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現在構建未來
THE FUTURE IS NOW

全民節能

機電工程署
EMSD

現在構建未來
協力為政府建築全面節能
The Future is Now
Help Save Energy in Government Buildings

機電工程署作為大部分決策局和部門的維修保養代理，最能協助政府建築物節省能源。

最近公布的「香港都市節能藍圖2015~2025+」提到，行政長官在今年的施政報告承諾，政府的新目標是在未來五年，把政府建築物的用電量，在運作環境相若的基礎上減少5%。這措施可讓政府繼續推展綠色運動，實現進一步節能，以在本港加強推動低碳和優質的建築環境。

宏觀來看，自1850年以來，全球氣溫已上升約攝氏一度，帶來極端天氣及嚴重影響生態系統。由於溫室氣體增加，香港也從19世紀末開始出現明顯的暖化趨勢。

發電是溫室氣體排放的主要來源，佔排放量約七成，而建築物就佔用電量約九成。為節約能源及應對氣候變化帶來的負面影響，政府自2003年起率先在政府建築物推行節能減耗措施，並已節省超過16%的用電量。

鑑於每年使用超過50萬度電的主要政府建築物約佔所有政府建築物總用電量的九成，當局會在2017-18財政年度或以前，為344幢這類主要政府建築物進行能源審核，以尋求節能機遇和推行綠色建築措施。在環境局撥款資助下，機電署會在2015-16財政年度，為用電量最高的150幢政府建築物安排進行能源審核。

機電署也於今年6月，為各決策局和部門的環保經理和能源監察員舉辦多場能源審核簡報會，作為持份者教育活動之一。簡報會旨在協助參加者編製能源報告、進行能源審核和落實各項慳電設施，包括良好的管理與其他相關節能項目。此外，我們也會為各決策局和部門提供協助和顧問合約樣本，方便他們聘用能源審計顧問。

對於無須管理主要政府建築物的決策局和部門，我們也會鼓勵他們參考機電署出版的各種慳電指引，以及有助節約能源的建議管理措施和最佳做法。

我們歡迎各決策局和部門查詢有關能源審核的事宜，並樂意提供專業和技術支援。請聯絡您的機電署客戶經理。

建築信息模擬(BIM)先導項目贏得業界獎項
BIM Pilot Project Wins Industry Award

機電工程署在建造業議會最近舉辦的「2014卓越建築信息模擬獎」中，以在總部大樓推行的一項先導計劃贏得「BIM創新建造獎」，再次證明我們在創新思維和應用技術方面的領導地位，備受業界認同，也彰顯了我們在建造業界的典範角色。

先導計劃於2014年在機電署總部大樓展開，目的是測試如何透過BIM技術，把資產管理(AM)系統、流動平台與電子系統結合應用的可行性。是項先導計劃是發展局所委託的任務，藉以研究BIM技術在建築物管理和維修保養方面的應用和潛在優點。

我們在先導計劃過程中進行的電腦模擬，清楚顯示了BIM-AM綜合模式的優點，如對事故處理速度更快、工作流程效率更高和文檔管理更為妥善等。先導計劃現時已進入第三階段，我們正與系統供應商加緊協作，開發BIM-AM綜合資訊管理平台，供客戶部門於今年年底試用。

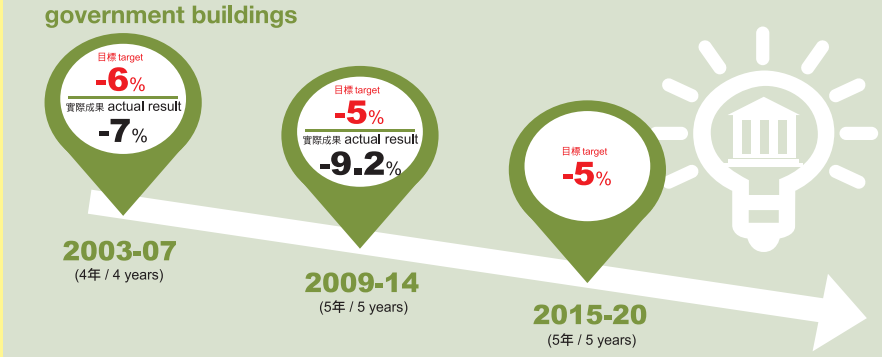
今次的BIM業界比賽，旨在表揚建造業從業員成功運用BIM技術及流程，優化整個設計、建造、操作與維修保養及項目管理的卓越成果。我們的先導計劃，既有啟發性的創新思維，又能改善建造業的生產力及可持續性，因而獲獎。

贏得「BIM創新建造獎」鞏固了我們在建造業界的領導地位。總工程師/機場及車輛工程詹建洪先生(左三)、署任總工程師/綜合工程梁穎康先生(左)及高級工程師/工程策劃陳賀賢先生(左二)，代表機電署領獎。

Winning the "Construction Innovator by BIM" award strengthens our leadership in the construction industry. Mr. Lo Kin-hung, Chief Engineer/Airport and Vehicle Engineering (3rd from left), Mr. Leung Wing-hong, Acting Chief Engineer/General Engineering Services (left) and Mr. Steve Chan Hor-yin, Senior Engineer/Project (2nd from left) receive the award on behalf of EMSD.

