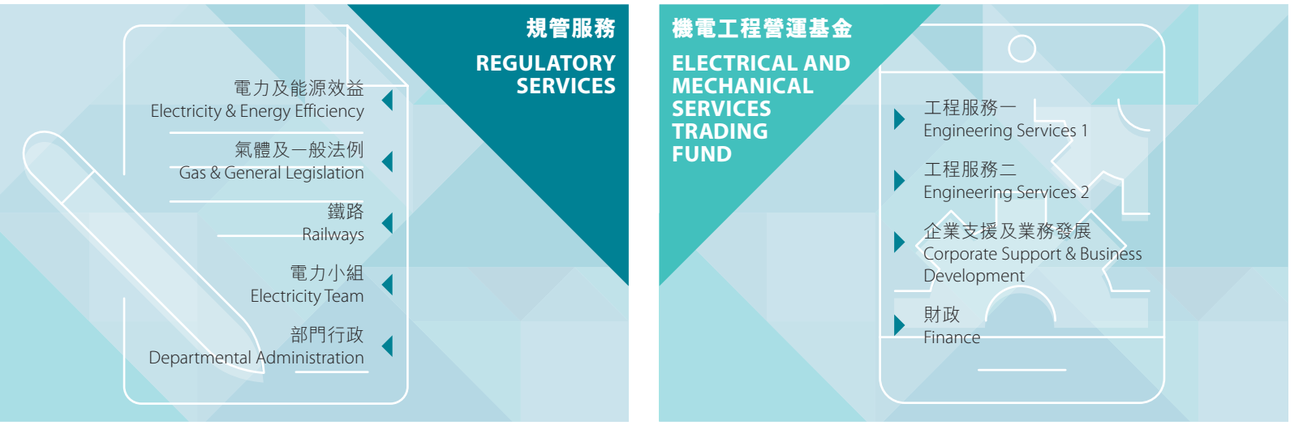
機電工程署
二零一六至一七年年報
Electrical and Mechanical Services Department
Annual Report 2016/17

同心惠民
CARING
People Together



機電工程署
EMSD

部門簡介及架構
Organisational Profile and Structure



機電工程署有兩個主要服務範疇，分別是規管服務及營運服務，後者也稱為機電工程營運基金（營運基金）。我們的職責包括為市民大眾確保機電安全、提高能源效益，亦為香港其他政府部門及公營機構提供機電工程服務。

The Electrical and Mechanical Services Department (EMSD) consists of two functional arms, namely Regulatory Services (RS) and Trading Services (TS). The latter is also known as the Electrical and Mechanical Services Trading Fund (EMSTF). Our responsibilities cover safeguarding electrical and mechanical (E&M) safety for the public and enhancing energy efficiency, as well as providing E&M engineering services for government departments and public bodies in Hong Kong.

我們的規管服務團隊由多個部別組成，每個部別負責不同界別的執法及公眾教育，以達致規管機電及氣體安全、鐵路安全及推廣能源效益的目的。規管服務團隊同時監管電力公司的技術表現及發展計劃，以及在有需要時，為政府的安全和環保計劃及活動提供專業及技術支援。

Our RS team comprises a number of divisions with each specialising in different areas of law enforcement and public education in E&M, gas and railway safety, as well as promotion of energy efficiency in the community. The RS team also monitors the technical performance and development plans of the electricity supply companies. To support the Government's safety and environmental programmes and initiatives, professional and technical expertise may be offered by the team when necessary.

我們的營運服務團隊為政府部門及公營機構提供優質的機電、電子工程及屋宇裝備服務，確保其設施能有效運作。我們所服務的客戶來自機場、醫院、學校、紀律部隊、運輸及公路、港口及海港、政府合署及法院大樓、公共文娛及康樂設施等。通過與客戶部門及機構建立的伙伴關係，我們矢志維持服務質素及公眾價值以促進社會發展。

Our TS team provides quality E&M, electronic engineering and building services to government departments and public bodies in Hong Kong to ensure operational efficiency of their facilities. The clients we served are from airport, hospitals, schools, security forces, transport and highways, port and harbour, government offices and law court buildings, and various public recreational and leisure facilities. Through partnership with our client departments and organisations, we aim to uphold quality and value for community betterment.

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薛永恒太平紳士
Mr Sit Wing-hang, Alfred, JP

機電工程署署長
機電工程營運基金總經理

Director of Electrical and Mechanical Services
General Manager, Electrical and Mechanical Services Trading Fund

署長的話
Message from the Director

2016/17年度是機電工程署(機電署)碩果豐收的一年，成績令人振奮。在規管服務方面，機電署維持高水平的機電安全和持續提升能源效益，並在開通新鐵路綫和發展區域供冷系統方面，達成多個目標。至於營運服務，我們的表現超逾目標，總收入錄得62.03億港元，收入回報率為5.3%。

與此同時，我們2016年的「客戶意見調查」和「員工滿意度調查」均在滿意度評分上創出新高，證明我們團隊的工作表現出色，對客戶和員工這兩組至為重要的持份者都照顧周到，既能滿足客戶的需要，也能有效地與團隊內的所有同事合作和溝通。

The year 2016/17 was fruitful for the Electrical and Mechanical Services Department (EMSD), with many exciting achievements. Our Regulatory Services maintained a high level of electrical and mechanical (E&M) safety and a good result in promoting energy efficiency, while reaching many milestones in new railway lines and district cooling system (DCS) development. Our Trading Services recorded above-target performance, with total revenue at HK$6,203 million and return on revenue at 5.3%.

Meanwhile, both our Customer Opinion Survey and our Staff Satisfaction Survey returned record high satisfaction scores in 2016. This is testimony to the excellent work of our team in serving the needs of our customers and engaging effectively with all our staff members, two of our most important stakeholder groups.

讓公眾安心

我們的首要任務，是提高機電安全和能源效益，讓公眾安心。近年來，規管服務不僅加大了執法力度，加強了對業界和公眾的安全教育，使機電事故數字處於較低水平，還推出多項計劃及活動，幫助業界遵行法規和提高服務質素。

有關例子包括「車輛維修工場自願註冊計劃」、「優質升降機服務認可計劃」，以及我們最近為向公私營機構推廣《重新校驗技術指引》及相關最佳作業方式而進行的工作。這些措施不一定是法定要求，卻有助提高機電安全和能源效益。作為監管者和促成者，我們很高興能為業界和社會多走一步，協力謀求福祉。

年內，規管服務內負責鐵路安全的同事也忙於為觀塘綫延綫及南港島綫的開通，進行測試及巡查工作。他們與另外五個政府部門的同事無縫合作，表現卓著，使各鐵路新綫的安全測試在緊迫時間下順利如期完成，亦為各協作部門在2017年公務員優質服務獎勵計劃中奪得「部門合作獎」金獎。這個獎勵計劃旨在嘉許卓越的政府服務。我們很高興能夠確保新鐵路綫「安全可靠」和如期啟用，造福市民。

啟德發展區區域供冷系統已運作數年，為各類建築物供應中央製造的冷凍水作空調之用，而機電署總部大樓也於2017年接駁至該供冷系統。隨着未來幾年有更多新鐵路綫開通，我們鐵路科的同事正為迎接新挑戰作出準備。一如鐵路科同事，我們的區域供冷系統團隊亦已準備就緒，現正為其他新發展區開展區域供冷系統的工作。這些令人振奮的挑戰，將會提升我們的專業知識，並在過程中為社會創造巨大價值。

PEACE OF MIND FOR THE PUBLIC

Enhancing E&M safety and energy efficiency so as to bring peace of mind to the public is our top priority. In recent years, our Regulatory Services has not only made great efforts to enforce the law, step up safety education for the trades and the public, and keep E&M incidents at a relatively low level, but also rolled out a diverse range of programmes and activities to help the trades comply with the law and raise their service quality.

Some examples are the Voluntary Registration Scheme for Vehicle Maintenance Workshops, the Quality Lift Service Recognition Scheme and our latest efforts to promote the Technical Guidelines on Retro-commissioning and related best practices to the public and private sectors. These initiatives may not be statutorily required, but they can contribute to greater E&M safety and energy efficiency. As regulator and facilitator, we are delighted to offer extra assistance to the trades and the community to help the cause.

Some colleagues in Regulatory Services responsible for railway safety were also busy in the past year with testing and inspection work for the opening of the Kwun Tong Line Extension and South Island Line. Thanks to their excellent work and seamless collaboration with five other government departments, the joint team satisfactorily completed the safety inspection of both new lines under a very stringent programme, and won the Partnership Award Gold Prize under the Civil Service Outstanding Service Award Scheme 2017, a major recognition in government service. We are delighted that our work in ensuring that the new rail lines were "safe and sound" and ready to commence service to the public on time was of value to the people of Hong Kong.

The DCS at Kai Tak Development has been operating for a few years, supplying centralised chilled water for air-conditioning purpose to a range of buildings, including our headquarters which was connected to the system in 2017. Like our colleagues in the Railways Branch, who are preparing for new challenges of the opening of more new railway lines in the next few years, our DCS team is also getting geared up for the adoption of DCS in new development areas in Hong Kong. These are exciting challenges that will take our expertise to a new level and create great value to the community in the process.



署長的話
Message from the Director

從「好」到「更好」

至於營運服務，即機電工程營運基金（營運基金），其主要目標是透過與客戶的伙伴合作，提高市民生活質素和締造更美好的社會。營運基金年內的成果之一，是透過公開投標取得醫院管理局（醫管局）的五年合約，為醫管局轄下醫院和診所的各種機電、屋宇裝備及生物醫療設備和系統，提供全面的操作及維修保養服務。這次獲得合約，突顯了我們的市場競爭力，以及我們與醫管局之間跨越廿載的穩固伙伴關係。

在科技應用方面，營運基金各個策略業務單位繼續協助客戶部門應用綜合樓宇管理系統和其他科技，以提高營運效率、節約能源和整體工程系統的表現。這些項目取得的佳績，有利我們更廣泛應用科技方案。對營運基金而言，科技應用是具有增長潛力的範疇，對客戶也很有價值。

隨着香港不斷發展和進步，機電署的使命也更趨明確，就是不單要發展本身的業務和服務，還要促使本港的機電設施精益求精，從「好」變成「更好」。香港在七八十年代經濟騰飛，大量機電資產和設施相繼安裝。時至今日，這些資產和設施已日漸老化，亟需優化或更換，以免老化的資產削弱本港的效率和可靠度。

我們面對雙重挑戰：必須適時優化或更換舊資產，並利用最新科技把半新不舊的資產及時數碼化。就此而言，無論我們的意願多好，也不能獨力成事。對於公營部門，我們必須得到擁有資產的客戶同意，再以我們的人力和技術技能配合他們的需要，方可成事。至於私營機構，要說服他們加強在資產管理方面的投入，否則挑戰更大，甚至超出我們的控制範圍。

透過知識分享和向公眾展示優化及更換資產的好處，同樣可以惠及私營機構。事實上，我們的新焦點應是促進與業界更緊密合作，藉此推動香港機電業的發展。

為此，我們已和18個機電機構組成香港機電業推廣工作小組。近年，工作小組舉辦了多項宣傳和招募活動，目的是讓年青人及家長感受到機電業界前景光明，並提升機電行業的專業形象，以吸引和培育新血，穩定地提供人才。

FROM "GOOD" TO "BETTER"

For our Trading Services, also known as the Electrical and Mechanical Services Trading Fund (EMSTF), improving people's quality of life and community betterment through partnership with our clients remains its key goal. One of EMSTF's achievements during the year was securing five-year contracts from the Hospital Authority (HA) via open tender, covering a wide range of operation and maintenance services for various E&M, air-conditioning, building services and biomedical systems at HA hospitals and clinics. This underscores our competitiveness in the market and the strength of our partnership with HA spanning two decades.

On the technology front, various Strategic Business Units under EMSTF have continued to help our client departments deploy the integrated Building Management System and other technologies to enhance operational efficiency, energy saving and overall system performance. The good results achieved in these projects have paved the way for more widespread deployment of technology solutions, an area of growth potential for EMSTF and of great value to our clients.

As Hong Kong continues to develop and move forward, it becomes ever more apparent that EMSD's mission is not only to grow our business and services, but also to help the city's E&M facilities progress from "good" to "better". Many of Hong Kong's E&M assets and facilities were installed in the 1970s and 1980s when the economy took off. Their timely upgrading or replacement is now becoming critical if we are to prevent ageing assets from undermining the city's efficiency and reliability.

Our challenge is two-fold: to upgrade or replace old assets in a timely manner, and to digitise mid-life assets in time using the latest technologies. Even with the best of intentions, we cannot do it alone. For the public sector, we need to secure buy-in from our clients that own the assets, and then align their needs with our manpower and technological capabilities. As regards the private sector, we need to persuade the trade to accord priority in asset management, or otherwise the challenge is even greater and, may eventually be beyond our control.

By making available our know-how and showcasing the benefits of asset upgrading and replacement to the community at large, the private sector will also stand to benefit. Indeed, our new focus should be to drive the development of the E&M industry in Hong Kong by working more closely with the trades.

Already in place is the Hong Kong Electrical and Mechanical Trade Promotion Working Group, which we formed with 18 related E&M organisations and have held various promotional and recruitment activities in recent years. The group's aim is to impress upon young people and their parents that the E&M trades offer bright prospects and to boost the professional image of these trades to attract and nurture a steady stream of new talent.

此外，我們認為本地機電業的技術和科技水平仍有改進空間，因此正與職業訓練局等機構緊密合作，籌辦各類推廣計劃和訓練課程。行文之際，機電署有兩位見習技術員已取得資格，於10月前往阿布扎比參加著名的「世界技能大賽」。他們的傑出表現，證明只要努力用心，香港的年輕技術人才也能達到世界級的機電標準。

七秩新目標

2018年是機電署成立70周年，正是反思過去、計劃未來的好時機。機電署為其他政府部門提供各類機電工程服務，歷史悠久，可追溯至戰後初期。近年，我們的工作範疇和營運模式均有重大變化和演進，但規管服務和營運基金的同事卻始終如一，以勇於承擔和堅定不移的態度，致力達成提高香港市民生活質素的目標。

只要堅持抱負、使命和信念，並獲得客戶、機電業界和其他持份者支持，要優化和更換機電資產，挑戰雖大，卻非不可做到。我們的往績顯示，機電署的強項之一，是與時並進，同時創造公共價值。我們將發揮這項實力，迎難而上，協助香港邁步向前。

致謝

過去一年，我們在多方面取得佳績，實有賴公眾、客戶、業界、全體員工、承辦商、專業團體、學者、培訓機構和其他持份者的支持，以及各前任者的領導，謹此向他們衷心致謝。我們亦感謝各政策局和部門的大力支持和衷誠合作，以及感謝立法會議員、意見領袖、傳媒及市民對我們作出監察和提供意見。我們期待來年繼續與各持份者攜手並肩，共創更美好的香港。

We also see room for improvement in the technical and technological proficiency of our E&M trades, and are working closely with institutions such as the Vocational Training Council on various promotional and training programmes. At the time of writing, two of our technician trainees have qualified to compete in the prestigious WorldSkills Competition in Abu Dhabi in October. Their outstanding performance shows that young technicians in Hong Kong can achieve world-class E&M standards by working smart.

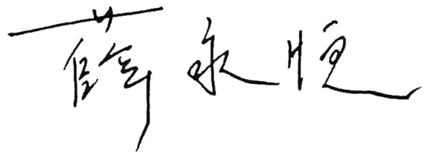
NEW GOAL AT 70

The year 2018 marks the 70th anniversary of EMSD, presenting a good opportunity for us to reflect on the past and plan ahead. EMSD has a long history of providing a multitude of E&M engineering services to other government departments, dating back to the early post-war years. Our scope of work and operating mode have changed and evolved significantly in recent years, but our people in both Regulatory Services and EMSTF have stayed committed and steadfast in fulfilling our goal to enhance the quality of life in Hong Kong.

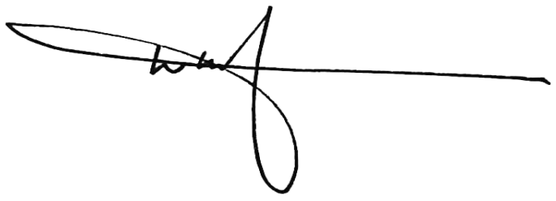
By adhering to our Vision, Mission and Values and securing the necessary buy-in from our clients, the E&M trades and other stakeholders, the asset upgrading and replacement challenge is not insurmountable. Our track record shows that keeping up with the times while creating public value is one of our strengths. We shall leverage this strength to forge ahead and help Hong Kong move forward.

VOTE OF THANKS

We owe our many accomplishments in the past year to the public, our clients, the trades, all our staff, contractors, professional bodies, academics, training institutions and other stakeholders as well as the leadership of our predecessors. We hereby express our sincere gratitude to them all. Our thanks also go to various policy bureaux and departments for their strong support and collaborative spirit. We also thank the Legislative Councillors, opinion leaders, media and the public for their scrutiny and feedback. We look forward to working with all our stakeholders in the coming year to make Hong Kong an ever-better place.



薛永恒
機電工程署署長
機電工程營運基金總經理



Sit Wing-hang, Alfred
Director of Electrical and Mechanical Services
General Manager, Electrical and Mechanical Services Trading Fund



規管服務業務概覽

REGULATORY SERVICES ACHIEVEMENTS OVERVIEW

抱負 VISION

我們的抱負，是要成為促使香港在機電安全及善用能源方面，都達到世界首要都會水平的政府機構。

Our vision is to be the government agency that makes Hong Kong a top-ranking city in E&M safety and in the utilisation of energy.

使命 MISSION

我們的使命，是確保機電及能源科技均以安全、可靠、經濟及環保的方式得以善用，並藉此促進社會的安全及提升生活質素。

Our mission is to enhance the safety and the quality of life of our community by ensuring that E&M and energy technologies are harnessed in a safe, reliable, economical and environment-friendly manner.

信念 VALUES

- 專業才能 Expertise
- 誠信 Integrity
- 可靠 Reliability
- 承擔 Commitment

高層管理人員
Senior Management



1 薛永恒太平紳士
Mr Sit Wing-hang, Alfred, JP
機電工程署署長
Director of Electrical and Mechanical Services

2 賴漢忠太平紳士
Mr Lai Hon-chung, Harry, JP
副署長/規管服務
Deputy Director/Regulatory Services

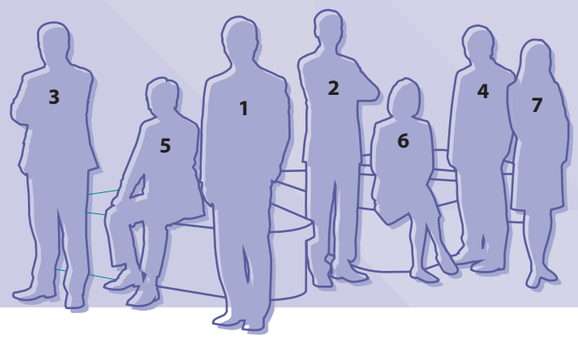
3 潘國英先生
Mr Poon Kwok-ying, Raymond
助理署長/電力及能源效益
Assistant Director/Electricity and Energy Efficiency

4 彭耀雄太平紳士
Mr Pang Yiu-hung, JP
助理署長/氣體及一般法例
Assistant Director/Gas and General Legislation

5 陳秋發先生
Mr Chan Chau-fat
助理署長/鐵路
Assistant Director/Railways

6 羅肇嫻女士
Ms Lo Siu-han, Cynthia
主任秘書
Departmental Secretary

7 何家儀女士
Ms Ho Ka-yee, Camilla
部門會計師
Departmental Accountant



* 陳帆太平紳士出任機電工程署署長至2017年6月30日
Mr Chan Fan, Frank, JP was Director of Electrical and Mechanical Services up to 30 June 2017

* 薛永恒太平紳士出任副署長/規管服務至2017年6月30日
Mr Sit Wing-hang, Alfred, JP was Deputy Director/Regulatory Services up to 30 June 2017

* 賴漢忠太平紳士出任助理署長/電力及能源效益至2017年11月14日
Mr Lai Hon-chung, Harry, JP was Assistant Director/Electricity and Energy Efficiency up to 14 November 2017

* 梁建民博士、太平紳士出任助理署長/鐵路至2017年5月26日
Dr Leung Kin-man, JP was Assistant Director/Railways up to 26 May 2017

服務回顧
Operations Review



賴漢忠太平紳士
Mr Lai Hon-chung, Harry, JP
機電工程署副署長 /
規管服務
Deputy Director/
Regulatory Services, EMSD

在2016/17年度，規管服務於監管機電安全及促成若干範疇的工作方面取得多項成就。我們能夠達到這些里程碑，全賴一眾同事的努力和拼搏精神，以及業界與社會大眾的鼎力支持。

The year 2016/17 saw a few milestone achievements in our role as E&M safety regulator and facilitator in certain areas of work. These would not have been possible without the hard work and can-do spirit of our colleagues and strong support from the trades and the community.

主要獎項與認同

去年的重要成就之一，是帶領屋宇署、路政署、香港消防處、香港警務處及運輸署共同贏得2017年公務員優質服務獎勵計劃的「部門合作獎」金獎。參賽項目「為新鐵路綫把關」詳細闡述我們六個政府部門如何緊密合作，以公眾安全為先，促成及確保新的西港島綫、觀塘綫延綫及南港島綫能在非常緊迫的時限內順利開通。這獎項充分肯定了我們同事和聯合團隊的出色專業表現和合作精神。我們謹祝賀為此付出的每一位工作人員。

MAJOR AWARDS AND RECOGNITION

A key achievement last year was leading to win the Partnership Award Gold Prize under the Civil Service Outstanding Service Award Scheme 2017 together with the Buildings Department, Highways Department, Hong Kong Fire Services Department, Hong Kong Police Force and Transport Department. Titled "Safeguard Our New Railway Lines", the joint entry outlined how the six departments, against very tight deadlines and with public safety as the priority, collaborated closely to facilitate and ensure the smooth opening of the new West Island Line, Kwun Tong Line Extension and South Island Line. This award is a major recognition of the professional excellence and collaborative efforts of our colleagues and the joint team. Our congratulations to everyone who contributed to this achievement.

國際能源效益獎項

我們的第二項成就，是獲美國能源工程師協會(AEE)頒發兩項崇高榮譽。機電署憑歷年來在開發、組織、管理和實踐其綜合能源管理方案的傑出表現，榮獲「AEE亞太地區機構能源管理獎」，以及憑創新的能源管理項目，榮獲「AEE亞太地區年度能源項目獎」。

這兩個獎項，是國際機構對我們多年來在香港推動節能減排工作的重要嘉許。事實上，在同事和其他持份者的努力下，香港過去十年的能源強度已下降超過26%，勝過大部分亞太經濟合作組織成員經濟體。

INTERNATIONAL AWARDS FOR ENERGY EFFICIENCY

A second achievement was EMSD winning two prestigious awards in the Association of Energy Engineers (AEE) Awards, namely the AEE Regional Institutional Energy Management Award for Asia-Pacific Rim Region for the Department's outstanding performance in developing, organising, managing and implementing its comprehensive energy management programme over the years, and the AEE Regional Energy Project of the Year Award for Asia-Pacific Rim Region for an innovative energy management project.

The AEE awards are a major international recognition of our commitment to implementing energy saving and emission reduction projects in Hong Kong over the years. Indeed, thanks to the good work of our colleagues and other stakeholders, Hong Kong's energy intensity has decreased by more than 26% in the past decade, outperforming most other Asia-Pacific Economic Cooperation (APEC) economies.

服務回顧
Operations Review

規管與促成並重

至於我們如何擔當促成者的角色，在此可進一步闡釋。我們推動業界和公眾恪守各種機電安全和節能的法規，並非新事。多年來，我們一直積極協助和勸諭老舊建築物的業主，為其固定電力裝置進行所需定期檢測和領取證明書，以符合法例要求。此外，又為升降機及自動梯承辦商制訂表現評級和認可計劃，並推出自願性的車輛維修技工及車輛維修工場註冊計劃，以鼓勵業界提高服務質素。儘管這些措施並非法例要求，但已證明行之有效，並深受市民歡迎。

隨着科技的急促發展，我們最近亦致力於推動科技創新，為業界樹立良好榜樣。在啟德發展區開創和實施的區域供冷系統，正好向社會展示在區域層面為空調系統供應中央製造的冷凍水所帶來的許多好處。機電署也因此成為落實和操作區域供冷系統的先驅，長遠而言，更可把累積的豐富經驗和最佳作業方法與私營機構和社會分享。

有些時候，要促進業界精益求精，需要的只是創新意念或做法，而非可能較為昂貴的嶄新技術。舉例來說，我們提供「升降機或自動梯保養工作移交事宜核對表」，便有助新舊承辦商順利交接。此外，我們亦定期就私人住宅和商業樓宇的升降機保養價格進行調查，並每六個月公布結果一次。業界的服務收費越公開透明，升降機負責人在選擇承辦商時就能掌握更多資訊，俾便作出較明智的決定。同樣地，這些舉措也不是法律要求，卻有助減少事故發生和提高升降機安全。我們希望能在其他工作範疇也注入這類創新意念。

TO REGULATE AND FACILITATE

Our role as facilitator is worth some elaboration. Facilitating the trades and the public to comply with various E&M safety and energy efficiency laws and regulations is nothing new. For many years, we have proactively offered assistance and advice to owners of ageing buildings to facilitate them to carry out the requisite Periodic Inspection, Testing and Certification for their fixed electrical installations, as required by law. We have also developed performance rating and recognition schemes for lift and escalator contractors, as well as voluntary registration schemes for vehicle mechanics and maintenance workshops, with a view to motivating them to raise service quality. These measures, though not statutorily required, have proved effective and have been warmly welcomed by the trades.

With rapid advancements in technology, our latest focus is to drive innovation with technology so as to set a good example for the trades. Our implementation of the District Cooling System (DCS) at Kai Tak Development is a case in point. Through this pioneering project, the Government has led by example to demonstrate to the community the benefits of supplying centralised chilled water for air-conditioning systems at regional scale. The project also puts EMSD at the forefront of DCS implementation and operation, from which a rich body of experience and best practice will arise over time for sharing with the private sector and community at large.

At times, facilitating the trades to do better requires only new ideas or processes, rather than new and potentially expensive technology. An example is our providing a "Checklist for Handover and Takeover of Lift/Escalator Maintenance" that facilitates a smoother handover for both the outgoing and incoming contractors. We also conduct a regular survey of lift maintenance prices in private residential and commercial buildings and announce the findings every six months. This helps make the trade's service charges more transparent to the public and enables Responsible Persons for lifts to make more informed choices when selecting a contractor for provision of services. Again, this is not required by law but can contribute to incident reduction and lift safety. We aim to come up with similarly innovative ideas in other areas of our work too.

重新校驗先驅

我們在2016/17年度的另一里程碑，是出版《重新校驗技術指引》(《指引》)。重新校驗是一個具成本效益、以知識為本的系統化檢測過程，有助定期檢查和糾正建築物內系統本身和操作過程出現的問題，使現有建築物回復到最佳操作狀態。重新校驗會深入監測和研究工程設備，了解在實際操作時涉及的各種因素和層面之間的互動關係，並輔以收集得來的數據進行分析，從而找出節能和其他改良操作效益的機會，並付諸實行。

為了研究怎樣在香港推動重新校驗，我們於2016年推出一項先導計劃，涵蓋政府樓宇和私人樓宇。我們挑選了六幢現有政府樓宇進行重新校驗。私人樓宇方面，我們一方面與業界內已率先於其樓宇進行重新校驗的先驅合作，同時也與香港綠色建築議會合作，透過議會協助私營企業在其樓宇進行重新校驗。

先導計劃找出了多個節能機會，包括簡單直接的系統調校，以至涉及系統的改善建議等，都能在較短的回本期帶來可觀的節能成效。先導計劃也為我們團隊帶來寶貴的實務經驗，並有助我們改進《指引》內容。

從先導計劃的研究成果，加上我們與各持份者及政府部門進行諮詢工作，讓我們豐富了《指引》內容作出版，並已於2017年6月在「全民節能」網站上載《指引》，隨之亦舉辦了多場簡報會及經驗分享會，吸引了1 500多人參與。

重新校驗可為樓宇業主、租戶和社區帶來營運、財務和環保方面的好處。為了應對氣候變化，我們很樂意擔當促成者/推動者的角色，協助社區採用這嶄新方法。我們的最終目標一貫是更有效地善用能源。為了環保，我們樂於多走一步。

PIONEER OF RETRO-COMMISSIONING

Another milestone was our work to publish the Technical Guidelines on Retro-commissioning during 2016/17. Retro-commissioning (RCx) is a cost-effective and systematic knowledge-based process to regularly check and rectify issues in systems and operational practice so as to restore an existing building to its optimal operational status. It involves in-depth monitoring and study of the dynamic interaction of different factors and dimensions during actual operation of the equipment, assisted by data analytics, so that energy saving and other operational enhancement opportunities can be identified and implemented.

To study how RCx may be applied in Hong Kong, we commenced a pilot study covering both public and private buildings in 2016. For public buildings, six existing government buildings were selected to undergo RCx. For private buildings, we collaborated with industry pioneers who have adopted some RCx measures in their buildings and the Hong Kong Green Building Council who assisted the private sector to conduct RCx in their buildings.

The pilot study identified various energy savings opportunities, ranging from straightforward system tunings to recommendations involving system improvements, which could generate considerable energy saving with short payback period. The pilot study also gave our team valuable hands-on RCx experience and helped to enhance the Technical Guidelines.

Results of the pilot study together with findings from consultation with stakeholders and relevant government departments have enabled us to enrich and publish the Technical Guidelines on Retro-commissioning on our Energy Saving for All website in June 2017, followed by many seminars and experience-sharing workshops attended by over 1 500 people.

Retro-commissioning brings operational, financial and environmental benefits to building owners, tenants and the community. To play a part in combating climate change, we are more than happy to be the facilitator/promoter to help the community adopt this new initiative. Our ultimate goal has always been to utilise energy in a more effective way. We are delighted to go this extra mile for the environment.

服務回顧
Operations Review

連接國內高鐵網

在整個2016/17年度，以至撰文之際，我們的同事都埋首工作，為定於2018年第三季通車的廣深港高鐵香港段作出準備，全力測試和檢查包括列車在內的各種機電系統。一如既往，每條新鐵路綫開通前的檢測時間總是非常緊迫。幸得近幾年開通多條新鐵路綫獲得的豐富經驗，加上與其他政府部門一貫的良好合作，我們團隊對應付這項挑戰滿有信心。

廣深港高鐵將首次把香港連接至國內的高鐵網，並通往其他「一帶一路」國家，我們很高興能參與這重要項目。

2017/18 年度重點工作

廣深港高鐵香港段的檢測和校驗，是2017/18年度的重點工作。另外，我們也正繼續落實啟德發展區區域供冷系統的工作，以配合不同新用戶接駁到該供冷系統的需求。同時，團隊也將忙於為東涌新市鎮擴展部分及其他新發展區，籌劃興建新的區域供冷系統。

我們將於2017/18年度主辦幾個重要的本地和國際會議。在撰文時已於2017年6月在香港舉辦國家質量監督檢驗檢疫總局與機電工程署的周年大會，標誌着雙方的緊密合作已踏入第14個年頭。為配合周年大會，我們雙方亦同時合作舉辦公眾展覽，讓市民更深入認識我們兩個機構就提高香港和內地機電安全和能源效益方面的合作。

我們也將於2017年10月在香港舉辦國際鐵路安全議會第27屆年度會議。這是一個重要的國際鐵路會議，匯集內地及世界各地的鐵路政策官員、運輸部長、規管機構代表、營運商、製造商和其他持份者，一起討論有關鐵路安全和發展的議題。

在2016年11月舉行的第二十屆北京‧香港經濟合作研討洽談會（京港會）上，機電署與北京市政府就兩個城市在電力安全的合作進行了討論。我們期待在2017年11月於香港舉行的第二十一屆京港會上，就這方面進行更多交流。機電署與亞太經合組織也會繼續維持長期合作的伙伴關係，而在2018年5月，機電署將以東道主身分在香港舉行亞太經合組織能源工作小組第55次會議。

CONNECTING TO THE MAINLAND'S HIGH-SPEED RAILWAY

All through the year 2016/17 and at the time of writing, our colleagues have been busy working on the testing and inspection of various E&M systems, including rolling stock, in preparation for the opening of the Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL) Hong Kong Section, scheduled for the third quarter of 2018. As always, the timeframe is tight, but with experience gained from opening other new lines in recent years, as well as good collaboration with other government departments, the team will rise to the challenge.

The XRL will not only connect Hong Kong to the Mainland's high-speed railway network for the first time, but also provide a link to other Belt and Road countries. We are delighted to play a role in this milestone project.

2017/18 PRIORITIES

Work on XRL testing and commissioning is an obvious priority in 2017/18. Besides, work for DCS at Kai Tak Development is being carried on to cope with the rising demand of various new consumers' connections to the DCS, while the plan for new DCS at Tung Chung New Town Extension and other new development areas will also keep the team busy.

2017/18 will also see us hosting several major meetings and international conferences. We had held the annual general meeting between the Mainland's General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) and EMSD in Hong Kong in June 2017, marking the 14th anniversary of the AQSIQ-EMSD cooperation. Together with the annual general meeting, a public exhibition was also jointly organised to raise community awareness of the two organisations' cooperation on E&M safety and energy efficiency in Hong Kong and the Mainland.

We shall be hosting the 27th annual conference of the International Railway Safety Council in Hong Kong in October 2017. This is a major international railway event in which railway policy makers, transport ministers, regulators, operators, manufacturers and other stakeholders from the Mainland and across the world will join together to deliberate on railway safety and development issues.

Meanwhile, discussions were held with Beijing municipal authorities on city-to-city cooperation on electrical safety during the 20th Beijing-Hong Kong Economic Cooperation Symposium in November 2016. We look forward to having more exchange on this front at the 21st Symposium in Hong Kong in November 2017. Our long-term working relationship with APEC will continue, with EMSD playing host to the APEC Energy Working Group 55th Meeting in Hong Kong in May 2018.

我們在不斷加強規管工作之餘，也同時增強作為促成者的角色，協助業界恪守法紀。在改善機電署總部大樓方面，我們也取得了良好進展，並陸續進行優化工程，使其成為可供參觀者及鄰近社區共享的可持續發展綠色建築。總部大樓內的「教育徑」經全面翻新後，將於明年初向公眾開放，讓數以千計關注機電安全、能源效益和機電署服務的學生和訪客，感受全新的體驗。

向持份者和合作伙伴致謝

謹此感謝各位同事過去一年為規管服務付出的努力和取得的成果。我們的服務與時並進，實有賴各持份者，包括業界的工作小組和組織、學術界、專業團體、非政府機構、培訓機構、參與我們各諮詢與技術委員會的組織，以及業內個別人士的積極支持，在此致以衷心謝意。我們也感謝相關決策局的支持及各部門的合作。此外，海外專家、內地對口單位及各個國際組織致力給予支持和配合，並且不吝賜教，分享專業知識，我們感激萬分。期待來年繼續獲得各方支持，再創佳績。

Apart from our ongoing efforts to enhance our regulatory work and step up our facilitator role to help the trades comply with the law, we are also making good progress on the transformation of our headquarters into a green and sustainable building for visitors and the neighbouring community to enjoy. Our revamped Education Path in the headquarters building will open to the public early next year, bringing a fresh new experience to thousands of students and visitors keen to learn about E&M safety, energy efficiency and our services.

APPRECIATION FOR STAKEHOLDERS AND PARTNERS

We must thank all the staff engaged in Regulatory Services for their excellent and award-winning work in the past year. As we grow and evolve, we continue to rely on the vital support of all stakeholders including various trade task forces and associations, academics, professional bodies, NGOs, training institutes, organisations on our advisory and technical committees, and individual members of the trades. We must express our gratitude to them all. We owe a vote of thanks to the concerned policy bureaux for their support and departments for their cooperation. Our appreciation also goes to our overseas experts, Mainland counterparts and various international organisations for their support, collaboration and generous sharing of knowledge and expertise. We look forward to your continued support in the coming year, and together we will strive for even better results.



賴漢忠
機電工程署副署長/規管服務



Lai Hon-chung, Harry
Deputy Director/Regulatory Services, EMSD

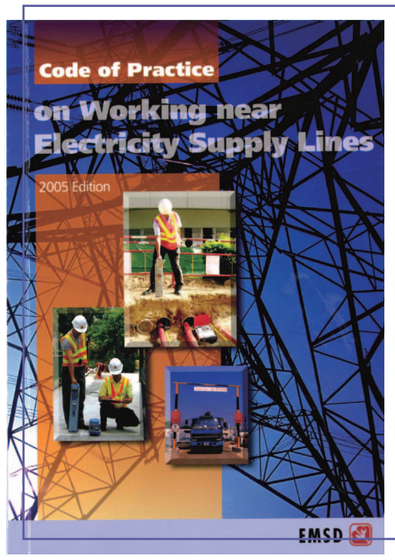
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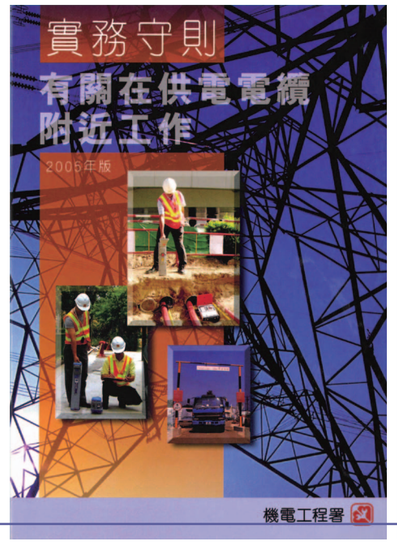
《有關在供電電纜附近工作的實務守則》完成諮詢

《有關在供電電纜附近工作的實務守則》新版本的諮詢工作，已於2017年3月完成，並預計於2018年年初出版。新版本旨在進一步降低因挖掘工程影響地底電纜、或因起重機或吊重機操作影響架空電纜，而做成意外事故或停電的風險。

CONSULTATION COMPLETED FOR CODE OF PRACTICE ON WORKING NEAR ELECTRICITY SUPPLY LINES NEW EDITION

The consultation on a new edition of the Code of Practice on Working Near Electricity Supply Lines was completed in March 2017. It is expected to be published in early 2018. The new edition aims to further reduce the risk of incidents and power stoppages arising from excavations near underground electricity cables, and cranes or hoists operating near overhead electricity cables.





《有關在供電電纜附近工作的實務守則》新版本，預計於2018年年初出版。

A new edition of the Code of Practice on Working Near Electricity Supply Lines is expected to be published in early 2018.

加強公共屋邨煤氣裝置定期安全檢查

為鼓勵更多公共屋邨住戶參與氣體定期安全檢查，我們與房屋署及香港中華煤氣有限公司合作推出的氣體定期安全檢查先導計劃，已擴展至總共八個公共屋邨，成功為更多住戶進行檢查或保養煤氣裝置。

REGULAR SAFETY INSPECTIONS FOR TOWN GAS INSTALLATIONS STEPPED UP AT PUBLIC HOUSING ESTATES

Our joint pilot scheme with Housing Department and The Hong Kong and China Gas Company Limited to encourage more households to take part in Regular Safety Inspections was expanded to cover a total of eight public housing estates, successfully accessing more households to inspect or maintain their towngas installations.





⏫ 能於個別住戶內進行定期安全檢查，對保障住宅樓宇氣體安全十分重要。

Accessing individual households for Regular Safety Inspections is crucial to ensuring gas safety in residential buildings.

⏩ 北角模範邨是我們推廣定期安全檢查先導計劃的八個公共屋邨之一。

Model Housing Estate in North Point is one of the eight public housing estates in our pilot scheme to promote Regular Safety Inspections.

推出石油氣車輛燃料缸保安封條系統工作守則

全新的《石油氣車輛燃料缸保安封條系統工作守則》已於2017年1月3日生效，工作守則要求所有設有內置燃料泵的石油氣車輛的燃料缸，均須貼上藍色或紅色保安封條。以防止非法更換燃料缸內外配件，及確保相關的維修工序是由勝任人士在石油氣燃料缸工場內進行。

CODE OF PRACTICE ON SECURITY LABEL SYSTEM FOR LPG VEHICLE FUEL TANKS LAUNCHED

A new "Code of Practice on Security Label System for LPG Vehicle Fuel Tanks" took effect on 3 January 2017 which requires all LPG vehicle fuel tanks equipped with internal fuel pumps be affixed with blue or red security labels, so as to deter unlawful replacement of internal or external components of a fuel tank, and ensure that the related repair work is carried out by a competent person at an LPG fuel tank workshop.



全新的《石油氣車輛燃料缸保安封條系統工作守則》海報，提醒石油氣車車主及司機，所有裝有內置燃料泵的車用石油氣燃料缸，由2017年1月3起均須貼上藍色和紅色保安封條。

Poster on the new "Code of Practice on Security Label System for LPG Vehicle Fuel Tanks" alerting LPG vehicle owners and drivers that all LPG vehicle fuel tanks equipped with internal fuel pumps be affixed with blue and red labels from 3 January 2017 onwards.

年度亮點
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昂坪 360 換新纜索

昂坪360纜車於2017年年初停止服務，以便進行纜索更換工程。纜車系統投入服務近十年，更換纜索是正常且必須的程序。更換纜索工程歷時約五個月，纜車系統經我們檢查後已於2017年6月初重新通車。新纜索全於歐洲生產及檢測，新導軌纜已加強了表面金屬絲的強韌性，使纜索更加耐用。

NEW ROPES AT NGONG PING 360

Ngong Ping 360 suspended service to replace ropes in early 2017. Ropes replacement for the system is normal and necessary after some 10 years in operation. The works took about five months and, after our inspection, the system was reopened in early June 2017. The new ropes were all manufactured and tested in Europe, and the new track ropes have improved features like thicker outer wires to enhance their durability.

