推廣定期檢測的重要性，並執行相關的規例。

如客戶對固定電力裝置檢測有任何查詢，歡迎聯絡高級工程師林詩薇女士(電話：3155 4301)。

Periodic Inspection, Testing and Certification (PITC) for fixed electrical installations can serve as precautionary measures to ensure reliable electricity supply and minimise the instance of electrical accidents. According to the Electricity (Wiring) Regulations, fixed electrical installations located at a place of public entertainment, premises for the manufacturing or storing of dangerous goods, or premises with a high voltage fixed electrical installation shall be inspected, tested and certified at least once every 12 months. Meanwhile, fixed electrical installations of other buildings as prescribed in the Regulations shall be inspected, tested and certified at least once every five years. To ensure public safety and safeguard clients' assets, EMSD has taken the lead to properly maintain government buildings and has conducted PITC for their fixed electrical installations to offer clients peace of mind.

Recently, we have completed PITC for fixed electrical installations of the Central Government Complex, the EMSD Headquarters and the Tai Po Air Quality Monitoring Station. Taking the Central Government Complex for example, the buildings house various bureaux and departments, many of which serve the public seven days a week throughout the year. They are at the public's service even at night or during holidays. This makes allocating a time slot to suspend power supply for conducting inspection of electrical installations particularly difficult. To ensure government services remain unaffected, we began planning more than two years ahead, conducted detailed research on the designs and modes of operation of the electrical installations, organised numerous inter-departmental meetings with



我們為政府總部完成電力裝置檢測，確保相關的電力設備順利運作，保障公眾安全。

We completed PITC for the Central Government Complex to ensure proper operation of the electrical facilities and protect public safety.

representatives of the Architectural Services Department and various bureaux and departments at the Central Government Complex, formulated comprehensive inspection plans and contingency solutions based on risk assessments, and carried out PITC in phases and on a zone-by-zone basis with all of them completed successfully in the end. The operations of the Central Government Complex, the Office of the Chief Executive and the Legislative Council Complex were not affected at all throughout the process.

Government buildings are venues where services are provided to the public. We have always initiated PITC for the fixed electrical installations with our clients in view of their operations. Moreover, to prevent any electrical accident and ensure public safety, EMSD has been proactively promoting the importance of PITC to owners of private buildings, and enforcing the Regulations.

Should clients have any enquiry on PITC for fixed electrical installations, you are welcome to contact Ms. Janet Lam, Senior Engineer, at 3155 4301.

政府總部建築羣由政府總部、行政長官辦公室和立法會綜合大樓組成，已於今年順利完成五年一次的固定電力裝置檢測。

This year, the Central Government Complex, which comprises the Central Government Offices, the Office of the Chief Executive and the Legislative Council Complex, has successfully undergone the quinquennial PITC for fixed electrical installations.



「機電嘉年華2018」 E&M Carnival 2018

「機電嘉年華2018」將於1月20至21日在機電署總部舉行，是本港推廣機電安全、節能環保和科技應用的大型公眾教育活動，適逢機電署在2018年慶祝成立70周年，活動亦加入了周年紀念的元素。

機電嘉年華節目內容豐富，包括饒富教育意義的攤位遊戲、兒童手工藝坊、遊樂玩意及團體表演等。此外，我們亦會在總部大樓地下大堂設置「機電業歷史展廊」，展示機電署和機電業界過去數十年為社會服務的珍貴歷史照片和資料，讓嘉賓和市民更深入地了解與市民生活息息相關的機電業和回味箇中點滴。為向公眾推廣機電安全、節能環保和科技應用，全新的「機電・夢飛翔」展覽館將正式開幕，歡迎市民參觀。

另外，「機電嘉年華2018」網上問答比賽亦由即日起至2018年1月10日舉行，歡迎大家踴躍參加，答中有關機電安全和能源效益的問題，便有機會贏取豐富獎品。欲知有關詳情，請登入以下的機電嘉年華網址瀏覽：

<https://www.emsd.gov.hk/minisites/carnival2018>

E&M Carnival 2018, one of Hong Kong's largest public educational activities promoting E&M safety, energy conservation and technology application, will be held from 20 to 21 January 2018 at the EMSD Headquarters. The year 2018 marks the EMSD 70th anniversary, so elements of our anniversary could also be found from the carnival as well.

The E&M Carnival will feature various activities including educational game booths, children handicraft workshops, recreational games and group performances. At the lobby on the ground floor of the headquarters building, there will be an exhibition "E&M Trade Historical Collections", showcasing precious photos and literature on the work contributed by EMSD and the E&M trade over the past few decades. Guests and members of the community can learn more about the E&M trade and reminisce about how it has played a crucial part in our daily lives over the years. To promote E&M safety, energy efficiency and technological application to the general public, the brand new EMSD Gallery will be officially opened to the public.

Meanwhile, the E&M Carnival 2018 online quiz is running until 10 January 2018. Please visit <https://www.emsd.gov.hk/minisites/carnival2018> for details of the carnival and stand a chance of winning valuable prizes by answering some questions about E&M safety and energy efficiency.



人事廣角鏡 Staff Movement



陳志偉先生
Mr. Chan Chi-wai

陳志偉先生自2017年10月9日起，調任署理機電工程署助理署長/3，主管企業支援及業務發展科，負責為機電工程營運基金制訂企業策略和計劃，以及負責部門的培訓發展。陳先生亦全面管理所有中央支援服務，以推動部門在客戶服務、市場推廣及業務支援等方面的工作，並直接管理部門的合約顧問事宜。

Effective 9 October 2017, Mr. Chan Chi-wai has been appointed as Acting Assistant Director/3 to take charge of the Corporate Support and Business Development Branch. He is responsible for the formulation of corporate strategies and plans for the Electrical and Mechanical Services Trading Fund and the Department's training development. Mr. Chan also provides overall management of all central supporting functions, facilitating the departmental work in customer services, marketing and business support, as well as direct management of contract advisory matters.

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（bssd@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（bssd@emsd.gov.hk）與我們聯絡。

Your opinion is very important to our continuous improvement in VoiceLink! If you have any comments or feedback for the newsletter, please do not hesitate to let us know anytime. If your colleagues are interested in receiving our newsletter and want to subscribe it, feel free to e-mail or fax us at bssd@emsd.gov.hk or 2882 1574, and we will add them to our list. In case you wish to remove your name from our newsletter mailing list, or to update your information in the future, please e-mail to bssd@emsd.gov.hk.

機電傳聲

出版：機電工程署 業務發展部
電話：(852) 2333 3762
傳真：(852) 2882 1574
網址：www.emsd.gov.hk
電郵：bssd@emsd.gov.hk

VoiceLink

Published by: Business Development Division, Electrical and Mechanical Services Department
Telephone: (852) 2333 3762
Facsimile: (852) 2882 1574
Website: www.emsd.gov.hk
E-mail: bssd@emsd.gov.hk

機電工程署
EMSD