政府建築物節電目標及實際節電成果

Reduction targets and actual reduction on electricity consumption for government buildings



機電署會為用電量最高的150幢政府建築物安排進行能源審核，實現進一步節能，以在本港加強推動低碳和優質的建築環境。

EMSD will manage the energy audits for the top 150 government buildings to achieve further energy savings, so as to foster a low-carbon and quality built environment in Hong Kong.

As the maintenance agent of most Government bureaux and departments (B&Ds), EMSD is in a good position to help government buildings save energy.

As mentioned in the recently promulgated "Energy Saving Plan for Hong Kong's Built Environment 2015~2025+", the Chief Executive in his Policy Address this year has pledged the new target of 5% saving in electricity consumption for government buildings under comparable operating conditions in the coming five years. The initiative aims to enable the Government to continue its green drive to achieve further energy savings, so as to foster a low-carbon and quality built environment in Hong Kong.

For a broader perspective, it should be noted that global temperature has increased by about 1°C since 1850 and brought about extreme weather and adverse effects on ecosystems. Locally, Hong Kong has also experienced a significant warming trend beginning from the late 19th century as a result of increasing greenhouse gas emissions.

Electricity generation is a major source of greenhouse gas emissions in Hong Kong, accounting for about 70% of the emissions, while buildings account for about 90% of the electricity consumption. To conserve energy and combat the negative effects of climate change, the Government has been taking the lead to reduce electricity consumption in government buildings by over 16% since 2003.

As major government buildings with annual electricity consumption of over 500,000 kWh account for about 90% of total consumption of all government buildings, energy audits will be conducted for 344 such major government buildings by FY2017-18 with a view to identifying opportunities to enhance their energy saving performance and green building measures. EMSD will manage the energy audits for the top 150 government buildings in FY2015-16, with funding provided by the Environment Bureau.

As part of a stakeholder education exercise, EMSD has also organised several briefings in June 2015 for green managers and energy wardens of B&Ds to facilitate their preparation of energy reports, energy audits and the implementation of electricity saving measures, including good housekeeping measures, as well as related projects. We shall also provide assistance and make available sample consultancy agreements to B&Ds to facilitate their engagement of energy audit consultants.

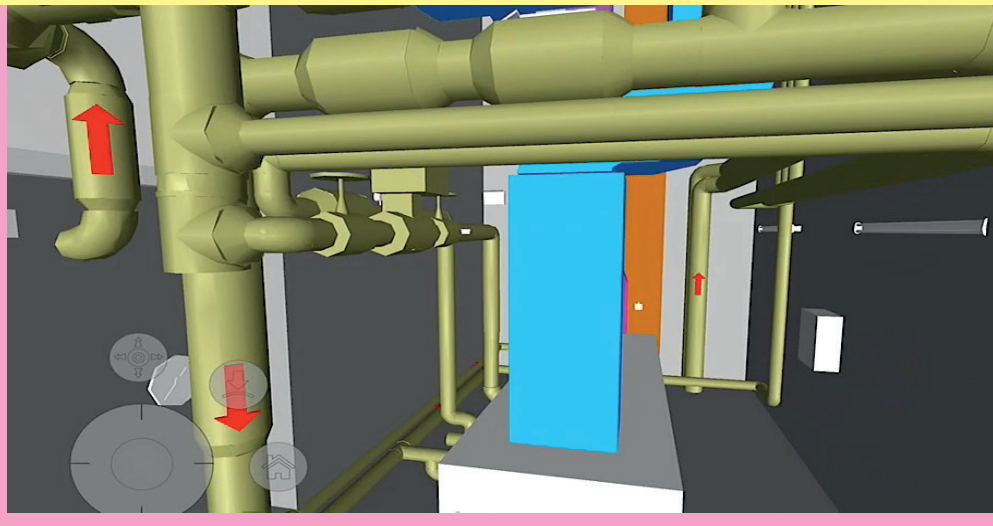
As for B&Ds which do not have major government buildings under management, they are encouraged to adopt the electricity saving measures in EMSD publications, as well as the recommended housekeeping measures and best practices for energy saving.

EMSD welcomes any questions from B&Ds on energy audits and is happy to offer our professional and technical support. Please contact your respective client managers for assistance.

EMSD has won the "Construction Innovator by BIM" award for a pilot project at its headquarters in the latest "Building Information Modelling (BIM) Excellence Awards 2014", organised by the Construction Industry Council. The win demonstrates once again EMSD's leadership in innovative thinking and technology application, and underscores our role as a trade model in the construction industry.

The pilot project began in 2014 at EMSD Headquarters to test the feasibility of integrating our asset management (AM) system, mobile platform and electronics system using BIM. The pilot was carried out as Development Bureau's commission for EMSD to study the feasibility and potential benefits of applying BIM to the operation and maintenance of buildings.

Workflow simulations conducted during the pilot clearly showed the potential benefits of a BIM-AM model, such as faster response to handle incidents, improved workflow efficiency and better documentation. We are now in the third phase of the pilot project, working closely with contractors to build a BIM-AM integrated platform for trial runs by client departments by end of this year.



機電署總部大樓設施的BIM模型。

BIM model of facilities in the EMSD Headquarters building.

The BIM Award competition aims to commend construction practitioners who have spearheaded successful efforts in the harnessing of BIM technology and processes to further design, construction, O&M and project excellence. The EMSD project was selected for its inspiring innovative thinking and improved productivity and sustainability in construction.