▶▶ 新纜索全於歐洲生產及檢測，新導軌纜更加強了表面金屬絲的強韌性，更加耐用。

The new ropes were all manufactured and tested in Europe. The new track ropes have thicker outer wires and are more durable.



▼▼ 昂坪 360 纜車投入服務近十年後，於 2017 年上半年進行纜索更換工程。

After some 10 years in operation, Ngong Ping 360 replaced its ropes during the first half year of 2017.



兩條新鐵路綫啟用

經過我們的檢查後，觀塘綫延線和南港島綫(東段)已分別於2016年10月和12月啟用。兩條新綫投入服務後，鐵路網已覆蓋全港十八區，是本港鐵路網持續發展的另一里程碑。南港島綫(東段)更採用最新科技全自動列車控制系統，具備高效可靠及靈活調動的優勢。

TWO NEW RAILWAY LINES OPENED

After our inspection, the Kwun Tong Line Extension and the South Island Line (East) (SIL(E)) were opened in October and December 2016 respectively. The railway network now serves all 18 districts in Hong Kong, marking another milestone in the city's continuous railway development. The SIL(E) has adopted the latest technology of fully automated operation, with a high degree of flexibility and operation excellence.

為政府大樓完成能源審計並節能

我們於2016年5月和2017年3月，分別為150棟和194棟政府大樓完成能源審計工作，並建議多個能源管理機會項目，更協助各部門爭取得額外五億元的政府撥款，以落實這批能源管理機會項目，配合政府計劃於2019/20年節省5%耗電量的目標。

ENERGY AUDITS FOR GOVERNMENT BUILDINGS TO SAVE ENERGY

We completed energy audits for 150 and 194 government buildings in May 2016 and March 2017 respectively, with various Energy Management Opportunities (EMO) recommended. We also helped make a successful bid for $500 million additional funding to implement these EMOs, so as to meet Government's 5% electricity saving target by 2019/20.

更新淡水冷卻塔計劃出版物

為配合相關法規和國際標準的最新要求，有關淡水冷卻塔計劃的現有刊物已完成檢討及更新，並分別易名為2016版本的《淡水冷卻塔計劃》及《淡水冷卻塔實務守則》第一至第三部。而2016版本的《預防退伍軍人病工作守則》亦已完成檢討。

FRESH WATER COOLING TOWER SCHEME DOCUMENTS UPDATED

Existing publications of the Fresh Water Cooling Towers Scheme have been reviewed and updated to meet the latest requirements of relevant regulations and international standards. The documents have been renamed as Fresh Water Cooling Towers Scheme (2016 Edition) and the Code of Practice for Fresh Water Cooling Towers: Parts 1-3 (2016 Edition). In addition, the Code of Practice for Prevention of Legionnaires' Disease (2016 Edition) has also been reviewed.



有關《預防退伍軍人病工作守則》及淡水冷卻塔計劃的各種刊物已完成更新，以配合相關法規和國際標準的最新要求。

Code of Practice for Prevention of Legionnaires' Disease and publications of the Fresh Water Cooling Towers Scheme have been updated to meet the latest requirements of relevant regulations and international standards.

重要數字
Key Figures

電業工程人員 ELECTRICAL WORKERS



註冊電業工程人員
REGISTERED ELECTRICAL WORKERS

2015
76 000 名 NOS.

2016
76 739 名 NOS.

電力供應 ELECTRICITY SUPPLY



本地售電量
LOCAL ELECTRICITY SALES

2015
43 912 百萬度 GWh

2016
44 029 百萬度 GWh

升降機及自動梯 LIFTS AND ESCALATORS



升降機
LIFTS

2015
63 561 部 NOS.

2016
64 930 部 NOS.

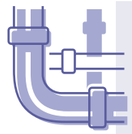


自動梯
ESCALATORS

2015
8 925 部 NOS.

2016
9 156 部 NOS.

燃氣供應 GAS SUPPLY



氣體喉管網路總長
TOTAL LENGTH OF GAS PIPE NETWORK

2015
3 583 公里 KM

2016
3 614 公里 KM

車輛維修技工 VEHICLE MECHANICS



註冊車輛維修技工
REGISTERED VEHICLE MECHANICS

2015
6 617 名 NOS.

2016
8 384 名 NOS.

鐵路 RAILWAY



鐵路路線長度
RAILWAY TOTAL ROUTE LENGTH

2015
221 公里 KM

2016
231 公里 KM



鐵路年度載客量
RAILWAY ANNUAL PATRONAGE

2015
1 884 百萬 MILLION

2016
1 893 百萬 MILLION

保障公眾安全
Protecting Public Safety

電力安全 ELECTRICAL SAFETY

安全水平保持穩定

2016年，電力事故宗數保持穩定，顯示電力安全水平得以維持。同時，隨着《電力(線路)規例工作守則》為期兩年的寬限期將於2017年11月30日結束，我們舉辦了多次簡報會，向業界加強闡釋推廣新守則的內容。

以對象為本傳達安全訊息

我們秉承協作的精神，並以對象為本，與各持份者緊密合作，讓我們的目標受眾更易取得安全資訊。例如，在面向75萬租戶的房屋署通訊中，刊載有關電氣安全的文章，並在長者安居服務協會的網站和社交媒體平台，上載短片和資訊等。並且為確保舊樓業主參加如「樓宇更新大行動」等現有建築物改善計劃時，不忘檢測固定電力安全裝置，我們更與屋宇署合作，宣傳相關經費的申請可包含電氣安全選項。

Steady Level of Safety

The number of electrical incident numbers in 2016 remained steady, indicating a sustained level of electrical safety. Meanwhile, we have stepped up the promotion of the new Code of Practice for the Electricity (Wiring) Regulations to the trade via numerous briefings, as the Code will be fully implemented on 30 November 2017 when its two-year grace period comes to an end.

Target Oriented Approach

In the spirit of collaboration, we have used a more target oriented approach via working with various stakeholders to reach the intended audiences of our safety messages. These included, for example, placing electrical safety articles in the Housing Department's newsletters to reach its 750 000 tenant families, and putting short videos and messages on the website and social media of the Senior Citizen Home Safety Association for the elderly. Moreover to ensure that owners of aging buildings do not forget about safety on electrical installations as they take part in existing buildings improvement initiatives like "Operation Building Bright", we have worked with the Buildings Department to promote that the relevant funding applications could contain items of electrical safety.





▲ 我們在羅湖和落馬洲邊境口岸均備放宣傳單張，提醒前往內地的市民應選購安全的電氣產品。

We have made leaflets available at Lo Wu and Lok Ma Chau border points to advise the public members going to Mainland that they should buy safe electrical products.

▶▶ 我們有關的宣傳單張，提醒市民選購安全電氣產品時須要留意的事項。

Our related leaflet advises the public on items to which they should pay attention for buying safe electrical products.





▲ 電力法例部與能源效益事務處的同事，使用一個「共用平台暨地理資訊系統」以便進行聯合零售店鋪巡查。系統能自動建議巡查路線，大大提高工作效率。

Using a Common Shop Inspection Platform cum Geographic Information System, colleagues from our Electricity Legislation Division and Energy Efficiency Office carry out joint retailer inspections. The System automatically plans the inspection routing, greatly boosting efficiency.

▶▶ 聯合零售店鋪巡查涵蓋能源標籤和電氣產品安全，是部門同事跨組合作的好例子。

The joint inspection covers both energy labels and electrical product safety, and is a good example of cross-team cooperation.

修讀工程或技術專業的學生，也應盡早接受有關電力安全教育。我們與職業訓練局作出安排，讓工程科目學生盡早接觸到電力安全訊息，尤其是《電力(線路)規例工作守則》更新版的資訊。另外，就針對前往內地的旅客，我們在羅湖和落馬洲邊境口岸均備放宣傳單張，提醒旅客應購買安全的電氣產品。

Students in engineering or technical courses should get exposure to electrical safety education. We have made arrangements with the Vocational Training Council so that safety messages, especially those related to the new Code of Practice for the Electricity (Wiring) Regulations, can reach engineering students as early as possible. For cross-border travellers going to the Mainland, we have made leaflets available at Lo Wu and Lok Ma Chau border points to advise them to buy safe electrical products.

提醒迷你倉業界注意安全

2016年6月，牛頭角一個迷你倉發生嚴重火災。我們隨即主動巡查香港的迷你倉，向發現有不合電力安全規格的營運商發出改善通知書。我們更馬上向所有迷你倉營運商發出建議信，並附上為迷你倉具體情況而建議的安全指引，提醒業界必須確保電氣安全。

Alerting Mini Storage Operators

Subsequent to a serious fire at a mini-storage space in Ngau Tau Kok in June 2016, we have taken the initiative to inspect mini-stores in Hong Kong and issued improvement notices to those with non-compliance items identified. We also promptly issued an advisory letter with tailor-made safety guidelines to all mini-store operators to alert them to ensure electrical safety.

加強巡查

另一方面，鑒於年內工地發生了致命電力事故，我們與勞工處攜手加強巡查工地，提醒工人採取適當的電力安全措施。如去年所述，我們也加強巡查全港大型戶外招牌，尤其注意電力裝置和防護措施是否安全。

Inspections Stepped Up

On a separate front, in view of fatal electrical incidents on work sites during the year, we have worked with the Labour Department to step up inspection of work sites so as to remind workers to take proper electrical safety precautions. As mentioned last year, we have stepped up inspection of large outdoor sign boards, in particular the related electrical installations and protective measures.

在零售店執行電器安全與能源效益巡查方面，我們年內開始推行並使用一個「共用平台暨地理資訊系統」。該系統能自動顯示巡查範圍附近所有相關電器零售店，並按其位置自動排列出一條建議的巡查路線，大大提高工作效率。

For inspection works at retail shops in respect of electrical product and energy efficiency we implemented and began using the Common Shop Inspection Platform cum Geographic Information System this year This system can automatically displays all relevant shop locations in the vicinity of the inspection area and generate a suggested route for inspection works, greatly boosting the efficiency of work.

保障公眾安全
Protecting Public Safety

協助屋苑住戶

科技應用雖好，但也必須配合積極協助大眾解決問題的良好態度。我們處理觀塘曉光閣停電事件就是個好例子。曉光閣於2016年6月發生停電停水事故，影響500多戶居民和一家屋苑內的安老院。我們即時派出三個小組提供支援：一組負責調查事故，另一組支援恢復供電工程，第三組則聯絡中電安排臨時供電。我們的行動，贏得住戶和區議員的讚揚。

Assisting Building Occupants

The use of technology, however, must go hand in hand with a proactive attitude to help the public. A good example is the case of Hiu Kwong Court in Kwun Tong which had a major power and water stoppage in June 2016. The incident affected over 500 households as well as a residential care home for elderly persons in the building. We immediately coordinated three teams to provide support: one to investigate the incident, the other to support power recovery works, and the third to liaise with CLP to provide temporary power supply. Our work won the praise of tenants and a District Councillor.

明年計劃

展望2017/18年，《供電電纜工作守則》新版本的諮詢工作已於2017年1月展開，將於2018年初完稿及準備出版。現有版本為2005年出版。

社區方面，我們正考慮一項新計劃，以提高私人護養院舍，包括安老院舍的電力安全，減少電力系統的潛在危險。目前，大部分電力負載量不超逾100安培的場所，均無須為其固定電力裝置進行定期測試(WR2)。我們計劃與相關行業經營者及政府部門合作，協助這類場所也實施定期測試，進一步加強私人護養院舍的電力安全。

此外，為確保市民家居的電力工程能安全進行，我們計劃與香港房屋委員會及香港房屋協會探討合作可能性，提醒住戶在裝修家居時，必須僱用註冊電業承辦商和註冊電業工程人員進行電力工程，並保留僱用承辦商的紀錄，以確保工程質素。

我們也會繼續探討與非政府機構的其他合作機會，如運用其社交媒體分享電力安全短片，讓目標受眾更有效接收訊息。

Initiatives Next Year

Looking to 2017/18, consultation on a new edition of the Code of Practice on New Electricity Supply Lines has begun in January 2017, which will be finalised and ready for publication in early 2018. The current edition was issued in 2005.

At the community level, a new initiative is being considered to enhance the electrical safety of private care homes such as residential care homes for elderly persons to reduce potential electrical safety hazards. Currently some of these venues are not required to carry out the Periodic Testing (WR2) requirements, as the approved loading of their electrical installations do not exceed 100 A. Our plan is to explore with the related trade operators and government departments to further enhance electrical safety at these private care homes by implementing the periodic testing requirements.

In addition, to ensure that electrical work is properly carried out, we plan to explore collaboration possibilities with the Hong Kong Housing Authority and Hong Kong Housing Society. Our aim is to remind their tenants to employ only Registered Electrical Contractors and Registered Electrical Workers for renovation involving electrical work, and to keep proper records of contractors employed, so that the quality of work is better assured.

We shall also continue to explore new opportunities to work with NGOs to share electrical safety videos via various social media so as to reach our target audiences more effectively.



檢查樓宇的固定電力裝置，是我們督察人員的職責之一。

Inspection of fixed electrical installations in buildings is one of the duties of our inspectorate teams.



化投訴為嘉許
Turning Complaints into Compliments

高級工程師甄文傑，以專業手法有效地處理公眾投訴和查詢，贏得2016年申訴專員嘉許獎。文傑的職責，是監督有關全港三百萬電力客戶的電力裝置法例的執行工作。作為監管者，他的團隊近年每年需處理多達24 000宗查詢和440宗舉報個案，而部分複雜的個案，更因種種原因，隨時會變為投訴。

文傑的手法是以主動誠懇的態度，與投訴人直接溝通。「與其迴避問題，不如細心聆聽和理解投訴人真正的難處，建立互信，找出問題癥結，然後嘗試幫忙解決。」他說。

以兩宗個案為例。某位註冊電業工程人員曾不斷投訴其他同業的工作「不合規格」，又投訴機電工程署要求業界在為固定電力裝置進行定期檢測時，必須暫停電力供應的做法。文傑和他的同事就此直接聯絡投訴人，安排會面，詳細討論有關問題並深入了解他的觀點，同時也解釋了機電署有關做法的背後理念，在過程中建立互信。

另一個案則涉及某村屋業主投訴無法取得正式電力供應和獨立電錶，對電纜安全也有意見。雖然某些問題是文傑團隊的工作範圍以外，但他們仍積極協助投訴人與電力公司及承辦商協調，以解決問題。兩宗個案後來都順利解決，可說是化投訴為嘉許。

他強調：「前線同事和大家的團隊合作精神其實功勞最大，否則不能成事。」

Andrew Yan, senior engineer, has won The Ombudsman's Award 2016 for his effective, professional handling of public complaints and enquiries. His role is to oversee enforcement work relating to electricity consumer installations of Hong Kong's three million electricity consumers. As regulator, his team handles as many as 24 000 enquiries and 440 reported cases from the public annually in recent years. Some complicated cases could turn into complaints due to various reasons.

Andrew's approach is to engage in proactive, sincere communication with the complainant directly. "Rather than avoiding the issue, it is more productive to listen to and understand the complainant's real concerns, establish trust, identify the root cause of the problem and help resolve it," he said.

Two cases illustrate his approach. One Registered Electrical Worker repeatedly complained about the "sub-standard" work by other members of the trade and EMSD's requirement for power suspension during PITC work. Andrew and his team contacted the complainant for a meeting, talked through the issues in great detail to understand his perspective, and explained EMSD's rationale, building trust in the process.

In another case a village house owner complained about not getting permanent electricity supply with individual energy meter and had issues with electrical cable safety. Andrew and his team helped liaise with the electricity supplier and contractor of the developer to rectify the problems, though some areas of such work was outside his team's duties. Both cases were amicably resolved, turning complaints into compliments.

"Credit must go to our frontline staff as well as team work that have made it all possible," he stressed.

保障公眾安全
Protecting Public Safety

氣體安全 GAS SAFETY

事故宗數維持穩定

2016年，氣體事故總計275宗，處於穩定水平。其中供氣分喉事故低見127宗。此外，第三者損毀地下煤氣喉管事故有13宗。

Incident Numbers Steady

Total gas incident numbers in 2016 remained steady at 275. Of these, riser incidents hit a low of 127. Besides, third-party damage to underground gas pipes incidents were at 13.

煤氣和瓶裝石油氣安全

繼去年與房屋署及香港中華煤氣有限公司(煤氣公司)合作，於三個公共屋邨推行氣體裝置定期安全檢查先導計劃後，我們在2016/17年，更將計劃擴展至總共八個公共屋邨。我們針對的是「長期沒有進行安全檢查」的公共屋邨煤氣用戶，即在過去五年或以上，因煤氣公司人員未能進入單位替煤氣裝置進行保養或檢查的目標用戶。先導計劃成功地讓煤氣公司人員完成了84%目標用戶的安全檢查工作。

同時，「瓶裝石油氣分銷商安全表現評級計劃」的2016年稽核結果也已公布。參與計劃的分銷商中，34家獲評為最高的金級，21家獲評銀級，125家獲評銅級。此計劃獲得所有分銷商的支持和參與，因而可作為用戶一個概括的參考。

Town Gas and LPG Cylinder Safety

Further to a joint pilot scheme last year with the Housing Department and The Hong Kong and China Gas Company Limited (HKCG) to encourage more households in three public housing estates to take part in Regular Safety Inspections (RSI), we have expanded the scope in 2016/17 to cover eight public housing estates in total. Our focus was the "Long-Time-No-Service" (LTNS) town gas accounts, i.e., those that have not had any maintenance or inspection service performed on their town gas installations for the past five years or more due to difficulty in accessing those households. The pilot has successfully facilitated the staff of HKCG to conduct RSI in 84% of the LTNS households.

Meanwhile, the LPG Cylinder Distributor Safety Performance Recognition Scheme launched has announced its 2016 audit results. Among the participating distributors, 34 attained gold rating, the highest level of safety performance, while 21 and 125 received silver and bronze ratings respectively. The scheme gained support and participation from all distributors. The scheme is therefore a general reference for consumers.



機電署督察巡視一個位於灣仔的瓶裝石油氣分銷商，該分銷商參與了我們的「瓶裝石油氣分銷商安全表現評級計劃」，並獲評為最高的金級。

Our inspector inspecting an LPG cylinder retailer in Wan Chai that has obtained the highest gold rating in our LPG Cylinder Distributor Safety Performance Recognition Scheme.





煤氣公司使用新界東北堆填區的沼氣，以電熱聯供發電系統發電，為大埔雅麗氏何妙齡那打素醫院提供蒸汽和熱水。機電署人員正巡查該電熱聯供發電系統。

Using landfill gas from the North East New Territories Landfill, Towngas uses a Combined Heat and Power Generation System for electricity generation, providing steam and hot water for the Alice Ho Miu Ling Nethersole Hospital in Tai Po. Our staff inspecting the concerned Combined Heat and Power Generation System.

年內也發生氣體產品回收事件。事緣我們接獲有關荃灣一屋苑的一款嵌入式煤氣爐具，出現數宗異常燃燒和過熱的報告。經調查後，我們認為爐具有潛在安全隱患，即於2016年8月1日呼籲公眾停止使用該型號爐具，並撤回該產品型號的許可證，指示進口商停止銷售，及安排回收產品。該爐具雖沒有即時危險，也沒有事故報告，但我們仍採取必要的預防措施，確保公眾安全。

The year also saw a product recall. After investigating into several reports of abnormal burning and overheating of a built-in type town gas cooking appliance installed at an estate in Tsuen Wan, we urged the public on 1 August 2016 to stop using that model in view of potential safety hazards. We withdrew approval of the model, instructed the importer to stop selling it and arranged a product recall. Though there was no immediate danger or related incident reported, the precautionary measures were taken to ensure public safety.

促進使用沼氣

年內，我們支持政府鼓勵使用沼氣的政策，項目之一是使用新界東北堆填區的沼氣，在打鼓嶺生產合成天然氣，供應給煤氣公司的電熱聯供發電系統作發電之用，並為雅麗氏何妙齡那打素醫院提供蒸汽和熱水。另一項目是煤氣公司在新界東南堆填區裝置設備，將剩餘的沼氣轉化為合成天然氣，輸送至煤氣公司位於井欄樹的調壓站，將合成天然氣混合煤氣之後，注入煤氣供氣網絡。

Facilitating the Use of Landfill Gas

During the year we supported the Government's policy to encourage utilisation of landfill gas. One project uses landfill gas from the North East New Territories Landfill at Ta Kwu Ling to produce synthetic natural gas (SNG) and supplies it to a Combined Heat and Power Generation System installed by Towngas for electricity generation, making steam and hot water for the Alice Ho Miu Ling Nethersole Hospital. The other project was at the South East New Territories Landfill where Towngas has constructed facilities to convert surplus landfill gas into SNG which is then transmitted via pipeline to a regulating station in Tseng Lan Shue and integrated into the town gas network.

保障公眾安全
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兩個項目均有助減排及轉廢為有用能源，改善空氣質素。我們的角色，是巡查和審批所有相關氣體設施和管道，並已於2017年3月完成工作。

Both projects can reduce carbon emission, turn waste into useful energy and improve air quality. Our role was to inspect, examine and approve all relevant gas installations and pipelines, which was completed in March 2017.

政府氣體風險顧問

我們是政府就所有土地用途和規劃建議的氣體風險顧問，以確定鄰近煤氣/石油氣裝置的地點是否符合規劃建議，及發展計劃是否可行、且不會遇到無法克服的困難。我們也擔任房屋署等多個部門的技術顧問，協助公共屋苑中央石油氣供應商的招標工作。由於屋苑的中央石油氣設施不斷老化，我們正協助房屋署根據最新的相關工作守則，檢討設施的狀況、設計及細節，以提高安全和可靠度。

Gas Risk Advisor to Government

We are the gas risk advisor to the Government in all land use and planning proposals, to ascertain if sites adjacent to town gas/LPG installations are feasible for the proposed development without insurmountable problems. We also act as technical advisor to departments such as Housing Department to help them prepare tenders of bulk LPG supply to its public housing estates. As those LPG facilities are aging, we are helping Housing Department to review their condition, design and facility details against the latest Code of Practice to enhance safety and reliability.





▲ 煤氣公司員工正檢測供氣喉管。

Towngas staff is examining a gas pipe.

◀◀ 我們非常重視氣體爐具的安全，如發現任何氣體爐具有安全隱患，必會果斷地安排產品回收，以確保公眾安全。

We take safety of gas appliances very seriously, and will not hesitate to arrange for product recalls should any gas appliance pose potential safety hazards, to ensure public safety.

▶▶ 車輛維修工場如有由機電署發出的藍色或紅色的識別標誌，即表示該車輛維修工場有適當的維修設備及人員，可提供石油氣燃料系統維修服務。

Any vehicle maintenance workshop with a red or blue identification signage indicates that it has the proper equipment and personnel to carry out LPG vehicle fuel system maintenance works.

▼▼ 我們員工根據《石油氣車輛燃料缸保安封條系統工作守則》，於運輸署三個驗車中心，為石油氣的士貼上藍色保安封條。

Our staff affixing blue security labels on an LPG taxi at one of Transport Department's three vehicle examination centres, in accordance with the "Code of Practice on Security Label System for LPG Vehicle Fuel Tanks".









石油氣車輛安全

石油氣車輛安全仍是我們的首要考慮。《石油氣車輛燃料缸保安封條系統工作守則》已於2017年1月3日生效，工作守則要求所有設有內置燃料泵的石油氣車輛的燃料缸，均須貼上藍色或紅色保安封條。氣體標準事務處會為現有的石油氣車輛的燃料缸貼上藍色保安封條，而新進口的石油氣車輛，則由車輛進口商負責貼上藍色保安封條，以防止燃料缸在下次覆檢或更換氣缸配件之前，被非法更換氣缸配件。覆檢或更換氣缸配件後，註冊氣體供應公司須於石油氣燃料缸工場內，為燃料缸貼上紅色保安封條。篡改封條或非法更換任何燃料缸內外配件，均會受到調查和檢控。

LPG Vehicle Safety

LPG vehicle safety continues to be a priority. The "Code of Practice on Security Label System for LPG Vehicle Fuel Tanks" took effect on 3 January 2017 which requires that all LPG vehicle fuel tanks equipped with internal fuel pump to be affixed with blue or red security labels. Blue labels are affixed by our Gas Standards Office on existing LPG vehicles, or by LPG vehicle importers on newly imported LPG vehicles, to prevent unlawful replacement of fuel tank components prior to the next revalidation or replacement. Red labels are affixed by registered gas supply companies at LPG fuel tank workshops after revalidation or replacement of fuel tank components. Tampering with the labels or unlawful replacement of any internal or external component of fuel tanks is subject to investigation and prosecution.

為了讓石油氣車輛司機和車主更容易識別可提供石油氣燃料系統維修服務的車輛維修工場，我們由2015年8月開始向有適當維修設備及人員的石油氣車輛維修工場發出藍色或紅色的識別標誌，以進一步加強石油氣車輛的維修安全。

In order to assist LPG vehicles drivers and owners to easily identify the vehicle maintenance workshops providing services to fuel system of LPG vehicles, we have started issuing blue or red identification signages to LPG vehicle maintenance workshops with proper equipment and personnel to carry out LPG vehicle fuel system maintenance works since August 2015. The measure aims to further step up LPG vehicle maintenance safety.

保障公眾安全
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車輛維修技工和車輛維修工場自願註冊計劃

業界和公眾對「車輛維修技工自願註冊計劃」和「車輛維修工場自願註冊計劃」給予大力支持和響應。我們也積極宣傳和進行外展推廣工作，並於2016年5月在一大型商場舉辦了吸引數以百計從業員和市民參與的推廣日，年內兩項計劃的參與率均達高峰。截至2017年3月底，共有9 170名車輛維修技工和1 790家車輛維修工場參加了自願註冊計劃，參與率相當於全港逾九成車輛維修技工及逾六成車輛維修工場。

Voluntary Registrations of Vehicle Mechanics and Vehicle Maintenance Workshops

The trade and the public have shown strong support and receptiveness to the Voluntary Registration Scheme for Vehicle Mechanics (VRSVM) and the Voluntary Registration Scheme for Vehicle Maintenance Workshops (VRSVMW). With our extensive promotional and outreach programmes as well as a Promotion Day held in a mega shopping mall in May 2016 that attracted hundreds of trade practitioners and members of the public, both VRSVM and VRSVMW attained high participation rates in 2016/17. As at end March 2017, a total of 9 170 VMs and 1 790 VMWs have registered under the VRSVM and VRSVMW respectively. The numbers are equivalent to participation rates of over 90% of all VMs and 60% of all VMWs in Hong Kong.

監察易燃雪種

年內，機電工程署帶頭成立了跨部門工作小組，對環保卻易燃的雪種之發展作出監察及商討處理這類雪種的行動。工作小組的目的，是加強及理順在監察易燃雪種的發展和使用情況上的合作，並協調部門之間的分工。

我們也成立了政府與業界的聯絡小組，負責協調政府部門、空調和製冷商會、專業組織、培訓機構、物業管理公司協會、保險公會和其他持份者。聯絡小組為政府和業界提供了一個平台，供雙方交換意見及協調有關安全處理易燃雪種的宣傳工作。

Monitoring of Flammable Refrigerants

During the year, EMSD has taken a leading role in setting up an Inter-departmental Coordination Group on monitoring the development of and coordinating actions in handling eco-friendly flammable refrigerants. The Coordination Group aims to reinforce and streamline the collaboration in monitoring the development and use of flammable refrigerants, as well as coordinate on the demarcation of works among concerned departments.

We have also set up a Government and Trade Liaison Group to coordinate government departments, air-conditioning and refrigeration associations, professional bodies, training institute, property management association, insurance association and other stakeholders. This provides a platform for the government and trade to exchange views and collaborate in promoting safety in handling flammable refrigerants.

來年展望

2017/18年也會是忙碌的一年。我們會將氣體定期安全檢查，拓展至另一批共133個公共屋邨，立要針對使用煤氣或管道石油氣的「長期沒接受安全檢查服務」用戶。我們更打算將計劃推廣至香港房屋協會的屋邨，同時提醒業界必須檢查及優化日漸老化的石油氣設施。我們團隊會繼續提高「車輛維修工場自願註冊計劃」的參與率，全力實施石油氣車輛燃料缸保安封條計劃，並密切監測石油氣車輛安全。

The Coming Year

2017/18 will be another busy year as we expand the RSI promotion programme to LTNS accounts in another batch of 133 public housing estates using town gas or piped LPG. We also plan to extend the programme to housing estates under the Hong Kong Housing Society, while reminding the trade to review and upgrade aged LPG assets. Our team will continue to boost the VRSVMW registration rate, implement the LPG fuel tank security labels scheme with full force, and closely monitor LPG vehicle safety.



確保氣體爐具安全
Ensure Safety of Gas Appliances

香港甚少發生氣體煮食爐回收事件，但如發現有問題爐具，我們必會果斷執法以保障公眾安全。事緣我們接獲數宗有關一款主要安裝於荃灣某屋苑的嵌入式煤氣煮食爐的投訴，指爐具出現不正常燃燒和過熱情況。經調查後，我們2016年8月回收該款爐具。雖然產品並無即時危險，但我們仍撤銷該款爐具型號的批准，並指示進口商全面停售和安排回收。

陳志偉是負責執行這次產品回收行動的。他說：「作為規管機構，我們必須公平，全面聆聽所有相關人士，包括發展商、進口商和住客的疑慮，在安全的大前題下取得平衡。」可以理解的是，住客必會有很多投訴和建議，而我們的團隊也努力聆聽眾多住客的意見，更造訪個別單位了解現場情況，務求更深入了解住客擔心的問題。

香港環境獨特，比如高樓大廈的某些單位位置比較當風，會增加使用該款爐具的安全風險。志偉指出，今次事件對進口商帶來啟示，即使產品已取得型號批准，也必須密切監察產品的質素。他也感謝團隊成員能以關懷和專業的態度，與個別住客廿四小時保持緊密溝通，讓住客對政府產生信任，對解決今次事件很有幫助。

Product recalls of gas cooking appliances are rare in Hong Kong but we will not hesitate to do so where necessary to ensure public safety. In August 2016, we recalled a built-in type town gas cooking appliance mainly installed at an estate in Tsuen Wan, after investigating into several reports of abnormal burning and overheating of the appliance concerned. Though there was no immediate danger, we withdrew approval of the model in view of the potential safety hazards, instructed the importer to stop selling it and arranged a product recall.

Chan Chi-wai, our engineer who led the team that implemented the recall, said, "As regulator, we must be fair and listen to the concerns of all parties, i.e., developer, importer and tenants in order to strike a balance, with safety as top priority". Understandably, the tenants had many grievances and suggestions, and the team spared no efforts in listening to their views and visiting individual units to better understand their concerns.

Several complications unique to Hong Kong, such as windy location of some flats in high rise buildings has added to the safety risk of using the model. Chi-wai said the lesson learnt for importers is that they must monitor product quality at all times, even after obtaining type approval. He also thanked his team members for their caring and professional attitude in communicating with individual tenants round the clock, thus building their trust in government which helped resolve the issues.

保障公眾安全
Protecting Public Safety



貼藍封條的小隊
The Team with Blue Labels

高級督察黎國峰率領三隊共六位督察，在運輸署轄下的三個驗車中心，為所有裝有內置燃料泵的車用石油氣燃料缸貼上藍色保安封條。根據2017年1月3日生效的新《石油氣車輛燃料缸保安封條系統工作守則》，所有設有內置燃料泵的車用石油氣燃料缸，均須貼上規定的保安封條。《守則》旨在防止非法更換任何內部或外部燃料缸的配件（包括更換石油氣缸內的燃料泵及相關配件），以確保其工序是由合資格人士於石油氣車輛燃料缸覆檢工場內進行。

國峰認為效率是關鍵。「由於我們借用運輸署的驗車中心為現有的石油氣車輛燃料缸貼上安全封條，因此我們必須有效率地完成以免妨礙中心的正常運作。」他說。全部程序都要在三分鐘內完成，包括貼上藍色安全封條、拍照、紀錄封條的序列號碼、車牌號碼和車底盤號碼。由於組員都在室外環境工作，四周都是車輛廢氣，而夏天時，同事雖穿了必需的個人保護裝備，熱度還是極高。

國峰說司機初時由於不明白安全封條的作用，有點抗拒。後來消息在同業中傳開去，加上司機看到貼封條的小組成員能詳盡介紹有關細節，又極有耐性地細心貼上封條，很多司機都開始明白，這措施長遠對他們本身和公眾的安全都有利。

Lai Kwok-fung, senior inspector, leads three teams of six inspectors in total to affix blue security labels on LPG vehicle fuel tanks equipped with internal fuel pumps at three Transport Department vehicle examination centres. The labels are mandatory for all LPG vehicle fuel tanks equipped with internal fuel pumps under the new "Code of Practice on Security Label System for LPG Vehicle Fuel Tanks" that took effect on 3 January 2017. The Code aims to deter unlawful replacement of internal or external components of an LPG fuel tank (including replacement of fuel pump inside the fuel tank and associated components), and ensure such work was carried out by a competent person at an LPG fuel tank workshop.

Efficiency is the key according to Kwok-fung. "As we are making use of Transport Department vehicle examination centres to affix labels on existing LPG vehicle fuel tanks, we must work fast to avoid causing any disruption to the centres' normal operation," he said. All steps must be completed within three minutes, including affixing the blue labels, taking photos and recording the relevant serial numbers, vehicle registration marks and chassis numbers. Team members must also work outdoors in a tough environment, exposed to exhaust fumes and intense heat in summer despite wearing the necessary personal protective gear.

Kwok-fung said initially the drivers were somewhat reluctant as they did not understand why the labels were necessary. However, as word got around and they saw the teams working hard to explain the details and affix the labels with great patience and care, many drivers have begun to understand that in the long run, the initiative will enhance their own safety and the safety of members of the public.

▶▶ 監察新導軌纜索和牽引纜索的運作，確保安全暢順。

Inspection of the new track ropes and haul ropes to ensure their safe and smooth operation.

◢◢ 昂坪 360 纜車系統經過十年運作，已於 2017 年上半年更換了全部導軌纜索和由機場島轉向站至昂坪站的牽引纜索。

After 10 years in operation, Ngong Ping 360 has completed replacement of all track ropes and haul ropes between the airport island and angled station and Ngong Ping Terminal during the first half year of 2017.

▼▼ 新導軌纜正從東涌灣的躉船拖出。

New track ropes pulling from the barge at Tung Chung Bay.







◢◢ 機械安全 MECHANICAL SAFETY

年內重點

2016/17年主要工作有三方面：架空纜車、機動遊戲機、升降機及自動梯。事故宗數保持穩定，年度同期數字相對波動不大。升降機意外宗數由2015年的439宗稍微減少至2016年的427宗，同期自動梯事故宗數則由1 590宗增加至1 624宗。由於乘客行為導致的意外仍佔大多數，我們必須繼續加強公眾安全教育。

更換昂坪 360 纜索

年內的重點項目是昂坪360纜車的纜索更換工程，有關工作於2016年初啟動，2017年初動工，工程歷時約五個月，纜車系統已於2017年6月重新通車。

昂坪360纜車自2006年起啟用，是亞洲最長的雙纜索纜車系統，單向總長5.7公里。經過十年運作，為確保纜車安全可靠，更換導軌纜索和牽引纜索是正常和必要的程序。新纜索均在歐洲進行測試，在整個過程中，昂坪360纜車營運商都與原索道製造商和資深顧問緊密合作。身為安全監管機構，我們也多走一步，特地諮詢海外知名學者，尋求獨立意見和監察。

Focus in the Year

Our work in 2016/17 focused on three areas: aerial ropeway, amusement rides, lifts and escalators. Incident numbers have stayed steady, with small year-on-year fluctuations. Lift incidents, for example, have slightly decreased from 439 in 2015 to 427 in 2016 while escalator incidents have increased from 1 590 to 1 624 in the same period. As passenger behaviour still accounts for the majority of the incidents, we must keep up the momentum of safety education for the public.

Ngong Ping 360 Ropes Replacement

A major initiative in the year was the large-scale rope replacement works of Ngong Ping 360 (NP360) that kicked off in early 2016, with commencement of site works in early 2017. The works took about five months to complete and the system was re-opened in June 2017.

Established in 2006, NP360 is the longest bi-cable ropeway in Asia, with a total length of 5.7 km in one way. After a decade in operation, replacement of both the track rope and haul rope is a normal and necessary process to ensure safety and reliability. The new ropes were tested in Europe, and the NP360 operator has been working closely with the original ropeway manufacturer and experienced consultants throughout the process. As the safety regulator, we also took the extra step to seek input from a renowned overseas academic for independent advice and vigilance.

保障公眾安全
Protecting Public Safety



◀◀ 香港迪士尼樂園的全新機動遊戲機「鐵甲奇俠飛行之旅」，其設計也經我們嚴格審核，才可開放給市民使用。

Control room of the "Iron Man Experience" at Hong Kong Disneyland. This new amusement ride went through our rigorous design vetting prior to opening.

▼▼ 2016年於中環舉行的歐陸嘉年華，其流動機動遊戲機，全部都經機電署嚴格的設計審核和操作審批，以保安全。圖示其中一款機動遊戲機「旋轉火車」。

Amusement Rides of the European Carnival 2016 held in Central. The mobile rides were all subject to EMSD's rigorous design and operations vetting to ensure safety. Picture showing one of the rides, the "Train Ride".



審批機動遊戲機

審批嘉年華的流動機動遊戲機，近年已成為我們每年一度的工作。年內，我們再為兩個嘉年華審批機動遊戲機，分別是荔園Super Summer 2016和冬季歐陸嘉年華。一如往年，我們都面對緊逼的時間表，必須盡快處理審批過程，以便能合時於節日期間為市民及遊客帶來歡樂，並維持最高的安全審批標準。

2017年1月，香港迪士尼樂園啟用全新機動遊戲機「鐵甲奇俠飛行之旅」，其設計也經過我們嚴格審核。這台新遊戲機不但為香港增添另一旅遊景點，更有助香港維持吸引遊客的勢頭。與此同時，我們繼續配合兩個主題樂園的擴展工作，包括將於2018年開幕的海洋公園大樹灣發展項目，及香港迪士尼樂園2018年至2023年的第一期擴建計劃。

Amusement Rides Safety Vetting

Vetting of mobile amusement rides for carnivals has become an annual exercise in recent years. During the year our team again has vetted amusement rides for two carnival events: the Lai Yuen Super Summer 2016 and the Great European Carnival in winter. Just as in past years, under tight timeframes of the events, our prompt handling of the application process has facilitated both events to be held in a timely manner in the holiday seasons for the enjoyment of tourists and local citizens, while at the same time maintaining our high safety standards via thorough inspection of the rides.

The new amusement ride "Iron Man Experience" that opened in January 2017 in Hong Kong Disneyland also went through our vigorous design vetting. The opening of the new ride has given Hong Kong a new tourist attraction and maintained the momentum of adding new tourist highlights for Hong Kong. Meantime we have continued to coordinate with the two theme parks on their expansion projects, such as the Tai Shue Wan Water Park Development in Ocean Park to be opened in 2018, and Phase 1 expansion of Hong Kong Disneyland from 2018 to 2023.

推動優化升降機及自動梯

全港現時約有五成升降機和四成自動梯已使用20多年，安裝時雖已達到當時的技術水平，但隨着近年科技迅速發展，這批升降機及自動梯的安全、可靠和舒適度仍有改進空間。

為促進現有升降機的優化工作，我們已推出多項措施，例如為負責人提供優化升降機工程服務合約的規格範本，設立優化升降機網上專頁，並向個別升降機負責人發信就優化升降機提出具體建議。

同樣，我們也於2016年9月推出優化自動梯推廣計劃，並同年12月出版優化自動梯指引，並佐以多項宣傳活動。

升降機及自動梯業界調查

我們聘請了獨立顧問公司於2016年進行升降機及自動梯業界調查，了解及探討從業員的人手問題、工作環境、工作滿意度及薪酬水平等。調查結果已於2017年3月提交升降機及自動梯安全諮詢委員會。我們將繼續與業界合作，共同促進行業的可持續發展。

Lift and Escalator Modernisation Drive

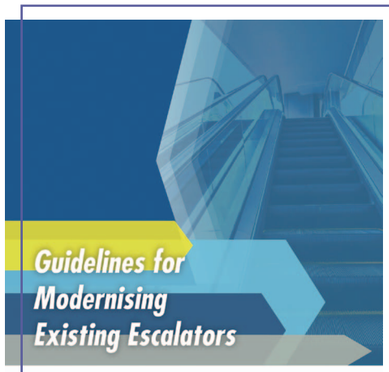
About 50% of existing lifts and 40% of existing escalators in Hong Kong are over 20 years old. Though their level of technology was appropriate at the time of installation, with rapid technology advancement in recent years, there is room for improvement to make these ageing lifts and escalators safer, more reliable and comfortable.

To boost lift modernisation in Hong Kong, we have introduced many measures such as making available a sample contract with specifications to help Responsible Persons (RPs) procure lift modernisation services, setting up a dedicated webpage on lift modernisation, and issuing reminder letters to individual RPs with specific recommendations on lift modernisation works.

Similarly, we have launched an initiative to promote escalator modernisation in September 2016, including issuing a set of escalator modernisation guidelines in December 2016 with supporting publicity activities.

Trade Survey of Lift and Escalator Industry

We engaged an independent consultant to conduct a Lift and Escalator Trade Survey in 2016 to gauge and explore issues of manpower, working environment, job satisfaction and salary level of practitioners. The results were presented to the Lift and Escalator Safety Advisory Committee in March 2017. We shall work with the trade to facilitate the sustainable development of the industry.