新版《電動車輛充電設施技術指引》

New Technical Guidelines on Electric Vehicles Charging Facilities

機電工程署全力支持政府協助推廣使用電動車的環保政策，以改善路邊空氣質素和減少由傳統內燃發動機的汽車所排放的溫室氣體。

為配合本港的電動車增長，電動車充電基礎設施是不可缺少的。由於電動車輛充電設施屬於固定電力裝置，因此必須符合《電力條例》（第406章）及其附屬規例的相關安全規定。我們於2011年公布了《電動車輛充電設施技術指引》（《技術指引》），協助電動車使用者、註冊電業承辦商、以及註冊電業工程人員了解不同的充電設施。

隨着科技進步，較新款的電動車都裝備了更先進和更高功率的車載充電器。在2014年，《技術指引》工作小組就《電動車輛充電設施技術指引》進行檢討，並建議多項更新。

新版《技術指引》提供了電動車充電設施的國際和國家標準的最新資訊，以及對其主要部件的要求；而《技術指引》內容則參考了大部分香港電動車支援的IEC 61851 標準（即國際電工技術委員會標準）內的傳導充電模式3。與充電模式1相比，模式3可節省充電時間多達60%。新版《技術指引》亦增加了充電模式3專用的插座和插頭等照片。

新版《技術指引》已於2015年4月出版，並可從這個連結下載：
http://www.emsd.gov.hk/emsd/c_download/pps/pub/Charging_Facilities_Electric_Vehicles.pdf

香港大部分電動車都可以支援IEC 61851標準的傳導充電模式3充電。
IEC 61851 Mode 3 conductive charging is supported by most electric vehicles in Hong Kong.

EMSD supports the Government's environmental protection policy on the promotion of wider use of electric vehicles (EVs) in Hong Kong to help improve roadside air quality and reduce greenhouse gas emissions from conventional combustion engine vehicles.

The development of an EV charging infrastructure is essential to complement the growth of EV quantity in Hong Kong. Essentially, EV charging facilities are fixed electrical installations and shall comply with the relevant safety requirements of the Electricity Ordinance (Cap. 406) and its subsidiary regulations. Therefore, a set of Technical Guidelines on Charging Facilities for Electric Vehicles (the Technical Guidelines) was promulgated in 2011 to help EV users, registered electrical contractors, and registered electrical workers understand the setting up of different charging facilities.

With the advancement of technology, newer EV models are now equipped with more advanced and higher power on-board chargers. In 2014, the Working Group on the Technical Guidelines conducted a review and recommended certain updates to the Technical Guidelines.

The new Technical Guidelines provide the latest information on international and national standards as well as the requirements of the major components of electric vehicle charging facilities. Reference is made to using IEC 61851 Mode 3 conductive charging as it is supported by most electric vehicles in Hong Kong. The charging time with Mode 3 can be reduced by as much as about 60% as compared with Mode 1. Photos illustrating Mode 3 charging with dedicated sockets and plugs have been also added to this edition.

The new edition of the Technical Guidelines was launched in April 2015 and can be downloaded from this link: http://www.emsd.gov.hk/emsd/e_download/pps/pub/Charging_Facilities_Electric_Vehicles.pdf.

IEC 61851充電模式3使用符合IEC 62196標準的專用插座和插頭，可傳送更高的充電電流，節省充電時間多達60%。
Using IEC 61851 Mode 3 charging together with dedicated plugs and sockets conforming to IEC 62196 can deliver a higher charging current, and hence a shorter charging time by as much as about 60%.

無線電轉發站加強海域安全

Off-air Repeater Station Enhances Maritime Safety

機電工程署致力以最新的應用科技，協助客戶解決問題。最近的例子是向香港海關建議設置「無線電轉發站」，這是本港首項同類設施，能為偏遠海域提供無線電覆蓋，消除通訊盲點。新的轉發站有助打擊海上走私活動，大大提升了本港的海域安全。

這項目是「統一數碼通訊平台」（統一平台）優化計劃的一部分。我們受委託為該優化計劃提供設計和管理服務。統一平台是香港警務處為保障公眾安全而設立的跨部門無線電通訊系統。除了香港警務處，香港海關、醫療輔助隊、消防處、衞生署及保安局都是統一平台的當前用戶。一旦發生事故，各用戶部門便可透過統一平台作更好的協調，進行聯合行動，從而節省時間和提升資源調配效率。

為促進海事安全，加強執法以打擊非法活動，實有迫切需要擴大統一平台的海上覆蓋面。該平台的地面覆蓋雖已相當廣泛，但海域覆蓋仍見不足。

「無線電轉發站」有助消除統一平台的部分海域盲點，為用戶帶來裨益和便利。轉發站既創新又具成本效益，儘管在設計過程中遇到很多困難，例如電源、接駁、頻譜、電磁干擾和現場安裝的問題等，但最終都能成功落實。

我們為「無線電轉發站」採用現有的室內覆蓋設計，並首次應用「干擾抵消系統」，節省百份之百的頻譜資源。同時，由於我們利用現有建築物裝設轉發站，無須加建，大大減少建築廢料和對自然環境的破壞。

為記錄和分享裝設「無線電轉發站」的經驗，我們撰寫了論文，參加香港工程師學會的「年輕工程師/研究員傑出論文獎2014」比賽。該文與機電署另一篇關於香港交通燈系統的文章，已同時入選以刊登於香港工程師學會期刊 *HKIE Transactions*。

我們將嶄新的「干擾抵消系統」技術應用到新的「無線電轉發站」，以改善「統一數碼通訊平台」的海上覆蓋面，大大增強本港的海域安全和執法工作。
We applied the latest technology of ICS to the new off-air repeater station to improve UDCP sea coverage on local waters, greatly enhancing maritime safety and law enforcement.

EMSD is committed to helping customers solve any problems by applying cutting-edge technology. A recent example was recommending to the Customs and Excise Department (C&ED) to install an innovative off-air repeater station, the first of its kind in Hong Kong, to provide radio coverage for critical communication in remote seawater areas which were previously blind spots. The new station has helped combat smuggling activities, greatly enhancing security on local waters.

The project was part of the improvement work of the Unified Digital Communications Platform (UDCP), for which we were engaged to provide design and administration services. UDCP is a shared system developed by the Hong Kong Police Force (HKPF) for critical radio communication among government departments for public safety. In addition to the HKPF, the C&ED, the Auxiliary Medical Service, the Fire Services Department, the Department of Health and the Security Bureau are the current users of UDCP. UDCP enables user departments to better collaborate and undertake joint operations, saving time and allocating resources more efficiently.

In view of the increasing demand for maritime safety and law enforcement against illegal activities, there is an imminent need to improve the sea coverage of UDCP, which already has extensive coverage on land but limited coverage at sea.

Our work on the off-air repeater station has helped eliminate part of the UDCP blind spots at sea and benefitted its users. The outdoor station is innovative and cost effective, and was successfully implemented in spite of the many difficulties such as power supply, connectivity, frequency spectrum, electromagnetic interference and on-site installation challenges.

We applied to the station the existing concept of indoor coverage design and used for the first time an Interference Cancellation System (ICS), thereby saving 100% of the spectrum resources. Construction waste and damage to the natural environment were also much reduced during project implementation, as the existing building was utilised and no additional structure had to be built.

To document and share the project experience, we made a submission to the HKIE Outstanding Paper Award for Young Engineers/Researchers 2014. The paper was accepted together with another EMSD paper on Traffic Signal System for publication in the *HKIE Transactions* journal.

首獲公德地盤金獎
First Gold Considerate Contractor Site Award

機電工程署祝賀我們的承辦商，在由發展局及建造業議會合辦的「第21屆公德地盤嘉許計劃」中獲獎，並首次獲得金獎。

今年共有四項由機電工程署監督的合約得獎，分別是金獎、銅獎和兩個優異獎，全屬於維修、保養、改建及加建的工務工程合約獎項類別。得獎承辦商在工地的良好作業方式，體現出高度注重公德的態度，以及安全、健康及環保的作業方式，獲得嘉許。

機電工程署致力推動承辦商在地盤時刻保持公德表現，締造安全、健康及環保的工作環境，並減少對鄰近居民造成的滋擾。我們嚴格挑選承辦商，並詳細審核他們的安全措施及過去安全表現；我們更鼓勵承辦商盡量利用先進科技，保持高水平的工作安全，以便為我們客戶的設施提供無間斷的維修服務。

今次奪得金獎的合約，服務範圍是為多個政府場地的升降機及自動梯，提供全面的保養和維修服務。值得注意的，是該承辦商為這項工程合約開發的兩項饒具創意的嶄新安全措施。

第一項是為提升前線員工安全而設計的移動傳應器程式：如前線員工在工作中靜止活動超過一段時間，他的手提電話即會自動發放求救訊息和準確位置給上司，以確保承辦商在最短時間內作出救援。

第二項安全措施是鋼索自動檢測系統：系統以鐳射束準確檢測鋼索的操作情況，如有問題，系統會發出訊號停止升降機服務，讓乘客可即時在附近樓層安全地疏散；至於升降機則必須經相關工程師檢查及確定鋼索沒問題後，才可恢復操作。藉着先進科技的應用，升降機的安全和可靠程度得以提升。

Congratulations to our contractors who won the first gold as well as other awards in the recent “21st Considerate Contractors Site Award Scheme”, jointly organised by the Development Bureau and Construction Industry Council. The Gold Award was the first gold that our contractors have ever won in this scheme.

Four EMSD contracts were presented with a Gold Award, a Bronze Award and two Merit Awards, all under the Repair, Maintenance, Alteration and Addition category of public works contracts. The four winning contractors were recognised for their highly considerate attitude as well as good work practices in site safety, health and environment.

EMSD is committed to promoting a considerate attitude among our contractors, which is vital to good site safety, health and environmental performance, and reduction of nuisance to the neighbourhood. We go through a vigorous selection process before a contractor is engaged in our work, which invariably involves vetting their safety systems and past safety performance. We also encourage our contractors to utilise advanced technology, where practicable, to maintain a high level of work safety in order to provide uninterrupted maintenance services for our clients’ facilities.

The Gold Award went to a contract for the comprehensive maintenance and repair of lift and escalator installations at various government premises. Two innovative safety measures developed by the contractor are noteworthy.

The first is a mobile app for motion detection for the safety of the frontline staff. If a worker fails to move for a certain time at work, an alert message with the worker’s exact location will be sent via his smart phone to the supervisor for immediate rescue.

The second safety measure is a wire rope condition monitor, which uses laser beam to detect wire rope operating condition of the lift accurately. Should abnormality be detected, the device would send signals to the lift to stop at the nearby landing, so that passengers can be released safely. Lift service is resumed only after a thorough check-up of the rope by the respective engineer to clear any problems. Lift safety and reliability are therefore enhanced by utilising the latest advanced technology.