《優化自動梯指引》已於2016年12月出版，旨在幫助自動梯負責人優化現有的自動梯。

The Guidelines for Modernising Existing Escalators were published in December 2016 to help Responsible Persons upgrade their existing escalators.

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▲ 我們也檢查自動梯年檢准用證上的資料，確保內容準確及已更新。

We also make sure that the information recorded on the escalator annual inspection Use Permit is accurate and up-to-date.

◀◀ 我們定期巡查自動梯的重點之一，是確保自動梯維修保養承辦商的工作質素達到一定水平。

The quality of work of escalator maintenance contractors is a priority in our regular escalator inspections.

自動梯事故

2017年3月下旬，旺角朗豪坊不幸發生自動梯事故，導致18名乘客受傷。事故引起社會關注自動梯維修保養的問題。我們十分重視這宗事故，並隨即進行深入調查，首先要求涉事的註冊自動梯承辦商，在事發一個月內檢查全港相同品牌的所有1 700部自動梯，並要求所有註冊自動梯承辦商在一星期內，為全港所有64部垂直提升高度達15米或以上的自動梯進行安全檢查，結果顯示該批自動梯全部運作正常。

後來的事故調查顯示，朗豪坊涉事自動梯的主驅動鏈和主驅動鏈保護裝置發生雙重失效，導致附加制動器無法啟動，使煞停自動梯的功能失效。我們已向全港註冊自動梯承辦商和註冊自動梯工程師發出通告，提醒他們檢查所有主驅動鏈保護裝置及主驅動鏈。我們並已展開法律程序，檢控須為事故負責的人士。

Escalator Incident

The unfortunate escalator incident at Langham Place, Mong Kok, in late March 2017, injuring 18 passengers, drew public attention to escalator maintenance. We took the incident very seriously and have begun in-depth investigations. The registered escalator contractor concerned in the incident was required to immediately check all 1 700 escalators of the same brand operating in Hong Kong within a month. We also required registered escalator contractors to make safety inspections of all escalators with a vertical height of all 64 high rise escalators of 15 metres or above within one week, which found those escalators operating normally.

Subsequent investigations revealed that a double failure of the main drive-chain and a broken-drive-chain device in the escalator concerned led to the inactivation of the auxiliary brake for stopping the escalator. A circular has been issued to all registered escalator contractors and registered escalator engineers to remind them to properly check all broken-chain-drive devices and the main drive chains. Legal proceedings are under way to prosecute the parties responsible for the incident.

2017/18 年重點工作

來年的重點工作，是修訂《升降機工程及自動梯工程實務守則》，檢討及更新架空纜車的相關實務守則，以於年內刊憲，及進一步推行「優質升降機服務認可計劃」。我們將繼續審批海洋公園發展項目的新添機動遊戲機，並緊密監察昂坪360纜車更換新纜後的運作情況。

2017/18 Priorities

Our priorities in 2017/18 are to update the Code of Practice for Lift Works and Escalator Works, review and update the Code of Practice on Aerial Ropeway for gazetting in the year, and further develop the Quality Lift Service Recognition Scheme. Our work on Ocean Park to vet new rides in its development projects will continue, as will our work to closely monitor the performance of NP360 with its refreshed ropeway system.



昂坪360纜索更換工程
NP360 Ropes Replacement Works

昂坪360纜車於2017年成功更換新纜索，是系統自2006年啟用以來首次更換導軌纜，是件重要的事。負責監察這工程的高級工程師區子威表示，機電工程署在換纜過程中既是規管者，也發揮促成者的角色。

「我們根據風險管理及治未病方法，觀察纜索實際的磨損情況，提醒昂坪360的營運商應提前開始更換纜索。」他說。他與團隊和旅遊事務署跟十多個政府部門緊密合作，確保換纜工程引致纜車暫停服務對遊客和其他使用者帶來的不便，會減到最低。

子威和他的同事在過程中還多走一步，例如親往外地的纜索生產商監察纜索質素，又要求昂坪360纜車就纜索接駁器進行實驗室「損毀」測試，並邀請一位知名學者兼纜車專家，作為換纜工程的獨立顧問。

團隊成員在五個月的施工期間，輪流往現場監察工程，無論通宵、星期日或公眾假期都無間斷且隨時都與營運商、承辦商和其他持份者保持緊密聯絡。換纜工程最終如期完成，昂坪360纜車也已於2017年6月初重開啟用。他說：「多謝大家的努力，為更換這亞洲最長的雙纜索纜車系統的纜索方面樹立了良好的楷模，可供未來參考。新導軌纜已加強了表面金屬絲的強韌性，使纜索更加耐用。」

The successful rope replacement of Ngong Ping 360 (NP360) in 2017 was significant as it was the first track rope replacement of NP360 since it commenced operation in 2006. William Au, senior engineer in General Legislation Division who oversaw the project, said that EMSD acted as the safety regulator as well as facilitator of the replacement exercise.

"Using a risk-based approach and in view of the wear-and-tear situation of the rope, we alerted the NP360 operator that replacement should start slightly earlier than planned," he said. Working closely with the Tourism Commission and over 10 related government departments, the team helped ensure that the service stoppage caused minimum impact on tourists and other users.

William and his team also went the extra mile, such as making an overseas visit to the rope manufacturer regarding rope quality, requesting the NP360 operator to conduct laboratory "destructive" tests on the rope connector, and engaged a renowned academic cum ropeway expert as independent consultant for the replacement exercise.

Team members took turns to monitor on-site the replacement works throughout the five-month process, no matter overnight, Sundays or public holidays. The team maintained close communication with the operator, contractors and other stakeholders at all times. The project was completed as scheduled and NP360 was re-opened for public use in early June 2017. "Thanks to everyone's hard work, Hong Kong now has a good template in rope replacement for future reference," he said. "The new track ropes have improved feature like thicker outer wires to enhance durability."

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鐵路安全 RAILWAY SAFETY

新鐵路綫最新發展

觀塘綫延綫已於2016年10月啟用，南港島綫(東段)也於2016年12月投入服務，這都是香港鐵路網持續發展的里程。

觀塘綫延綫長約2.6公里，是現有觀塘綫從油麻地擴展至黃埔的路綫，設何文田和黃埔兩個新站。南港島綫(東段)長約七公里，接駁金鐘和海怡半島，途經海洋公園、黃竹坑和利東三站。該綫採用嶄新的中型鐵路三卡車廂全自動操作列車，配合列車前後端視覺屏幕，為首個在香港使用的無人駕駛地鐵列車系統。無人駕駛列車採用了最新科技，高度可靠，未來有很大的應用潛力。

正如近年其他投入服務的新鐵路綫一樣，我們在觀塘綫延綫與南港島綫(東段)啟用之前，都與多個有關政府部門和香港鐵路有限公司(港鐵)緊密合作，配合工程的不同階段，就兩條新綫所有關乎安全的系統，進行現場測試及法定巡查，確保兩條新綫全綫「安全可靠」之後，方可開通給公眾使用。所有測試和巡查工作，均按最嚴格的安全標準和在極緊湊的時限內完成，充分表現相關政府部門的工作熱忱，和出色的團隊精神。

下一條啟用的新鐵路綫，是廣深港高速鐵路(高鐵)香港段，預期於2018年投入服務。各項測試和巡查工作進展順利，有望能如期投入服務。

New Railway Lines Update

The opening of the Kwun Tong Line Extension (KTE) in October 2016 and the South Island Line (East) (SIL(E)) in December 2016 marked another milestone in the city's continuous railway development.

At about 2.6 km long, the KTE is an extension of the existing Kwun Tong line from Yau Ma Tei to Whampoa, with two stations at Ho Man Tin and Whampoa. The SIL(E), about 7 km long, runs between Admiralty and South Horizons with three intermediate stations at Ocean Park, Wong Chuk Hang and Lei Tung. It is a new medium-capacity railway operating with 3-carriage fully automatic trains, making it the first metro line in Hong Kong to use driverless trains with vision screens at both ends. Supported by the latest technology, driverless trains are highly reliable and have good potential to be further deployed in future.

As with other new railway lines opened in recent years, we worked closely with other relevant government departments and MTR Corporation Limited (MTRCL) to conduct on-site testing and statutory inspections of all safety related systems in KTE and SIL(E) with their phased work completions along the way, until we confirmed both lines in their entirety as "safe and sound" for operation for public use. The testing and inspections were conducted against very tight deadlines and stringent safety standards. All the government departments involved in this joint effort showed great passion and wonderful team spirit throughout the process.

The next new line to open in 2018 will be the Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL) Hong Kong Section. Testing and inspection work is progressing well towards the target opening.



將行走廣深港高速鐵路(高鐵)香港段的列車。

New trains for the Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL) Hong Kong Section.



我們與屋宇署、路政署、消防處、警務處及運輸署於2017年公務員優質服務獎勵計劃獲得「部門合作獎」金獎。

We won the gold prize of the Partnership Award in the Civil Service Outstanding Service Award Scheme 2017 with Building Department, Highways Department, Fire Service Department, Hong Kong Police Force and Transport Department.

跨部門通力合作

我們能順利完成工作，實有賴屋宇署、路政署、消防處、警務處及運輸署等各部門支持和合作。我們更與上述五個部門攜手，以「為新鐵路綫把關」為題，參加了「2017年公務員優質服務獎勵計劃」，並獲得「部門合作獎」金獎。

機電工程署負責這項計劃的牽頭角色，在跨部門聯手合作下，確保新鐵路綫順利通車。跨部門團隊曾共同克服不少挑戰，例如須審批大量工程文件和圖則，並要在緊逼的時限內完成許多法定巡查，在資源方面有極大的壓力。但團隊的六個部門能相互支持，緊密合作，例如在進行法定巡查的高峰期，消防處人手極有壓力，機電署於是外借工程人員給消防處。機電署同事也經常不定時工作，甚至通宵達旦，以確保檢測新綫的工作，不會干擾現有鐵路的正常運作。

Joint Departmental Effort

Our work would not have been possible without the support and cooperation from other departments including the Buildings Department, Highways Department, Fire Services Department (FSD), Hong Kong Police Force and Transport Department. Indeed, we have made a joint entry with these five departments in the Civil Service Outstanding Service Award Scheme 2017, titled "Safeguard our New Railway Lines" that won the gold prize of the Partnership Award under the Scheme.

EMSD took the lead in this joint departmental initiative to ensure the smooth opening of the new railway lines. Some of the challenges for the team included, for example, great pressure on our resources to handle a large amount of engineering documents and drawings for vetting and approval, and a tight schedule of numerous statutory inspections. All six departments in the joint team collaborated closely and supported each other, such as EMSD "loaning" its technical staff to FSD at the peak of the statutory inspections when FSD's manpower was under great strain. EMSD colleagues also worked many irregular hours overnight to carry out statutory inspections, to ensure that the normal operation of the interfaced existing railways was not disrupted.

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八卡列車改裝工程

興建中的沙中線項目，挑戰之一是，西鐵綫和馬鞍山綫在2019年會連接起來，成為未來的「東西走廊」，連接新界東部和西部，屆時「東西走廊」的所有列車必須改為八卡列車。這過程相當複雜，即是要把西鐵綫列車，由七卡列車改為八卡列車，而馬鞍山綫列車也會以八卡列車代替四卡列車。由2016年1月起，我們已開始在西鐵綫採用七卡/八卡列車混合模式，及後在馬鞍山綫也採用四卡/八卡列車混合模式，並逐步增加八卡列車數量，以過度至全面八卡列車運作。我們必須確保和驗證，轉換至八卡列車後的運作，能完全符合鐵路安全的要求，讓乘客可安全使用。

Conversion to 8-car Trains

The challenge of the Shatin to Central Link (SCL) project is multiplied by the complex arrangement under which the West Rail Line (WRL) and the Ma On Shan Line (MOL) will be transformed into the future East West Corridor (EWC) connecting the east and west parts of the New Territories by rail in 2019, all with 8-car trains. This will entail converting 7-car trains running on the WRL to 8-car trains and replacing 4-car trains running on the MOL with 8-car trains. A mixed mode of 7-car/8-car trains and 4-car/8-car trains has been running on WRL and MOL respectively during this transition period commencing from January 2016, with gradual increase of 8-car trains. All requirements from a railway safety perspective must be satisfied and verified in order to ensure the converted 8-car trains are safe for passenger service.



◀◀ 我們的工程師於港鐵黃竹坑站啟用前，進行各種驗收測試工作。

Our engineer making statutory inspections at the MTR Wong Chuk Hang station prior to its opening.

▼▼ 港鐵黃竹坑站，是南港島綫（東段）的新站之一。新綫已於2016 年 12 月啟用。

The MTR Wong Chuk Hang station on the South Island Line (East). The new line was opened in December 2016.



提升鐵路安全

至於提升現有鐵路安全方面，我們的首要工作，是加強審核港鐵的工程資產管理和安全管理系統工作，同時敦促港鐵及早更新老化的工程資產。近年來，港鐵在更換現有鐵路綫的訊號系統和更換列車方面頗有進展。接着要更新的主要資產，就是對鐵路服務的安全和可靠度十分重要的供電系統。

Enhancing Railway Safety

As to enhancing safety of existing railways, our priority is to enhance our audit work of MTRCL's asset management and safety management systems, and at the same time urge it to replace and rejuvenate its aging assets. Replacement of old signalling systems and rolling stock on existing lines has made considerable progress in recent years. The next major asset to be upgraded and replaced will be the power supply system, vital to the safety and reliability of railway service.



我們的工程師為現有鐵路綫進行定期巡查。

Our engineer making inspections on an existing railway line.

2016年，因設備故障及員工行為引起的鐵路事故有91宗，數字保持穩定。我們會繼續着重深入調查所有事故的根本原因，並建議港鐵採取即時補救和改進措施。

The number of railway incidents due to equipment failure and staff behaviour in 2016 has remained steady at 91. We continued to put great emphasis on thorough and detailed investigation into incidents to identify the root causes, followed by urging MTRCL to take prompt remedial and improvement measures.

2017年2月，荃灣綫一列滿載乘客的列車，在即將到達尖沙咀站月台時，車上一名男子突點着燃燒彈，造成19名乘客受傷。這雖屬個別事件，但我們已敦促港鐵須就火警意外事故進行演習，並加強向乘客宣傳教育，在發生火警意外時須注意的事項。

An incident occurred in February 2017 when a man set off a firebomb in a crowded train on Tsuen Wan Line when it was about to reach the Tsim Sha Tsui Station platform, injuring 19 passengers. Though the incident was an isolated case, we have urged MTRCL to conduct relevant drills and step up publicity to educate passengers on the dos and don'ts in the event of fire-related emergencies.

來年亮點

廣深港高鐵香港段啟用的籌備工作，是2017/18年的重點之一。我們也會繼續敦促港鐵加快更新優化資產，尤其要更換訊號系統、列車及供電系統，以提升現有鐵路綫的安全。預計2019年啟用的沙中綫「東西走廊」，也快進入測試及校驗階段，再次涉及機電署與其他政府部門的通力合作。我們期待這些挑戰。

Highlights Next Year

Preparatory work for the opening of XRL Hong Kong Section will be a focus in 2017/18. We shall also keep reminding MTRCL to carry out and expedite asset upgrading, in particular the replacement of the signaling system, rolling stock and power supply system to enhance the safety of existing rail lines. The SCL East West Corridor, expected to open in 2019, will soon enter the testing and commissioning phase, once again involving the joint effort of EMSD and other government departments. We look forward to the challenges ahead.

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新綫的挑戰：轉戰沙中綫
The New Lines Challenge: Moving on to SCL

觀塘綫延綫和南港島綫（東段）已分別於2016年10月和2016年12月順利啟用。兩條新綫開通前的籌備工作，工程師李潔珍都有大量參與。

潔珍對南港島綫（東段）印象特別深刻。該綫是以全自動操作系統運作，列車裝有自動駕駛功能和多種先進設備，例如自動探測障礙器、自動泊站功能和靈活的走綫調動等，測試亦乎合國際標準。此外，由政府多個部門組成的「軌道安全及保安委員會」更要求所有全自動駕駛列車，須有一名客戶服務員駐守列車，讓乘客更感方便和安心。

潔珍記得在南港島綫（東段）開通前，在極緊迫的時間內，為各種機電系統進行了大量檢查及驗收，和審批了無數圖則和文件。「我們有很多個深宵都在軌道或車站工作中渡過，每晚工作都要捉緊大概兩小時的工作空間，由大約凌晨一時半開始至三時半。」她說。「早上四時前需要完成測試新系統的工作，讓鐵路系統回復運作，以免影響現有鐵路綫的正常服務。」

觀塘綫延綫和南港島綫（東段）開通前，必須進行大量關於訊號系統、列車、機電系統、車站和軌道的檢測工作，和新綫開通前的各種跨部門協調工作，潔珍也積極參與。現在兩條新綫已投入服務，她也已轉戰另一富挑戰性的新綫開通工作 — 沙中綫。

Our engineer, Cherry Lee, was heavily involved with pre-opening work of the recent new Kwun Tong Line Extension (KTE) and South Island Line (East) (SIL(E)), both opened smoothly in 2016.

The SIL(E), a metro line in Hong Kong which uses fully automated operations, is particularly memorable for Cherry. She noted that its trains were implanted with operating intelligence and advanced features like obstacle detection device, auto station docking and flexible service loops running, all tested according to international standards. The presence of a customer service officer on each driverless train, as required by the Trackside Safety and Security Committee formed by various government departments, provides additional service and confidence for passengers.

Cherry recalled the pressure of having to conduct numerous statutory inspections of E&M systems as well as vetting countless drawings and documents for approval, all against high standards and limited time prior to SIL(E) opening. "I recall working many late nights in stations or on tracks when we had only two hours from around 1:30 to 3:30am to complete the tasks," she said. "By 4am we must cease our project activities for system resumption to avoid disrupting the normal service of the existing lines in operation."

Cherry was heavily involved in inter-departmental consolidating work leading to railway commissioning and pre-opening inspections of signalling systems for KTE and SIL(E), as well as work on other aspects like trains, E&M systems, stations and trackwork. Now that the new lines are running, she has moved on to another exciting challenge — the Shatin to Central Link.



新綫的挑戰：新綫變身現有綫
The New Lines Challenge: From New to Existing Lines

工程師雷衍仁和他的團隊，職責是監察三條現有鐵路綫的運作，即西港島綫、觀塘綫延綫和南港島綫（東段）。在這之前，他也大量參與了這三條新綫開通前的驗收和測試工作。該三條鐵路綫分別於2014年12月、2016年10月和12月開通啟用，之前也全通過極嚴謹的安全檢查和測試，還有多次緊急事故應變演練和模擬。這些工作，他都有參與。

以觀塘綫延綫為例，衍仁主要負責機電系統和新站的安全測試，並與其他政府部門和港鐵公司，共同監察在新綫站內和鐵路隧道內進行的模擬火警事故或乘客疏散演練。「觀塘綫延綫的測試工作，在綫路開通前一年已開始進行，測試和演練工作在最後的3個月更進入高峰期」他說。「我們是與時間競賽，一方面要日以繼夜進行系統測試、各種演練和事故模擬，同時也得審批大量文件。」

雖然團隊的人數不多，但都能互相支援，順利渡過了2016年觀塘綫延綫和南港島綫（東段）開通籌備工作同時達到「高峰」的幾個月。回味新綫開通前的工作，衍仁說觀塘綫延綫啟用的首天，團隊人人都鬆一口氣，也十分開心，就像「迎接新生嬰兒」般興奮。

Our engineer, Marco Lui, and his team currently oversee the operation of three existing lines: West Island Line (WIL), Kwun Tong Line Extension (KTE) and South Island Line (East)(SIL(E)). Prior to this he was heavily involved with the pre-opening inspection and testing work of these new lines. Opened in December 2014, October and December 2016 respectively, all three lines went through rigorous safety inspections and testing as well as numerous emergency drills and simulations prior to opening — in which Marco played a part.

Take the KTE opening as example. Marco was mainly responsible for testing of E&M systems and receiving the new stations, as well as overseeing jointly with other government departments and MTRCL the various emergency drills, including those simulating fire incidents or passenger evacuations in stations and rail tunnels. "The peak of KTE testing work took place in the final two months prior to opening," he said, "thus we all had to race against time — conducting system inspections and drills and simulations day and night, on top of vetting and approving numerous documents."

Though the team was small, members supported each other during several "peak" months in 2016 when preparatory work for the opening of KTE and SIL(E) took place concurrently. Looking back at the pre-opening work, Marco recalled fondly that on the first day of KTE opening, everyone in the team was relieved and happy, like "receiving a new born baby".

推廣能源效益及節能
Promoting Energy Efficiency and Conservation

節能約章 2016

為了推廣能源效益，我們於年內向大眾推出兩項新猷。首先是繼2012年「節能約章」推出以來，連續第四年推行的「節能約章2016」。2012年推出約章的原意，是鼓勵參與機構承諾在夏季月份保持室內溫度在攝氏24至26度之間，當時有100家機構參加，至2016年，參與「節能約章」的機構已大幅增至3 300家，來自多個界別，包括商場、商舖、辦公室、屋苑、住宅、非政府機構、中小學和專上院校等。

「節能約章」的涵蓋範圍，也由原先的控制室內溫度，拓闊至其他要求，包括關掉不使用電器的電源，及採購一級能源標籤的電器，以節省電力和減少碳排放。

慳神大比拼

另一新猷是2016年推出的全新「慳神大比拼」計劃，旨在表揚運用節能科技而做出優秀節能表現的團體。比賽吸引了279家機構參加，分別來自商場、辦公室、住宅、屋苑、中小學和專上院校五大類別。頒獎典禮已於2016年5月舉行，得獎者更就如何令現有建築物更有效地節能，親與業界及市民分享經驗和最佳實務做法。

全民節能

「全民節能」運動自2015年推出後持續進行至今，2017年更推出新亮點 —「4Ts約章」，強調「制定時間表」，「訂立目標」，「開放透明」和「共同參與」。至於2015/16年舉辦的「慳電熄一熄青年獎」比賽優勝者，則於2016年8月遠赴丹麥和瑞典參加學習交流團，參觀當地的低碳綠色城市，回港後更已於2016年11月與公眾分享其學習心得。

Energy Saving Charter 2016

The year saw two major initiatives in promoting energy efficiency to the public. One was the Energy Saving Charter 2016, the fourth one since its launch in 2012. What began as a pledge to maintain an indoor temperature between 24 to 26 degrees Celsius in the summer months, with about 100 signatories in 2012, has grown and evolved into an extensive campaign with 3 300 signatories in 2016. The signatories have come from a wide spectrum including shopping malls, shops, offices, housing estates, residential buildings, NGOs, schools and post-secondary educational institutions.

The scope of the Charter has also been extended from indoor temperature to also cover switching off electrical appliances when not in use, and to procure electrical appliances with Grade 1 Energy Label to help reduce electricity consumption and carbon emissions.

Energy Championship Scheme

The other initiative was the new Energy Championship Scheme launched in 2016, aiming to commend organisations with excellent energy saving performance via adopting energy efficient technologies. The contest attracted 279 organisations under the five categories of shopping malls, office premises, housing estates and residential buildings, schools and tertiary institutions. The prize presentation ceremony was held in May 2016, and winners shared their experiences and best practices with the trade and community on how to make existing buildings more energy efficient.

Energy Saving for All Campaign

Meanwhile, the Energy Saving for All Campaign that began in 2015 has continued, with new elements added in 2017 such as the launch of the "4Ts Charter" with an emphasis on "timeline", "target", "transparent" and "together" for participating organisations. Winners of the Youth Energy Saving Award held in 2015/16 also went on a study trip to Denmark and Sweden in August 2016 to learn about low-carbon green cities and, upon return, shared their experiences in a session with the public in November 2016.



我們的工程師正檢測設於機電署總部大樓廣場，一塊有追蹤陽光功能的太陽能發電板。我們近年為廣場增添了不少綠色設施和節能科技，變身為方便公眾人士享用的空間。

Our engineer checking a sun-tracking photovoltaic panel at the piazza of EMSD Headquarters Building. The piazza has been transformed into a showcase of green features and technologies for enjoyment by the public.

「強制性能源效益標籤計劃」邁進一步

業界和其他持份者，均對建議中的「強制性能源效益標籤計劃」第三階段大力支持，而有關的條例修訂亦已提交立法會審議。這是2016/17年的一大成績，將能擴大「強制性能源效益標籤計劃」的涵蓋範圍。建議中的條例修訂法案將於2017年5月審議。

第三階段計劃一旦實施，「強制性能源效益標籤計劃」的涵蓋範圍將擴大至包括電視機、儲水式電熱水器和電磁爐，現行的冷氣機及洗衣機涵蓋範圍也會擴大。新階段計劃預計可每年節省約150兆瓦時電力，和減少105 000噸二氧化碳排放，連同該計劃現時涵蓋的電器，整個計劃屆時涵蓋的所有電器耗電量，將相等於全港住宅每年總耗電量約七成。

我們另一方面的工作是協助政府節約能源，為社區樹立好榜樣。年內，我們為各政策局及政府部門的環保經理，舉辦有關節能內務管理實務工作的簡報會，並分別於2016年5月和2017年3月，為150棟和194棟政府大樓完成能源審計工作，和建議多個能源管理機會項目。為促進各政府部門落實這批能源管理機會項目，我們更就此爭取得額外五億元政府撥款，以配合政府計劃於2019/20年節省5%耗電量的目標。

One Step Forward for Mandatory Energy Efficiency Labelling Scheme

With full support from the trades and key stakeholders for the proposed Phase 3 of the Mandatory Energy Efficiency Labelling Scheme (MEELS), a major achievement in 2016/17 was the introduction of legislative amendments to the Legislative Council that will enable the extension of MEELS product coverage. The proposed amendments will be vetted in May 2017.

Once implemented, Phase 3 will extend the product coverage to televisions, storage-type electric water heaters and induction cookers, and expand the existing scope of room air-conditioners and washing machines. The new phase is expected to bring about energy saving of 150 GWh and reduction of 105 000 tonnes of carbon dioxide emissions a year. Together with existing products under MEELS, all the product types covered will account for about 70% of total annual electricity consumption in Hong Kong's residential sector.

Helping government save energy, thus setting a good example for the community, is another aspect of our work. During the year we held a briefing for green managers of all bureaux and departments on energy saving house-keeping practices. We also completed energy audits for 150 and 194 government buildings in May 2016 and March 2017 respectively, with various Energy Management Opportunities (EMOs) recommended. To facilitate the EMOs implementation, we helped make a successful bid for $500 million additional funding earmarked for those energy saving projects, so as to meet the Government's 5% electricity saving target by 2019-20.

推廣能源效益及節能
Promoting Energy Efficiency and Conservation

創科論壇 2016

機電工程署每兩年一度舉辦的「創科論壇」已於2016年11月舉行，主題為「想像。創新。香港」，邀得特區政府高官、本地和海外學界與商界領袖、業界代表出席。論壇為期兩天，吸引了400多位參加者，集中以樓宇、運輸、能源和可持續發展等角度，探索最新的城市發展概念，願景是把香港打造為未來的智慧型都市。

EMSD Summit 2016

The EMSD Summit 2016, the latest of our biennial signature conference, with the theme "Imaginovate Hong Kong" was held in November 2016. Attended by senior SAR government officials, leading academics, business leaders and representatives of the trades both local and overseas, the 2-day event explored the latest urban development ideas from the perspectives of building, transportation, energy and sustainability with the vision of transforming Hong Kong into a smart city of the future. The event attracted over 400 participants.

區域供冷系統最新發展

年內，在能源效益基建的成績方面，我們完成了啟德發展區區域供冷系統中，橫跨啟德明渠的海底及冷凍水管敷設工程，將前啟德南面停機坪區與供冷系統南廠連接起來，並將由2017年下半年開始，為香港兒童醫院提供冷凍水，讓醫院的空調系統能於2018年該院啟用時準備就緒。此外，區域供冷系統也將由2017年年中起，向機電工程署總部大樓供應冷凍水，而未來港鐵沙中綫啟德站和宋皇臺站，也會使用其冷凍水供應服務。

District Cooling System Update

An achievement in our work on energy efficiency infrastructure during 2016/17 was the completion of the sub-sea chilled water pipe laying across the Kai Tak Approach Channel of the District Cooling system (DCS) at Kai Tak Development. This sub-sea tunnel will connect the former Kai Tak south apron area to the DSC South Plant that will start supplying chilled water to the Hong Kong Children's Hospital in the second half of 2017. This will enable the hospital to get its air-conditioning system ready for its opening in 2018. The DCS will also start supplying chilled water to the EMSD Headquarters Building in mid-2017 and the future Kai Tak Station and Sung Wong Toi Station of the MTR Shatin to Central Link will also use the chilled water supplied from the DCS.



▶▶ 機電工程署員工正檢查啟德發展區區域供冷系統的製冷機組，該供冷系統為啟德發展區內的用家提供冷凍水，以供空調之用。

EMSD staffs are checking the chiller of the District Cooling System (DCS) at Kai Tak Development (KTD). The DCS supplies chilled water to consumers in KTD for air-conditioning purposes.

▼▼ 啟德發展區區域供冷系統採用了海水作為散熱之用，圖為供冷系統的海水泵。

The District Cooling System at Kai Tak Development uses seawater for heat rejection purpose, as shown in the photo is the seawater pump.



隨着香港各新發展區的主要基建工程和新市鎮擴展工作正陸續進行，我們在區域供冷系統方面的經驗也將大派用場於有關的發展區，例如東涌新市鎮擴展和洪水橋新發展區等。我們期待香港能更廣泛採用區域供冷系統，以節能減排，也樂意扮演推動的角色。

As major infrastructure works in various new development areas (NDAs) and new town extensions throughout Hong Kong are in the pipeline, our DCS experience will be applicable to these large-scale new developments, such as Tung Chung New Town Extension and Hung Shui Kiu NDA. We look forward to playing a role in more extensive application of DCS in Hong Kong to save energy and reduce carbon emissions.

《建築物能源效益條例》及相關守則

《建築物能源效益條例》自2012年實施至今已四年多，繼2015年新版的《建築物能源守則》及《能源審核守則》刊憲頒布後，有關的寬限期亦已屆滿，所有訂明新建築物及現有訂明建築物的主要改裝工程，必須遵守有關新版守則。同時，上述兩份《守則》會每三年檢討一次，就2018年版本的內容，我們已開始進行諮詢業界及持份者。檢討工作會切合最新的技術發展和相關國際標準新動向，並符合公眾期望。

Buildings Energy Efficiency Ordinance and its Codes

The Buildings Energy Efficiency Ordinance (BEEO) has been implemented for over four years since 2012. Further to the gazetting of the upgraded Building Energy Code (BEC) and Energy Audit Code (EAC) 2015 Edition, the relevant grace periods have expired and all prescribed new buildings as well as major retrofitting works in existing prescribed buildings must follow these Codes. Meanwhile, as part of the once-every-three-years review cycle of the Codes, a new round of consultation with the trades and stakeholders has already started regarding the 2018 Edition of both Codes. The review will be in tandem with the latest technology advancements, upgrades in comparable international standards and public aspirations.

元朗公共圖書館已於2017年6月遷往新的元朗文化康樂大樓，新設施全面符合《建築物能源效益條例》。我們的同事為遷址後的圖書館檢測能效表現。

The Yuen Long Public Library was relocated to the new Yuen Long Leisure and Cultural Building in June 2017. The facility fully complies with the Buildings Energy Efficiency Ordinance. Our colleagues are checking the energy efficiency performance of the newly relocated Yuen Long Public Library.





推廣能源效益及節能
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機電署出版了《重新校驗技術指引》以協助物業管理公司、樓宇運作人員和持份者以各種「重新校驗」方法提高現有建築物的能源效益。我們的同事正檢測系統以確保校驗方法。

With the publication of our Technical Guidelines on Retro-commissioning, we can facilitate property management companies, building operators and stakeholders to improve energy efficiency in existing buildings via retro-commissioning practices. Our colleagues checking system at pilot site to confirm relevant methodology.

2017 EMSD

重新校驗技術指引

機電工程署制訂的《重新校驗技術指引》，旨在幫助物業管理公司、樓宇運作人員和其他持份者提高現有建築物的能源效益。「重新校驗」是一個具成本效益的系統性測試過程，用作定時檢查現有建築物的能源效益表現，及找出運作上的優化方案，以達到節能目的。測試過程可以單項進行，亦可配合翻新工程進行。

經兩輪諮詢後，《重新校驗技術指引》已於2017年6月30日推出。

Retro-commissioning Guidelines

The Technical Guidelines on Retro-commissioning developed by EMSD aim to help property management companies, building operators and stakeholders to improve energy efficiency in existing buildings. Retro-commissioning (RCx) is a cost effective, systematic process to periodically check the energy efficiency performance of existing buildings and identify operational improvements to save energy. The process can be performed alone or in conjunction with a retrofit project.

After two rounds of consultations, the Guidelines were launched on 30 June 2017.

淡水冷卻塔計劃

為配合相關法規和國際標準的最新要求，我們已於2016年12月完成檢討有關淡水冷卻塔計劃的現有出版物，並分別易名為《淡水冷卻塔計劃(2016版本)》，及《淡水冷卻塔實務守則：第一部分至第三部分(2016年版)》。另一份經修訂的出版物是《預防退伍軍人病工作守則(2016年版)》，並已全部上載至機電工程署網站。我們也於2016年12月舉辦技術論壇，推廣淡水冷卻塔計劃和建築物能源效益。

2017/18 年動向

機電工程署將主辦2017/18年在香港舉行的第55次亞太經合組織工作小組會議，準備工作已經展開。我們也會與環境局合作，向立法會尋求通過「強制性能源效益標籤計劃」第三階段，並開始研究該計劃在未來階段，是否可進一步涵蓋LED燈和氣體用具。而《建築物能源效益條例》各項守則的檢討和更新工作也會持續進行。

Fresh Water Cooling Towers Scheme

To cope with the latest requirements of relevant regulations and international standards, a review of existing publications of the Fresh Water Cooling Towers (FWCT) Scheme was completed in December 2016. The documents have been updated and renamed as Fresh Water Cooling Towers Scheme (2016 Edition), and the Code of Practice for Fresh Water Cooling Towers: Parts 1-3 (2016 Edition). Another updated document is the Code of Practice for Prevention of Legionnaires' Disease (2016 Edition), all of which are available on the EMSD website. A technical forum was also conducted in December 2016 to promote the FWCT Scheme and building energy efficiency.

2017/18 Initiatives

EMSD will be hosting the APEC Working Group 55th Meeting in Hong Kong in 2017/18 and preparations are under way. We shall work with the Environment Bureau to seek Legislative Council approval for Phase 3 of MEELS. At the same time, studies on future phases of MEELS to also cover LED lights and gas appliances will begin. Work to update the various Codes under BEEO will continue too.



機電署同事正為完成安裝的淡水冷卻塔進行檢查。

Our staff is carrying out inspection for the just installed fresh water cooling towers.

推廣能源效益及節能
Promoting Energy Efficiency and Conservation



我們舉辦淡水冷卻塔和建築物能源效益的規管及實務的研討會，藉以向業界推廣「淡水冷卻塔計劃」和分享建築物能源效益的最新發展。

We hold a forum on control and practice of fresh water cooling towers and buildings energy efficiency to promulgate the Fresh Water Cooling Towers Scheme and share the latest development of building energy efficiency to the trade.



為了更準確預測香港未來的能源消耗量，我們團隊會大幅修訂已沿用七年的「香港長期能源選項規劃模型」。有關修訂會充份反映近年數據定義、數據趨勢、推動耗能的成因與耗能活動之間的相聯關係、以及政府政策的轉變，以更準確預測本港未來的能源消耗量。

To more accurately predict future energy consumption in Hong Kong, we shall revamp the Hong Kong Long-range Energy Alternatives Planning (LEAP) Model, already running for seven years. The revamp will capture the latest changes in data definitions, data trends, correlations between drivers and activity indicators as well as government policies for more accurate projections.

我們團隊已在日常工作中使用移動通訊技術，例如使用「共用平台暨地理資訊系統」，方便我們在與電力法例部同事聯手巡查零售店鋪、以查核能源標籤和電器安全情況時，可利用該系統，更有效地安排巡查路線。我們並會探討應用更多技術應用方案，使日常運作更有效率。

Our team has also been using mobile technologies in daily work, such as the Common Shop Inspection Platform cum Geographic Information System to help us plan more efficiently the routes of retailer inspections of mandatory energy efficiency labels and electrical product safety, jointly with colleagues from the Electricity Legislation Division. We shall explore further technology applications to make our operations more efficient.



我們從運作啟德發展區區域供冷系統中獲得不少經驗和知識，這些在日後我們營運其他新發展區的區域供冷系統時就能派上用場。圖為供冷系統的北廠鳥瞰。

Through operating the District Cooling System at Kai Tak Development, we have gained lots of experience and knowledge which should be useful for our operation of the future DCS in new development areas. Photo shows the aerial view of the North Plant of the System.

推廣能源效益及節能
Promoting Energy Efficiency and Conservation



推廣4Ts約章
Marketing the 4Ts Charter

怎樣才能最有效推廣4Ts約章？負責這項目工程師李秀芬，就要面對這問題。

機電工程署於2012年推出節能約章並一直大力推廣，而政府最近也推出了新的4Ts約章，以「4Ts」作框架，即「訂立目標」、「制定時間表」、「開放透明」和「共同參與」。約章是香港對《巴黎協定》作出的回應，同時也鼓勵政府所有的4Ts合作伙伴，包括物業管理公司、醫院、學校和非政府機構等，訂定具體的節能目標和時間表，也鼓勵他們分享現有和計劃中的節能措施。目前已有一千多家公司和機構簽署參加約章，反應勢頭持續積極。

「推廣工作的關鍵，是去了解可能參與機構的真正需要，和他們對實際操作的疑慮。」秀芬說。舉個例，部分機構擔心他們提交的資料會作甚麼用途，她就會解釋資料只會用作統計用途，而機電工程署也不會干預參與機構的節能計劃。

至於4Ts約章有甚麼作用？確立目標本身就極有意義，秀芬說：「4Ts約章的好處，就是讓機構為自己訂立節能目標，製訂時間表，到最後便能知道節能計劃是否奏效。」另外兩個T，即「開放透明」和「共同參與」，則旨在鼓勵參與機構多跟公眾分享知識，和動員更多其他機構去參加約章。

What is the best way to "market" the 4Ts Charter? That is the question for Sue Lee, our engineer tasked with promoting the cause.

On top of the Energy Saving Charter which EMSD has been promoting since its launch in 2012, the Government has come up with a new 4Ts Charter, on the basis of the 4Ts framework, namely "target", "timeline", "transparency" and "together". It is a response to the Paris Agreement of which Hong Kong is a signatory, and aims to encourage all 4Ts partners such as property management companies, hospitals, schools and NGOs to set energy saving targets and timelines, and share their current and planned energy saving measures. Over 1 000 companies and organisations have signed up and response continues to be positive.

"The key is to understand potential participants' needs and their practical concerns," Sue said. For example, some are worried about the use of the information submitted. She assured them that it would be for statistical compilation only, and EMSD would not interfere with their energy saving plans.

Why is the 4Ts Charter useful? Sue said that having a target makes all the difference. "The beauty of the 4Ts Charter is that you set your own target and plan your timeline, so that you can measure in the end whether the energy saving plan has been successful." The other two Ts — "transparency" and "together" -- serve to encourage knowledge sharing with the public and mobilise more organisations to join the effort.



幫「三無」大廈符合《建築物能源效益條例》
Helping "Three-nil" Buildings Comply with BEEO

根據2012年全面實施的《建築物能源效益條例》規定，現有商業/綜合建築物須進行的首次能源審核，進度雖然大致良好，但於「三無」大廈卻遇上重重困難。「三無」大廈是指那些無業主立案法團、無業主委員會、也無物業管理公司的大廈，大多位於上環和油麻地等舊區。

督察高錦昌本着協助市民符合法例和促進建築物能源效益的精神，特別多走幾步，盡量聯絡這些「三無」大廈的業主。雖然業主名字和地址可以查冊找到，但郵寄給他們的信件通常都沒有回音。「要找到這些業主，唯一方法是親自上門，在附近問人，希望找到業主本人。」他說。尋找業主的過程很花時間，也要堅持和耐心。

一找到業主，接着就要向他們解釋《建築物能源效益條例》和能源審核的相關要求。

「有些業主有很多怨氣發洩，也不明白為甚麼大廈要做能源審核。」他說。他的團隊會詳細地解釋，讓業主漸漸明白和接受新法例要求。錦昌很高興的說，至目前為止，「三無」大廈業主都願意接受法例的要求。「這是對我們能源事務處工作的認同，也是一種動力。」他說。

The first round of energy audits of existing commercial/composite buildings, as required under the Buildings Energy Efficiency Ordinance (BEEO), is in good progress ever since the BEEO commenced implementation in 2012. However, "three-nil" buildings posed a challenge. They are buildings without owners' corporations, residents' organisations or property management companies, typically in older districts like Sheung Wan or Yau Ma Tei.

In the spirit of facilitating compliance with the law and promoting buildings energy efficiency, our inspector Ko Kam-cheung, took extra steps to reach out to property owners in those buildings. The owners' names and address can be ascertained via document search, but letters mailed often go unanswered. "The only way to reach the property owners is to go to the building, ask around, and hopefully find them in person," he said. The process is time consuming and requires perseverance.

Once the owners are found, what follows is to explain to them how to comply with the BEEO and energy audit requirements.

"Some owners have lots of frustrations to vent and do not understand why their buildings need to conduct energy audits," he said. The team makes detailed explanations, so that the owners gradually understand and accept the requirements. Kam-cheung was also delighted to point out that so far, owners of "three-nil" building are willing to accept the idea of complying with the new law. "It is a sort of motivation and appreciation of our work in the Energy Efficiency Office," he said.

提高公眾安全及節能意識
Raising Public Awareness of Safety and Energy Conservation

與持份者聯繫溝通是我們十分重要的工作，用以提高公眾的安全及節能意識、和向業界提倡良好的實務做法。我們相信公眾教育比檢控，更能有效提高市民和業界的安全與能源效益水平。以下是我們年內，為業界和公眾度身設計的主要聯繫溝通活動。

Stakeholder engagement is a very important part of our work in building public awareness of safety and energy efficiency, and promoting best practices. We believe that public education is more effective than prosecution in achieving a high level of safety and energy efficiency, both for the trades and the public. Below are some of our key engagement initiatives tailored for the trades and the public during the year.

聯繫業界 ENGAGEMENT WITH THE TRADES

我們與各個受規管的業界及相關行業，有非常多元化和深入的互動溝通。除了既定的溝通渠道，如定期會議、簡報會/研討會，和向商會、工會、專業團體及培訓機構發出通告和通訊刊物等文字資料之外，規管服務的各個部別，多年來都透過各種工作小組和諮詢委員會，去鼓勵業界表達意見和提出建議，務求掌握和了解業界的實際疑慮和感受。

Our communication with the regulated trades and related industries are diverse, deep and dynamic. Apart from established channels like regular meetings, briefings/seminars and written communications such as circulars and newsletters for trade associations, workers' unions, professional bodies and training institutes, our Divisions over the years have also engaged the trades via a network of working groups and advisory committees to solicit their views and suggestions, and to gauge the trades' practical concerns and sentiments.

我們也相信，別人的認同可激勵更佳表現。因此我們近年積極投放資源，組織各式獎項、比賽和多個自願性質的註冊/約章計劃，以激勵業界參與和改善實務操作做法。

We also believe that recognition motivates performance. Hence in recent years we have invested more resources in organising awards, contests and various voluntary registration/charter schemes to motivate the trades to participate and improve their practices.



要確保升降機及自動梯安全，改變使用者習慣及行為是十分重要，所以宣傳及公眾教育仍是我們的工作重點。

Avocating the change in passenger behaviour is pivotal to lift and escalator safety. Therefore, we continue to attach great importance to publicity and public education.

獎勵計劃

年內，我們持續調校改善各種為業界而設的嘉許和獎勵計劃，像2015年推出的「優質升降機服務認可計劃」及2016年推出的「瓶裝石油氣分銷商安全表現評級計劃」。二者都以根據一套安全及服務表現準則而進行的獨立審核結果，去評定參加計劃的負責人、承辦商或氣體分銷商應得到金級、銀級或銅級評級和證書，目的是對其表現作出嘉許，並激勵大家做得更好。所有結果和評級資料都已上載機電工程署網頁，讓市民在挑選服務供應商時，可作出更明智選擇。

與此同時，一些既有的比賽，如「傑出註冊電業工程人員選舉」這類每兩年一次具代表性的活動，則繼續舉行。

Award Schemes

We continued to refine and improve various recognition schemes for the trades, such as the Quality Lift Service Recognition Scheme and the LPG Cylinder Distributor Safety Performance Recognition Scheme, launched in 2015 and 2016 respectively. Both schemes use independent audit results per a set of safety and performance criteria as the basis for awarding gold, silver and bronze ratings and corresponding certificates to participating responsible persons, contractors or gas distributors, so as to recognise their performance and motivate further improvements. All the results and ratings are available on the EMSD website to help the public make informed choices of service providers.

Meantime, established contests such as the Outstanding Registered Electrical Worker Awards Scheme have continued as our biennial signature events.

註冊與約章計劃

我們在2016/17年度推出了幾個新的註冊和約章活動。早於2015年7月首推的「車輛維修工場自願註冊計劃」，則於2016年5月，假一大型商場舉行推廣日，吸引了數百位業界人士和市民參加。截至2017年3月底，該註冊計劃已吸引了全港約六成的車輛維修工場註冊，數字仍在不斷上升。

Registration and Charter Schemes

2016/17 saw the extensive promotion or launch of several registration and charter schemes. The Voluntary Registration Scheme for Vehicle Maintenance Workshops (VRSVMW), launched in July 2015 with the aim to enhance the service quality of vehicle maintenance workshops, held a Promotion Day in May 2016 at a mega shopping mall which attracted hundreds of trade practitioners and members of the public. As of end March 2017, the VRSVMW has attracted some 60% of all vehicle maintenance workshops in Hong Kong to register. The number continues to go up.

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約章方面，早於2012年推出的「節能約章」，至2016年已是第四屆。今屆約章吸引了3 300多個場所簽署，承諾履行各種節能措施，例如由六月至九月期間，把室內溫度控制於攝氏24至26度之間，及採購節能電器產品等。

As to charters, a key one is our annual Energy Saving Charter launched in 2012 which saw its fourth edition in 2016, attracting over 3 300 premises to sign up and pledge to various energy saving practices such as maintaining indoor temperature of 24–26 degree Celsius from June to September, and procuring energy efficient appliances.

2016/17年度的新猷是「4Ts約章」，是政府與業主及管業經理的伙伴計劃，旨在鼓勵這類持份者運用4Ts框架，即據「訂立目標」、「制定時間表」、「開放透明」和「共同參與」四個原則，由每個參與機構去訂定本身的具體節能目標和制定時間表，公開分享節能表現記錄，並與政府和其他持份者合作，去落實其節能目標。新約章很受歡迎，已有千多個機構簽署參加。

A new initiative in 2016/17 was the 4Ts Charter, a partnership with building owners and managers to motivate them to save energy in the built environment under the 4Ts framework, namely "target", "timeline", "transparency" and "together". Each participating organisation is expected to come up with a plan with a specific energy saving target and timeline, make available its performance records, and work together with government and other stakeholders to achieve its target. The new Charter is well received and over 1 000 organisations have signed up.



「慳神大比拼」2016的優勝隊伍與環境局局長黃錦星先生於頒獎典禮合照。

Winning teams of the "Energy Saving Champion Scheme" 2016 posed with Mr. Wong Kam-sing, Secretary for the Environment, at the prize presentation ceremony.

諮詢業界

諮詢業界十分重要，旨在確保受規管者的意見，獲得充份聆聽和考慮，而這類正式和非正式的交換意見與資訊，也有助我們感受業界的實際處境，對業界的疑慮和關注問題也保持敏感度。除了各式各樣有業界商會及代表參與的定期會議、論壇、工作小組、專責小組和諮詢委員會之外，去年我們更增添了幾個新渠道。

Consulting the Trades

Trade consultation is critical as it ensures that regulatees' views are heard and taken into full account. These formal and informal exchanges of views and information also keep us stay sensitive to the trades' concerns. In addition to a variety of regular meetings, forums, working groups, task forces and advisory committees involving various trade associations and representatives, last year also saw several new initiatives.

至於近年建築物能源效益推廣工作能取得成效，業界諮詢是絕對不能或缺的要素之一。當中每三年一次檢討及優化《建築物能源效益守則》的工作，和「強制性能源效益標籤計劃」的未來拓展階段，均涉及持續的諮詢業界過程。至於2017年6月已推出的《重新校驗技術指引》，也包含了大量機電業界的專業意見，有助各持份者在其建築物內落實重新校驗。我們會繼續與業界合作，持續優化該《指引》。

A key factor for the success in promoting buildings energy efficiency, trade consultation is also an ongoing process on matters such as the once-every-three-years cyclical upgrading of the Building Energy Codes, as well as future phases of the Mandatory Energy Efficiency Labelling Scheme. Our Technical Guidelines on Retro-commissioning (RCx), launched in June 2017, have also incorporated considerable input from the E&M trades to facilitate stakeholders to implement RCx in their own buildings. We shall continue to collaborate with them to refine the Guidelines in future.

我們也會進行業界意見調查，找出業界關注的事項，和了解業內人士切身的福祉問題，務求找出改善方法。2016年進行的升降機及自動梯業界調查就是一例。

Trade survey is another tool to help us identify issues of concern for the trades and the general well-being of trade practitioners for improvement initiatives, such as the Lift and Escalator Trade Survey conducted in 2016.

會議及國際交流

機電工程署近年為多個在港舉行的機電安全及能源效益會議作東道主，讓香港躋身區域和國際業界交流會議中心之列。例如2016年11月舉行的「創科論壇」，主題是「想像∞創新∞香港」。會議趁現時部分城市正轉型為未來智慧型都市之際，從樓宇、運輸、能源和可持續發展等角度，探索最新的城市發展概念，吸引了400多位來自本地及海外的政府官員、商界、學者及非政府機構人士參加。這論壇也是機電工程署每兩年一度的部門旗艦活動。

Conferences and International Exchange

EMSD has played host to various E&M safety and energy efficiency conferences in recent years, putting Hong Kong on the map as a hub of regional and international exchange for the trades. An example was the EMSD Summit 2016 held in November, the latest of our biennial signature conference with the theme "Imaginovate Hong Kong". It explored the latest urban development ideas from the perspectives of building, transportation, energy and sustainability as existing cities transform into smart cities of the future. Over 400 local and overseas participants from government, business, academia and NGOs attended the event.

年內，我們也積極籌備將於2017年10月與港鐵公司合辦的第27屆「國際鐵路安全議會」會議。會議匯聚了全球和內地的鐵路規管機構、營運商和專家，堪稱鐵路安全及發展方面最重要的國際交流活動。香港快將於2018年接駁內地高鐵網絡，此時在港主辦鐵路盛事，正合時宜。

Much work was done during the year to prepare for the 27th International Railway Safety Council (IRSC) Conference that we are co-hosting with MTR Corporation Ltd in October 2017. Bringing together railway regulators, operators and experts from around the world and the Mainland, IRSC is the most important international event for railway safety and development. It is also timely given Hong Kong's imminent connection to the Mainland's high-speed railway network in 2018.

2017年也是機電工程署與國家質量監督檢驗檢疫總局合作的14周年，我們除了於2017年6月主辦「國家質量監督檢驗檢疫總局—機電工程署周年大會」外，更特別舉辦了公眾展覽及聯繫年青人的活動。

2017 was EMSD's 14th year of cooperation with the Mainland's General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ). Special events were held in Hong Kong to mark the occasion, such as an exhibition and youth engagement activities, in addition to the AQSIQ-EMSD annual general meeting which EMSD hosted in June 2017.

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一年一度的機電署電力規例研討會是我們的旗艦活動之一，專為電氣行業各持份者舉辦，深受業界歡迎。2016 年的電力規例研討會假荃灣大會堂舉行，吸引了數百名電業界人士參加。

The EMSD Annual Technical Seminar for the electrical trade is one of our signature events that is highly popular with various stakeholders in the electrical trade. The 2016 Annual Technical Seminar was held at Tsuen Wan Town Hall and well attended by hundreds of electrical trade practitioners.





聯繫公眾 ENGAGEMENT WITH THE PUBLIC

我們跟市民大眾的聯繫工作，重點是以多渠道多類型活動，適時有效地與不同的目標對象溝通，並強調部門運作高度透明，和盡量分享資訊。對傳媒查詢，我們以專業方式適時回應，而公眾投訴和查詢也盡快處理。在適當情況下，個別同事更會多走一步，協助投訴人找出問題的成因，幫忙解決問題，化投訴為嘉許。

Our public engagement programme focuses on timely and effective communication with various target audiences via a multitude of channels and activities, with a high degree of transparency in our operations and information dissemination. We address media enquiries in a professional and timely manner, while complaints and enquiries from the public are handled promptly. Where appropriate, individual officers often go the extra mile to help complainants look into the root cause of the issues and help resolve the problems, turning complaints into compliments.

為了宣傳機電安全和能源效益訊息，我們也運用不同的社交媒體，再配合傳統的離線工具，推出多元化的宣傳運動和盛事活動，以接觸特定的目標受眾。我們正與多個非政府機構和其他組織，商討如何合作宣傳，期望能把部門的資源發揮更大效用，也可學習其他機構在宣傳推廣方面的長處。

To promote specific safety and energy efficiency messages, we have deployed a mix of social media and traditional offline tools in diverse publicity campaigns and events in order to reach out to the intended audiences. We are also stepping up collaboration with NGOs and other organisations in publicity and communication matters, both to optimise our resources for bigger impact and to learn from others.

傳媒關係

傳媒是市民知悉我們工作表現的主要訊息來源，因此我們對新聞界採訪，都力求主動配合和保持高透明度。除了應對傳媒日常查詢，我們也不時安排專訪或特寫故事，提醒市民我們各種活動背後的安全與節能訊息。我們每年也舉辦傳媒聚會，讓記者和部門高層管理人員見見面，更新聯繫。

Media Relations

For the public, the media are the key source of information about our work and so we strive to be pro-active and highly transparent when it comes to working with journalists. Apart from handling day-to-day media enquiries, we also arrange media interviews and special features from time to time to remind the public of the safety and energy conservation messages which underpin our initiatives. We also hold an annual media gathering to refresh contacts between journalists and our senior management.

獎項與比賽

比賽與獎項既可激勵參加者，予以嘉許認同，也可動員市民大眾反思安全和節能等問題，改變大眾的行為。2015 年「全民節能」運動，就有兩項為市民而設的比賽，即「慳電熄一熄青年獎」和「新能源‧新世代」太陽能車比賽，已於 2016/17 年度圓滿結束，頒獎禮亦已於 2016 年 6 月舉行。

2016 年 8 月，機電工程署署長更親自率領「慳電熄一熄青年獎」得獎者組成學習團，遠赴丹麥和瑞典，參觀歐洲城市的低碳環保措施。學習團回港後，團員更於 2016 年 11 月舉行公眾分享會，是整個活動的壓軸項目。

Awards and Contests

Competitions and awards provide motivation and recognition, which can mobilise the public to reflect on safety and energy efficiency issues and transform their behaviour. Two contests for the public under the "Energy Saving for All 2015" campaign, namely the Youth Energy Saving Award and New Energy New Generation Solar Car Competition were successfully concluded in 2016/17, with prize presentations held in June 2016.

The Director of Electrical and Mechanical Services also led winners of the Youth Energy Saving Award on a study trip to Denmark and Sweden in August 2016 to learn more about low-carbon green practices in European cities. A public sharing session by the trip participants was held in November 2016 as the finale.

機電青少年大使與樂齡科技博覽

「機電青少年大使」是機電工程署聯繫青少年的活動計劃，已登記成員有 6 000 多名，近年都積極參加我們的多種活動，例如由香港社會服務聯會（社聯）於 2017 年 6 月主辦、多個政府部門包括機電署和多個其他機構支持的全港首個「樂齡科技博覽暨高峰會」，其中由我們聯同社聯一起主辦的「樂齡科技顯愛心」青少年比賽，就有很多機電青少年大使參與。比賽目的是鼓勵參加者提出創新的產品意念，讓長者生活更方便、更健康愉快。

EMYA and Gerontech Expo

The E&M Young Ambassador programme (EMYA), our youth engagement scheme with over 6 000 registered members, has played an active role in many EMSD community engagement activities in recent years. The latest example was the Gerontech Youth Challenge, part of Hong Kong's first-ever Gerontech Expo cum Summit held in June 2017 organised by the Hong Kong Council of Social Service (HKCSS) and supported by the Government including EMSD and many other organisations that co-organised by HKCSS and us. Many EMYA members participated in the Gerontech Youth Challenge, a competition of creative product ideas that aims to enhance the health, convenience and well-being of the elderly.

提高公眾安全及節能意識
Raising Public Awareness of Safety and Energy Conservation

樂齡科技和照顧銀髮一族，或非我們的規管工作範疇，但與市民的安全和生活質素則息息相關，因此我們很高興有機會盡一分力。這也是我們首次與社聯合作，期望日後能跟更多非政府機構有其他合作。

Gerontechnology and caring for the elderly may be beyond the scope of our regulatory duties, but are highly relevant to safety and people's quality of life. In that regard we were delighted to have the opportunity to contribute to the cause. It was also our first collaboration with HKCSS, and we look forward to more collaboration with NGOs in future.

年內，「機電青少年大使」計劃也為成員安排了一系列參觀活動，包括參觀國泰城、中電青山發電廠和「電力世界」展覽廳、港鐵九龍灣車廠、香港天文台和機電工程署總部大樓。

During the year EMYA also organised many visits for members. The Young E&M Ambassadors enjoyed great fun and acquired knowledge about E&M safety and energy efficiency matters during visits to Cathay City, the Castle Peak Power Station "ElectriCity", MTR Kowloon Bay Depot, the Hong Kong Observatory and EMSD Headquarters Building.



機電署的機電青少年大使參觀港鐵九龍灣車廠，親身體驗鐵路運作方面的機電安全工作。

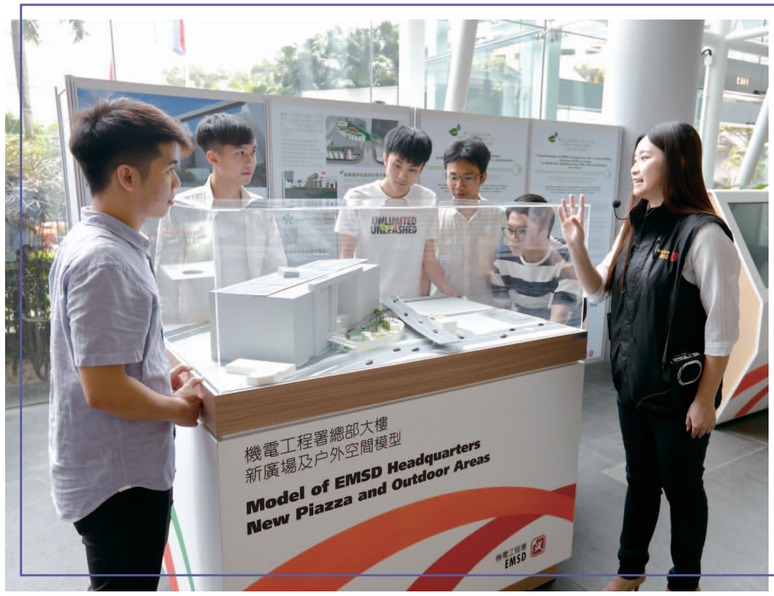
Our E&M Young Ambassadors on a visit to MTR Kowloon Bay Depot to learn first hand about E&M safety in a railway operation setting.

協作、外展、優化總部

我們一直都探討如何與其他機構協作，把機電安全和能源效益的宣傳工作做得更好。例如我們已把電力安全短片，放到幾個非政府機構的社交媒體平台，務求更有效接觸某些目標對象。我們也跟香港房屋協會合作，提醒住戶在裝修家居時，必須僱用註冊電業承辦商和註冊電業工程人員，以策安全。

Collaboration, Outreach, Headquarters Improvements

Indeed, we have always explored collaboration opportunities with other organisations in publicising E&M safety and energy efficiency. A case in point was sharing our electricity safety videos on social media of other NGOs so as to reach the target audiences more effectively. We also work with the Hong Kong Housing Society to remind their tenants to only employ Registered Electrical Contractors and Registered Electrical Workers during electrical renovation works to ensure safety.



機電署總部大樓正進行多項改建工程，變為更綠化環保的公共空間，供公眾人士享用。圖為學生參觀總部大樓模型，導賞員則簡介各種綠化和能源效益設施。

The EMSD Headquarters Building is being transformed into a sustainable space for enjoyment by the public. Photo shows students viewing a model of the headquarters building while one of our tour guides explained the various greening and energy efficiency facilities.

正如「機電青少年大使計劃」，我們的學校外展計劃也行之多年，深受全港學校和學生歡迎。2016/17年度，我們來自各部別的全職學校宣傳大使隊伍，走訪了331所機構，主持機電安全和能源效益講座，共涵蓋207所幼稚園、36所小學、29所中學、1個專業團體、5所特殊學校、51所老人和社區中心與2個其他機構，並於多家學校舉辦了96次展覽和互動問答遊戲。

Just like the EMYA scheme, our school outreach programme is well established and popular with schools and students all over Hong Kong. In 2016/17, our team of full-time school ambassadors from various Divisions visited a total of 331 institutions to deliver talks for the promotion of E&M safety and energy efficiency, covering 207 kindergartens, 36 primary schools, 29 secondary schools, 1 professional institute, 5 special schools, 51 elderly and community centres and 2 other organisations. The team also held 96 roadshows and exhibitions with fun quizzes at various schools.

至於總部大樓教育徑的導賞活動仍深受歡迎。雖然教育徑年內進行翻新工程，只能局部開放，但2016/17年度，我們仍舉辦了334次導賞活動，接待了來自學校、社區和青少年中心、本地專業組織和海外的訪客。教育徑翻新工程將於2018年年初完成，屆時教育徑將以全新面貌開放，讓訪客有煥然一新的體驗。

The in-bound guided tours to the Education Path at our headquarters building were as popular as ever, though it was under renovation and hence only partially opened during the year. A total of 334 guided tours for schools, community and youth centres, professional bodies and overseas visitors were held in 2016/17. When renovation works are fully completed in early 2018, the revamped Education Path will re-open to give a brand new experience to visitors.

與此同時，我們總部大樓外的廣場持續進行綠化和改善工程，進展良好，目的是提供一個可持續發展的優質公共空間，與社區人士共享。

Meantime, continuous greening and improvement works in our piazza were in good progress, which will provide a sustainable, high-quality public space for all in the neighbourhood to enjoy.

機電工程營運基金報告

ELECTRICAL AND MECHANICAL SERVICES TRADING FUND REPORT



抱負 VISION

致力提供優質機電工程服務，精益求精，以提升市民的生活質素。

To improve the quality of life for our community through continuous enhancement of our electrical and mechanical engineering services.

使命 MISSION

客戶 CUSTOMER

提供優質的工程方案，以滿足客戶的需要。

Providing quality engineering solutions to satisfy our customers' needs.

員工 STAFF

建立一支卓越的員工隊伍，並維持和諧的工作環境。

Developing a competent workforce and maintaining a harmonious environment.

部門 ORGANISATION

掌握科技發展和流程改善，以提供更佳服務。

Keeping pace with technology development and process improvement for service enhancement.

信念 VALUES

誠信 INTEGRITY

我們秉持誠信，維持良好道德操守。

We uphold honesty and integrity to embrace an ethical culture.

出色服務 SERVICE EXCELLENCE

我們提供安全可靠、高效率、具成本效益和優質的服務。

We provide safe, reliable, efficient, cost-effective and quality services.

關懷 CARING

我們關懷員工、客戶和市民大眾，並重視環保。

We care for our staff, customers, community and the environment.

以客為本 CUSTOMER FOCUS

為滿足客戶的各種需要，我們盡心竭力，積極提供工程方案，以贏取客戶的信任和支持。

We focus on the needs of our customers and provide engineering solutions in a proactive and responsible manner to win their trust and support.

承擔 COMMITMENT

我們言行一致，信守承諾。

We do what we promise.

常務委員會
Executive Board

主席 CHAIRMAN



韓志強太平紳士
Mr Hon Chi-keung, JP
發展局常任秘書長(工務)
Permanent Secretary for Development (Works)

成員 MEMBERS



麥成章太平紳士
Mr Mak Shing-cheung, Vincent, JP
發展局副秘書長(工務)2
Deputy Secretary for Development (Works)2



薛永恒太平紳士
Mr Sit Wing-hang, Alfred, JP
機電工程營運基金總經理(機電工程署署長)
General Manager, EMSTF (Director of Electrical and Mechanical Services)

秘書 SECRETARY



戴德謙太平紳士
Mr Tai Tak-him, JP
機電工程署副署長/營運服務
Deputy Director/Trading Services, EMSD



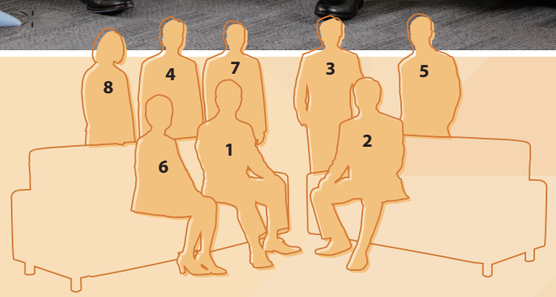
羅肇嫻女士
Ms Lo Siu-han, Cynthia
機電工程署主任秘書
Departmental Secretary, EMSD

* 陳志明太平紳士出任發展局副秘書長(工務)2至2016年10月4日
Mr Chan Chi-ming, JP was Deputy Secretary for Development (Works)2 up to 4 October 2016

* 陳帆太平紳士出任機電工程署署長至2017年6月30日
Mr Chan Fan, Frank, JP was Director of Electrical and Mechanical Services up to 30 June 2017

管理委員會
Management Board





主席 CHAIRMAN

1 **薛永恒太平紳士**
Mr Sit Wing-hang, Alfred, JP
機電工程營運基金總經理(機電工程署署長)
General Manager, EMSTF (Director of Electrical and Mechanical Services)

成員 MEMBERS

2 **戴德謙太平紳士**
Mr Tai Tak-him, JP
機電工程署副署長/營運服務
Deputy Director/Trading Services, EMSD

3 **王錫章太平紳士**
Mr Wong Sek-cheung, JP
機電工程署助理署長/1
Assistant Director/1, EMSD

4 **張遠芳先生**
Mr Cheung Yuen-fong
機電工程署助理署長/2
Assistant Director/2, EMSD

5 **張國輝太平紳士**
Mr Cheung Kwok-fai, JP
機電工程署助理署長/3
Assistant Director/3, EMSD

6 **李碧雲女士**
Ms Li Pik-wan, Clara
機電工程署財政經理
Finance Manager, EMSD

7 **王文剛先生**
Mr Wong Man-kong
機電工程署員工關係主任
Staff Relations Officer, EMSD

秘書 SECRETARY

8 **羅肇嫻女士**
Ms Lo Siu-han, Cynthia
機電工程署主任秘書
Departmental Secretary, EMSD

* 陳帆太平紳士出任機電工程署署長至2017年6月30日
Mr Chan Fan, Frank, JP was Director of Electrical and Mechanical Services up to 30 June 2017

* 張丙權太平紳士出任機電工程署助理署長/1至2017年2月13日
Mr Cheung Ping-kuen, Michael, JP was Assistant Director/1, EMSD up to 13 February 2017

* 麥家俊太平紳士出任機電工程署助理署長/2至2016年12月19日
Mr Mak Ka-chun, JP was Assistant Director/2, EMSD up to 19 December 2016

業務回顧與前瞻
Operations Review and Outlook



戴德謙太平紳士
Mr Tai Tak-him, JP
機電工程署副署長/營運服務
Deputy Director/Trading Services, EMSD

2016/17年度是重要的一年。年內，機電工程營運基金20周年慶祝活動圓滿結束，其間讓我們回顧了營運基金的發展。這也是我們首個五年計劃的第四年，是開始部署下一個十年路向的好時機。

2016/17年度的財務表現穩健，並超越我們的業務目標，總收入為62.03億港元（2015/16年度：57.64億港元），收入回報率為5.3%（2015/16年度：4.8%）。我們繼續以微利營運的方針為客戶創造最大價值，並確保營運基金能持續發展。

The year 2016/17 was significant in that it marked the conclusion of our 20th anniversary celebratory activities, giving us a chance to reflect on EMSTF's development. It was also the fourth year of our first five-year plan, and an opportune time to start thinking about our next decade.

The 2016/17 financial results were steady and exceeded our business targets, with total revenue at HK$6,203 million (2015/16: HK$5,764 million) and return on revenue at 5.3% (2015/16: 4.8%). We maintained our slim-profit operating principle to optimise value for clients while sustaining our continuous development.

年內亮點

年內，我們達致了多個里程碑。首先，我們透過公開投標成功取得醫院管理局（醫管局）的工程合約，由2017/18年度起，繼續提供五年服務。這是醫管局由以往簽訂服務水平協議的安排轉為招標方式後，我們取得的首批大型合約。合約範圍包括為醫管局轄下醫院及診所的機電、空調、屋宇裝備、電子系統及多種生物醫療設備，提供操作及維修保養服務。雖然招標過程及隨後的合約管理工作涉及額外成本，但我們尊重客戶改變採購方法的意願。事實上，我們仍與醫管局保持穩固的伙伴關係，也定會不斷提高生產力，以應對未來的挑戰。

第二個里程碑是協助客戶制訂節能計劃及預算以提交政府，所涉及的未來五年建議撥款約為5億港元。隨着港珠澳大橋等重大基建項目快將陸續落成，客戶部門對營運基金的服務需求定必上升。我們必須把握這黃金機會，不單要協助客戶按政府要求完成五年內節能5%的目標，還要透過資產更新，以及善用軟件和數據以對機電系統作更精密的微調，從而加快科技轉型，以優化空調系統等客戶資產的表現。

第三個里程碑是營運基金內部的「Shine 30+」行動，目的是鼓勵年青一代的同事表達他們心中對營運基金未來十年及以後日子的發展願景。營運基金幾位新進高級工程師組成了專責小組，並撰寫「Shine 30+」報告，提出未來十年的機構發展，必須具備「創新」、「同心協力」、「靈活應變」及「具透明度」這四項組織特質。報告已獲高級管理人員接納，其中部分建議會納入營運基金下一個五年計劃內。

2016/17 HIGHLIGHTS

The year was punctuated by several milestones. The first was successfully securing our work for the Hospital Authority (HA) via open tender, our first major contracts from the former Service Level Agreement arrangement, for another five years from 2017/18. The contracts cover operation and maintenance (O&M) services for electrical and mechanical (E&M), air-conditioning, building services and electronic systems and various biomedical equipment at HA hospitals and clinics. Though the tender process and subsequent contract administration pose additional cost implications, we respect the client's wish to change the procurement approach. Indeed, we have maintained strong partnership with HA and shall continue on our journey of productivity improvement to meet future challenges.

The second milestone in 2016/17 was our work to help clients prepare energy-saving projects and budget for submission to the Government, with funding proposals worth about HK$500 million over the next five years. Together with the forthcoming completion of major infrastructure projects, such as the Hong Kong-Zhuhai-Macao Bridge, demand for EMSTF's services is set to increase. This will give us a golden opportunity not only to help clients achieve 5% energy saving in five years as required by the Government, but also to expedite technology transformation that will optimise the performance of clients' assets, such as air-conditioning systems, via asset upgrading and the smart use of software and data for fine control.

The third milestone was our internal "Shine 30+" initiative, which aimed to encourage the new generation to articulate their vision for EMSTF development in the coming ten years and beyond. The "Shine 30+" report, prepared by a group of up-and-coming EMSTF engineers, outlines four organisational characteristics, namely Innovative, Connected, Agile and Transparent (ICAT) that will be vital to our organisational development in the next decade. The report has been accepted by our senior management, and some of the recommendations therein will be deployed in EMSTF's next five-year plan.

業務回顧與前瞻
Operations Review and Outlook

業務增長和人力資源突破

上述各項節能計劃及新基建項目落成，預期會帶來業務增長，但對我們的人手和資源運用也會構成壓力。可喜的是，營運基金已成功向政府申請開設42個公務員職位，並於2016/17年度全數落實。

經過多年來維持人手編制不變後，如今終於可增聘公務員，讓我們消除了營運上的一個「樽頸」問題。新職位有助營運基金更好地運用資源，而非公務員合約員工及承辦商，則仍是我們人力資源組合的重要部分。另外，四年前我們全面改革技術員培訓計劃時所聘請的首批100名見習技術員，已於2016/17年度畢業。隨着每年都有新一批的見習技術員畢業，這培訓計劃將源源不絕地為我們的前線團隊提供新血。

人力資源的突破，加上我們致力研訂員工才能矩陣，都有助提升員工的能力，並有效地讓員工保留核心技能和學習新技術，兩者對營運基金的發展都至關重要。

BUSINESS GROWTH AND HUMAN RESOURCE BREAKTHROUGHS

The anticipated business growth arising from various energy-saving and new infrastructure projects, as mentioned above, is set to put pressure on manpower and our resource utilisation. The good news is that regarding EMSTF's successful bid to the Government for 42 new civil service posts, all of them were created in 2016/17.

The recruitment of additional civil service staff after years of maintaining the same establishment has removed one of our operational bottlenecks. The new posts will help EMSTF mobilise our resources better, though non-civil service contract staff and contractors will continue to play an important role in our manpower mix. Meanwhile, the first cohort of 100 technician trainees recruited four years ago, when our revamped training scheme was launched, graduated in 2016/17. With new cohorts coming through the system, the scheme will provide a steady stream of new blood for our frontline team.

These human resource breakthroughs, together with our drive to develop the staff competence matrix, will help us build staff capacity and retain core and new skills in-house more effectively, both of which are crucial to EMSTF's development.

由操作及維修保養至節能與系統優化

年內，我們繼續協助客戶更新現有或老化的資產，並加強資產管理。舉例來說，我們把所有服務年期已達25年或以上並須更換的機電資產列入清單，讓政府可預留所需的撥款。

有一點令我們感到興奮的，就是為達到節能5%的目標而實施的各種能源管理項目，讓我們有機會進行改革，為資產營運環境帶來全新景象，而更新資產只是第一步。事實上，隨着我們能更精確地調控機電資產的運作，例如利用感應器和數據分析以提升空調系統的運作表現，我們要為客戶節省更多能源和進一步提升資產可靠度，並非不可能。

FROM O&M TO ENERGY SAVING AND SYSTEM OPTIMISATION

Our work to help clients better manage and upgrade existing or ageing assets continued during the year. For example, we drew up a list of E&M assets that have been in service for 25 years or more and ought to be replaced, so that the Government may prepare the appropriate funding in advance.

We are also excited about the potential for a complete overhaul of our asset operating landscape, which is arising from the various energy management projects that aim to achieve the target of 5% energy saving. Asset replacement is only the first step. Indeed, with more precise control of assets, such as optimised operational control of air-conditioning systems, enabled by sensors and data analytics, additional energy saving and greater reliability for clients are not impossible.

因此，我們操作空調及其他系統時必須採用全新方法，包括重新培訓員工，目的不單是節能，而且要全面提升各種機電系統的整體表現。我們也可善用類似的能源管理機會，提升政府建築物的電力、照明、升降機及自動梯系統的表現。我們的目標是推行新方法，建立成功案例，為業界找出最佳做法，務求惠及各方。

反思營運基金的路

有賴客戶的支持，2016年9月舉行的營運基金20周年壓軸慶典非常成功。我們也藉此機會，反思營運基金發展路上的波折起伏。營運基金的歷史，經歷過掙扎求存與持續改進，並依循成長、整合、調整又再成長的模式發展。自2012年起，我們邁進更成熟的階段，聚焦於為客戶及社會創造公眾價值。

在操作及維修保養服務的心態方面，我們亦大有進步。營運基金成立初期，我們滿足於「包搞掂」。及後，我們的焦點由修理故障轉為預防故障，以做到「包沒事」為目標，提高客戶工程系統及設備的可用性。後來，隨着全球綠色技術一日千里，我們便提高目標以達到「包滿意」，並專注為客戶節約能源。我們最新的目標是「包智能」，即有效地利用資訊與通訊科技和物聯網技術，協助客戶透過數碼化管理其機電資產，同時優化系統表現。

這些變化已令營運基金轉型，而很多其他服務機構也曾經歷類似改變。傳統的操作及維修保養模式，已轉移至領域更廣闊的系統表現優化。

This calls for a new approach to the operation of air-conditioning and other systems, including re-training our staff, with the aim not only to save energy but also to optimise overall system performance. Similar energy management opportunities can also be leveraged to optimise the performance of electrical, lighting and lift and escalator systems in government buildings. Our goal is to implement the new approach, establish a few success cases and then identify the best practices for the trade so as to benefit all.

REFLECTIONS ON THE PATH OF EMSTF

Thanks to the support of clients, EMSTF's 20th anniversary finale ceremony held in September 2016 was a great success. The occasion gave us an opportunity to reflect on the twists and turns of EMSTF's development. Ours is a story of survival and continuous improvement, following a pattern of growth, consolidation and adjustment. Since 2012, we have entered a more mature phase where the focus has been to create public value for our clients and the community.

In terms of the O&M service mindset, we have also come a long way. In the early days of EMSTF, we used to be content with "guaranteed fixed". Then our focus shifted from fault rectification to fault prevention, aiming at "guaranteed no breakdowns" so as to achieve a high availability of plant and equipment for clients. Then, with advancements in green technologies worldwide, we aimed higher at "guaranteed satisfied", with a focus on helping clients save energy. The latest goal is "guaranteed smart", making intelligent use of information and communication technology and Internet of Things technologies to help clients manage E&M assets through digitisation and optimise system performance.

These shifts have changed EMSTF, and also played themselves out in many other service organisations. There has been a paradigm shift from traditional O&M to the wider realm of system performance optimisation.

業務回顧與前瞻
Operations Review and Outlook

糅合經驗與青春活力

轉型是新的挑戰，需要新的解決方案、技術應用及創新意念。正如「Shine 30+」專責小組報告提到，我們應該重新審視機構的發展，為未來作好準備，將焦點集中於「創新」、「同心協力」、「靈活應變」及「具透明度」方面。以培訓技術員為例，新世代的見習技術員從小就接觸智能電話和手機應用程式，如繼續單以上世紀的傳統操作及維修保養方法來訓練他們，未免有違常理。不過，這並不表示現行做法及概念已毫不相關，我們仍應重視現有的技術、知識及經驗，並視之為持續發展的基礎。

保留資深員工的智慧，跟培育新一代的理想和活力同樣重要。我們應該激發和結合不同世代員工的優良質素，發揮「靈活應變」的作用，即是機構須有靈活性，讓員工能不斷嘗試新事物，從而學得更快，並緊貼時代的快速步伐。同樣道理，為了做到「同心協力」和「具透明度」，我們鼓勵員工透過具高透明度的溝通方式積極參與，共同承擔問題，共同制訂方案。

COMBINING EXPERIENCE WITH YOUTHFUL VITALITY

This transformation is a new challenge that calls for new solutions, technology application and innovation. As the "Shine 30+" report rightly points out, we ought to re-think our organisational development to get ready for the future, focusing our efforts on achieving ICAT. Take technician training as an example: the new generation of technician trainees has grown up with smart phones and mobile apps, and so it would be absurd if we continue to train them only with old O&M methods from the last century. Having said that, it does not mean that existing practices and ideas will become irrelevant. We should treat all our existing skills, knowledge and experience with respect and as the basis for continuous development.

Retaining the wisdom of experienced staff is as important as nurturing the aspirations and vitality of our younger generation. We must bring out and combine the best qualities in different staff generations. This is also where the "agile" element comes into play, meaning we must have the organisational agility to try many new things so that we can learn faster and keep up with the changing times. By the same token, in the effort to "connect" and be "transparent", we have encouraged our staff to "co-own" issues and "co-create" solutions through highly transparent staff communication and engagement activities.

五年展望

展望未來，2017/18年度的首要工作，是認真檢討我們第一個五年計劃的成果，並為未來五年制訂策略。我們雖不宜太早下定論，但現行的五年計劃，在提供優質服務、讓客戶知悉工作進度，以及提升客戶滿意度方面似乎成效最大；而在其他策略，包括成為業界典範、建立員工才能與關懷文化、優化知識管理和持續綠色作業方面，都饒有進展。

我們的五年計劃並非一個僵硬的框架，而是有助我們聚焦和作出較長遠部署的方案。這個五年計劃也給我們帶來新挑戰：如何為香港的機電業創造環境，使業界走得更遠，進步得更快？營運基金為政府資產提供機電工程服務，營運較具彈性，因此有條件成為業界典範。舉例來說，我們可以擔當「科技建築師」的角色，為業界樹立良好榜樣，示範如何善用科技，將操作及維修保養工作提升至更卓越的水平。這也是我們重要的長遠目標，必須秉持。

THE NEXT FIVE YEARS

Looking ahead, a priority in 2017/18 will be to critically review the results of our first five-year plan, and to develop strategies for the next five years. Without pre-empting ourselves, it does appear that the current five-year plan has made the greatest impact on delivering excellent service, keeping customers informed and boosting customer satisfaction, while also making progress in the other strategic directions. The latter includes becoming a trade model, building staff capacity and a caring culture, enhancing knowledge management and green operations.

Rather than being a rigid framework, our five-year plan has in fact helped us stay focused and acquire a longer-term perspective. It also brings us to another challenge: how can we create an environment for the E&M trade in Hong Kong to improve further and faster? EMSTF, as the E&M service provider for government assets, has more operational flexibility and is well positioned to become a trade model for others to follow. For instance, we can take on the role of "technology architect" to set a good example for the trade on how to use technology to transform O&M work for new levels of excellence. This remains one of our key long-term goals.

致謝

最後，我要多謝客戶過去一年的支持，特別是積極參與2016年客戶意見調查。客戶對我們近年的改善措施提出正面回應，令我們深感鼓舞，也推動我們再接再厲，續創佳績。

我們也要感謝常務委員會及各政策局的指導和支持，以及營運基金全體員工盡忠職守，努力不懈。各承辦商用心為我們的客戶提供服務，業界組織積極推廣機電行業，各大學及專業團體慷慨給予支持和意見，我謹向他們致以謝忱。

我們期盼與所有持份者繼續緊密合作，迎接碩果豐盛的另一年。

GRATITUDE AND APPRECIATION

Finally, I would like to thank our clients for their support in the past year, in particular their enthusiastic participation in the 2016 Customer Opinion Survey. We have been greatly encouraged by clients' positive feedback on our improvement measures in recent years, thus motivating us to strive for further progress.

We must express our heartfelt gratitude to the Executive Board and policy bureaux for their guidance and support, and all EMSTF staff for their commitment and hard work. Our appreciation also goes to our contractors for serving our clients, the trade associations for promoting the E&M trades, and the many universities and professional bodies which have generously given us their support and advice.

We look forward to continuously engaging with all our stakeholders for another fruitful year.