創新的移動傳應器程式，會於前線員工在工作期間靜止活動一段時間後，即自動透過其手提電話，向上司傳送求救訊息和員工的準確位置，以確保承辦商在最短時間內作出救援。
The innovative mobile app for motion detection will, if a frontline worker fails to move for a certain time at work, automatically send an alert message with the worker’s location via his smart phone to the supervisor for immediate rescue.

「升降機遙距監控系統」試點計劃
Pilot to Test Remote Lift Monitoring System

機電署與承辦商的團隊緊密合作，應用最新的遙距監控技術，為升降機進行維修保養。試點計劃將有助業界提高服務質素。
EMSD and the contractor's teams work closely together to apply the latest remote monitoring technology to lift maintenance. The pilot scheme will help the trade improve service quality.

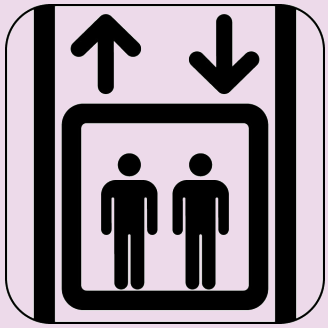
有見乘客對升降機安全及優質服務的要求不斷提高，機電工程署率先引進在日本廣泛應用的「升降機遙距監控系統」，並在2014年11月開展為期一年的試點計劃，測試該系統在香港的使用成效，冀能提高升降機的效率，減少操作故障與檢修時間，讓乘客享用更安全及便捷的升降機服務，從而把升降機的維修保養提升到新的更高水平。長遠來看，我們也希望新系統能把實地檢查和預防性維修次數，在個別的場地由每週一次續步減至每月一次，增加升降機使用效率，提升服務質素。

我們在順利紀律部隊宿舍進行有關試點計劃。順利紀律部隊宿舍共分八座，我們只在其中四座的升降機內裝置了「升降機遙距監控系統」，並把這些升降機的維修數據，例如停機時間，與另外四座並無裝置遙距監控系統的升降機作出比較。

「升降機遙距監控系統」的操作：在每部升降機內安裝了一個內置多個感應器的系統，24小時持續監測升降機的操作情況，並收集數據，例如開門速度、平層距離和制動系統表現等。這些實時數據會持續傳送到升降機承辦商的中央控制中心。工程師在中央控制中心內分析受監控升降機的數據，包括故障資料（如有）。系統一旦偵察到有故障，便會通知工程師，由工程師安排維修員工立即前往修理。

透過持續監控升降機的「健康」狀況，該系統也可協助工程師確定進行預防性維修的最佳時間，同時防患未然，在升降機出現故障前先行把問題找出並作出糾正，從而減少升降機的停機時間。

我們最近完成的試點計劃中期檢討，已顯示「升降機遙距監控系統」在提高維修效率方面有一定的成效，而整個試點計劃將於2015年10月底完成。



To meet the ever rising passengers' demand for safe and quality lift services, EMSD has taken the lead to introduce a remote lift monitoring system already well adopted in Japan. We began in November 2014 a one-year pilot scheme to test the effectiveness of the monitoring system in Hong Kong, with the aim of improving lift efficiency, reducing operation down time and trouble-shooting time, whilst enhancing passenger safety and convenience, so the new system will hopefully take our lift maintenance service to a new level. In the long run, we hope it will help reduce the frequency of on-site inspection and preventive maintenance visits, from weekly to monthly, for increasing the lift service availability as well as enhance service quality.

The pilot scheme was undertaken at Shun Lee Disciplined Services Quarters which has eight buildings. A remote monitoring system was installed in four buildings. Maintenance results, like down time of the lift operation, will be compared with lifts in the other four buildings not covered by the scheme.

How does the remote monitoring works. Inside each lift, there is a panel installed with many sensors, which continuously monitor the lift operation conditions and collect data, such as door opening speed, levelling distance and braking system performance. The real-time data are sent to the contractor's Central Control Centre (CCC). Engineers at the CCC analyse the data, and fault information if any, arising from the lifts monitored. Upon the spotting of a fault by the system, engineers are alerted so they can send technicians for immediate repairs.

With the "health" condition of the lifts constantly being monitored, the system also helps engineers determine the best timing for preventive maintenance, foresee and rectify problems well before lift failure occurs, eventually reducing the lift's down time.

The most recent interim review has already recorded some improvement on the lift maintenance efficiency. The pilot scheme will be completed at end of October 2015.

我們再次成功支援港島東醫院聯網的另一公立醫院 — 東華東院取得ACHS醫療認證，以為市民提供更優質可靠的醫療服務。

We once again helped another public hospital in HKEC, the Tung Wah Eastern Hospital in its ACHS accreditation, enabling it to deliver better and more reliable healthcare services to the community.