戴德謙
機電工程署副署長/營運服務



Tai Tak-him
Deputy Director/Trading Services, EMSD

營運服務
Trading Services

輕鬆暢運 COMMUTING WITH EASE

香港近年與內地及海外城市的運輸聯繫持續增加，突顯本港在國家以至世界舞台上的重要角色，這點亦反映於營運基金在本港海陸空公共交通基建發展方面不斷拓展的支援服務上。

我們近年在香港國際機場的工作大致穩定並持續進行，包括為機場主要系統，例如助航燈系統、一般抽水輸送系統和污水處理設施等，提供操作及維修保養服務。我們亦與香港機場管理局共同設計了一套機場助航燈系統不斷電切換模擬器，並取得設計專利。模擬器有助我們解決在維修保養助航燈時遇到的各種問題，並提升其運作效率。

Hong Kong's transport links with mainland and overseas cities have continued to grow in recent years, underscoring the city's role both in the Mainland and on the world stage. This is reflected in the expanding portfolio of our services supporting the public transport infrastructure, encompassing air, sea and land.

Our work at the Hong Kong International Airport has stabilised in recent years and we continue to provide O&M services for key airport systems such as Airfield Ground Lighting (AGL), General Pumping Systems and Sewage Treatment Plants. We also jointly designed an Uninterruptible Power Transfer Simulator with the Airport Authority Hong Kong and obtained a design patent. The simulator has helped us overcome many AGL system maintenance challenges and improved its operational efficiency.





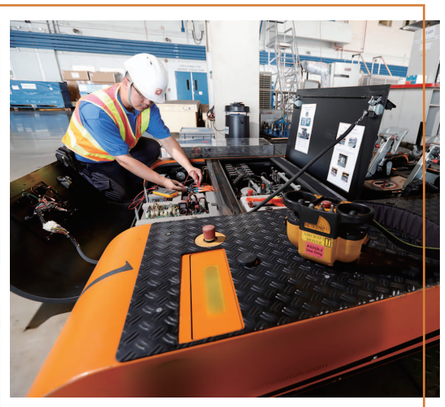
海事處第三代船隻航行監察服務系統的第二期工程，是另一個由我們提供項目管理服務的大型項目。

The Marine Department's third-generation Vessel Traffic Services System Phase II is another major project for which we provided project management service.

另一項與機場運作同樣有關的工作，是我們與民航處合作，就新航空交通管理系統的過渡工作提供協助。此外，我們與採用新科技的先驅 — 政府飛行服務隊也合作無間，從德國引進能夠拖拉重達50噸的飛機和直升機，但無需牽引桿的無線遙控飛機拖拉車。與傳統運用牽引桿的型號相比，新的拖拉車車身較小巧靈活，操作更準確安全，而且更節省能源和存放空間。

Also related to airport operations is our collaboration with the Civil Aviation Department to facilitate the transition to the new air traffic management system. We also work closely with the Government Flying Service, another pioneer in using new technologies, on a towbarless wireless remote-controlled aircraft tractor introduced from Germany. This new tractor can tow aircraft and helicopters of up to 50 tonnes. Compared with traditional models with towbars, this compact tractor is more flexible, precise and safe, saving both space and energy.





我們為政府飛行服務隊的無線遙控飛機拖拉車提供預防性維修保養服務。

Preventive maintenance for the wireless remote-controlled aircraft tractor at the Government Flying Service is part of our service.

海運方面，我們已於2016/17年度為海事處進行第三代船隻航行監察服務系統的第二期工程，包括安裝和測試位於偏遠海島的極精密雷達，以配合處方在香港水域進行船隻追蹤、導航和監察工作。年內，我們亦協助海事處就建議設置於香港的「中軌道衛星搜救系統」地面站及相關設施，草擬招標規格，讓香港在這個項目上緊貼國際步伐；事實上，全球各大海運國家現正陸續開發或設置類似的地面設施。

Turning to sea transport, we implemented Phase II of the Marine Department's (MD) third-generation Vessel Traffic Services System in 2016/17 which involved the installation and testing of highly sophisticated radars at outlying stations for vessel tracking, navigation and monitoring of Hong Kong waters. At the same time, we have been helping MD draft the tender specifications for implementing in Hong Kong a proposed ground station and associated facilities of the Medium Earth Orbit Search and Rescue system. This is an opportune time to pursue such a project, in light of an internationally agreed time frame; in fact, major maritime countries are in the process of developing or implementing similar ground facilities.

營運基金也密切參與本港不少陸上交通基建工作，東區海底隧道便是一例。該隧道自從於2016年8月由私人營辦商交回政府後，便由我們負責協助運輸署監察隧道營辦商提供的操作及維修保養服務。在交接期間，我們監察機電系統的運作，以確保東隧的交接工作得以順利完成。

EMSTF is closely involved in the city's land transport infrastructure. One example is the Eastern Harbour Crossing (EHC), which was returned to the Government in August 2016 by the private operator. EMSTF is now responsible for offering support to the Transport Department for monitoring the O&M services provided by the tunnel operator. During the handover, EMSTF monitored the operation of the E&M systems to ensure a smooth and seamless handover of the EHC to the Government.

營運服務
Trading Services

營運基金也為行車隧道的機電系統提供工程策劃服務，並為交通管制及監察系統等重要設施進行定期更新工程。我們也負責監察青馬管制區的操作及維修保養服務營辦商，並於年內更新了管制區的收費系統。

EMSTF also provides project services for E&M systems for road tunnels, and regularly replaces critical systems such as the Traffic Control and Surveillance Systems. We are also responsible for monitoring the contractor that operates and maintains the Tsing Ma Control Area, and we replaced its tolling system in 2016/17.

此外，我們喜見路政署於2017年2月與營運基金簽訂為期十年的服務水平協議。我們將為港珠澳大橋香港口岸過境設施的機電設備和系統，提供操作及維修保養服務。

In an exciting new development, we secured a ten-year Service Level Agreement with the Highways Department in February 2017 to provide O&M services for the E&M equipment and systems at the Hong Kong Boundary Crossing Facilities of the Hong Kong-Zhuhai-Macao Bridge.

年內，我們的工程項目團隊為運輸署完成了「衝紅燈攝影機系統」第四期拓展工程，工作包括系統設計及於全港40個新地點安裝數碼攝影機。第四期工程更採用了雷達訊號偵測汽車，較諸早期採用的地底環線感應系統，新系統維修時無須再掘路，更為便民。

During the year, our project team completed the Red Light Camera System Phase IV Expansion Project for the Transport Department. The project involved system design and the installation of digital cameras at 40 new locations across the city. Phase IV uses radar signals to detect vehicles, which eliminates the need for road works during system maintenance, as is necessary with the underground-loop technology used in earlier phases.





運輸署已完成「衝紅燈攝影機系統」第四期拓展工程，以提升交通安全。營運基金協助署方設計和執行該項目。

The Transport Department has completed its Red Light Camera System Phase IV Expansion Project, which EMSTF helped design and implement, to enhance traffic safety.

我們於維修車廠引進流動維修管理系統，記錄車輛維修進度和流量，以提升維修效率。

To enhance efficiency of our workshop, we introduced a mobile maintenance management system to keep track of vehicle maintenance progress and processing volume.





如何減少因交通運輸而產生的有害排放物，是我們另一項挑戰。以興建中的中環灣仔繞道隧道為例，我們要求承建商建造一個全港首見的大型地下通風建築物，以過濾隧道空氣中的所有氮氧化物。

The next challenge is to reduce harmful emissions. A case in point is the Central-Wan Chai Bypass tunnel now under construction, where we required the contractor to construct a sizeable underground ventilation building, the first structure of its kind in Hong Kong, for filtering all nitrogen oxide from the tunnel air.

擁有6 000多部車輛的政府車隊是主要的道路使用者之一，我們有責任以可靠的採購及維修保養服務，確保政府車隊維持高可用率及適合在路上行駛。目前我們負責採購的所有政府車輛，都已符合歐盟第六代排放標準。為了提高車隊維修效率，我們於2016/17年度為政府大型客貨車推行了全新的預約系統，把大型客貨車車隊的可用率提升約2.5%。我們更於總部維修車廠推行流動維修管理系統，把車輛接收、檢查和修理的程序簡化。我們也正與香港警務處合作研發一套車隊管理系統，務求更準確地記錄和分析駕駛日誌、司機駕駛行為及車輛運作狀況等有關資訊，以加強道路安全和提升車隊效率。

The government fleet with over 6 000 vehicles is one of the major road users and we play a role in ensuring its high availability and roadworthiness via sound procurement and maintenance. On procurement, all government vehicles that we help purchase now comply with EURO VI emission standard. To enhance the efficiency of our fleet maintenance, we implemented in 2016/17 a new advance booking system for large vans, which has improved the large van fleet availability by about 2.5%. We have also introduced a mobile maintenance management system at our vehicle depot to streamline our vehicle reception, inspection and repairs process. A fleet management system is also being developed with the Hong Kong Police Force, which will more accurately record and analyse information such as driving log, driver behaviour and vehicle running conditions, to improve road safety and fleet efficiency.

營運服務
Trading Services



見習技術員 矢志向上
The Technician Trainee with the Drive to Succeed

身為一名女性車輛見習技術員，曾詠妍對汽車的興趣，始於童年時多次到訪親屬的汽車維修工場的經歷。她於2016年加入機電署的技術員訓練計劃。在這個為期四年的課程中，學員除了須在機電署汽車工場接受全面的實際操作培訓外，還須修讀職業訓練局的相關課程。

As a female vehicle technician trainee, Ms Tsang Wing-yin's interest in vehicles began early, during childhood visits to a relative's vehicle workshop. She joined EMSD's Technician Training (TT) Scheme in 2016. The four-year programme includes comprehensive hands-on training at the EMSD vehicle depot, along with a Vocational Training Council course.

曾女士表示：「技術員訓練計劃最令我興奮的地方，是有機會接觸到大大小小不同種類的汽車。」她最感興趣的是救護車，因為車廂內有很多不同的內部裝置，從中可以學到很多知識。此外，救護車救急扶危、服務人羣的功能亦是她喜歡救護車的原因。

"The best part about the TT Scheme is that we get to work on many types of vehicles, both big and small, which is really exciting," Ms Tsang said. She is most interested in ambulances, as their great variety of interior fixtures means there is much to learn. She likes ambulances also because they serve people and play a life-saving role in the community.

她認為女性在需要耐性和注意細節的工作上較有優勢，她說：「女性在操作電子設備和進行系統分析方面，表現也可以很出色。」曾女士的家人十分支持她的事業選擇，她表示待完成機電署技術員訓練計劃後，打算進修高級文憑課程，目標是將來成為機械督察。

Ms Tsang feels women have an advantage when it comes to tasks that require patience and attention to detail. "Women are good with electronic gadgets and system analysis, too," she said. Her family is very supportive of her career choice, and she already has her eyes set on a Higher Diploma after completing the TT Scheme. Her goal? To become a mechanical inspector in the future.





Ms Tsang Wing-yin has been interested in vehicles since childhood. She joined EMSD in 2016 to become a vehicle technician trainee to pursue her career goal.

自小已對汽車產生興趣的曾詠妍女士，在2016年加入機電署成為車輛見習技術員，實現事業理想。

都會生活 ENJOYING EVERYDAY LIFE

身為都市人，香港市民每天都會享用各種康樂設施及享受購物等活動。營運基金有責任確保街市和文娛康樂場地內所有機電系統的運作暢順可靠，並且高效節能。

As city dwellers, the people of Hong Kong make use of varied recreational facilities and enjoy activities like shopping in their daily life. It is EMSTF's duty to make sure that all E&M systems in markets and recreational and cultural venues operate smoothly and reliably and are highly energy efficient.

繼去年成功推行一項先導計劃後，食物環境衞生署（食環署）於年內撥款，在未來十年全面更換轄下公眾街市和熟食中心的老化升降機及自動梯，為其長遠的資產更換工作踏出重要的一步。我們不但趁此機會為客戶換上高用量及按需求服務的節能自動梯型號，還安裝綜合樓宇管理系統硬件，讓我們可以遙距監察升降機及自動梯的運作情況，從而提高它們的可用率和可靠性。

Following the success of a pilot scheme last year, the Food and Environmental Hygiene Department (FEHD) allotted funding in 2016/17 for a ten-year programme to replace all aged lifts and escalators in its public markets and cooked food centres. The move is significant as it kicked off the client's long-term asset replacement initiative. We have made use of this opportunity to not only replace the old lifts and escalators with heavy-duty and more energy-efficient service on-demand models, but also to apply integrated Building Management System (iBMS) hardware that will allow us to remotely monitor the operating status of these lifts and escalators so as to improve their availability and reliability.

事實上，我們近年一直着力利用綜合樓宇管理系統方案和技術，提高主要機電系統的能源效益和表現。繼我們去年成功在香港文化博物館推行更換和優化製冷機組先導計劃，為博物館節省15%耗電量後，我們將在其他場地全力進行製冷機組更新優化工作。為葵青劇院安裝新的舞台換景系統，也是更換老化資產的另一個好例子。該套全電腦化的系統是全港最先進的同類系統之一，可同時操控八枝懸桿，用以在演出時移動布幕、燈光、布景和其他舞台裝置。至於興建中的文化場地，例如位於九龍灣的東九龍文化中心，預計於2021年啟用，我們期望屆時能為該場地提供服務。

Indeed, deploying iBMS solutions and technologies to optimise the energy efficiency and performance of major E&M systems has been our focus in recent years. Our chiller replacement and optimisation work will be rolled out at full strength at various venues after the successful pilot at the Hong Kong Heritage Museum that saved 15% electricity consumption last year. Meanwhile, a new flying system deployed at the Kwai Tsing Theatre is another good example of aged asset replacement. Essential for moving curtains, lights, scenery and other components during stage performances, the fully computerised system can fly eight bars simultaneously and is one of the most sophisticated in Hong Kong. With regard to cultural venues in the pipeline, the East Kowloon Cultural Centre in Kowloon Bay is expected to open around 2021 and we look forward to servicing the venue.





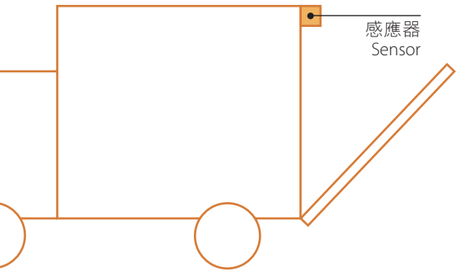
我們為葵青劇院安裝的全電腦化新舞台換景系統，是全港最先進的同類系統之一，可移動布幕、燈光、布景和其他舞台裝置。

The new, computerised flying system which we installed at the Kwai Tsing Theatre is one of the most sophisticated in Hong Kong. It moves curtains, lights, scenery and other stage components.

營運服務
Trading Services

不恰當使用貨車尾板可導致夾傷。除現有的遙控裝置外，我們的新方案是在貨車尾部安裝感應器，預防意外。

Improper usage of tail lifts may cause trapping injuries. Apart from the existing remote control, our new solution is to install sensors at the back of lorries to prevent such incidents.





乾淨、綠化和安全的都市環境，對本港的生活質素非常重要。年內，我們的車輛工程團隊協助食環署採購新的洗街車。新車採用高壓式水洗清潔方法，不但能大大提高清洗街道的效率，而且能降低耗水量。

A clean, green and safe urban environment is vital to the quality of life in Hong Kong. During the year, our vehicle project team helped FEHD procure new street washers that use high-pressure water cleaning method, greatly increasing the efficiency of street cleaning with less water consumption.

近年本港不幸發生多宗涉及車輛尾板的致命意外。有見及此，政府推出新的指引，規定所有尾板都必須安裝防夾裝置。年內，我們協助政府物流服務署草擬該項新裝置的首份技術規格，並為23輛設有尾板的政府車輛完成加裝新裝置（包括緊急按鈕）的工作。憑藉改裝首批車輛的經驗，我們現正着手為其他同類政府車輛加裝新裝置。

Regrettably, there have been several vehicle-mounted tail lift fatalities in Hong Kong in recent years. The Government is now enforcing new guidance notes that require all tail lifts to be fitted with a trapping prevention device. During the year, we helped the Government Logistics Department draft the first specifications and complete the retrofitting of the new device, including a panic emergency button, on 23 government vehicles with tail lifts. With experience from the first batch, the team is retrofitting other similar government vehicles.



我們協助改造摩士公園游泳池，以作為2016年聖誕節期間的「極光飄雪嘉年華」場地。

We assisted in converting the Morse Park Swimming Pool into a venue for the Aurora & Snow Carnival during the 2016 Christmas season.

營運基金於短時間內協助香港警務處把八鄉的前消防訓練學校改建成「少年警訊永久活動中心暨青少年綜合訓練營」，並負責設計和安裝機電設施，如空調、照明及保安系統等。

EMSTF helped the Hong Kong Police Force convert the former Fire Services Training School at Pat Heung into the Junior Police Call Permanent Activity Centre and Integrated Youth Training Camp in a short period of time. We designed and installed E&M systems there, such as air-conditioning, lighting and security systems.







據行政長官於2016年發表的《施政報告》所述，政府會把位於八鄉的前消防訓練學校改建成「少年警訊永久活動中心暨青少年綜合訓練營」。我們協助香港警務處在極短時間內完成有關的改建及翻新工作，而該中心已於2017年4月非正式開放。我們亦協助康樂及文化事務署把摩士公園游泳池變身成為具有歐陸色彩的小鎮，以便在2016年聖誕節期間舉辦「極光飄雪嘉年華」，為市民和遊客帶來驚喜。

We also helped the Hong Kong Police Force refurbish, in a very short time, the former Fire Services Training School at Pat Heung and convert it into the Junior Police Call Permanent Activity Centre and Integrated Youth Training Camp, as outlined in the Chief Executive's 2016 Policy Address, with a soft opening in April 2017. Our colleagues also helped the Leisure and Cultural Services Department transform the Morse Park Swimming Pool into an enchanting European town for the Aurora & Snow Carnival held there during Christmas in 2016 to the delight of visitors from home and abroad.



營運服務
Trading Services



為郊外的生化廁所提供定期維修保養服務。

Regular maintenance service is provided at a bio-toilet in the countryside.

我們已為全港郊野公園內73個環保生化廁所的污水處理系統安裝網上遙距監察裝置，此舉應會獲得遠足和大自然愛好者讚賞。我們亦會為另外44個生化廁所安裝同類裝置，以提高故障維修效率。該等項目看似微不足道，但對改善市民生活甚為重要。

Hikers and other nature lovers will appreciate that we have installed web-based remote monitoring devices for waste water treatment operation at 73 environmentally-friendly bio-toilets in country parks throughout Hong Kong. A further 44 bio-toilets will be installed with similar devices to enhance our fault response service. These projects may be small in scale, but they are of value to the betterment of the community.

年內，我們亦為2017年4月在香港單車館舉行的「場地單車世界錦標賽」作仔細周詳的準備。我們全力提供支援及隨時候命服務，以確保在這項世界級賽事中，工程系統的每個重要部分（例如計時器和計分板系統）皆運作暢順。

During the year, we also made extensive preparations for the UCI Track Cycling World Championships held in April 2017 at the Hong Kong Velodrome, where we continued to provide unfailing support and standby service to ensure every critical piece of the engineering systems, such as the timer and scoreboard systems, is always available for such world-class event.

我們會繼續努力，為客戶進行資產更換工作，並投放資源完成安裝綜合樓宇管理系統及各種節能裝置，讓客戶的機電系統得以發揮最高性能，令市民能享用更可靠舒適的服務。

We will continue to work on asset replacement and invest in iBMS as well as energy-efficient installations to help clients get optimal performance from their E&M systems, thus making their services ever more reliable and enjoyable for the public.

2017年「場地單車世界錦標賽」於香港單車館舉行，我們為場地所有機電設備提供技術支援，獲客戶讚賞。

In the 2017 UCI Track Cycling World Championships held at the Hong Kong Velodrome, we provided technical support for all E&M equipment and received appreciation from the client.





靈活變通：更換自動梯項目要訣
Resilience in Project Management Pays Off in Escalator Replacement

事緣2014年在九龍城街市，一台老化的自動梯正進行更換工程。「由於項目的施工期和圍板安排影響到多位攤檔檔主，我們因而接獲投訴。」負責該項目的工程師王冠平先生解釋說。他於是迅速採取措施，調動工程工序，務求將受影響攤檔的停業時間縮至最短，以及盡量減少對租戶和市民造成的影響。

The story began at the Kowloon City Market in 2014, when an ageing escalator was being replaced. "It all started with complaints about the project duration and hoarding arrangements, which affected several stall owners," Mr Jairus Wong, the project engineer explained. He promptly took steps to rearrange work processes to minimise the business shutdown period and the impact on the tenants and the public.

然而，存放新自動梯的貨倉不幸受到旁邊倉庫起火波及，令自動梯被焚毀，故此須安排另一台新的自動梯付運到港。工程延誤引發新一輪的投訴，但王先生的團隊並不氣餒，繼續與租戶和客戶部門保持緊密聯繫，以訂出新的施工時間表。

Unfortunately, a fire broke out in the neighbouring warehouse where the new escalator was being stored. The escalator was damaged and a new one had to be delivered. The delay triggered new complaints, but Mr Wong's team persevered and kept in close contact with the tenants and the client department to work out a new schedule.

王先生說：「我們向租戶展示同類更換工程的工程圖，並闡釋完成該等工程所需的時間，以供參考。我們同時採取措施，協助租戶在工程暫停期間重開檔位營業。我們盡力解決租戶擔憂的問題，這有利商討工作順利進行。」新的自動梯最終在2015年11月投入服務。王先生在這項極具挑戰性的項目上贏得各持份者的讚賞，更獲頒「2016年申訴專員嘉許獎」以示表揚。

"We showed the tenants the project plans of similar replacement works and explained how long the works had taken as reference. We also took steps to help them reopen their businesses in the interim. It was important that we addressed the tenants' concerns so that discussions could proceed smoothly," Mr Wong said. The new escalator eventually came into operation in November 2015. Mr Wong won the praise of stakeholders in this challenging project, and was presented with the 2016 Ombudsman's Award as recognition of his performance.



Mr Jairus Wong Kwun-ping, project engineer of the Kowloon City Market Escalator Replacement Works, wins the Ombudsman's Award.

負責九龍城街市自動梯更換工程的項目工程師王冠平先生榮獲「申訴專員嘉許獎」。

營運服務
Trading Services

全民康泰 STAYING HEALTHY

為天水圍醫院的醫療設備，如手術室照明系統和藥用冷藏櫃等，提供維修保養服務。

Maintenance services for hospital equipment, such as operating theatre lighting and medical refrigerators, are provided at the Tin Shui Wai Hospital.





市民健康是締造幸福社區的關鍵。營運基金的主要職責之一，是為本港公立醫院和醫療部門的機電系統及醫療設備提供操作及維修保養服務，讓病人及家屬受惠。

Good health is essential to a happy community. One of our key duties is to help our public hospitals and healthcare departments operate and maintain their E&M systems and medical equipment for the benefit of patients and their families.

我們欣然報告，營運基金年內成功取得醫院管理局（醫管局）的五年服務合約。合約期由2017/18年度開始，範圍涵蓋醫管局轄下公立醫院及診所的機電、空調和屋宇裝備系統，以及多種生物醫療儀器的操作及維修保養服務。這個新里程碑為我們注入動力，激發同事更用心服務客戶和提高工作效率。

We are happy to report that EMSTF has successfully secured the contracts from the Hospital Authority (HA) for another five years from 2017/18, covering O&M services for electrical, mechanical, air-conditioning and building services systems and various biomedical equipment in public hospitals and clinics under HA. This new milestone has given us extra impetus to be ever more customer-focused and productive.

年內，我們與政府化驗所續簽新一份為期五年的服務水平協議，為菲臘牙科醫院整修其培訓設施，也協助衞生署為即將啟用的政府中藥檢測中心採購新的檢測儀器。

During the year, we also renewed a five-year Service Level Agreement with the Government Laboratory, assisted the Prince Philip Dental Hospital to renovate its training facilities, and helped the Department of Health (DH) procure new testing equipment for the Government Chinese Medicines Testing Institute opening soon.

另一亮點是我們為醫管局轄下多家主要急症醫院及醫管局大樓，完成了「巡視式能源調查」。調查收集所得的豐富數據，讓我們得以為這些場地設計一套有效並以事實為基礎的能源管理系統。由於這項工作十分成功，醫管局已計劃在未來五年實施是次能源調查所定出的能源管理機會。待項目完成後，醫管局的耗能量將可大大減低。

Another highlight was the completion of our "Walk-around Energy Survey" for HA's major acute hospitals and the Hospital Authority Building. The rich data collected from the survey has enabled us to devise an effective and fact-based energy management system for these premises. The exercise was so successful that HA has planned to implement the identified energy management opportunities over the next five years, which will help HA substantially reduce their energy consumption upon project completion.

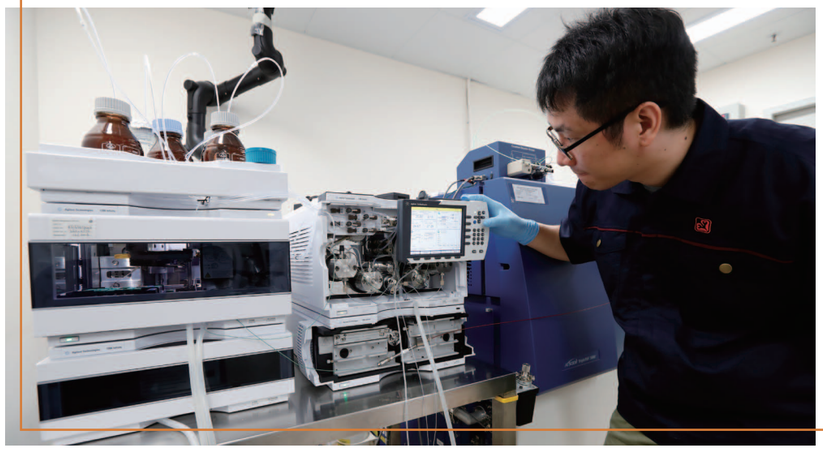
空調雖可營造舒適的室內環境，卻非常耗電。自2015年起，我們一直與醫管局合作，務求在2018年或之前，把九家公立醫院的38台傳統製冷機組更換為高能效的型號，大幅減少能源消耗和溫室氣體排放。以同類項目而言，這是全港最大規模和最有系統的製冷機組更新項目。營運基金以這項目贏得「美國能源工程師學會2017年亞太區年度能源計劃大獎」，實屬可喜。

Air-conditioning is critical in providing a comfortable indoor environment but consumes much energy. We have been working with HA since 2015 to replace a total of 38 conventional chillers in nine public hospitals with highly energy-efficient chillers by 2018 to substantially reduce energy consumption and greenhouse gas emissions. This is the largest and most systematic retrofit project of its kind in Hong Kong. We are delighted to receive the Association of Energy Engineers' Region Asia Pacific Rim Energy Project of the Year Award for 2017.

醫院內有很多設備都關乎病人的生死安危，因此維持穩定而無間斷的電力供應至關重要。然而，要更換醫院的電力裝置實在是困難重重，因為我們必須把工程對醫院正常服務的影響減至最低。我們與醫管局和電力公司合作，經過長期籌備和周詳部署後，為屯門醫院成功更換了兩組老化的高壓電力裝置，大大提高了醫院電力供應系統的可靠度。

As many facilities in hospitals are life critical, the provision of steady and uninterrupted power supply for hospitals is of vital importance. However, the replacement of electrical installations is highly challenging as disruption to normal hospital services must be kept to a minimum. With co-operation from HA and the power company, we successfully helped the Tuen Mun Hospital replace two ageing high voltage installations after long and meticulous preparation work, raising significantly the reliability of power supply system there.



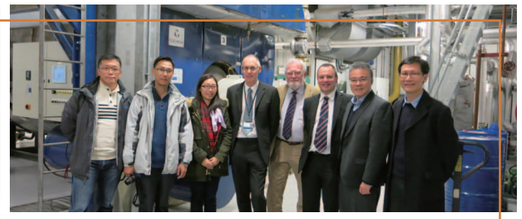


我們為政府中藥檢測中心採購新的檢測儀器，並在中心啟用前進行最後檢查工作。

We help the Government Chinese Medicines Testing Institute procure new testing equipment and carry out final inspections before its opening.

營運服務
Trading Services





同事於去年12月外訪英國，與海外專家交流鍋爐技術，以加強員工訓練和提升鍋爐操作及維修保養服務的質素。

Our colleagues visiting UK in December 2016 exchanged new ideas about boiler technology with experts overseas, so as to enhance staff training and O&M service quality.

另一方面，我們繼續為消防處提供更有效的救護車採購服務。最新的方案是為救護車採購工作採納標準化的技術規格，目的是盡用有限的車輛空間來提供救援服務，以及為投標過程引入更多競爭。我們與消防處緊密合作，透過參考國際標準和運用三維立體打印技術打印出1比24的三維立體模型，商討如何設計新的「概念救護車」。將於明年付運的第一批「概念救護車」，是跨部門合作改進本地救護車設計的一大突破，希望藉此為公眾提供更佳服務。

On a different front, we have continued to help the Fire Services Department (FSD) procure ambulances more effectively. The latest initiative was to adopt standardised technical specifications for ambulance procurement so as to maximise the limited vehicle space for rescue services and introduce more competition to the tendering process. With reference to international standards and by making use of 3D printing technology to produce a 3D model on a scale of 1 to 24, we worked closely and discussed with FSD to design a new "concept ambulance". The first batch of "concept ambulances", to be delivered next year, will mark a breakthrough in joint departmental effort to enhance local ambulance design for public service improvements.

除了節能工作，我們亦一直努力提高操作及維修保養服務的效率，着力探討有潛力在將來為客戶帶來最大利益的重要科技，例如鍋爐技術和生物醫療科技。舉例來說，我們去年便邀請了兩位英國鍋爐技術專家來港培訓同事，而有關其他設備的培訓工作亦正籌備中。

Energy-saving work aside, we have been seeking to enhance our O&M practices by focusing on critical technologies with the potential to benefit clients most in the future, such as boiler and biomedical technologies. We brought in two UK experts in boiler technology last year, for example, to train our staff, and training on other equipment is in the pipeline.



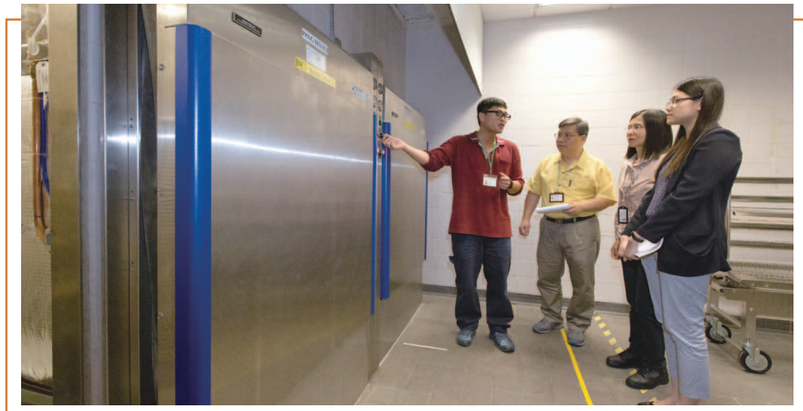
利用三維立體打印技術製作「概念救護車」三維立體模型，讓客戶更易明白最新的採購規格。

3D printing technology is used to produce a 3D "concept ambulance" model to help our client better understand the latest procurement requirements.

我們為鑽石山靈灰安置所進行的優化工程，不但解決了化寶爐的噴火屑和排煙問題，還改善了附近環境的空氣質素。

The problem of flying embers and smoke arising from heavy use of joss paper burners at the Diamond Hill Columbarium was resolved by our improvement works, significantly improving air quality in the surrounding areas.





我們的團隊已將「客戶探訪計劃」擴展至衞生署，以便更深入了解客戶需要，從而改善我們的技術支援服務。

Our team has extended its "client visit" programme to the Department of Health to better understand its needs for enhancing our technical support services.

我們的「客戶探訪計劃」在過去兩年深受醫管局臨牀醫護人員歡迎，因此現時已於醫管局所有醫院聯網實行，並將於明年推廣至衞生署。事實上，我們的工作並不局限於醫護場所。以靈灰安置所為例，我們亦有協助解決化寶爐燃燒大量冥鏹時引致的空氣質素問題。在這方面，我們協助食物環境衞生署改善鑽石山靈灰安置所化寶爐的抽風及排煙系統，有效解決化寶爐火屑四濺和排出濃煙的問題，大大改善了附近一帶的空氣質素。

Our "client visit" programme has been so well received by HA's clinical staff over the past two years that it has been adopted in all HA hospital clusters, and will be extended to DH next year. In fact, our work is not limited to health-related venues. For example, we also assisted in resolving air quality problems arising from heavy use of joss burners at columbaria. In this regard, we helped the Food and Environmental Hygiene Department enhance the ventilation and smoke exhaust system of joss paper burners at the Diamond Hill Columbarium. The problem of flying embers and smoke was effectively resolved, significantly improving air quality in the neighbouring areas.

未來幾年，本港多家新醫院和設施將陸續落成啟用，包括最近已局部投入服務的天水圍醫院、設於伊利沙伯醫院的油麻地專科診所、瑪麗醫院T座多用途大樓和香港兒童醫院。就此，我們會相應地擴大前線人員和技術人員團隊，以應付新工作，並同時加強員工在新科技和環保措施方面的培訓。

In the coming years, several new hospital venues are set to open, including the Tin Shui Wai Hospital which has been put into partial operation recently, the Yaumatei Specialist Clinic at the Queen Elizabeth Hospital, the multi-purpose Block T at the Queen Mary Hospital and the Hong Kong Children's Hospital. Accordingly, we will expand our frontline and technical staff teams to take on the new work while building staff capacity in new technologies and green practices.

營運服務
Trading Services



更換高壓電力裝置團隊投入關鍵
Commitment Crucial in HV Installation Replacement

為醫院更換高壓電力裝置是一項艱巨的工作。我們走訪了為屯門醫院更換高壓電力裝置的人員，發現在這項無縫交接的更換工作背後，團隊的全情投入和良好的時間管理均十分重要。

更換工作由營運基金與屯門醫院和中華電力有限公司緊密籌劃。工程於2016年年初展開，2017年1月完成。該項目的助理督察黃國輝先生和黎耀祺先生認為，項目的最大挑戰是施工時間上的限制。

黃先生透露：「由於我們必須盡量減低對醫院帶來的影響，所以只能在每晚10時後的幾小時內停電施工。在持續一年多的施工期內，我們的同事經常通宵加班工作。」此外，與員工保持溝通也同樣重要。黎先生說：「有一點很重要，就是施工前我們必須把職責清楚告知團隊每位成員，確保資訊充足並且透明度高。」團隊跟屯門醫院員工在整個更換過程中也密切溝通，並為醫院制訂了應變計劃，以及安排多重後備電源供電，以策萬全。

這些努力都十分值得，因為新的高壓電力裝置為屯門醫院帶來穩定而且可靠度高的電力供應。

Replacing high-voltage (HV) electrical installations at hospitals is highly challenging. Going behind the scenes at the Tuen Mun Hospital (TMH), we learned that commitment and good time management were crucial to this seamless HV facilities replacement project.

The replacement works, which EMSTF closely co-ordinated with TMH and CLP Power Hong Kong Limited, began in early 2016 and were completed in January 2017. As assistant inspectors for the project, Mr Wong Kwok-fai and Mr Lai Yiu-ki said the biggest challenge was the time constraint under which works had to proceed.

"As power suspension was possible for only a few hours after 10 pm, our team worked extra hours over many nights during the year-long replacement works so as to minimise disruption to the hospital," Mr Wong revealed. This effort was matched by a commitment to communication. "It was important that we briefed every team member in advance on his duty in the works to ensure that sufficient information was given and transparency was maintained," said Mr Lai. The team also maintained frequent communication with TMH's staff throughout the entire replacement works, in addition to drawing up a contingency plan and arranging multiple power supply backups to prepare for all possible contingencies.

It has been worthwhile making all these efforts as the new HV installations have brought a highly reliable and steady power supply to TMH.



Assistant inspectors Mr Wong Kwok-fai and Mr Lai Yiu-ki said the biggest challenge of replacing high voltage installations in hospitals was the time constraint under which works could proceed.

助理督察黃國輝先生和黎耀祺先生均認為，更換醫院高壓電力裝置的最大挑戰，是施工時間上的限制。

安全城市 FEELING SAFE AND SECURE

香港是全球最安全的城市之一，法治和紀律部隊的卓越表現應記一功。此外，營運基金在背後亦發揮很大作用，透過為有關政府部門提供操作及維修保養服務，令其機電系統有效運作，讓市民感到安心放心。

Hong Kong is one of the safest cities in the world, thanks in large part to the good work of our disciplined forces and the rule of law. EMSTF also plays a significant role behind the scene by supporting the relevant government departments with O&M services that keep their E&M systems operating efficiently, helping everyone in the community feel safe and secure.

在行政長官於2016年3月為消防及救護學院主持開幕典禮後，我們於2016年年底開始為學院的機電系統提供操作及維修保養服務。一如去年年報所述，為學院設計建造的多個實物原大的實景模型如飛機、船隻和火車經已完成。配合較早前完成的多個實物原大的實景模型如迷你倉、劏房和可改動間格的迷宮式空間安裝等機電裝置，可提供全面的滅火和救援實火模擬訓練。

Subsequent to the official opening of the Fire and Ambulance Services Academy by the Chief Executive in March 2016, we started to take up O&M services for its E&M systems at the end of 2016. The life-size mock-ups of an aircraft, a ship, and a train, as reported last year, are fully in place for real-fire simulation firefighting and rescue training, in addition to earlier completed life-size E&M mock-up installations such as mini-storage spaces, subdivided flats and configurable labyrinthine spaces.

我們有責任確保學院內各種實景模型的機電系統及其他機電設施，在任何時候都運作良好，讓消防學員在受訓期間學習到最多有用的知識。

It is our duty to make sure that the E&M systems in the mock-ups and other E&M facilities at the academy perform well all year round so that fire brigade trainees can get the most out of their time at the training facility.





我們協助客戶為消防及救護學院設計和引入的各種實物原大的實景模型，如圖中的船隻及加油站，對模擬訓練十分重要。

Life-size mock-ups at the Fire and Ambulance Services Academy, such as a ship and a petrol station, which we helped the client design and introduce, are vital to simulation training.

營運服務
Trading Services







營運基金於2016/17年度接收西九龍法院大樓的機電設施，以提供操作及維修保養服務。

The West Kowloon Law Courts Building was handed over to EMSTF for O&M services in 2016/17.

年內，我們接收了新落成的西九龍法院大樓，以提供操作及維修保養服務。法院大樓設有30多個法庭及各類先進設施，現已全面投入服務。此外，我們也接收了新油麻地警署，為其提供操作及維修保養服務。我們現正向香港警務處建議可為各警署和場地節省能源的方法。我們能為本港的執法和司法工作略盡綿力，服務市民，實在深感欣喜。

The new West Kowloon Law Courts Building, with over 30 courtrooms and state-of-the-art facilities, has been handed over to EMSTF for O&M services and is now fully operational. Another venue we have taken over for O&M services is the new Yau Ma Tei Police Station. Our team is also advising the Hong Kong Police Force on ways to save energy at police stations and venues. We are happy to play a role in work related to law enforcement and administration of justice for the public.

維持現有政府建築物的安全和保安是同樣重要的工作。政府總部及立法會綜合大樓是全港其中兩個最重要的場地，確保其電力裝置安全並處於良好操作狀態是我們的首要任務。年內，我們順利為該兩幢大樓的電力裝置完成了定期檢查、測試及領取證明書的工作。該兩幢大樓在檢測進行期間仍能如常為市民提供服務，實有賴同事上下一心，通力合作，作出妥善的安排。

Maintaining the safety and security of existing government buildings is equally important. It is our first priority to ensure that the electrical installations at the Central Government Offices and Legislative Council Complex, two of the most critical venues in Hong Kong, are safe and in good working condition. We have completed the periodic inspection, testing and certification for their electrical installations smoothly without disrupting normal services to the public. Staff commitment and collaboration are essential to our work excellence.

為懲教機構現有設施進行改善和優化工程，是我們的服務重點之一。年內，我們不但接手為大欖女懲教所的機電系統提供操作及維修保養服務，還一直與懲教署進行商討，為全港所有監獄安裝無匙電鎖保安系統，並提升所有現有的閉路電視系統。

Upgrading and modernising existing facilities at correctional institutions has been another highlight of our work. In addition to taking over O&M services at the Tai Lam Centre for Women in 2016/17, we have been in discussions with the Correctional Services Department to install keyless Electric Locks Security Systems at all prisons in Hong Kong and to upgrade all existing CCTV systems.

在邊境保安方面，我們年內繼續為香港海關採購和維修保養流動X光檢查裝置，並為港珠澳大橋的啟用作準備。我們一直協助須在港珠澳大橋香港口岸過境設施執勤的紀律部隊，設計和採購各類機電及電子系統和設備。

On border security, we continued to procure and maintain mobile X-ray inspection units for the Customs and Excise Department during the year. In another development, preparation work for the opening of the Hong Kong-Zhuhai-Macao Bridge (HZMB) is underway. We have been helping various disciplined forces involved in the Hong Kong Boundary Crossing Facilities of HZMB to design and procure various E&M and electronic systems and facilities.





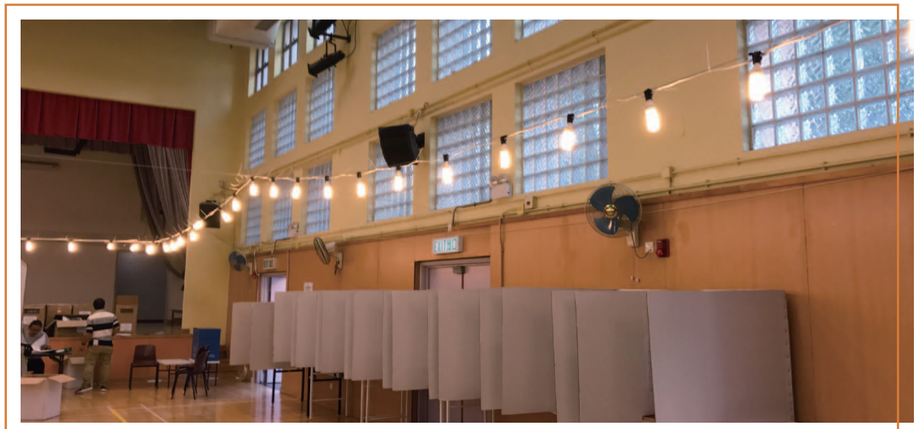
為善用再生能源，我們協助懲教署為大欖女懲教所保養太陽能熱水系統和太陽能光伏系統。

To make better use of renewable energy, we maintained a solar hot water system and photovoltaic system at the Tai Lam Centre for Women for the Correctional Services Department.

營運服務
Trading Services

營運基金也負責為選舉事務處所有選舉的投票及點票站提供足夠照明。如有需要，我們更會在票站加裝照明設備及臨時供電插座。年內，我們先後為2016年9月的立法會換屆選舉及2016年12月的選舉委員會界別分組一般選舉，提供票站臨時照明及供電插座。該次立法會換屆選舉與平常不同，部分投票站有很多選民在最後一刻才到達，因此我們須及時為這些票站加裝額外照明設備，讓選民能在照明充足的戶外環境下輪候投票。最後關閉的票站位於太古城，而最後一張選票差不多在凌晨二時半才在該票站投下，較原定票站關閉時間延遲了四小時，我們在該段期間一直在現場候命。

EMSTF is responsible for providing adequate lighting at all polling cum counting stations in all elections in Hong Kong that are conducted by the Registration and Electoral Office. We also set up additional lighting and ad hoc power points at stations where necessary. During 2016/17, we provided temporary station lighting and power for the Legislative Council General Election in September 2016 and the Election Committee Subsector Ordinary Elections in December 2016. The Legislative Council General Election was unusual in that there were so many last-minute voters at some stations that additional lighting had to be promptly put in place to ensure that voters could queue up outdoors in a well-lit environment. The last station to close was in Taikoo Shing. The last vote was cast there at almost 2:30 am, four hours after the poll was originally scheduled to close, and all the while we provided ad hoc standby.

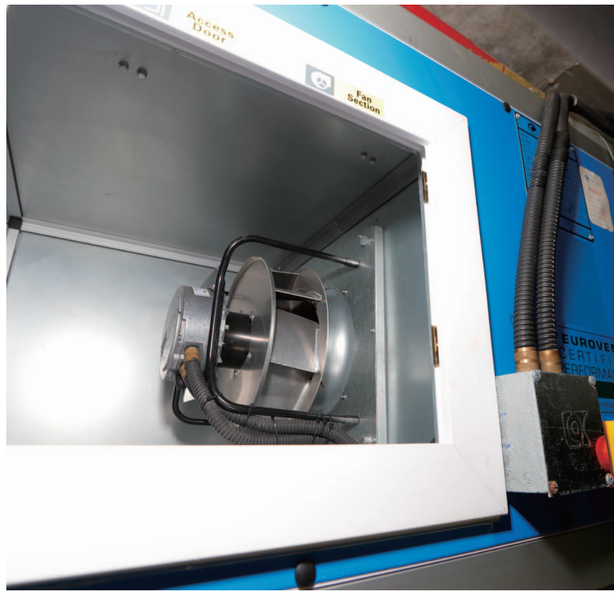




各個投票及點票站在選舉日都必須有足夠照明及候命支援服務。在2016/17年度，我們先後為立法會換屆選舉（右）及選舉委員會界別分組一般選舉（上）提供這些服務。

Adequate station lighting and standby support services are essential to polling cum counting stations at elections. We provided such services for the Legislative Council General Election (right) and the Election Committee Subsector Ordinary Elections (top) held in 2016/17.





為幫助客戶節能，我們主動應用新科技，例如在香港警察學院安裝電子整流風扇。

To help clients save energy, we have proactively applied new technologies such as installing EC fans at the Hong Kong Police College.

我們也協助客戶探討如何應用新科技，舉例來說，我們在香港警察學院安裝配置電子整流風扇的空氣處理機組，作為先導計劃的試點。電子整流風扇配備一個無刷直流電電動機，該電動機可自行進行變壓，令風扇更節能、較易維修保養，以及發揮穩定性能。我們希望電子整流技術在不久的將來可應用於其他客戶和場地。

We also help our clients explore the applications of new technologies. For example, we installed an air-handling unit with electronically commutated (EC) fans at the Hong Kong Police College as a pilot. An EC fan has a brushless direct current motor and incorporates voltage transformation within the motor. It saves energy, is easier to maintain and delivers reliable performance. We are hopeful that EC technology will be useful to other clients and venues in due course.

雖然市民未必能即時察覺到營運基金的支援角色，但我們會認真承擔所肩負的責任，並會繼續透過提供卓越的操作及維修保養服務，以及運用創新科技和環保作業方法，協助客戶取得最佳的營運效益。

While our supporting role may not be immediately visible to the public, we take our responsibilities seriously and will continue to help our clients optimise their operations and efficiency via good O&M work, innovative technologies and green practices.

營運服務
Trading Services



洞悉先機 協力救災
Foresight Proved Valuable in Emergency

2016年6月牛頭角發生迷你倉火警，當時有一段鮮為人知的故事，就是黃大仙消防局一台專為消防員的呼吸器供應壓縮空氣的壓縮氣充氣機，在該場火警中發揮了舉足輕重的作用。

當時負責維修保養該台充氣機的程國強督察說：「由於香港夏天天氣過於炎熱，該台德國製充氣機在消防局裏根本無法持續運作。」

有見及此，在黃大仙消防局於2013年安裝該台充氣機後不久，我們便旋即採取緩解措施，包括在放置充氣機的房間加裝空調，使環境溫度維持在可讓充氣機發揮最高性能的攝氏20至30度，並提供通風設施，以助機器散熱。此外，我們又加裝感應器，確保在充氣期間不會有其他氣體滲入消防員的氧氣筒內。在牛頭角迷你倉發生火警期間，該台充氣機連續四日四夜為數以百計的消防員氧氣筒充氣，效率極高，並且沒有出現故障，足證我們採取的上述措施奏效。「該場火警證明我們的工作經得起嚴峻的考驗。」程先生補充說。

One of the lesser-known stories about the Ngau Tau Kok mini-storage fire incident in June 2016 was the critical role played by a compressed-air filling machine at the Wong Tai Sin Fire Station. The machine is used for supplying compressed air to firemen's breathing apparatus.

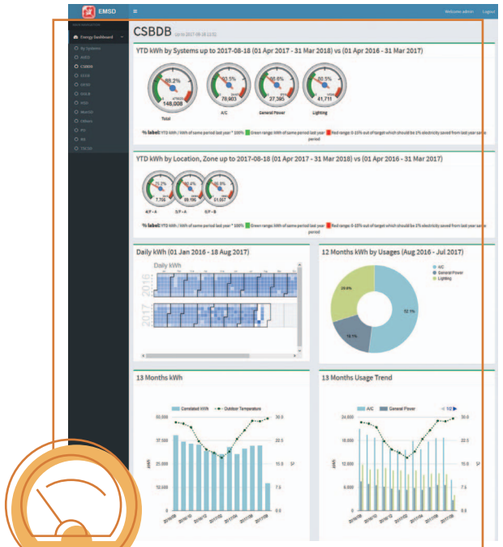
"The summers in Hong Kong are too hot for the German-made compressed-air filling machine in the station to operate continuously," Mr Cheng Kwok-keung, an inspector responsible for the maintenance of the machine at the time, shared the story.

Mitigation measures were put in place soon after the air-tank filling machine was installed at the Wong Tai Sin Fire Station in 2013. These measures included air-conditioning to keep the ambient temperature at an optimal level of between 20 to 30 degrees Celsius, ventilation to remove the heat produced by the machine, and sensors to ensure no other gases could get into the firemen's air tanks. The measures proved their worth during the Ngau Tau Kok blaze, when the compressed-air filling machine operated without fail for four days and nights, recharging efficiently hundreds of air tanks for the firefighters. "Our work passed the test under the most demanding conditions," Mr Cheng added.



Inspector Mr Cheng Kwok-keung and his team proactively enhanced the compressed-air filling machine at the Wong Tai Sin Fire Station, and received commendation from the client.

督察程國強先生及其團隊主動為黃大仙消防局的壓縮氣充氣機進行優化工程，獲得客戶嘉許。



我們於機電署總部大樓增設了「能源儀錶板」，協助監察大樓內各特定位置的實時能源消耗量。

We have added an "energy dashboard" at EMSD Headquarters Building to help monitor real-time energy consumption of specific areas of the building.

總部露天廣場裝設了太陽能風能混合路燈，以鼓勵環保節能。

To encourage energy saving and environmental protection, solar wind hybrid street lights are installed at our headquarters piazza.



科技創新 DRIVING INNOVATION AND TECHNOLOGY

作為政府建築物機電裝置的操作及維修保養團隊，我們大有條件以創新科技方案，協助客戶提高效率、節約能源，以及採用更環保的運作方式。

繼2015/16年度為150幢政府建築物完成能源審核和找出其能源管理機會後，我們於2016/17年度繼續為其他政府建築物進行能源審核工作，並從中找出更多能源管理機會。行政長官於2017年《施政報告》中也作出承諾，會為政府建築物的節能項目預留撥款。

由於政府即將撥款約7億元，投放在政府建築物的節能及可再生能源項目上，預計有關能源管理機會和可再生能源項目會在未來數年全面實施，進一步提升政府建築物的節能水平。

另一項相關措施，是為政府建築物的機電系統加緊安裝能源量度和管理系統，以更準確地量度能源消耗量和其他數據。有關數據會傳送至連接我們的綜合樓宇管理系統的中央監控系統，以便監察各主要政府建築物的機電設施運作情況。

我們亦已在機電署總部大樓安裝了「能源儀錶板」，這項試點計劃旨在準確地監察大樓內各特定位置的實時能源消耗量。此舉有助員工採用更有效的內務管理方法來節能，並可改變員工的耗能行為。儀錶板亦可能對其他政府建築物的節能工作有所助益。

As the maintenance agent of E&M installations in government buildings, we are well positioned to help our clients deploy innovative technology solutions that help them raise efficiency, save energy and be more environment-friendly.

Further to completing energy audits for 150 government buildings in 2015/16, and identifying their energy management opportunities (EMOs), our work on energy audits for other government buildings continued in 2016/17. This has led to more EMOs. The Chief Executive has also pledged in his 2017 Policy Address to earmark provisions for energy-saving projects for government buildings.

With forthcoming government funding at about $700 million for energy-saving and renewable energy (RE) projects in government buildings, the next few years will see the implementation of EMOs and RE projects in full swing, taking energy saving in government buildings to a new level.

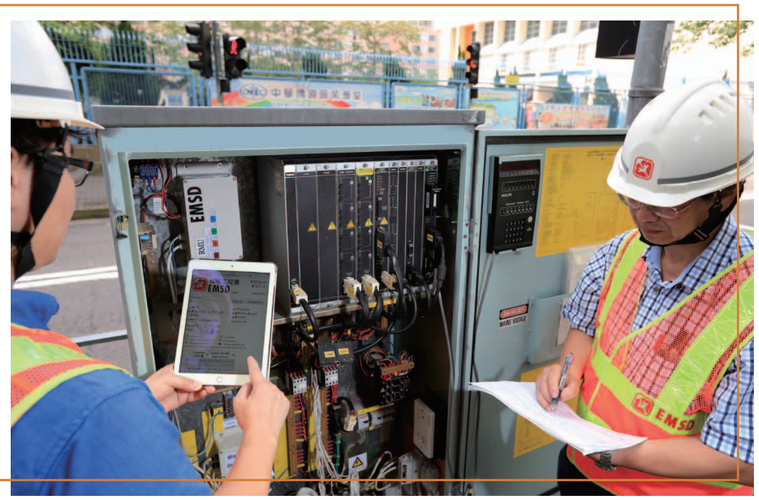
A related measure is stepping up the installation of energy measurement and management systems for E&M systems for more accurate energy consumption and other data measurement. Data is sent to the Central Control Monitoring System, which is connected to our integrated Building Management System for monitoring the operating status of E&M facilities in key government buildings.

We have also installed at EMSD Headquarters Building an "energy dashboard" as a pilot to precisely monitor real-time energy consumption of specific areas of the building. This can help staff adopt better housekeeping measures to save energy and change their energy consumption culture. The dashboard may also be useful to other government buildings to help save energy.

營運服務
Trading Services

安裝於交通燈上的遙距監測裝置一旦偵測到有故障發生，便會觸發中央監察系統即時發出手機短訊，通知我們的維修團隊進行搶修。圖為我們的員工正在檢查交通燈遙距監測裝置的運作情況。

Once faults are detected, the Remote Monitoring Units installed on traffic lights will trigger the Central Monitoring System to send instant SMS notifications to our maintenance team for speedy repairs. Photos show our staff checking the operation of the Units.





總部大樓露天廣場及綠化設施的三維立體模型。有關設施於2016年12月為部門取得「綠建環評社區」(先導評估)鉑金級證書。

A 3D model of our headquarters piazza and its greening facilities, for which we were awarded the Platinum Rating Certification under BEAM Plus Neighbourhood (Pilot Version) in December 2016.

我們支持發展局的倡議，推廣在建築物的操作及維修保養工作上應用「建築信息模擬」技術，並把該技術與我們的「資產管理系統」整合。這項工作在2017年2月踏入新里程，因為「建築信息模擬 — 資產管理」系統取得香港專利，讓我們可以進一步把「建築信息模擬」技術推廣至建築物的操作及維修保養工作。我們的下一步工作是與發展局和建造業議會磋商，協助制訂一套切合香港需要的「建築信息模擬」技術標準，讓不同範疇的專業人士和員工在參與建築物的設計、建造和維修保養工作時，能按照一套共通標準行事。

Our work to support the Development Bureau's initiative to promote the use of Building Information Modelling (BIM) in the O&M of buildings, integrated with our Asset Management (AM) System, reached a milestone in February 2017 when a Hong Kong patent for our BIM-AM was granted. This enables us to further promote BIM to the trades in the O&M of buildings. Our next step is to work with the Development Bureau and the Construction Industry Council to help establish BIM standards tailored for Hong Kong, so that professionals and workers of various disciplines involved in the design, construction and maintenance of buildings can work according to a set of common standards.

我們亦一直推行多項可持續發展措施，向社會樹立好榜樣。在2016/17年度，機電署總部大樓榮獲「綠建環評既有建築」最終鉑金級證書和「綠建環評社區」鉑金級證書。營運基金現正為多個客戶部門提供協助，務求為其取得既有建築物的「綠建環評」證書，藉此提高建築物的節能表現及整體可持續發展能力。

We have also been working on several sustainability initiatives to set an example. During 2016/17, EMSD Headquarters Building was awarded the Final Platinum Rating Certification under BEAM Plus Existing Buildings and the Platinum Rating Certification under BEAM Plus Neighbourhood. EMSTF is now helping client departments achieve BEAM Plus certification for existing buildings, which will benefit their energy saving and overall sustainability.

年內，我們繼續就啟德發展區區域供冷系統分站進行興建工程，為接駁高效節能的區域供冷系統的冷水供應至機電署總部大樓，作最後準備。

During the year, we continued with the construction of a substation of the District Cooling System (DCS) at the Kai Tak Development, as part of the final preparations for connecting EMSD Headquarters Building to the chilled water supply by the highly energy-efficient DCS.

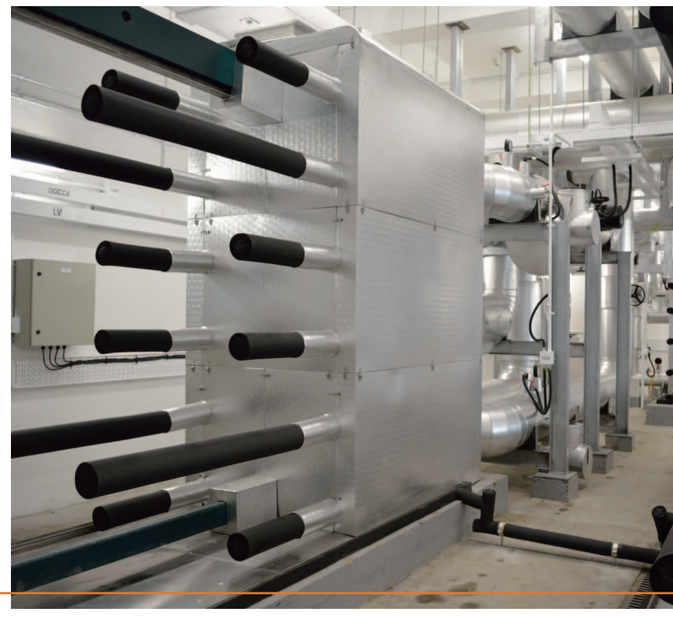
全球有關大數據和智慧城市概念的發展一日千里，營運基金也成立了智慧城市專責小組。小組由高層管理人員領導，負責探討我們能如何協助客戶落實創新意念，促使香港成為放眼未來的智慧城市。

In response to rapid developments in big data and smart city concepts worldwide, EMSTF has set up a Smart City Task Force. Led by the senior management, it explores how we can help clients implement innovative ideas that will facilitate Hong Kong to become a smart city of the future.

區域供冷系統熱交換器已接駁至機電署總部大樓，為其空調系統提供冷水，預計每年可為大樓節省約15%耗電量。

The heat exchanger of the District Cooling System is now connected to EMSD Headquarters Building to provide chilled water for its air-conditioning system. It is expected to save around 15% in annual electricity consumption.





營運服務
Trading Services

另一方面，一些既簡單又創新的方案，也能大大提升本港機電設備的可用率和可靠性，我們現時為電掣板、行人天橋升降機和自動梯，以及部分未納入電腦監察網絡的交通燈所安裝的遙距監測裝置，便屬一例。當遙距監測裝置偵測到有故障發生，中央監察系統便能即時發出手機短訊要求維修人員進行搶修，盡量減少對公眾造成的不便。

Simple and innovative solutions can also go a long way towards raising E&M equipment availability and reliability across the city. A case in point is our current efforts to install Remote Monitoring Units (RMUs) on electrical switchboards, footbridge lifts and escalators, as well as some non-networked traffic lights. The Central Monitoring System can send instant SMS messages to maintenance personnel for rectification once faults are detected by RMUs, thus minimising the inconvenience to the public.

另一個例子是一套相當獨特，由我們設計和建造的流動製冷系統。這套創新和高效能的系統，可於公立醫院製冷機組發生故障後的24小時內提供緊急後備冷水供應，確保醫院有可靠和持續的中央空調供應，讓病人享受安全舒適的環境。

Another example is a unique mobile chiller system that we designed and constructed. This innovative, highly efficient system provides emergency chilled water backup supply to public hospitals within 24 hours from the occurrence of a chiller plant breakdown. It helps ensure reliable and continuous supply of central air-conditioning in hospitals for the safety and comfort of patients.

我們的團隊熱衷於研發有助我們為客戶提供更佳服務的資訊科技方案，例如一套由我們自行研發，名為KITE的系統。這套現時處於試驗階段的系統，是我們致力加強承辦商管理工作的項目之一，可用以遙距監察承辦商員工出勤至預定地點工作的情況。

Our colleagues are passionate about developing IT solutions that help us better serve our clients, such as an application called KITE System developed in-house. Currently at the trial stage, it remotely keeps track of contractors' staff attending designated locations as part of our effort to enhance contractor management.



營運基金主動構思和提出各項增值服務方案，例如這個創新的流動製冷機，以滿足客戶的緊急製冷需求。

EMSTF proactively designs and produces various value-added service solutions, such as this innovative mobile chiller, to meet clients' urgent cooling demand.





「建築信息模擬 — 資產管理」系統獲認同
Recognition Given to BIM-AM

自2014年營運基金開始研發「建築信息模擬 — 資產管理」以來，該項目的助理工程師袁彪洪先生一直參與其中。該項目之所以展開，是源於發展局要求我們於機電署總部大樓進行先導計劃，試行將「建築信息模擬」技術應用於建築物資產管理上。袁先生回想當時的情況：「項目的要求很清楚，只是當時未有解決方案。」他又解釋，雖然香港業界已使用「建築信息模擬」技術來設計建築物，卻不曾將技術應用於建築物的維修保養工作上。項目團隊初時連找合適的承辦商來參與開發工作也很困難，後來終於把多個概念和技術方案成功整合在一起，工作才見突破，成為今天的「建築信息模擬 — 資產管理」系統。

Mr Francis Yuen, the project's assistant engineer, has worked on BIM-AM ever since its inception in 2014. The project began when the Development Bureau asked EMSD to conduct a pilot at EMSD Headquarters Building to try BIM on the asset management of buildings. "The brief was clear but no solution was in sight," recalled Mr Yuen, explaining that BIM had been used in Hong Kong for designing buildings, but not for maintenance. Even finding the right contractor was initially a challenge. The breakthrough came when the project team finally integrated the various ideas and technical solutions into what later became the BIM-AM System.

團隊中另一位要員是首席技術主任嚴志明先生，他負責繪製機電署總部大樓的「建築信息模擬」技術模型，最近也為天水圍醫院繪製同類模型。嚴先生說：「這項工作令人興奮。『建築信息模擬』技術是一套很有用的視覺數據，讓使用者可以即時看見已計劃的工程在完成後的模擬效果。」

Another important character in the story of BIM-AM is Mr Yim Chi-ming, a principal technical officer who developed the BIM model for EMSD Headquarters Building and more recently the one for the Tin Shui Wai Hospital. "The work is exciting. BIM is a very useful visual database that helps the users immediately see the results of the planned works," said Mr Yim.

至於參與該項目的最大收穫，袁先生及嚴先生都認為是「建築信息模擬 — 資產管理」系統得到業界和專業團體認同，以及在本地及海外引起極大興趣。

The biggest reward? Both agreed that it was the recognition given to the BIM-AM System by the trade and professional institutions, and the great interest generated locally and overseas.



Mr Francis Yuen, assistant engineer (left), and Mr Yim Chi-ming, principal technical officer (right), are key members of our team that developed the BIM-AM System.

助理工程師袁彪洪先生(左)和首席技術主任嚴志明先生(右)是我們的「建築信息模擬 — 資產管理」系統研發團隊的重要成員。

企業管理
Corporate Stewardship

在2016/17年度，企業支援及業務發展單位致力推動機電工程營運基金五大策略之相關工作，旨在支援我們的工程團隊本着貼心及創新的態度服務客戶和社會，務求讓廣大市民享受到更優質的生活。我們落實五大策略至今已有四年，各項策略下的相關工作正進行得如火如荼。一如往年，我們沿用一套行之有效的關鍵績效指標監察和檢視營運基金的表現。以下是我們這年內的工作重點：

Our corporate support units have been working hard to carry out various initiatives during 2016/17 under our five strategies. The aim is to support our engineering teams in serving clients and the community with care and innovation, so that citizens will enjoy a better quality of life. Four years into implementation, our five strategies are in full swing. Similar to last year, we have monitored and reviewed EMSTF performance using a set of Key Performance Indicators (KPI). The highlights of our endeavours are as follows.

五大策略進展 PROGRESS UNDER OUR FIVE STRATEGIES

提供優質服務

客戶滿意度是這項策略的關鍵指標。我們欣然報告，有賴客戶的支持，在2016年客戶意見調查中，以8分為滿分計，營運基金的客戶滿意指數創出6.45分的歷史新高。為了主動回應客戶的意見和建議，我們近年已落實一系列的持續改善計劃，包括與客戶保持溝通、應用新科技、強化合約管理，以及為客戶準確估算合約價格等。

Deliver Excellent Service

Client satisfaction is a key performance indicator of this strategy. We are delighted to report that, thanks to our clients' continuous support, EMSTF achieved a record high score of 6.45 out of 8 in the Customer Satisfaction Index of its Customer Opinion Survey 2016. Responding proactively to clients' views and suggestions in recent years, we have implemented a series of improvement initiatives, which include keeping clients informed, applying new technology, enhancing contract management, and providing accurate contract price estimates to our clients.



300多位同事及嘉賓參與「品質及安全日2016」，分享和表揚同事在提升服務品質及職安健方面的貢獻。

More than 300 staff members and guests participated in the Quality and Safety Day 2016 to share and recognise staff contribution to service quality and occupational health and safety improvements.



客戶對服務公眾有很高期望，我們為了讓客戶達到甚至超越期望，已開始為客戶的機電資產，按計劃進行分類及認證，以分析相關資產資料，及制訂資產更新計劃。我們更把機電資產資料與營運基金的企業電腦系統結合，設計了一套全面資產管理系統。我們也透過「維修外判合約表現監察系統」，成功運用資訊科技以監察維修保養合約的表現。該系統也能與未來嶄新的「顧客為本電子平台」結合，提供實時的工作進度資訊，加強客戶服務。

To go beyond the aspiration of our clients in delivering public services, we have been carrying out E&M asset categorisation and certification as scheduled for analysing asset information and planning for asset rejuvenation. Moreover, the E&M asset information has been integrated with the Corporate Computer System to set out a holistic asset management system. Besides, we have successfully deployed IT technologies to monitor the performance of maintenance contracts through the "Performance Monitoring System for Maintenance Contract (PMSMC)" system. The PMSMC will integrate with the new Customer Centric e-Platform (CCeP) to provide real time job process information for enhancing our customer services.

全新的「顧客為本電子平台」是我們推行的另一個重要項目。這平台會成為日後的客戶服務中心的骨幹，目的是按照我們現行的五年策略計劃，為客戶提供更佳服務。過去一年，我們由衞生工程服務團隊開始，分階段建立「顧客為本電子平台」。2016年9月，我們為醫院管理局(醫管局)設計的「顧客為本電子平台 — 醫管局延伸系統」正式啟用，標誌着這項目的首個里程碑。系統介面能與醫管局的新資產管理系統交換工作資訊，精簡資料輸入工序，以及使客戶在電子平台上的資料更為統一。

The implementation of the CCeP, the backbone of our future Customer Service Centre (CSC), is an important strategic initiative for enhancing services to clients under our current five-year strategic plan. The CCeP has been under development in phases starting with the health service teams in the year. The first milestone was achieved in September 2016 when the CCeP – Hospital Authority (HA) Enterprise Asset Management System Interface (CCeP-EAM) was commissioned to exchange job information with the new asset management system of HA. The CCeP-EAM streamlined work process on data input and improved data consistency under the CCeP initiative.

我們年內也採用「敏捷開發方式」，讓員工充份參與「顧客為本電子平台 — 工作管理系統」的開發工作，並廣納員工的意見。這系統將成為「顧客為本電子平台」的核心組成部分，讓使用者適時取得工作進度資訊，有助客戶服務中心更有效地將我們的工作進度知會客戶。為了爭取於2017/18年度推出這工作管理系統，我們的電腦服務團隊年內與各策略業務單位緊密合作，為來年的系統實施和整合鋪路。至於新客戶服務中心的工作也正進行中，額外的辦公室空間安排已獲批准，初步設計亦已完成。

A CCeP – Job Management (CCeP-JM) system is being developed using agile methodology with full staff engagement. The CCeP-JM will be the core building block of CCeP for capturing job status in a timely manner which will empower the CSC to keep clients better informed of our services. Aiming for a roll-out in 2017/18, our computer services team has been working very closely with Strategic Business Units (SBUs) to pave the way for system implementation and integration in the following year. Work on the new CSC is also underway, with extra accommodation approved and preliminary design completed.



在2016年公務員事務局局長嘉許狀頒發典禮上，時任行政長官梁振英先生與機電工程署三位獲獎同事及家屬合照。

Pictured are the then Chief Executive the Honourable C Y Leung with the three awardees from EMSD and their families at the Secretary for the Civil Service's Commendation Awards Presentation Ceremony 2016.

企業管理
Corporate Stewardship

項目 Item	關鍵績效指標(單位)[1] Key Performance Indicators (Unit)[1]	2016/17 目標 Target	2016/17 成績 Results
1.	收入回報率 (%) Return on Revenue (%)	3.1	5.3
2.	新收入增長(百萬元) New Business and Growth of Business ($M)	185	301.5
3.	客戶滿意指數以8分為滿分 Customer Satisfaction Index on an 8-point scale	6.3	6.45[2]
4.	年內續訂的服務水平協議 (%) Percentage of Service Level Agreement (SLA) Renewed during the Year (%)	95	99.93
5.	每月電話調查客戶滿意度 (%) Percentage of Satisfaction Level Based on Monthly Customer Feedback (%)	95	99.64
6.	每名營運基金員工接受訓練的日數 Training Days/EMSTF Staff (no. of training days per staff)	4.5	5.29
7.	員工滿意度指數以10分為滿分 Staff Satisfaction Rating on a 10-point scale	6.8	6.8[2]
8.	員工建議計劃 Awards for Staff Suggestion Scheme Proposal (no.)	75	113
9.	達到服務水平協議所訂的表現目標 (%) Percentage of SLA Service Performance Target Compliance (%)	99	99.97
10.	每千名營運基金員工須呈報的意外宗數(每千人計算) Reportable Accidents per 1 000 EMSTF Staff (no. per 1 000 staff)	5	5.35[3,4]
11.	違反法例次數 Statutory Non-compliance (no.)	0	0
12.	耗電量(千瓦小時)機電工程署總部大樓、數據中心及各策略業務單位 Electricity Consumption (kWh) EMSD Headquarters, Corporate Data Centre and all SBUs Venues	10 838 767[5]	10 492 055[6]

1 表內各項目只適用於機電工程營運基金,至於第7、第8及第12項,適用於整個機電工程署。
All items apply to EMSTF only, except items 7, 8 and 12 which apply to EMSD as a whole.

2 數字為2016年的調查結果。
Result from the survey conducted in 2016.

3 每千名機電工程署員工及營運基金員工須呈報的意外宗數,分別為4.90宗及5.35宗(不包括非因機電工程署司機犯錯導致的意外)。
The number of reportable accidents per 1 000 staff for EMSD and EMSTF were 4.90 and 5.35 respectively (excluding traffic accidents not due to the fault of EMSD drivers).

4 與2015/16年度相比,以下兩類意外於2016/17年度有上升趨勢:(i)滑倒、絆倒或在同一高度跌倒;(ii)與固定或不動的物件碰撞。
Two types of accidents showed an increasing trend of occurrence in FY2016/17 when compared with FY2015/16 — (i) Slip, trip or fall on same level; and (ii) Striking against fixed or stationary object.

5 2013/14年度的耗電量(扣除客戶使用量)。
Baseline electricity consumption (exclude client usage) as of FY2013/14.

6 正常化後2016/17年度的耗電量(扣除客戶使用量)。
Normalised electricity consumption (exclude client usage) as of FY2016/17.

服務品質及職安健乃卓越服務的先決條件。我們舉辦「品質及安全日2016」,讓「最佳改善個案獎」、「最佳環保個案獎」及「最佳職安健改善個案獎」的得獎團隊能藉此向300多位員工及嘉賓展示其創新意念和最佳做法。這項一年一度的活動公開肯定員工在提升工作品質和改善職安健方面的貢獻,並讓他們分享經驗及成果,誠然效益良多,因此深受同事歡迎。

Quality service and occupational health and safety (OHS) are prerequisites for service excellence. Our Quality and Safety Day 2016 provided an opportunity for the winning teams of the Best Improvement Project Awards, Best Green Project Awards and the Best OHS Enhancement Project Awards to showcase their innovative ideas and best practices to over 300 staff members and guests. The annual event is meaningful as always and is welcomed by staff as their efforts in quality and OHS improvements are formally recognised and shared.

2016年,營運基金再度憑出色服務獲頒公務員事務局局長嘉許狀。三位分別任職於工程策劃部、運輸、保安及中央工程部和衞生工程部的得獎同事,多年來在客戶服務方面表現卓著,獲獎是實至名歸。

EMSTF's service excellence was once again recognised by the Secretary for the Civil Service's Commendation Awards 2016. Three colleagues from Projects Division, Transport, Security and Central Services Division and Health Sector Division respectively were awarded for their outstanding client service over the years.



《機電工程署二零一五至一六年年報》榮獲美國通訊專業聯盟的「2016 Vision Awards」鉑金獎。

The EMSD Annual Report 2015/16 won the League of American Communications Professionals' 2016 Vision Awards – Platinum Award.

機電工程署2015/16年度年報榮獲美國通訊專業聯盟的「2016 Vision Awards」,表揚我們在客戶及公眾傳訊方面的成就。年報所獲獎項包括:政府組別鉑金獎、亞太區最佳致股東信函金獎、亞太區80份最佳年報(排名第17位),以及2016年全球100份最佳年報(排名第50位)。

The EMSD Annual Report 2015/16 won the 2016 Vision Awards organised by the League of American Communications Professionals, a major recognition for our communication with clients and the public. The awards won included Platinum Award – Government Industry; Gold Award – Best Letter to Shareholders in the Asia-Pacific region; Top 80 Reports in the Asia-Pacific region (ranked 17th) and Top 100 Reports Worldwide (ranked 50th) in 2016.

2016年9月,我們在總部大樓舉辦機電工程營運基金20周年感恩典禮,眾多客戶親臨慶賀。典禮由時任政務司司長主禮,來賓包括多位政府高層官員、歷任機電工程署署長、客戶代表及機電業界領袖。我們很高興能藉此儀式紀念這特別日子,標誌着我們與客戶的廿載成功伙伴關係,和我們為打造卓越未來的不斷努力。

Many clients also joined us at the EMSTF 20th Anniversary Thanksgiving Ceremony held in September 2016 at our headquarters, officiated by the then Chief Secretary for Administration and well attended by senior government officials, past Directors of Electrical and Mechanical Services, clients and E&M industry leaders. We were delighted to commemorate the special occasion marking EMSTF's successful partnership with clients in the past two decades and our continuous quest to excel for the future.

機電工程營運基金20周年感恩典禮主禮嘉賓 — 時任政務司司長林鄭月娥女士與一眾嘉賓、機電工程署管理層和年青員工代表。

Officiating at the EMSTF 20th Anniversary Thanksgiving Ceremony are the then Chief Secretary for Administration, Mrs Carrie Lam, with our guests, management team and young staff representatives of EMSD.



企業管理
Corporate Stewardship



為吸引年青人加入機電業，我們參與了「教育及職業博覽2017」，介紹機電工程署的就業機會、晉升階梯及培訓計劃。

To attract youngsters to the E&M trade, we participated in the Education & Careers Expo 2017 to showcase the job opportunities, career path and training schemes at EMSD.

成為業界典範

近年來，機電業界十分關注如何確保有足夠的優質人才供應，令行業持續蓬勃發展，並滿足業內不斷上升的人力需求。機電工程署已帶領由19個團體組成的香港機電業推廣工作小組，率先推行了多項措施，鼓勵年青人入行，例如於2月參加一連四天在香港會議展覽中心舉行的每年一度「教育及職業博覽2017」，以及於3月參加在職業訓練局葵涌大樓舉行，專為中學生而設為期兩天的「機電業博覽2017 — 機電新世代」。

為了向業界樹立榜樣，我們承諾在2016至2020年期間，透過技術員訓練計劃推行「為業界培訓人才」的新項目，每年培訓100名見習技術員，為香港持續提供機電技術人員和技工。此外，機電工程署聯同香港機電工程商聯會、渠務署、水務署和其他伙伴機構，推出全新的合作培訓技術員先導計劃，為「為業界培訓人才」項目下的見習技術員提供實習機會，助其擴闊視野和提升技術水平。

我們每年籌辦多個技術研討會，以推動機電業界分享知識。2016年5至6月期間，我們特別舉辦了一系列的創新科技交流會及業界科技研討會，作為營運基金20周年慶祝活動之一。本港多間大學的學者及其他專家就50多個議題發表演說，吸引了來自客戶部門、業界及學術界的1 600多名參加者出席。

Become a Trade Model

A major concern of the E&M trade in recent years is how to ensure adequate supply of quality talents so that the trade may continue to thrive and meet soaring manpower demand. As the leader of the Hong Kong Electrical and Mechanical Trade Promotion Working Group comprising 19 organisations, we have spearheaded many initiatives to encourage young people to join the industry, such as participating in the annual four-day Education & Careers Expo 2017 held in February at the Hong Kong Convention and Exhibition Centre. We also took part in the two-day Electrical and Mechanical Trades Expo 2017 – E&M New Generation held in March at the Vocational Training Council Kwai Chung Complex, targeting secondary students.

To set an example for the trade, we have pledged to train 100 new technician trainees per year under the new initiative of "Train for the Trade" via our Technician Training Scheme from 2016 to 2020 to provide a steady supply of tradesmen and craftsmen for Hong Kong. A related new initiative is the Pilot Cooperative Apprentice Training Scheme where EMSD partners with the Hong Kong Federation of Electrical and Mechanical Contractors Limited, the Drainage Services Department, the Water Supplies Department and other partnering companies to provide attachment opportunities for technician trainees under the "Train for the Trade" initiative to enrich their exposure and skills.

Every year we organise many technical seminars to facilitate knowledge sharing among the E&M trade. As part of the EMSTF 20th anniversary celebratory activities, we held a special series of Innovation Technology Sharing and Trade Technology Seminars during May and June 2016. Scholars from various universities in Hong Kong and other experts spoke on some 50 topics, attracting over 1 600 attendees from client departments, the trade and the academia.



「機電工程署創科論壇」探討了多個關於未來城市發展的議題，活動深受業界歡迎。

The EMSD Summit explored a wide range of topics on future city development, and was well received by the industry.

營運基金20周年的壓軸慶祝活動，是2016年11月假香港科學園舉行的「機電工程署創科論壇 — 想像∞創新∞香港」。為期一天半的論壇，旨在從建築物、交通、能源及可持續發展等不同範疇，探討香港未來的城市發展，以期把香港打造成世界級的綠色智慧型未來城市。講者包括著名學者、政府高層官員、機電工程和可持續發展範疇的行業領袖，出席者達400多人。

有賴業界積極參與和提供寶貴意見，《機電工程署安全及健康手冊》已於2016年11月完成和出版。機電工程署亦已按照勞工處的最新要求，於2016年5月出版和實施《加強高處工作安全措施工作指引》。這些文件載列業內目前的最佳做法，我們鼓勵機電業界於日常工作中予以參考。此外，我們於2016年10月舉辦了承辦商研討會，與我們的承辦商分享職安健知識和最佳做法。

Another pioneering event was the 1.5-day EMSD Summit – Imaginovate Hong Kong held in November 2016 at the Hong Kong Science Park, also the grand finale of our 20th anniversary celebrations. The Summit aimed to explore the future city development of Hong Kong from the perspectives of buildings, transportation, energy and sustainability in a bid to transform Hong Kong into a world-class green and smart city of the future. Speakers included prominent academics, top government officials and leaders in E&M engineering and sustainability disciplines. More than 400 participants attended the event.

The EMSD Safety and Health Handbook was completed and issued in November 2016, with valuable input from the trade. The Guidelines on Enhanced Safety Measures for Work-at-Height were also issued and implemented in May 2016 according to the latest requirements from the Labour Department. The documents capture the most current best practices, and we encourage the E&M trade to make reference to them in their daily work. In addition, a Contractors Forum was organised in October 2016 to share our OHS knowledge and best practices with our contractors.

建立員工才能與關懷文化

機電工程署2016年員工滿意度調查是2016/17年度的重點工作之一。調查結果顯示，以10分為滿分計，整體員工滿意度指數創下6.8分的歷史新高，比2014年調查所得的6.4分更高。是次調查的回應率達40%，也比2014年的回應率高5%。是次調查及其後進行的20場聚焦小組討論，帶來了嶄新的員工參與模式，讓員工能共同擁有和共同創立各項改進措施。員工滿意度屢創新高，證明我們近年為建立員工才能與關懷文化而推行的各種措施方向正確。

年內，我們繼續研訂員工才能矩陣、加強現行的各項員工福利計劃，以及推出各項新猷。舉例來說，我們繼續委託香港家庭福利會為機電工程署所有員工（包括借調至其他部門的人員）提供輔導服務。該會為員工舉辦了10場簡介會，由專家講解如何促進工作與生活平衡，以及加倍注意身體、精神及情緒健康。該會更設立了專用熱線，為員工提供次數不限的諮詢或輔導服務。

Build Capacity and Caring Culture

A highlight of 2016/17 was the EMSD Staff Satisfaction Survey 2016 which returned a record high of 6.8 out of 10 in overall staff satisfaction rating, against 6.4 in the previous Survey in 2014. The 40% response rate was also 5% higher than that in 2014. The Survey and the subsequent 20 focus group discussions led to a new staff engagement approach which will enable staff to co-own and co-create various improvement measures. The high satisfaction score shows that our initiatives in recent years to build capacity and a caring culture are on the right track.

During the year, we continued to develop the Staff Competency Matrix. Also, existing programmes on staff well-being were enhanced and new initiatives launched. For example, we continued to commission the Hong Kong Family Welfare Society to provide counselling services to all EMSD staff, including those seconded to other departments. About 10 briefings by experts were held for staff to promote work-life balance and their awareness of physical, mental and emotional health. A designated hotline is available for staff to obtain unlimited consultation or counselling services.

企業管理
Corporate Stewardship



為提高同事對身心健康的重視，我們提供心理輔導服務，並定期舉辦各類工作坊。

To enhance staff awareness of the importance of mental and physical health, we provide counselling services as well as organising various regular workshops.