支援東華東院取得ACHS認證 促進良好伙伴關係

ACHS Accreditation Strengthens Partnership with Tung Wah Eastern Hospital

長期以來，機電工程署都是醫院管理局（醫管局）的緊密合作伙伴，特別在協助其屬下醫院取得質素認證方面，更是合作無間。在2010年，我們協助港島東醫院聯網的東區尤德夫人那打素醫院，取得澳洲醫療服務標準委員會（ACHS）醫療認證。最近，我們再一次成功支援聯網的另一公立醫院 — 東華東院（醫院）取得ACHS醫療認證，以為市民提供更優質可靠的醫療服務。

為協助院方順利通過ACHS認證考核，我們全面審視了該院的機電、空調和生物醫學工程設備，並且擬備了一份調查報告，提供適時、適切的跟進和長期改善建議，當中包括為消防喉轆而設的標籤系統，以及醫療氣體、通風、供電、供水和消防裝置的應急方案等。

在整個評核過程中，東華東院和機電署的工作團隊都為持續改善服務質素的共同目標而努力；雙方的伙伴關係更趨鞏固，溝通交流更為密切。機電署的團隊也在內部落實了工程服務的最佳作業措施，並且強化了工作程序和制度。

ACHS醫療認證已於2014年頒授予東華東院，表彰該院已達至ACHS的評核要求及質素改進標準，以及該院對持續提升護理質素、服務和安全水平的承諾。

我們很榮幸能成為醫管局質素認證的合作伙伴，我們定會不遺餘力，為醫管局提供優質的機電支援服務。

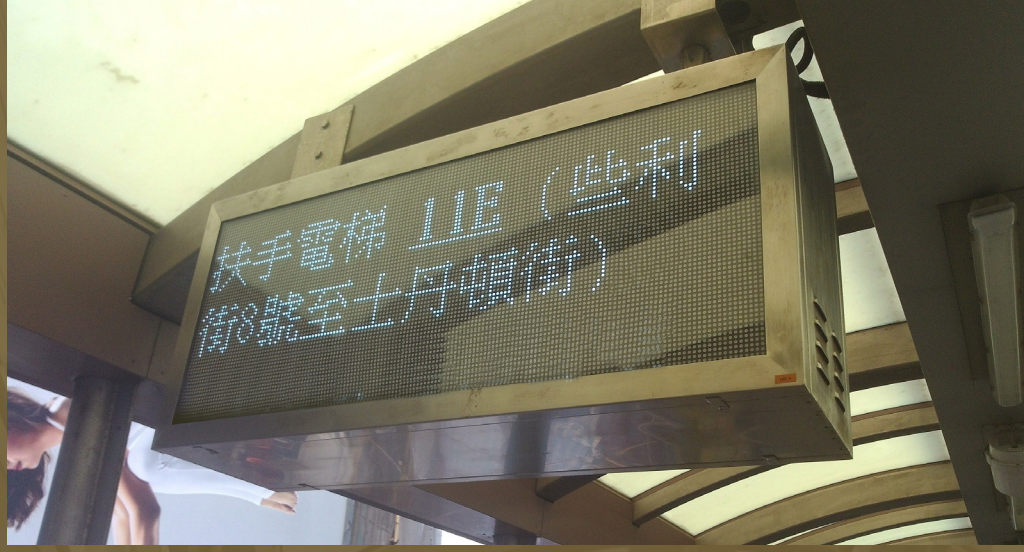
We have always been a close partner of the Hospital Authority (HA), especially in helping its hospitals achieve quality accreditation. In 2010, we supported the Pamela Youde Nethersole Eastern Hospital of the Hong Kong East Cluster (HKEC) to gain accreditation by The Australian Council on Healthcare Standards (ACHS). Recently, we once again helped another public hospital in HKEC, the Tung Wah Eastern Hospital (the Hospital) in its ACHS accreditation, enabling it to deliver better and more reliable healthcare services to the community.

To prepare the Hospital for accreditation, we conducted a comprehensive review of the engineering services for all its electrical, mechanical and air-conditioning systems and biomedical engineering services equipment. We also prepared a survey report, with appropriate follow-up and long-term improvement advice. Some of our recommendations included a tagging system for fire hose reel as well as emergency plans for medical gas, ventilation, power and water supply, and fire services systems.

The accreditation process strengthened the partnership between the Hospital and the EMSD team, as both were working towards the common goal of continuous improvement. Communication between the two parties has also improved. Internally, our EMSD team has implemented best practices for our engineering services, and strengthened the work procedures and management systems.

The ACHS accreditation was granted to the Hospital in 2014 in recognition of the accomplishment of the evaluation and quality improvement standards, and its commitment to continuous improvement of the quality of care, service and safety.

We are proud to be HA's partner in its quality journey of accreditation. We will uphold our commitment to supporting the Hospital in the provision of quality E&M services.



自動扶梯的LED顯示屏幕展示系統的操作情況，讓行人可以未雨綢繆。
An Escalator's LED display board shows the operation status of the system to enable pedestrians to plan their journey.

提升中環至半山自動扶梯系統服務

Enhance Services for Central-Mid-Levels Escalator and Walkway System

中環至半山自動扶梯系統（自動扶梯）於1993年啟用，全長超過800米，是世界最長的有蓋自動扶梯系統，每天服務逾85,000人次。自動扶梯最近更以其獨特創意，膺選美國有線電視新聞網(CNN)「世界七大最具型格的往來運輸工具」之一。

機電工程署由2014年9月開始，為自動扶梯引進全新的管理、操作和維修服務模式，市民使用該自動扶梯時如遇上任何問題，都可透過一站式服務迅速得到協助。設施管理公司現時在自動扶梯的現場控制室派駐人員24小時當值，為使用自動扶梯的市民即時提供協助。如有任何問題，控制室的工作人員會迅速有效地調動資源，讓問題快速得到解決。

這套新管理模式可讓我們善用資源，將非核心工作，例如自動扶梯的日常操作、維修保養、清潔和保安等外判予設施管理公司，從而專注於合約管理和監察工作。這與現時提升成本效益和運作效率的市場趨勢一致。

自動扶梯不僅是一種交通工具，更已成為香港的一個旅遊景點，故完善的設施管理服務對其高效操作至為重要。
Apart from serving as a mode of transport, the Escalator has also become a tourist attraction. Integrated facility management service is therefore vital to its efficient operation.