我們推出了一份名為《機電前線》的全新中文網上員工通訊，以加強與前線員工的溝通，讓他們知悉部門最新發展及有關前線需要的事宜。在2016/17年度，《機電前線》出版了五期。這份通訊可補足以全體員工為對象的現有員工通訊《羣聲》。

A new Chinese online newsletter called EMSD Frontline News was launched to enhance communication with frontline staff, so that they are kept abreast of the Department's latest developments and issues pertinent to frontline needs. Five issues were published during 2016/17. It augments our existing staff newsletter Group Voice which caters for all staff.

為讓員工積極參與部門事務，部門工作服工作小組收集了營運基金前線員工對由香港理工大學專業設計師所設計各款新制服的意見。工作小組還邀請逾2 000位合資格員工投票挑選設計方案。此外，約100位前線員工代表更參加了新制服試穿活動，以助設計師改良設計，務求新制服於2018年年底推出時，員工穿着工作時能倍感舒適。

In the spirit of engaging staff, the Department's Uniform Working Group not only collected the views of EMSTF frontline staff about options of their new uniforms designed by professional designers from the Hong Kong Polytechnic University, but also invited over 2 000 eligible staff members to vote on the design options. Furthermore, about 100 frontline staff representatives participated in a trial wearing of the new uniforms, which has been targeted to launch by end 2018, to facilitate minor touch-ups for extra comfort at work.



新推出的《機電前線》，旨在加強與前線員工的溝通。

The new EMSD Frontline News was launched to enhance communication with frontline staff.



工作服工作小組聘請專業顧問，並收集前線員工意見，以設計營運基金前線員工的新制服。

The Uniform Working Group hired a professional consultant and collected the views of frontline staff in designing new uniforms for our frontline staff.

為推廣無障礙工作間，總部大樓出入管制系統的升級工程已於2017年完成。新的通道讀卡器使用藍牙及近距離無線通訊技術，並已安裝於大樓內各主要出入口。員工可利用流動應用程式代替通行證開啟門鎖，令出入更便利。新系統尤其方便輪椅使用者，以及須以手推車運送貨物及文件的員工出入。

To promote barrier-free access for staff, the access control system at our headquarters building was upgraded in 2017. New access readers using Bluetooth and NFC technologies have been installed at key entrance points throughout the building. Staff may use a smartphone app instead of access card to unlock doors for easier access, which is especially convenient for wheelchair users and staff transporting goods and documents in trolleys.

優化知識管理

隨着「知識群體網站」繼續發展，我們也為虛擬專用網絡系統升級，使各個遙距辦事處都能與總部連接，此舉可讓遙距運作的策略業務單位能隨時取用總部的企業資訊科技資源。這些新的便利設施有助促進企業資訊分享和提升知識管理能力。

Enhance Knowledge Management

As our Knowledge Communities Portal continued to develop, we also upgraded the virtual private network system for connecting remote offices to the headquarters. In this way, remote SBU offices were enabled to use our corporate IT resources seamlessly. These new conveniences have boosted our corporate information sharing and knowledge management capabilities.

去年提及的全新知識管理工具「知識地圖」已經推出。「知識地圖」是用於識別知識項目（何事）、其擁有人（何人）及地點（何地）的知識管理工具，以便將知識資產分類。「知識地圖」編集關鍵工序對員工的知識需求（例如取得文件和接觸具備相關知識同事的途徑），以助新調職同事及時學習新工序。在2016/17年度完結前，我們已完成12份「知識地圖」，內容涵蓋廣泛知識領域的關鍵工序，例如電氣火災調查、升降機及自動梯檢查、工程招標和車輛採購等。

As mentioned last year, a new knowledge management (KM) tool called Knowledge Map (K-map) was introduced. K-map is a KM tool for the identification of knowledge item (what), its owner (who) and location (where) for categorising knowledge assets. K-map codifies the knowledge needs of staff (such as access to documents and knowledgeable colleagues) in critical processes, helping colleagues posted to a new position to learn new work processes in a timely manner. By end 2016/17, a total of 12 K-maps were completed, covering critical processes from a wide range of knowledge areas, for example, electrical fire investigation, lift and escalator inspection, works tendering and vehicle procurement.

企業管理
Corporate Stewardship

啟迪論壇提供平台，讓嘉賓講者及同事分享關於機電及其他相關議題的經驗和心得。

The Enlightenment Forums provide a platform for guest speakers and colleagues to share experience in and insights into E&M and other related matters.





我們亦計劃透過「睿智小組」進一步推廣在工作上應用新技術。截至2016/17年度完結前，同事們已自發組成了40個「睿智小組」，涵蓋19個機電工程領域，參加者包括740多位專業及技術職系的員工。在下一個財政年度，營運基金會考慮為「睿智小組」提供種子基金及配對機會，讓同事與大學研究人員或業界伙伴合作，進行把新技術應用於工作上的先導測試。

Plans are also underway to use Interest Groups (IGs) to further promote new technology application at work. As of end 2016/17, 40 IGs have been formed voluntarily, covering 19 E&M areas and some 740 staff members from both professional and technical grades. In the coming fiscal year, EMSTF will consider providing seed funding and pairing-up opportunities for IGs to work with university researchers or industry partners to conduct pilot testing of new technology applications in our work.



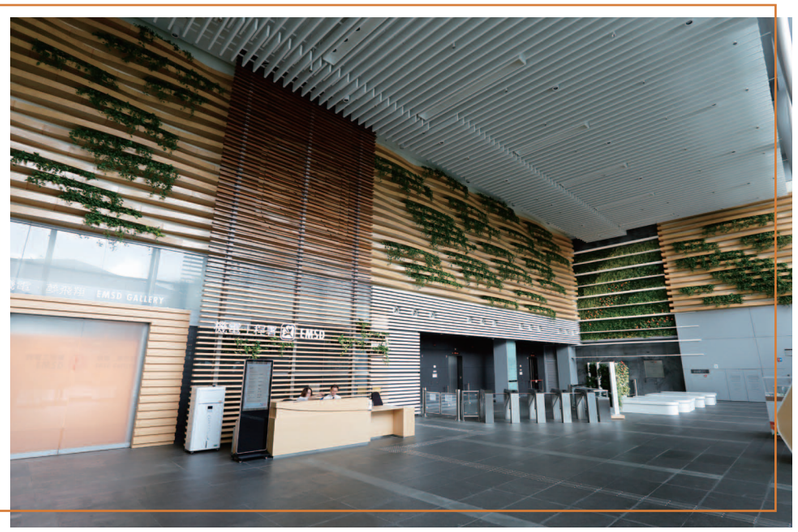
副署長/營運服務戴德謙先生於「營運基金廿載『情』」分享會上，向同事講述營運基金的歷史及發展。

Deputy Director/Trading Services, Mr Tai Tak-him, briefs colleagues on the EMSTF history and development at the EMSTF 20th Anniversary Sharing Session.



機電工程署總部大樓主入口大堂已增添綠化設施。

Additional green features at the EMSD Headquarters Building main entrance lobby.



持續綠色作業

我們的重點是讓營運基金的所有業務及工序，均以環保及可持續發展的方式進行，務求能節省電力、用水和用紙等天然資源。我們在總部大樓引進一套使用智能電錶及能源儀錶板的新能源管理系統，讓每個部別都能取得實時耗電量數據，以便更有效監察和控制其能源消耗量。

環保採購是我們可持續發展作業的重要一環。我們嚴格依循環境局的通告和指引，在採購方面盡可能採用環保規格。我們的企業電腦系統採購模組，現已能向所有員工提供最新的環保採購規定以供遵循。

如何處理和棄置廢料及使用期已完結的產品，既是社會關注的問題，也是我們工作的新焦點。環境保護署已發出指引，而《2016年促進循環再造及妥善處置(電氣設備及電子設備)(修訂)條例》亦已闡明若干指導原則。我們亦參考上述有關生產者所需的發牌規定指引及條例。在發牌制度實施後，有關規定即會納入我們的報價邀請及招標文件內。

我們的總部大樓繼續推行多項環保建築計劃和增添室內綠化設計。繼年內獲取「綠建環評社區」鉑金級證書後，我們為大樓的空調系統於2017年5月連接至啟德發展區區域供冷系統，進行最後的準備工作。採用區域供冷系統可提升總部大樓的能源效益，讓我們成為供冷系統的用戶，以收節約能源和減少碳排放之效，同時為保護環境出一分力。

Sustain Green Operation

Our focus is to operate all EMSTF activities and processes in a green and sustainable manner and save natural resources like water, electricity and paper. A new energy management system using smart meters and an energy dashboard was introduced at our headquarters building, so that each division can obtain real-time data of its electricity consumption to facilitate more effective monitoring and control of its energy consumption.

Green procurement is a key component of our sustainability practice and we adhere closely to the Environment Bureau's circulars and guidelines to adopt green specifications in our purchases as far as practicable. The Purchasing Module of our Corporate Computer System now provides to all staff the latest green purchase requirements for compliance.

The handling and disposal of waste and products at the end of their life cycles is an issue of concern in the community and a new focus in our work. The Environmental Protection Department has issued guidelines while the Promotion of Recycling and Proper Disposal (Electrical Equipment and Electronic Equipment) (Amendment) Ordinance 2016 has also made clear certain guiding principles. We have made reference to both in drawing up the necessary licensing requirements in our Producer Responsibility Scheme which will be included in our quotation and tender documents once the licensing regime is in place.

Our headquarters building continues to implement various green building initiatives as well as indoor greening features. Subsequent to our obtaining Platinum Rating Certification under BEAM Plus Neighbourhood during the year, we made final preparation work on connecting our air-conditioning system to the chilled water supply from the District Cooling System at Kai Tak Development in May 2017. This would be another energy efficiency booster for our headquarters and make us one of the System users to save energy, reduce carbon emissions and contribute to protecting the environment.







社會及環保報告

SOCIAL AND ENVIRONMENTAL REPORT

關於本報告
About this Report

匯報原則

本報告是香港特別行政區政府機電工程署[1]的年度社會及環保報告(本報告)。本報告全面闡述我們於2016/17年度,在環境、社會及經濟方面的表現。

本報告參照全球報告倡議組織G4可持續發展報告指引的核心選項而編寫。此外,我們亦依照環境保護署的《環境管制人員適用環保報告指引》而編寫本報告。

全球報告倡議組織的內容索引收錄於本報告末段部分,列載指標並將之與本報告的相關章節對照。為提高本報告的可靠性,我們已通過獨立第三方驗證,以核實報告的質素及準確度,並確保報告內容符合全球報告倡議組織G4可持續發展報告指引的核心選項的要求。

重要議題及報告範圍

本報告載述機電工程署由2016年4月1日至2017年3月31日期間,在可持續發展方面的措施及績效。報告中截至2017年3月31日止的數據乃根據部門所知悉的實際數字(除另外說明)。報告亦涵蓋截至2017年3月31日止的財政年度的財務數據。所有金額均以港元為單位。本署的權責關係、規模、架構,及其供應鏈於報告期間並無重大改變。

透過重要議題評估過程,我們與不同持份者組別[2]包括職員、客戶及供應商[3]緊密聯繫,以問卷調查形式[4]收集他們的寶貴意見。我們分析持份者最關注的經濟、社會及環境議題。根據持份者參與活動的結果,我們歸納出一系列重要的議題,並按持份者問卷調查結果排列優先次序[5]。

[1] G4-17 [2] 主要持份者組別主要參考其與機電工程署的運作的相關性而挑選及聯繫(G4-25) [3] G4-24 [4] G4-26 [5] G4-18

REPORTING PRINCIPLES

This is the annual Social and Environmental Report (hereafter "the Report") published by the Electrical and Mechanical Services Department (EMSD)[1] of the Government of the Hong Kong Special Administrative Region (HKSAR). The Report presents a comprehensive overview of our environmental, social and economic performance in 2016/17.

The Report has been prepared in accordance with the Global Reporting Initiative (GRI) Core option of the G4 Sustainability Reporting Guidelines. We have also made reference to the Environmental Protection Department's A Guide to Environmental Reporting for Controlling Officers when developing the Report.

A GRI Content Index has been included at the end of the Report, showing the GRI indicators and the corresponding chapters. To enhance the reliability of the Report, we have sought independent third-party verification to check the quality and accuracy of the Report and ensure compliance with the Core option of the GRI G4 Sustainability Reporting Guidelines.

MATERIAL ASPECTS AND BOUNDARY

Our sustainability initiatives and achievement presented in the Report cover the period from 1 April 2016 to 31 March 2017. Data are based on absolute figures as of 31 March 2017 (unless otherwise stated) to the best of our knowledge. Financial data contained in the Report are reported for the financial year ended on 31 March 2017 with all monetary values presented in Hong Kong Dollars. There were no significant changes with regard to departmental ownership, size, structure, or its supply chain.

Through our materiality assessment process, we engaged our key stakeholder groups[2] including staff, clients and suppliers[3] to solicit their feedback in the form of questionnaire survey[4]. We identified the economic, social and environmental topics that are of greatest concern to the stakeholder groups. As a result, a list of material aspect is consolidated and prioritised based on the outcome of the stakeholder survey[5].

[1] G4-17 [2] Major stakeholder groups are identified and engaged with reference to their relevance to EMSD's operations (G4-25) [3] G4-24 [4] G4-26 [5] G4-18

類別 Categories	重要議題[6] Material Aspects[6]	範圍 Boundaries: 機電工程署的運作[7] Operations of EMSD[7]	範圍 Boundaries: 主要供應商的運作[8] Operations of Our Major Suppliers[8]
環境 Environmental	生態保育[9] Ecological Conservation[9]	✓	
	節約能源 Energy Conservation	✓	✓
	污水及廢物處理 Effluents and Waste Treatment	✓	
	廢氣控制 Emissions Control	✓	
	節約用水 Water Conservation	✓	
	物料使用 Use of Materials	✓	
	評估供應商/承辦商的環境表現 Supplier/Contractor Environmental Assessment	✓	
	運輸的環境影響[9] Environmental Impacts of Transportation[9]	✓	
經濟 Economic	財務表現 Financial Performance	✓	
	部門的採購政策 Departmental Procurement Practices	✓	✓
	間接經濟影響[9] Indirect Economic Impact[9]	✓	
	客戶的滿意度 Customer Satisfaction	✓	
社會 Social	員工培訓及教育 Employee Training and Education	✓	
	職業健康及安全 Occupational Health and Safety	✓	
	員工投訴機制 Grievance Mechanisms (Labour Practices)	✓	
	多元化及平等機會 Diversity and Equal Opportunity	✓	
	員工政策 Employment Policy	✓	
	避免對員工強迫勞動 Avoid Forced Labour	✓	

我們的社會及環保報告2016/17可於網上查閱。歡迎讀者直接與我們聯繫(電郵:bssd@emsd.gov.hk),就我們在可持續發展方面的績效或報告方式,提出寶貴意見。

Our Social and Environmental Report 2016/17 is also available online. Readers are welcome to provide feedback on our sustainability performance or reporting approach by contacting us directly at bssd@emsd.gov.hk.

[6] G4-19, G4-27 [7] G4-20 [8] G4-21 [9] G4-23 新加入於本報告

[6] G4-19, G4-27 [7] G4-20 [8] G4-21 [9] G4-23 Newly covered in this Report

實現可持續發展
Sustainability at EMSD



管理方針

機電工程署透過持續綠色作業，以及規管服務和營運服務團隊積極協助政府、業界及公眾提升能源效益及節能成效，致力建設可持續社會。

規管服務的可持續發展

為應對氣候變化，政府於2017年1月公布《香港氣候行動藍圖2030+》，列出2030年之前及之後的政策行動計劃。為履行2016年《巴黎協定》下的責任，行動藍圖旨在透過增加能源效益及減少氣體排放，以達致於2030年的絕對碳排放量減低26%至36%。

作為規管機構，我們負責檢視及制訂能源效益、節能及公共設施等的主要法例。最新的《淡水冷卻塔實務守則》於2016年12月推出，整合及改善淡水冷卻塔計劃的申請程序效率及參與要求。《預防退伍軍人病工作守則》亦於同期推出，加強了有關冷熱水供應系統的疾病預防措施。我們亦於2016/17年度推行「強制性能源效益標籤計劃」第三階段，擴大現有計劃涵蓋範圍，達致最佳節能效果。

我們積極支持政府更廣泛使用可再生能源、推廣能源效益及節能的計劃和措施。我們持續為有關計劃及措施進行推廣、提供專業諮詢及技術支援，如《建築物能源效益條例》、香港建築物能源效益註冊計劃，及與環境局合作推行的「全民節能2016」等運動。機電工程署亦透過不同方式舉辦一系列宣傳活動，如「慳電熄一熄青年獎」及「慳神大比拼2016」推廣日、技術研討會、講座、學校外展暑期計劃及展覽等。這些教育活動旨在建立節能及安全使用能源的公眾意識。

儘管推行可持續發展時遇到不少挑戰，機電工程署會繼續掌握現時地區及國際發展的趨勢，支持政府制訂能源效益規管框架，邁向節能及低碳經濟。

MANAGEMENT APPROACH

EMSD is committed to making every effort to realise a sustainable society through our green operation and pivotal roles in assisting the government, industry and the public in maximising energy efficiency and energy saving performance through our Regulatory Services and Trading Services.

Sustainability in our Regulatory Services

To combat climate change, the HKSAR Government released the new Hong Kong's Climate Action Plan 2030+ in January 2017 that sets out policy actions to be enforced by and beyond 2030. To fulfil our commitment under the 2016 Paris Agreement, the Action Plan intends to increase energy efficiency and reduce gas emissions and to meet our absolute carbon emissions pledge of reducing 26-36% by 2030.

As a regulatory body, we review and formulate key legislation in areas like energy efficiency, resource conservation and public utilities. In December 2016, the latest Code of Practice for Fresh Water Cooling Towers (FWCT) was published to consolidate and improve the efficiency of the application procedures and requirements of the Scheme. At the same time, the Code of Practice for Prevention of Legionnaires' Disease was also issued in December 2016 to enhance precautionary measures pertaining to hot and cold water supply systems, featuring updates in the practical guidelines for associated facilities in preventing the disease. In 2016/17, we also pushed forward the third phase of Mandatory Energy Efficiency Labelling Scheme (MEELS) to expand the existing scope of the scheme in order to attain maximum energy saving potential.

We take proactive role in supporting the wider use of renewable energy as well as launching energy efficiency and energy saving programmes and initiatives by the government. We continuously help promote and provide professional advisory services and technical support for these initiatives such as the Buildings Energy Efficiency Ordinance and Energy Efficiency Registration Scheme for Buildings and campaigns jointly organised by the Environment Bureau and us including the Energy Saving for All 2016. EMSD also holds a wide range of promotional campaigns through extensive means. Examples include workshops and the promotion day for the Youth Energy Saving Award, Energy Saving Championship Scheme 2016, technical forum, seminars, school outreach summer programmes and exhibitions. These educational activities aim to build public awareness of energy conservation and safety compliance.

Despite facing the impending challenges of developing sustainable initiatives, EMSD continues to keep abreast of existing regional and global developments to support the government in drawing up an energy efficiency regulatory framework to move towards an energy saving and low carbon economy.

營運服務的可持續發展

機電工程署其中一個主要職責是為客戶提供優質機電工程服務，同時亦會盡量減低服務對環境的影響。因此，我們一直於部門運作及工程相關工作中盡量採用最新科技，以作節能及實施能源管理方面的業界典範。

我們早已獲得ISO 9001、ISO 14001及OHSAS 18001認證，並將這些系統整合為綜合管理系統，管理及減低對品質、環保及職業安全健康的影響。利用這套綜合管理系統，我們能更有效地處理不同程序，找出不合規行為及持續改進的空間。此外，總部大樓獲得ISO 50001認證亦是我們不斷提升能源管理的成果。

我們致力為香港社會創造長遠及正面的裨益，透過推行節能及使用可再生能源和頂尖科技，鼓勵客戶和業界與我們緊密合作，一同推動可持續發展。

Sustainability in our Trading Services

At EMSD, one of our core responsibilities is to provide quality electrical and mechanical services for our clients while mitigating the impacts on the environment. To this end, we continue to use latest technologies and lead the industry by examples in achieving energy conservation and practising energy management through our departmental operations and engineering associated work.

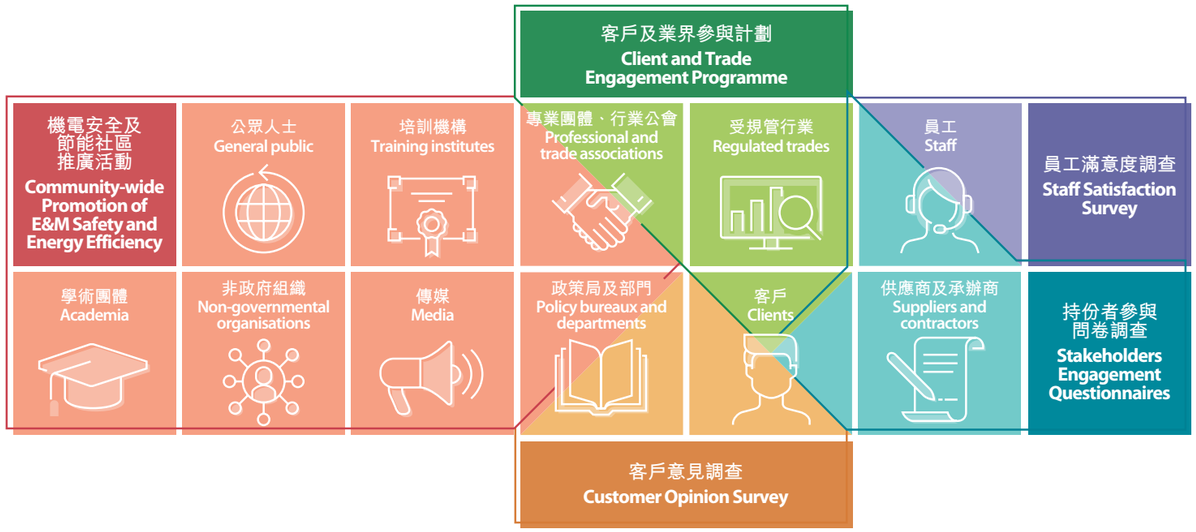
As an early adopter of ISO 9001, ISO 14001, and OHSAS 18001, we have combined these systems into an Integrated Management System (IMS), managing and reducing our impact on quality, environmental and occupational health and safety. By implementing the IMS, we are able to support various processes with higher efficiency and identify non-compliances and opportunities for continual improvement. We have also demonstrated ongoing commitment to energy management through acquisition of ISO 50001 certification for our headquarters.

We aspire to create long-term positive sustainability impacts on Hong Kong community. By taking the lead to execute projects with a focus on energy saving and adoption of renewable energy and state of the art technologies, we encourage vibrant collaborations with our clients and among industry in advancing sustainability.

實現可持續發展
Sustainability at EMSD

持份者的參與

我們的主要持份者及參與方法[1]



機電工程署致力追求更卓越的可持續發展表現。我們定期與員工、客戶、供應商、承辦商，及其他主要持份者聯繫，進一步擴闊溝通層面。我們重視不同持份者的意見，以達致持續改進。我們採用了不同方式讓持份者參與其中，以上列舉部分例子[2]，詳情可參閱社會成效章節。

[1] G4-24 [2] G4-26

STAKEHOLDER ENGAGEMENT

Our Key Stakeholders and Engagement Process[1]

EMSD goes beyond the boundary in attaining our goals for sustainability. To extend our reach and magnify our positive impact on the community, we regularly engage our staff, clients, suppliers and contractors and other key stakeholders. We value feedback solicited from our various stakeholders, which enable continual furtherance of our sustainability performance. We apply various approaches in our stakeholder engagement process, some of the examples are listed above[2]. More details can be found in the Chapter of Social Performance.

[1] G4-24 [2] G4-26

可持續發展的卓越成果

獲得ISO認證

機電工程署多年來力求不斷進步，致力為客戶提供優質機電工程服務。我們定期檢討工作程序，努力成為提供優質服務及持續綠色作業的業界典範。

機電工程署獲ISO認證的時序

1999	ISO 9001 品質管理系統企業認證 ISO 9001 Quality Management System Corporate Certification
2000	ISO 14001 環境管理系統企業認證 ISO 14001 Environmental Management System Corporate Certification
2001	OHSAS 18001 職業健康及安全管理系統認證 OHSAS 18001 Occupational Health and Safety Management System Certification
2002	建立綜合管理系統 Established Integrated Management System (IMS)
2008	數據中心獲ISO 27001 資訊保安管理系統認證 ISO 27001 Certification – Information Security Management System of our Data Centre
2015	機電工程署總部大樓獲ISO 50001 能源管理系統認證 ISO 50001 Energy Management System Certification – EMSD Headquarters Building

獎項及嘉許

我們盡心及傑出的員工憑其出色的服務及安全表現所獲得的嘉許，進一步肯定及鼓勵我們的工作。參與各種比賽及計劃有助鼓勵員工與時並進，緊貼最新的創新科技發展，從而啟發及不斷推進我們的機電服務。

SUSTAINABILITY EXCELLENCE

Achieving ISO Certifications

Over the years, EMSD is committed to providing clients with quality E&M engineering services through continuous improvement. We endeavour to strive for excellence by regularly reviewing our processes in order to become the trade model for delivering quality service and sustaining green operation.

Timeline for ISO Certifications Achievements

1999	ISO 9001 品質管理系統企業認證 ISO 9001 Quality Management System Corporate Certification
2000	ISO 14001 環境管理系統企業認證 ISO 14001 Environmental Management System Corporate Certification
2001	OHSAS 18001 職業健康及安全管理系統認證 OHSAS 18001 Occupational Health and Safety Management System Certification
2002	建立綜合管理系統 Established Integrated Management System (IMS)
2008	數據中心獲ISO 27001 資訊保安管理系統認證 ISO 27001 Certification – Information Security Management System of our Data Centre
2015	機電工程署總部大樓獲ISO 50001 能源管理系統認證 ISO 50001 Energy Management System Certification – EMSD Headquarters Building

Awards and Recognition

We are encouraged by the recognition received for our dedicated and talented staff, as well as their effort in service and safety excellence. Through participating various competitions and schemes, it can be of great help in keeping up our staff with advanced innovations and technologies that are inspiring to strengthen our electrical and mechanical engineering services.

實現可持續發展
Sustainability at EMSD



2016年傑出學徒獎勵計劃頒獎典禮。

2016 Outstanding Apprentices Award Presentation Ceremony.

2016年傑出學徒獎勵計劃

參與我們技術員訓練計劃的兩位見習技術員郭俊霆先生及黃文軒先生於2017年3月在職業訓練局舉辦的傑出學徒獎勵計劃，獲嘉許成為2016年傑出學徒。他們獲安排到韓國考察，了解當地學徒制度及行業的最新發展。

2016 Outstanding Apprentice Awards

In March 2017, two trainees under our Technician Training Scheme, Mr Kwok Chun-ting and Mr Wong Man-hin were both selected as the 2016 Outstanding Apprentices in the Outstanding Apprentices Award organised by the Vocational Training Council. They also took part in an exchange visit to Korea to learn about the local apprenticeship system and latest development of the industry.

傑出工程學員獎

我們兩名見習工程師許詠然女士(電子)和甄富濠先生(電機)分別獲得了香港工程師學會2016年度傑出工程學員獎第一名及第三名。今後我們將繼續優化見習工程師訓練計劃，培養更多優秀又具熱誠的年輕工程師。

Trainee of the Year Award

Two of our engineering graduates, Ms Hui Wing-yin (Electronics) and Mr Yan Fu-ho (Electrical), won the first and third prizes of the Hong Kong Institution of Engineers (HKIE) Trainee of the Year Award 2016 respectively. We will continue to enhance our Engineering Graduate Training Scheme, nurturing more outstanding and passionate young engineers.



香港工程師學會第42屆周年晚宴暨頒獎典禮。

The HKIE 42nd Annual Dinner cum the Award Presentation Ceremony.

傑出青年工程師獎

傑出青年工程師獎每年由香港工程師學會舉辦，表揚年輕工程師的貢獻及成就。我們非常榮幸本署工程師蕭曉暉先生獲得2017傑出青年工程師獎，工程師梁志滔先生亦獲頒優異獎。而助理工程師郭倩明女士、蔡曜暉先生、鄭綽德先生及梁卓烽先生亦以他們創新及出色的工程知識應用，獲得香港工程師學會青年會員創意獎2017(組別I)大獎。

Young Engineer of the Year Award

The Young Engineer of the Year Award is organised annually by the HKIE to recognise contribution and achievement of young engineers. We were proud of our engineers, Mr Siu Hiu-fai in obtaining the Young Engineer of the Year Award 2017 and Mr Leung Chi-to in receiving the Certificate of Merit. In addition, our young assistant engineers, Ms Kwok Sin-ming, Mr Choi Yiu-fai, Mr Cheng Cheuk-tak and Mr Leung Cheuk-fung gained the Grand Prize of the HKIE Innovation Awards for Young Members 2017 – Category I for their outstanding innovative application of engineering theories.

傑出職安健員工嘉許計劃

機電工程署一直將員工的健康及安全放在首要位置。2017年2月，我們參與由職業安全健康局、勞工處、立法會勞工界議員及勞顧會僱員代表聯合舉辦的第九屆全港傑出職安健員工嘉許計劃。我們兩名員工趙祖全先生及張立忠先生分別獲得管工組別銅獎及前線員工組別優異獎。

Outstanding Occupational Safety and Health Employees Award

EMSD places top priority on the safety and health of our employees. In February 2017, we participated in the 9th Outstanding Occupational Safety and Health (OSH) Employees Award co-organised by the Occupational Safety and Health Council, Labour Department, Labour Representative of Legislative Council and Employee Representatives of Labour Advisory Board. Two of our employees, Mr Chiu Cho-chuen and Mr Cheung Lap-chung were awarded the Outstanding OSH Employee Award – Bronze (Supervisor Category) and Merit (Frontline Staff Category) awards respectively.



香港工程師學會迎新會暨頒獎典禮。

The HKIE New Members' Reception cum Prize Presentation Ceremony.





第九屆全港傑出職安健員工嘉許計劃頒獎禮。

The 9th Outstanding OSH Employees Award Ceremony.

實現可持續發展
Sustainability at EMSD





機場管理局工程承包商安全運動頒獎典禮。

Airport Authority's TSD Contractors Safety Campaign Award Presentation Ceremony.

機場管理局工程承包商安全運動

機電工程署的助航燈系統團隊於2017年3月在機場管理局(機管局)舉辦的工程承包商安全運動2016/17中，奪得安全問答比賽及最佳工作間安全檢查比賽季軍。

Airport Authority's Technical Services Department (TSD) Contractors Safety Campaign Award

In March 2017, EMSD's Airfield Ground Lighting Team won 2nd runner-up in Safety Quiz and Best Workplace Safety Inspection Competition respectively in TSD Contractors Safety Campaign 2016/17 organised by the Airport Authority (AA) Hong Kong.

機場安全嘉許計劃

我們兩名員工徐志傑先生及陳仲謙先生於2016/17機場安全嘉許計劃獲得模範安全行為獎項。頒獎典禮於2017年3月由機管局舉辦，表揚於過去一年為機場安全作出的貢獻。

Airport Safety Recognition Scheme

Two of our employees, Mr Chui Chi-kit and Mr Chan Chung-him, have been honoured with the Role Model Safety Behaviour Award at the 2016/17 Airport Safety Recognition Award in March 2017 held by the AA, recognising continuous contribution to airport safety throughout the year.

2016/17機場安全嘉許計劃頒獎典禮。

2016/17 Airport Safety Recognition Award Presentation Ceremony.



年度重點 Highlights of the Year

機電工程署於2016年12月出版《淡水冷卻塔計劃小冊子》及《淡水冷卻塔實務守則》，以配合相關規例、國際標準的最新要求及行業的良好作業。	EMSD has published the FWCT Scheme Brochure and Code of Practice for FWCT in December 2016 to cope with the latest regulatory requirements and international standards, and be in line with industry good practice for using FWCTs.
預防退伍軍人病委員會亦於2016年12月出版《預防退伍軍人病工作守則》。	Prevention of Legionnaires' Disease Committee has also published the Code of Practice for Prevention of Legionnaires' Disease in December 2016.
機電工程署總部大樓於2016年成為首棟獲香港綠色建築議會頒發「綠建環評既有建築」最終鉑金級證書的現有政府大樓，並獲得「綠建環評社區」鉑金級證書。	EMSD Headquarters Building was the first existing government building being awarded the Final Platinum Rating Certification under BEAM Plus Existing Buildings and Platinum Rating Certification under BEAM Plus Neighbourhood from the Hong Kong Green Building Council in 2016.
於2016年客戶意見調查創下客戶滿意指數歷史新高，以8分為滿分計，取得6.45分。	Attained a record high Customer Satisfaction Index of 6.45 out of 8 in the 2016 Customer Opinion Survey.
於2016年員工滿意度調查創下員工滿意度指數歷史新高，以10分為滿分計，取得6.8分。	Attained a record high Staff Satisfaction Rating of 6.8 out of 10 in the 2016 Staff Satisfaction Survey.
「建築信息模擬 — 資產管理」系統取得香港專利。	Patent granted to Building Information Modelling – Asset Management System.
與機管局共同設計的助航燈系統不斷電切換模擬器取得設計專利。	Patent granted to Uninterruptible Power Transfer Simulator for Airfield Ground Lighting System with Airport Authority.
與環境局合作推行「全民節能2016」運動。	Jointly launched the Energy Saving for All 2016 Campaign with the Environment Bureau.

環保成效
Environmental Performance

機電工程署透過實施多項能源效益法例及政策，致力改進香港的能源效益表現。我們亦實施環境管理系統，盡量控制及減少營運帶來的重要環境影響，並持續改善我們的環保表現，推動香港成為一個更環保的城市。

EMSD is committed to improving the energy efficiency of Hong Kong through the introduction of various energy efficiency legislations and policy initiatives. We also implement an Environmental Management System to control and minimise all significant environmental impacts associated with our operations and improve our environmental performance continuously. It is our mission to motivate and draw concerted efforts to make Hong Kong a greener city.

環境管理系統

自2000年起，我們根據ISO 14001的標準，制訂及實施環境管理系統，以達致綠色作業。我們多年來一直密切關注環境管理系統的最新發展，並相應地提升我們的系統。於2016/17年度，我們為升級環境管理系統展開了籌備工作，以配合最新的2015年版本的ISO 14001標準。我們為系統加入了新的風險為本模式，以生命周期的角度評估環境影響。我們亦採用了「合併及轉換」方法，將ISO 9001品質管理系統及ISO 14001環境管理系統整合成一個綜合管理系統。

ENVIRONMENTAL MANAGEMENT SYSTEM

Since 2000, we have developed and implemented the Environmental Management System (EMS) in accordance with the ISO 14001 Standard in pursuit of greener operation. Throughout the years, we have closely followed the latest development of the EMS standard and upgrade our systems accordingly. In 2016/17, we have been paving the way to upgrade our EMS to comply with the latest 2015 version of the ISO 14001 Standard, incorporating the new risk-based approach and identifying and evaluating our environmental aspects with due consideration of a life cycle perspective. We also adopted a "Merge and Convert" approach to combine the management systems in quality (ISO 9001) and environment (ISO 14001) into an Integrated Management System.

透過實施環境管理系統，我們定期檢查我們的營運對不同環境範疇所造成的影響，包括空氣、水、噪音、視覺、土地污染、資源利用、動植物及一般滋擾。當發現到重要的潛在影響，系統的控制機制便會提供相應的環境指引及程序手冊，以免造成實際影響。

Through adopting the EMS, we regularly review the environmental aspects of our operations according to their impacts on air, water, noise, visual, land contamination, resource use, flora and fauna, and general nuisance. When significant potential impacts were identified, a control mechanism which includes the corresponding environmental instruction and procedure manual will be available to prevent the occurrence of the potential impacts.

除了在營運基金及規管服務採用環境管理系統外，我們於總部大樓亦實施了多項環保措施，致力節約資源、減少廢物及防止污染。我們亦與承辦商、供應商及其員工保持溝通，盡力減少對環境所造成的影響。

Apart from adopting the EMS for our EMSTF and regulatory service, we strive to conserve resources, minimise waste and prevent pollution through implementing various green measures at our headquarters. We also communicate with our contractors, suppliers and their staff to minimise environmental impacts as far as practicable.

透過節能邁向綠色城市

作為推廣能源效益及可再生能源的主要部門，機電工程署推出了多項措施及計劃，致力達致政府減低能源強度的目標。

建築物能源效益

建築物佔全港用電量約90%，改善建築物的能源效益可有效節能。因此，機電工程署實施了《建築物能源效益條例》、建築物能源效益資助計劃、為政府建築物進行能源審核，及草擬《重新校驗技術指引》。

《建築物能源效益條例》

《建築物能源效益條例》於2012年9月正式實施，列出四個主要屋宇裝備裝置安裝工程類別的最低能源效益設計標準。根據條例要求，進行以下類別的工程時，需遵行《建築物能源效益守則》所訂明的設計標準：

i) 新建建築物的空調、照明、電力、升降機及自動梯裝置；及
ii) 主要裝修工程。

根據條例要求，商業大廈業主須根據《能源審核守則》，每十年進行一次能源審核。

為配合技術提升和行業發展，《建築物能源效益守則》及《能源審核守則》會每三年進行一次檢討，首次檢討已於2015年完成。透過於2015年版《建築物能源效益守則》內採用較嚴格的標準，預期會在2025年前，累計節省約50億千瓦小時能源，相當於減少約350萬噸溫室氣體排放量。機電工程署已於2017年年初準備第二次檢討。

ENERGY SAVING FOR A GREENER CITY

As a key player to promote energy efficiency and encourage the wider use of renewable energy, EMSD has put in place a number of measures and initiatives driving towards the government's energy intensity reduction target.

Buildings Energy Efficiency

Hong Kong's buildings account for about 90% of the city's electricity usage. There are huge energy saving potentials through improving the buildings' energy efficiency. In this regard, EMSD has implemented the Buildings Energy Efficiency Ordinance, Buildings Energy Efficiency Funding Schemes, conducted energy audits for government buildings, and drafted the Technical Guidelines on Retro-Commissioning.

Buildings Energy Efficiency Ordinance

The Buildings Energy Efficiency Ordinance (BEEO), enforced in September 2012, has set out the minimum energy efficiency design standards for four key types of building service installations. Under the BEEO, the following areas are required to comply with the design standards as stipulated in the Building Energy Code (BEC):

i) air-conditioning, lighting, electrical as well as lift and escalator installations in newly constructed buildings; and
ii) major retrofitting works.

Under the BEEO, owners of commercial buildings are required to carry out energy audit once every ten years in accordance with the Energy Audit Code (EAC).

To cope with technological advancement and evolving industry practices, the BEC and EAC will be reviewed every three years, with the first review completed in 2015. By adopting more stringent standards in BEC 2015 edition, it is expected to bring about a cumulative energy saving of 5 billion kWh by 2025, equivalent to a reduction in greenhouse gas (GHG) emissions of about 3.5 million tonnes. EMSD has started the preparation for the second review in early 2017.



環保成效
Environmental Performance

建築物能源效益資助計劃

自2009年4月開始，機電工程營運基金一直為環境局提供支援，實施由環境及自然保育基金撥款資助的建築物能源效益資助計劃。該計劃提供約4.5億元資助建築物業主以進行能源及二氧化碳排放綜合審計，並推行能源改善項目。資助計劃已於2012年停止接受申請，機電工程營運基金一直監察涉及大約6 000座已獲批資助的建築物的進度，直至計劃完成為止。獲批准的計劃每年估計將節省約1.6億千瓦小時的能源，相等於減少約120 000噸碳排放量。

《重新校驗技術指引》

除了《建築物能源效益條例》及建築物能源效益資助計劃外，機電工程營運基金積極推廣「重新校驗」這個具成本效益的方案，以鼓勵現有建築物進行節能工作。為了推動更多建築物業主進行重新校驗，機電工程署草擬相關的技術指引，說明重新校驗的流程及重點，為業主及業界提供明確清晰的節能改善建議。該技術指引於2017年7月公布。

為政府建築物節能

機電工程營運基金受委託為340座主要政府建築物，於2017/18年度或之前進行能源審核，並根據每座建築物的運作和技術特性尋找節能空間。此項措施旨在協助政府決策局及部門檢查其建築物的能源使用情況，並實施相應節能措施，減低建築物用電量。

Buildings Energy Efficiency Funding Schemes

Since April 2009, the EMSTF has been supporting the Environment Bureau to implement the Buildings Energy Efficiency Funding Schemes (BEEFS), with the funding support from the Environment and Conservation Fund. The BEEFS have provided $450-million-worth subsidies for building owners to conduct energy-cum-carbon audits, and carry out energy efficiency improvement works. The application of BEEFS was closed in 2012 and the EMSTF continues to monitor the progress of all the approved projects, involving around 6 000 buildings, until their completion. It is estimated that a total energy saving of around 160 million kWh per annum, about 120 000 tonnes carbon reduction, would be yielded by the approved projects.

Technical Guidelines on Retro-commissioning

Apart from the BEEO and BEEFS, the EMSTF has actively pursued the cost effective programme of "Retro-commissioning" (RCx) to further encourage energy conservation works in existing buildings. To facilitate building owners to carry out RCx, EMSD has drafted the Technical Guidelines on Retro-commissioning to clarify the RCx process and focus, and to provide clear energy saving improvement proposals for building owners and the industry. The Guidelines are issued in July 2017.

Energy Savings in Government Buildings

The EMSTF has also been entrusted with 340 major government buildings to conduct energy audits and identify energy saving opportunities in their operational and technical aspects by 2017/18. This initiative aims to facilitate government bureaux and departments to review their buildings' energy profile and implement appropriate saving measures to cut down energy consumption of their buildings.