Opened in 1993, Central-Mid-Levels Escalator and Walkway System (the Escalator) is the longest covered escalator system in the world, at over 800 metres, transporting over 85,000 users every day. It recently received the accolade of CNN as one of the "Seven of the world's coolest commutes" for its creativity.

Effective September 2014, a new mode of management, operation and maintenance services has been introduced for the Escalator to enable members of the public to receive one-stop, speedy assistance with any questions they have about the Escalator. The facility management company now operates the 24-hour control room on-site, providing immediate assistance to Escalator users. Should any problems arise, staff at the control room will mobilise resources promptly and effectively to fix them.

Through the new management mode, we can put our resources to the best use by contracting all the non-core activities like daily operation, maintenance, cleaning and security services for the Escalator to a facility management company while we will focus on our contract administration and supervisory role. This is also in line with the market trend to improve cost and operation efficiency.

加強機電工作安全
Reinforce E&M Work Safety

在本年1月20至23日，機電工程署舉辦的「機電工作安全科技週」的亮點活動之一「機電工作安全科技研討會」，首次與安全設備展覽同時舉行。安全設備供應商在會場展示多款安全裝備，包括供中高位作業使用的安全平台、防墮裝置、電力安全裝備、個人防護裝備及工具等。

在研討會中，參與的講者包括機電承辦商都一致強調，採用「最佳職安健實務做法」對持續改善機電工作安全與健康至為重要。他們也在會上分享了各項創新安全技術及應用方法，這些技術和方法都可採納或發展為機電工作的最佳職安健實務做法。

作為主辦機構，我們的目標是透過科技應用，推動機電工作的最佳職安健實務做法，並特別聚焦於電力工作及在中高位作業的工作安全。機電署助理署長張國輝先生在研討會上指出，機電署的最新部門安全與健康政策，以「安全」作為提供機電服務的首要考慮。他強調業界必須積極尋找、制定並採用最佳職安健實務做法，以實踐持續促進機電工作安全的目標。

張先生還指出，所有有關機電工作安全的新技術及應用方法，都必須先經過徹底測試、比較及實用性評估，方可採納為最佳職安健實務做法以供廣泛使用。

The Work Safety Technology Seminar was one of the highlights of the Technology Week, organised by EMSD from 20-23 January. This was the first year that the Work Safety Technology Seminar was held in conjunction with the Safety Equipment Exhibition, in which suppliers showcased safety equipment, ranging from safety platforms for working-at-medium-height, fall protection devices, to electrical safety equipment as well as personal protection equipment and tools, etc.

Speakers, including E&M contractors, at the Work Safety Technology Seminar unanimously emphasised that adopting best Occupational Safety and Health (OSH) practices was critical to the continual improvement of E&M work safety and health. They also shared innovative safety technologies and applications which could be adopted as, or developed into, best OSH practices in E&M works.

As the event organiser, our objective was to promote the best OSH practices in E&M works through the application of technology, with particular emphasis on electrical safety as well as safety of works carried out at medium height. Speaking at the seminar, Mr. Cheung Kwok-fai, Assistant Director pointed out that according to the latest EMSD Safety and Health Policy, "safety" was accorded top priority in delivering E&M services. He noted that it was essential for industry practitioners to identify, formulate and adopt the best OSH practices to achieve continual improvement in E&M work safety.

Mr. Cheung also noted that new technologies and applications for E&M work safety must be tested and compared, and the practicality evaluation processes must be thoroughly conducted before their adoption as the best OSH practices for wider use.

這類梯台設有護欄和大面積的站立平台，為進行高處工作的工人提供一個穩定和安全的工作環境，減少人體下墮的風險。
This platform ladder provides a secure and safe working area for the workers while working at height, by providing guardrail and large standing area to reduce the risk of falling.

在安全設備展覽上展示了各項機電工作安全新設備。
The Safety Equipment Exhibition displayed new products for E&M work safety.

歷來最大工程合約
更換及提升船隻航行監察系統

Largest Works Contract to Replace and Upgrade Vessel Traffic System

機電工程署很榮幸得到海事處委託，為香港船隻航行監察服務系統（「航監系統」）的更換和提升工程，提供項目管理服務。整個項目的核准撥款達5.582億港元，當中更換和提升「航監系統」的工程合約金額為近4億港元，是機電署歷來為單一客戶部門批出的最大工程合約。

第一代「航監系統」早於1989年推出，我們當時已參與有關的項目管理工作；其後當「航監系統」於千禧年進行第二代更換和提升工程時，我們也是系統的項目經理。至於即將進行的工程，將會是「航監系統」持續發展的另一重要里程。

新的「航監系統」工程預計在2016年10月完成，該系統以最先進的科技設計，能滿足香港的國際港口在未來15年不斷增長的港口交通需要，同時符合最新的國際標準，有助海事處監察海上交通，加強香港水域內船隻航行的安全。

新「航監系統」採用最先進的技術和設備，包括雷達和自動識別系統及電子光學設備等，可在同一時間監察多達1萬艘船隻，數量相等於目前的兩倍。

隨着互聯網和資訊科技的進步，新「航監系統」與海事處的內部資訊系統會有更緊密的數據交換，從而減輕前線操作員以人手輸入數據的工作。此外，新系統還提供互聯網和移動裝置的瀏覽連接，方便海事處人員實時遙距監督香港水域的海上交通。在新的「航監系統」下，船隻監察將更為便捷，而文書工作亦可減少，讓系統的操作員可更專注提供海上交通資訊和航行建議，促進本港船隻航行安全。

EMSD is honoured to be entrusted by the Marine Department with project management services for the replacement and upgrading of the Hong Kong Vessel Traffic Services (VTS) System. With an approved funding of HK$558.2 million, and the contract sum for the VTS replacement project amounting to approximately HK$400 million, this is the largest works contract ever awarded by EMSD for a client department.

Our involvement with the VTS System goes way back to 1989 when its first generation was launched, followed by the implementation of the second generation in 2000, for which we were also the project manager of the replacement and upgrading work. The forthcoming work will be another milestone in the continued development of the VTS system.

Scheduled for completion in October 2016, the new VTS System has been designed with the most advanced technology to meet the growing traffic demands of our international port in the next 15 years. It will also comply with the latest international requirements to facilitate the Marine Department to monitor marine traffic and enhance navigational safety in Hong Kong waters.

The new VTS System will feature state-of-the-art technologies, including radar, automatic identification system, electro optics, etc., which can track up to 10,000 VTS participating vessels at one time, doubling the current capacity.

With the innovations in the Internet and information technologies, the new VTS System will have closer data exchanges with Marine Department's internal information system to minimise the need for manual data input by front-line VTS operators. It will also provide web and mobile interfaces for Marine officers' remote real-time monitoring of marine traffic in Hong Kong waters. Vessel tracking will be much easier, more efficient with less paper work. VTS operators may further concentrate their efforts on providing traffic information and advice to mariners to enhance maritime safety.

橫瀾島雷達站為香港東部水域進行船隻航行監察。
The radar on Waglan Island is for vessel traffic monitoring in the eastern sector of Hong Kong waters.

預防勝於治療
Prevention is Better than Cure

我們致力確保機電科技應用得當，安全可靠，以促進社會安全和提升市民生活質素。為此，我們竭力為客戶進行緊急維修，務求從速解決客戶問題。另一方面，我們堅信預防總是勝於治療，每有事故發生，定必立即進行調查，採取預防措施並制定預防指引，確保同類事故不再發生，好讓客戶安心。

去年10月在一座法院大樓發生的消防事故正可作為例子，展示我們的專業團隊如何迅速進行調查，找出故障成因，部署採取適切的後續預防措施，提升安全水平和優化服務。

該宗消防事故於下午發生，雖然火勢在半小時內被撲滅，但濃烈的燒焦煙味影響了三個法庭的運作。我們連夜趕工，去除燒焦煙味，確保受影響的法庭於翌日早上恢復正常運作。

我們進行調查後，發現該宗事故源於空調系統風櫃房內的諧波過濾器的電容部件出現問題，而有關故障極為罕見，在香港從未出現過。我們於是立即對相關產品採取了嚴格的預防措施，要求製造商檢測同一批次生產的諧波過濾器電容部件，以及提升未來的產品質素。

除此之外，我們亦在短時間內，就所有為客戶安裝和維修的諧波過濾器完成全面周詳的檢查，確保所有相關部件都安全可靠。我們並特地就那些諧波過濾器，特別是電容部件，研訂新的技術程序及定期預防性維修指引。

我們致力成為業界榜樣，努力落實各項良好做法和新技術，協助客戶為市民大眾提供更佳服務。

We are committed to enhancing the safety and quality of life of our community by ensuring that E&M technologies are harnessed in a safe and reliable manner.

As such, we strive to help customers fix problems by providing prompt emergency repair. But we also believe that prevention is always better than cure. That is why whenever an incident happens, our approach is to promptly investigate, take preventive action and develop preventive guidelines in order to avoid recurrence of similar incidents in future – all aiming to give customer the peace of mind.

A case in point is a fire incident in a court building last October. It demonstrated how our professional team took prompt action to investigate and identify the fault cause, and deployed appropriate follow-up preventive measures to enhance safety and our services.

The fire incident happened in the afternoon. Although the fire was extinguished within half an hour, the strong burnt smell still affected the operation of three court rooms. We worked overnight to remove the burnt smell and ensured that the affected courts could resume operation the next morning.

Investigation of the incident found that it broke out in the middle of the harmonic filter inside the air-handling unit room of the air-conditioning system, which involved a faulty capacitor with a rare defect never found in Hong Kong before. We immediately took stringent preventive measures targeting the related products and asked the manufacturer to check out other capacitors in the same batch, and to enhance the quality of future products.

Within a month, we completed an extensive and thorough inspection of all the harmonic filters installed and maintained for our customers, to ensure all related products were free of defects. Specific to the harmonic filters, we developed a set of new technical procedures and guidelines on regular preventive maintenance, particularly for the capacitor.

As we strive to become the industry's role model, we shall spare no efforts in implementing good practices and new technologies, in order to help our customers better serve the community.

我們在一個月內完成檢查所有已安裝的諧波過濾器，確保類似的消防事故不再發生。
We checked all installed harmonic filters within a month to prevent recurrence of similar fire incidents.

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。
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