水冷卻系統

淡水冷卻塔計劃

淡水冷卻塔計劃於2000年推行，旨在於非住宅類型建築物推廣使用具節能效益的淡水冷卻塔於空調系統中。按早前的研究結果顯示，與風冷式空調系統相比，水冷式空調系統在環境、經濟及財務方面均有更大效益。為推廣水冷式空調系統，機電工程署在2016年12月就本計劃完成了最近一次的檢討，並簡化了申請程序及更新了計劃的要求。

自推出淡水冷卻塔計劃起，機電工程署已收到1 046份申請。當中2 290座淡水冷卻塔已落成並投入運作。預計所有申請的安裝完成後，每年可節省4.65億千瓦小時用電量，相當於每年減少約325 000噸二氧化碳排放量。

為防止淡水冷卻塔因受污染而傳播退伍軍人病，機電工程署自2011/12年度起一直採取多項措施監察淡水冷卻塔水質。根據淡水冷卻塔計劃，如水樣本的退伍軍人桿菌含量等如或超出上限，冷卻塔擁有人需要採取減除行動。2016/17年度共收到904個冷卻塔水樣本。

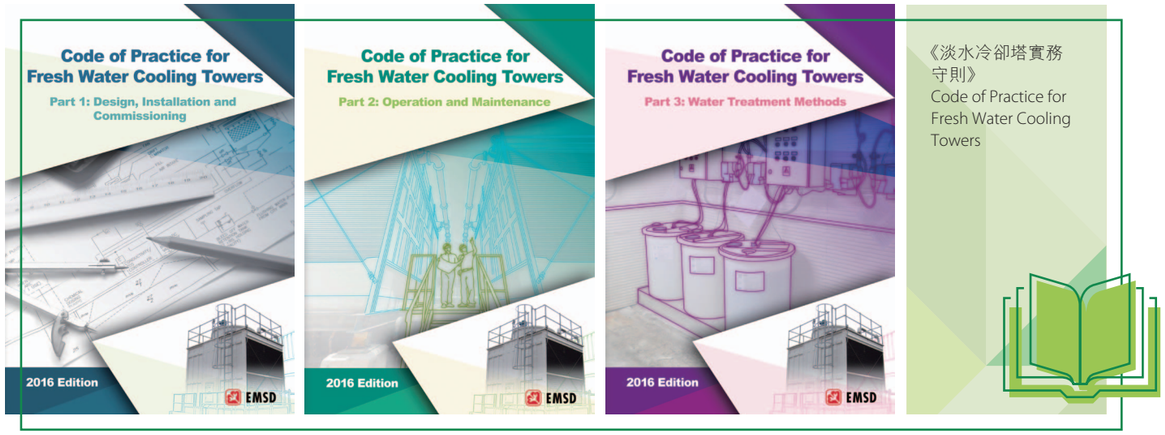
Water Cooling Systems

Fresh Water Cooling Towers Scheme

The Fresh Water Cooling Towers (FWCT) Scheme was launched in 2000 aiming to encourage a wider use of fresh water in cooling towers for energy efficient air-conditioning systems in non-domestic buildings. Previous studies concluded that the use of water-cooled air-conditioning systems (WACS) has greater environmental, economic and financial benefits than air-cooled air-conditioning systems. To foster the adoption of WACS, a review was completed in December 2016 to streamline the application procedures and update the requirements of the FWCT Scheme.

Since launch of the FWCT Scheme, EMSD has received 1 046 applications. Among them, 2 290 FWCTs have been completed and put into operation. It is estimated that the completed installations could save up to 465 million kWh electricity annually, which is equivalent to around 325 000 tonnes carbon reduction per annum.

To prevent the outbreak of Legionnaires' disease due to contamination of the FWCTs, EMSD has been implementing various measures to regulate water quality of the FWCTs since 2011/12. Under the FWCT Scheme, owners of the FWCTs are required to carry out abatement actions if water samples with total legionella count are equal to or above the stipulated upper threshold. In 2016/17, 904 water samples were taken from FWCTs.



環保成效
Environmental Performance

為加快配合最新的法規要求及推廣業界良好作業，機電工程署於2016年推出了《淡水冷卻塔計劃小冊子》及《淡水冷卻塔實務守則》。預防退伍軍人病委員會亦於同年推出《預防退伍軍人病工作守則》，以保障公眾安全。

To facilitate compliance with the latest regulatory requirements and promote industry best practices, EMSD published the FWCT Scheme Brochure and Code of Practice for Fresh Water Cooling Towers in 2016. During the same year, the Prevention of Legionnaires' Disease Committee also released the Code of Practice for Prevention of Legionnaires' Disease to protect the public at large.

啟德區域供冷系統

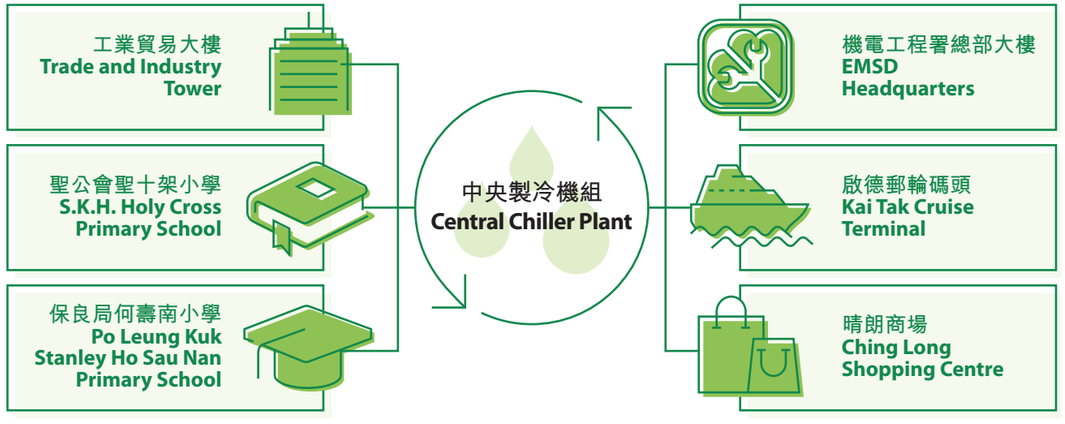
為提升新發展區域的節能效益，啟德發展區安裝了區域供冷系統，為該區域的建築物的中央冷氣提供冷水。與傳統風冷式空調系統相比，區域供冷系統的耗電量可減少達35%。區域供冷系統估計每年可節省高達8 500萬千瓦小時電力，相當於每年減少59 500噸二氧化碳排放量。此計劃的一期及二期工程已完成，現正進行第三期甲的工程。

District Cooling System at the Kai Tak Development

To promote energy saving in newly developed areas, a District Cooling System (DCS) was installed at the Kai Tak Development (KTD) to supply chilled water to buildings in the new development area for centralised air-conditioning. Compared to traditional air-cooled air-conditioning systems, DCS consumes at most 35% less electricity than the traditional systems. It is estimated that the use of DCS at KTD can save up to 85 million kWh electricity annually, which is equivalent to 59 500 tonnes of carbon reduction per annum. The Phase I & II of the KTD project were completed and the Phase IIIA is underway.

啟德發展計劃區域供冷系統用戶（2017年中期）

Users of DCS at KTD (as of mid-2017)



能源效益產品

強制性能源效益標籤計劃

「強制性能源效益標籤計劃」自2009年11月實施，旨在為消費者提供更清楚的產品能源效益表現。計劃現時涵蓋五種產品，包括冷氣機、冷凍器具、緊湊型熒光燈（慳電膽）、洗衣機及抽濕機。在此計劃下，製造商及進口商需要在指定的電器上貼上能源標籤。截至2017年6月，約有8 300款產品型號已被列入計劃名單當中。

為鼓勵更多具能源效益產品推出市面，自2015年11月25日起，冷氣機、冷凍器具及洗衣機已全面實施更嚴格的能源效益等級標準。

機電工程署現正計劃實施第三階段的「強制性能源效益標籤計劃」，以涵蓋更多電器產品。第三階段的標籤計劃可帶來更多的節能量，估計每年約1.5億千瓦小時，相當於每年減少105 000噸碳排放量。計劃書已於2017年5月提交立法會審議。

Energy Efficient Products

Mandatory Energy Efficiency Labelling Scheme

The Mandatory Energy Efficiency Labelling Scheme (MEELS) has been implemented since November 2009, with an aim to better inform consumers about the products' energy efficiency performance. The MEELS currently covers five prescribed products including room air-conditioners, refrigerating appliances, compact fluorescent lamps, washing machines and dehumidifiers. Under the MEELS, manufacturers or importers are required to affix prescribed electrical appliances with energy labels. As of June 2017, around 8 300 product models have been listed under the Scheme.

To encourage the supply of more energy efficient products in the market, more stringent energy efficiency grading standards for room air-conditioners, refrigerating appliances and washing machines have been fully implemented on 25 November 2015.

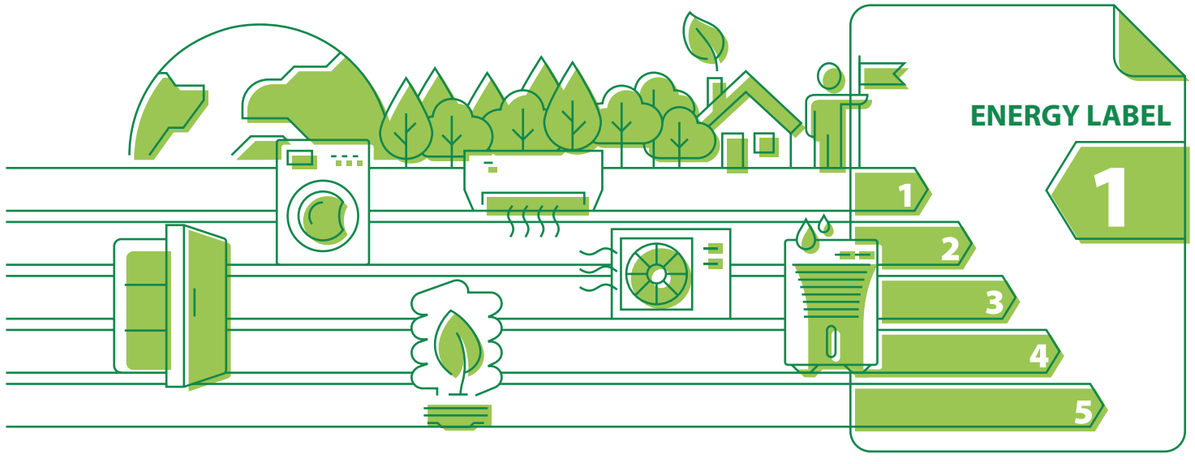
EMSD is planning for the third phase of MEELS to cover more electrical products under the Scheme. The additional energy saving potential yielded by the third phase of MEELS is estimated to be around 150 million kWh per year, equivalent to 105 000 tonnes of carbon reduction annually. The proposal was submitted to the Legislative Council for consideration in May 2017.

綠色作業

除了於建築物及產品推廣能源效益概念外，機電工程署於總部大樓及轄下設施亦實施了多項環保措施，提高員工環保意識及宣傳綠色文化，以達致全面改善環保表現的最終目標。

Green Operations

Apart from promoting the concept of energy efficiency in buildings and products, EMSD has implemented a number of green measures in our headquarters and facilities to raise environmental awareness amongst staff and promote a green culture at EMSD, with an ultimate goal to improve our overall environmental performance.



環保成效
Environmental Performance

節約資源

政府於2015年的《施政報告》中承諾由2015/16至2019/20年度，以2013/14年度為基線，於未來五個財政年度把政府建築物的用電量減少5%。除了節能外，機電工程署亦利用各種方法，尋求於營運中減少產生廢物及加入環境的考慮因素。

機電工程署在環境管理系統下制訂了環境管理計劃，定期檢視我們的目標及目的。部分於2016年採用的節約資源措施包括：

- 於午飯時間關掉辦公室照明總掣
- 移除辦公室範圍內不必要的照明，減少耗電
- 聘請空調系統服務供應商評估及提升製冷機及空氣處理機組的效能
- 尋找更多碳粉盒回收商，增加不同品牌的碳粉盒的回收率
- 減少或停止訂閱印刷報紙

除了由第三方營運的員工飯堂及基建設施(例如連接總部的行人天橋和無線電站)外，我們的政府建築物(例如總部大樓、工場、租用辦公室和數據中心)用電量於2013/14至2016/17年度下降了1.5%。在2013/14年度相若的運作情況下，2016/17年度所節省的用電量達3.7%。用電量減少原因在於實施各種內務節能措施，包括使用LED照明設備，以及檢討通風系統的運作時間等。

Resource Conservation

In 2015 Policy Address, the Government pledged to reduce additional 5% electricity consumption in existing government buildings over five years from 2015/16 to 2019/20, using 2013/14 as the baseline. Apart from energy saving, EMSD also made every effort to explore waste reduction potential and include environmental consideration in our operation.

EMSD has formulated an Environmental Management Plan under the EMS and regularly review our targets and objectives. Some of the resource conservation measures adopted in 2016 include:

- To turn off office lighting by the master control switch during lunch hours
- To reduce electricity consumption through de-lamping in office area
- To engage air-conditioning system service providers in reviewing and enhancing chiller and air handling unit performance
- To search for more toner cartridge recyclers to increase the recycling rate of toner cartridge of different brands
- To reduce or stop the subscription of printed newspapers

The total electricity consumption of our government buildings (e.g. the headquarters, depots, rented offices and data centre) excluding staff canteen operated by the third party and infrastructure (e.g. the footbridge connecting to the headquarters, and radio stations) from 2013/14 to 2016/17 was decreased by 1.5%. There was also a 3.7% saving in electricity consumption in 2016/17 when compared with similar operating conditions in 2013/14. The energy reduction is owing to the implementation of various electricity saving measures including the use of LED lighting, review of operating schedule of the ventilation system, etc.

我們的政府建築物由2013/14至2016/17年度的用電量列表如下：

Electricity consumption of our government buildings from 2013/14 to 2016/17 is tabulated below:

	用電量 Electricity consumption （'000千瓦小時） ('000 kWh)	於相若運作情況下的用電量[1] Electricity consumption under comparable operating conditions[1] （'000千瓦小時） ('000 kWh)
2013/14（基線 baseline）	14 738	不適用 Not Applicable
2014/15	14 920 (+1.2%)	14 578 (-1.1%)
2015/16	14 998 (+1.8%)	14 582 (-1.1%)
2016/17	14 521 (-1.5%)	14 195 (-3.7%)

機電工程署的水及煤氣用量列表如下：

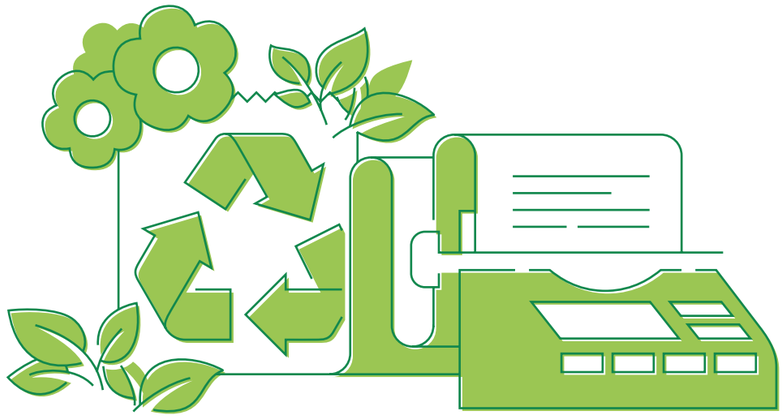
The water and towngas consumption at EMSD is shown in the table below:

	2014/15	2015/16	2016/17
水(立方米)[2] Water (m^3)[2]	42 547	40 226	36 422
煤氣(兆焦耳) Towngas (MJ)	19 392	0[3]	0

1 此計算比較於2013/14至2016/17年度仍然有運作的營運單位的淨耗電量的改變。
2 用水量包括總部大樓(由第三方營運的飯堂除外)及土瓜灣和加路連山的工場。
3 主要使用煤氣供應熱水的加路連山工場於2014/15年度關閉，因此自2015/16年度起，該工場沒有使用煤氣。

1 The calculation compares the net consumption changes for operating units that are still under operations from 2013/14 to 2016/17.
2 The water consumption covers the headquarters (excluding staff canteen operated by third party) and workshops in To Kwa Wan and Caroline Hill.
3 The Caroline Hill workshop, which used towngas for water heating, was closed in 2014/15. Hence there has been no towngas consumption at this workshop starting from 2015/16.

環保成效
Environmental Performance



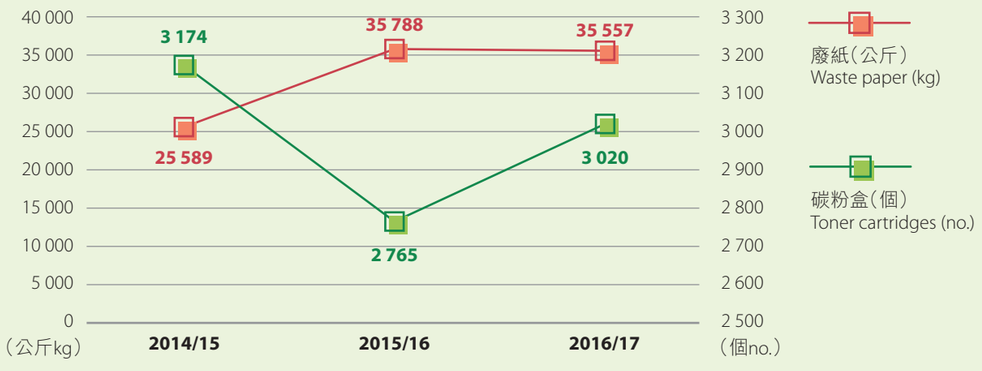
廢物管理

盡量減少產生廢棄物，並盡可能回收可再造物料，是我們的主要廢物管理策略。我們的廢棄物主要來自辦公室和工場，而廢棄物都盡可能回收。辦公室的回收廢棄物主要是紙張及碳粉盒，而工場回收的廢棄物則以舊水銀燈、舊充電池、金屬廢料、舊車胎及舊光管為主。廢紙及碳粉盒的回收量趨勢列表如下。

Waste Management

Minimising waste generation and maximising material recycling are our major waste management strategies. Our waste mainly comes from office operations and workshop activities, which have been recycled as far as practicable. The major office wastes that we recycled include paper and toner cartridges, while those for workshops include spent mercury lamps, rechargeable batteries, metal scraps, vehicle tyres and spent fluorescent tubes. The trend for waste paper and toner cartridge recycling is shown in below chart.

辦公室廢物循環再用量
Amount of Recycled Office Waste



2016/17年度廢紙回收量輕微下跌主要基於良好的辦公室作業及大量使用雙面印刷。碳粉盒的回收量上升則基於營運需要的增幅。如想了解更多廢物回收詳情，請參閱統計資料摘要。

The slightly decrease in the amount of waste paper recycled in 2016/17 is mainly due to the good office practice of the extensive use of both side of paper. While the increase in the number of toner cartridge recycled is because of the increase in toner consumption for operational requirement. For more information on waste recycling, please refer to Summary of Statistics.

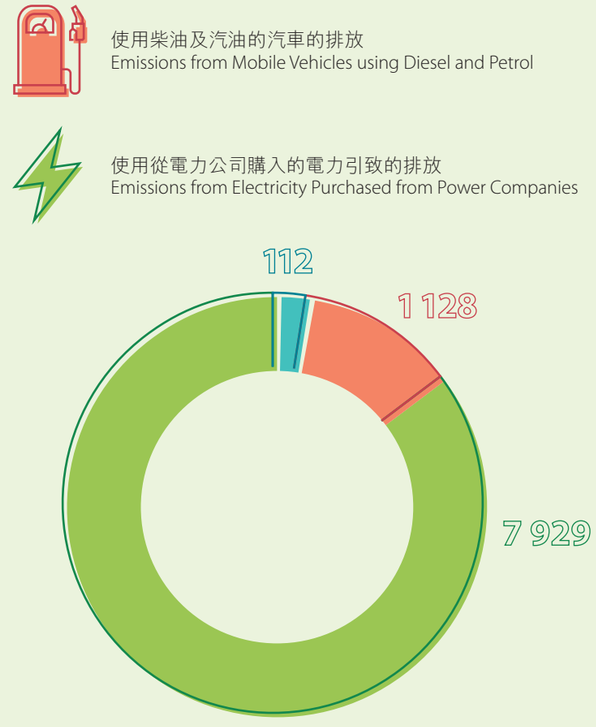
減少氣體排放

為應對氣候變化，控制及減少溫室氣體排放至為重要。機電工程署溫室氣體排放的主要來源來自辦公室和工場的用電和運輸工具的排放。機電工程署於2016/17年度的碳足跡（公噸）列表如下。

Emission Reduction

To combat climate change, it is of paramount importance to control and reduce GHG emissions. The major source of GHG emissions in EMSD is attributed to the consumption of electricity in our offices and workshops, and transportation emission. The breakdown of carbon footprint of EMSD in 2016/17 (in tonnes) is shown in the graph below.

二氧化碳排放當量（公噸）
Tonnes of CO_2-equivalent



環保成效
Environmental Performance

綠化總部大樓

推廣綠色建築一直是機電工程營運基金的其中一個重點。機電工程署總部大樓於2016年成為首棟獲香港綠色建築議會頒發「綠建環評既有建築」最終鉑金級證書的政府大樓，並獲得「綠建環評社區」鉑金級證書。機電工程署總部大樓是首棟連接區域供冷系統及於大樓設計加入可再生能源特色的既有建築。例如，機電工程署總部大樓安裝的太陽能光伏系統自2005年至2017年3月下旬已產生198萬千瓦小時的能源，最高可產出350千瓦的再生能源。

Greening Our Headquarters

Promoting wider adoption of green building has been one of the priorities of EMSTF. EMSD Headquarters Building was the first existing government building awarded the Final Platinum Rating Certification under BEAM Plus Existing Buildings and Platinum Rating Certification under BEAM Plus Neighbourhood from the Hong Kong Green Building Council in 2016. It is the first existing building connected to District Cooling System and incorporated with renewable energy feature in the building design. For instance, the photovoltaic system installed in the EMSD Headquarters, with a maximum output of 350kW, has generated a total of 1.98 million kWh up to end of March 2017 since its inception in 2005.

機電工程署總部大樓獲得「綠建環評既有建築」最終鉑金級證書及「綠建環評社區」鉑金級證書。

EMSD Headquarters Building awarded the Final Platinum Rating Certification under BEAM Plus Existing Buildings and Platinum Rating Certification under BEAM Plus Neighbourhood.



運輸

基於營運需要，機電工程署有多架車輛，耗用不能再生的化石燃料，並排放溫室氣體。截至2017年3月31日，我們用作執行職務的車隊有225部車輛，包括貨車、客貨車、大型房車及電單車等。此外，我們亦為客戶部門的5 746部政府車輛提供維修服務。

為減輕對全球暖化的影響，我們實行良好的內務管理、妥善保養車輛及減少使用運輸工具，盡力減少車輛運作及維修過程中的廢氣排放。我們亦正改用混能車及電動車，減低馬路空氣污染及碳排放。現時，我們擁有七部電動車及十一部混能車，所消耗的燃料較體積相近的傳統車輛少40%。基於其環保效益，我們將於未來數年，增加使用混能車和電動車。

Transport

Due to operational requirement, EMSD maintains a number of vehicles, which consumes non-renewable fossil fuels and generates air emissions. As of 31 March 2017, we have a fleet of 225 vehicles including lorries, vans, saloon cars and motorcycles. We are also responsible for maintaining 5 746 government vehicles for our client departments.

To mitigate the risk of global warming, we strive to minimise emissions from transportation by good housekeeping, proper vehicle maintenance, and reduce use of vehicles. We are switching to use hybrid vehicles and electric vehicles to reduce roadside air pollution and carbon emissions. Currently, we have seven electric vehicles, and eleven hybrid vehicles which consume 40% less fuel than conventional vehicles of similar size. In view of the environmental benefits, we will increase the use of hybrid vehicles and electric vehicles progressively in the next few years.

可持續採購

為支持政府的環保採購政策，機電工程署已於日常的採購過程中納入環保要求。我們參考環境局第6/2015號通告的產品環保規格，並相應地更新我們的採購規格。我們亦密切監察供應商所宣稱的綠色產品特徵。於登記成為機電工程署供應商時，所有新的供應商均會被篩選及分類，以分辨出能夠提供環保產品的供應商。2016/17年度，機電工程署供應商名冊新增了151家可提供符合綠色產品規格的產品的供應商，使名冊中的環保供應商達1 000個。年內，部門亦共斥資4,326萬元購買環保產品，佔部門總採購金額4.1億元的10%以上。

Sustainable Procurement

In support of the government's green procurement policy, EMSD has been incorporating environmental requirements into our procurement practices. We make reference to the green specifications of products stipulated in the Environment Bureau Circular Memorandum No. 6/2015 and update our procurement specifications accordingly. We also closely monitor the green product features claimed by our suppliers. All new suppliers will be screened and categorised during EMSD supplier registration process to identify if they can provide environmental-friendly products. In 2016/17, the updated EMSD Suppliers Lists contained newly added 151 suppliers who are able to provide environment-friendly products complying with our green specifications, making up a total no. of 1 000 environment-friendly suppliers on our supplier list. During the year, we have spent a total of $43.26 million (over 10%) purchasing green products out of our total purchase amount of $410 million.



我們自2001年起使用再造紙。2016/17年度，我們使用的紙張全都是再造紙，共購入26 167令紙，比原訂限額低2.6%。

為了協助員工實施環保採購，我們已於機電工程署的內聯網，提供一個環保採購參考庫，收錄關於各種高能效產品和裝置的現行採購指引、實務守則和標準，以及綠色產品的一般規格等。為推廣於機電工程採用最新環保技術，我們於2010年成立環保採購工作小組，為各類機電工程選定符合環保要求的材料、產品、系統和建造方法。

We have also adopted the use of recycled paper since 2001. In 2016/17, all our paper consumed was recycled paper and we purchased a total of 26 167 reams of paper, which was 2.6% below the set quota.

To facilitate implementation of green procurement, we have maintained a reference library on EMSD's Intranet, which covers current guidelines, code of practices and standards relating to energy efficiency products and installations, as well as specifications of green products. In order to promote a wider adoption of latest green technologies in relation to E&M works, a Working Group on Green Procurement in E&M Works has been established since 2010 to oversee the identification of suitable green materials and products, systems and construction methodologies for E&M activities.

社會成效
Social Performance

我們一直重視在社會方面的表現，以及我們對員工、客戶、承辦商以及社會大眾的影響。作為視服務社會為主要承擔的政府機構，我們致力為員工提供持續發展的機會，堅守嚴謹的安全標準、提升客戶和承辦商的環保意識，及提高社區對正確及安全使用機電設備的意識。

We are always conscious of our social performance and the impact we have on our staff, clients, contractors, as well as the wider community. Grounded on our primary commitment as a government authority to serve the society, we strive to maximise our positive social impact by ensuring continuous development of staff, upholding a high standard of work and public safety, influencing our clients and contractors on environmental awareness, and raising the community's awareness towards proper and safe E&M applications.

我們的社會責任

我們擔當着主要政府機構和機電工程服務供應商的雙重角色，充分了解到員工的能力影響着我們所提供的服務品質和專業性。因此，我們致力為員工提供持續的培訓和實踐機會，並為他們提供一個安全可靠的工作環境。透過制訂人力資源發展政策和安全與健康政策，我們清楚地向各相關持份者闡明我們對保護員工安全以及為員工提供發展機會的承諾。除了關心我們的員工，我們亦透過不同措施和社區活動，積極拓展對承辦商、供應商和社會大眾的關懷和影響力。

自2014年起，機電工程署連續第三年榮獲香港社會服務聯會頒發的「同心展關懷」標誌，以表揚我們在實踐社會責任方面的努力。

OUR SOCIAL RESPONSIBILITY

Acting as a dual role of the government authority and a leading E&M engineering service provider, we fully understand that our delivery of professional and quality services is very much dependent on the competency of our people. Therefore, we are highly committed to providing continuous training and practice opportunities, as well as a safe and sound working environment for our staff. By stipulating our commitment in both the Human Resources Development Policy and Safety and Health Policy, we clearly communicate our expectation of protecting and developing our staff to relevant stakeholders. Apart from taking care of our staff, we also actively extend our sphere of influence and care to contractors, suppliers and the wider public through various initiatives and social activities.

Since 2014, we have been awarded the Caring Organisation Logo by the Hong Kong Council of Social Service for the third consecutive year, as a recognition of our dedicated effort to exercise social responsibility.

關懷我們的員工

員工聘任

根據政府的公務員聘用條款和非公務員合約僱員計劃，我們向員工提供全面的薪酬待遇，包括醫療及牙科服務、住房津貼、約滿酬金等，具體取決於有關的僱傭條款。

年內，我們共聘用了5 283名僱員，包括521名新員工(9.9%)，而離職率則為8.9%。我們積極配合公務員事務局制訂的行為守則規範，全力支持社會共融和平等就業機會。我們繼續參與《有能者‧聘之約章》及共融機構嘉許計劃的僱主機構，推動殘疾人士就業。年內，我們共僱用了199名輕度殘疾人士，約佔截至2017年3月31日止的員工總人數3.77%。我們努力確保不同背景及能力的員工都能融入我們友愛的工作環境。

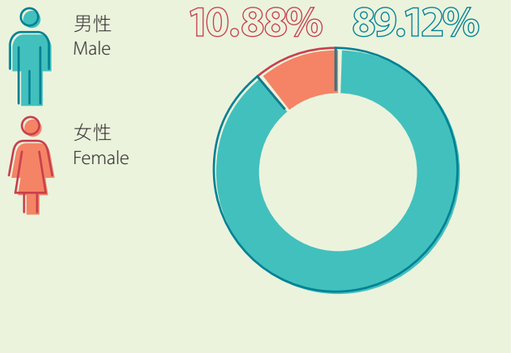
CARING OUR STAFF

Employment

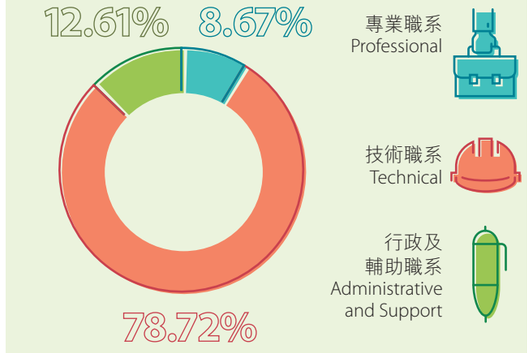
In line with the Government's civil service employment terms and the non-civil service contract staff scheme, we offer our staff a comprehensive remuneration package, including medical & dental service, housing benefit, gratuity, etc., as entitled depending on the relevant employment rules.

During the year, we have a total of 5 283 employees, with 521 new hires (9.9%) and a turnover rate of 8.9%. Following the Civil Service Bureau's codes of conduct, we fully support social integration and equal opportunities employment. We continued to take part in the Talent-Wise Employment Charter and Inclusive Organisations Recognition Scheme as an Employer Organisation to promote the employment of persons with disabilities. During the year, a total of 199 staff with minor disabilities were employed, representing about 3.77% of our total workforce as at 31 March 2017. Employees with different background and abilities are easy to blend in with our amicable workforce and environment.

按性別劃分 Breakdown by Gender



按職級劃分 Breakdown by Grade



在2016/17年度，部門因員工放取病假共損失了22 544個工作天，相等於每位員工損失約4.27個工作天。

In 2016/17, a total of 22 544 working days were lost due to sick leave. This is equivalent to around 4.27 working days lost per employee.

職業安全與健康

基於我們的業務性質，員工的職業安全與健康(職安健)尤其重要。作為機電工程署的安全管理系統的其中一環，我們的安全與健康政策重申了我們對職安健的承擔，訂明在提供機電服務時必須以安全作為優先考慮，以減少工作場所的危險，確保內部員工及承辦商員工的健康。

我們亦設有部門職業安全及健康委員會，並由職業安全及健康策導委員會監督，負責確保我們對職安健的承諾得以切實地執行。各級員工皆有代表參加部門職業安全及健康委員會，定期討論和審查與職安健相關的事項和措施。截至2017年3月31日，全體員工均在部門職業安全及健康委員會中設有代表。

除了部門職業安全及健康委員會外，我們亦鼓勵每位員工在日常工作中盡力採取最佳的職安健措施，營造安全的工作環境。在2016/17年度，我們針對高空工作的風險，制訂了《加強高處工作安全措施工作指引》。為了加強我們的員工及承辦商對機電工程署職安健的政策、目標及管理方法的認識，今年度我們亦出版了《機電工程署安全及健康手冊》。為了避免員工於叢林及辦公室範圍工作時染病，我們亦於內聯網內張貼有關預防斑疹傷寒及其他立克次體病，及預防呼吸道感染的健康貼士。

Occupational Health and Safety

In view of the nature of our operations, we consider occupational safety and health (OSH) of our workers as utmost importance. As part of our safety management system, EMSD Safety and Health Policy affirms our commitment to OSH, putting safety as the first priority in the course of delivering our E&M services, so as to minimise workplace hazards, and ensure the health and well-being of our in-house staff and employees of our contractors.

Overseen by the Steering Committee on OSH, the Departmental Occupational Safety and Health Committee (DOSHC) is in place to ensure our commitment to OSH is firmly adhered and put into practice. Staff representatives from all levels of workforce is presented in the DOSHC to regularly discuss and review on OSH-related issues and initiatives. All workforce is represented in the DOSHC as at 31 March 2017.

Apart from the DOSHC, every individual staff is encouraged to create a safe working environment by adopting best OSH practices wherever practicable in day-to-day operation. In 2016/17, we identified the risk for working-at-height and thus issued the Guidelines on Enhanced Safety Measures for Work-at-Height. To strengthen our staff's as well as our contractor's awareness on EMSD OSH policy, objectives and management approach, the EMSD Safety and Health Handbook was also published this year. To prevent our staff from getting diseases when working in shrubby area and office area, health tips on prevention of typhus and other rickettsial diseases and respiratory infections were posted on our intranet.

社會成效
Social Performance

Steering Committee on OSH
職業安全及健康策導委員會

- 由高層管理人員組成
  comprises senior management staff
- 制訂政策及監察部門執行職安健措施的情況，持續改進安全表現
  formulate policies and monitor implementation of OSH initiatives for continuous improvement in safety performance
- 檢討內部及承辦商的意外事件
  review in-house and contractor accidents
- 督導部門職業安全及健康委員會
  steer DOSHC

Departmental OSH Committee
部門職業安全及健康委員會

- 由各科/部別的管理層和員工代表，及部門的協商委員會組成
  comprises senior management and staff representatives from branches/divisions as well as departmental consultative committees
- 監察部門安全與健康政策的實施情況
  monitor implementation of the department safety and health policy
- 向員工推廣職安健
  promote occupational safety and health among staff
- 有需要時為特別工作成立臨時工作小組及委任小組成員
  set up ad-hoc working groups for specific tasks and co-opt working group members where needed
- 為其他職安健議題提供討論平台
  serve as a forum for other safety and health matters

我們對職安健的關注亦大大感染了我們的年輕新一代。當中三名見習屋宇裝備工程師參加了由職業安全健康局和勞工處合辦的「職安健常識問答比賽2016」。該團隊成功從超過200多支企業機構團隊中脫穎而出，獲得「企業機構組碟賽」中的亞軍。

Our attention to OSH has also substantially influenced our young talents. Three of our engineering graduates participated in the Safety Quiz 2016 co-organised by the Occupational Safety and Health Council and the Labour Department. The team successfully out-competed over 200 teams from different corporations, and was awarded 1st runner-up in the Corporate Category.



三名見習工程師於「職安健常識問答比賽2016」中獲得了亞軍。

Three engineering graduates awarded 1st runner-up in the Safety Quiz 2016.

員工發展

多年來，我們通過各種培訓計劃培育在職和新入職的員工。這些培訓計劃均經過精心設計，用以加強員工的知識及專業水平。

學習及發展

為了增強員工的能力，我們每年均會制訂一個部門培訓發展計劃。通過識別培訓需求、訂立目標培訓時數，並分配資源設立培訓優先次序，該計劃為員工的培訓和發展定下了明確的方向。在此大方向下，我們繼續推出相應的學習及發展計劃，不但讓我們的員工有所得益，同時亦提升我們的服務質素。

Staff Development

Over the years, we have trained and nurtured our existing staff and newcomers through various training programmes which were carefully designed to strengthen their knowledge and professionalism in delivering services to our clients.

Learning and Development

To build up the capability of our staff, we have devised a Departmental Training and Development Plan (DTDP) on an annual basis. The DTDP sets out EMSD's staff training and development directions by identifying training needs, determining number of target training hours, and setting training priorities for resource allocation. With the clear direction defined by the DTDP, we continue to initiate and launch suitable learning and development programmes that benefit our staff and strengthen our service profile.

機電工程署2016/17年度的員工發展數據

超過 over **3 300** 培訓及發展活動次數 numbers of training and development activities

超過 over **37 000** 參加者 attendees

5.41 每名員工每年平均受訓日數 average days of training per staff member per year

EMSD Staff Development Statistics in 2016/17

隨着我們不斷推出回應行業趨勢的培訓項目，我們在2016/17年度共組織了3 300多次培訓及發展活動，共有超過37 000人參加。每名員工每年平均受訓日數達到5.41天，超越了我們2016/17年度4.5天[1]的目標。

With our continuous effort to develop new training initiatives in respond to latest industry trends, we have organised over 3 300 numbers of training and development activities in 2016/17 and successfully attracted over 37 000 attendees. The average number of training days per staff member per year reached 5.41 days, exceeding our 2016/17 target of 4.5 days[1].

訓練計劃

為向年輕工程師提供實習機會，我們自六十年代起推行見習工程師訓練計劃。多年來，此計劃已成功培訓了超過700位見習工程師，被公認為香港工程界的最佳在職培訓計劃之一。計劃透過實際訓練及實習機會，讓見習工程師學習到實用技能和行業知識，滿足本地行業的人才需求。在2016/17年度，我們挑選了共24位來自電氣、機械、電子、屋宇裝備、資訊科技和生物醫學等範疇的工程系畢業生，參加此計劃。

Training Schemes

Taking the responsibility to nurture new talents in the engineering field, we have been organising the Engineering Graduate Training Programme since 1960s. Over the years, the programme has successfully trained up more than 700 graduates and has been recognised as one of the best on-the-job training schemes in the engineering profession in Hong Kong. Through hands-on training and practice opportunities offered in the programme, engineering graduates are equipped with necessary skills and industry know-how to meet the needs of the local profession. In 2016/17, we have recruited 24 engineering graduates from the field of electrical, mechanical, electronics, building services, information technology and biomedical engineering through the programme.

1 僱用人員包括部門/一般/共通職系/非公務員合約僱員，不包括見習技術員及見習工程師。

1 Employees include Departmental/General/Common Grade/Non-Civil Service Contract staff, excluding all technician trainees and engineering graduates.

社會成效
Social Performance

機電工程署的另一重點培訓計劃為技術員訓練計劃，計劃旨在提供系統化和高水平的訓練，以滿足專業行業對技術方面的需求。該計劃已推行了60多年，成功為業界培訓了接近6 000名學徒。今年的招募人數更達到新高，共招募了260名見習員，其中包括96名見習二級技術員(三年訓練制)、105名見習二級技術員(四年訓練制)、46名見習一級技術員(三年訓練制)和13名見習一級技術員(四年訓練制)。每年，技術員訓練計劃中表現出色的見習技術員亦會被提名參加由職業訓練局舉辦的傑出學徒獎勵計劃，以進一步擴闊他們的視野。

The Technician Training Scheme is another key training programme offered by EMSD, with an aim to provide systematic and high standard training to meet the requirements on technical aspects of the profession. This scheme has been running for over 60 years and successfully trained up about 6 000 apprentices for the profession. This year, the recruitment has reached a recent new high with a total of 260 trainees, including 96 technician trainees II (three-year training programme), 105 technician trainees II (four-year training programme), 46 technician trainees I (three-year training programme) and 13 technician trainees I (four-year training programme). Every year, high-flying technician trainees from the Technician Training Scheme would also be nominated to the Outstanding Apprentices Award organised by the Vocational Training Council to further their exposure.

今年更新增了合作培訓技術員先導計劃，共有75名從事電氣、機械和空調範疇的二級技術員(四年訓練制)參與其中。該計劃為學員提供在不同合作機構和公司工作的機會，當中包括水務署、渠務署，及其他工程公司等，以擴闊學員的眼界，並深化他們的行業知識。

As a new initiative this year, 75 of the technician trainees II (four-year training programme) specialised in electrical, mechanical, and air-conditioning were selected to participate in the Pilot Cooperative Apprentice Training Scheme. This programme offered candidates an opportunity to rotate to other co-operating authorities and corporates including the Water Supplies Department, Drainage Services Department, other engineering companies, etc. to widen their exposure and deepen their industry knowledge.

員工溝通

要達致更有效和可持續的運作，員工是我們最大的智囊團。因此，我們建立了多個溝通渠道，與員工進行定期的交流和對話，收集意見以不斷改進，以及回應他們的關注事項。

員工滿意度調查

了解員工對工作和部門的滿意程度對維持一個積極和穩定的團隊十分重要。為此，我們委託獨立的專業調查公司，每兩年進行一次員工滿意度調查，收集所有非首長級員工的意見。在2016/17年度，員工整體滿意度達到了6.8分(10分為滿分)，創下紀錄新高。調查結果使我們能夠確定需要改善的範疇，從而建立穩定及具熱誠的團隊。

員工諮詢途徑

在機電工程署內，我們設有四個部門協商委員會和五個部別協商委員會，擔負向管理層表達員工意見及關注事項的重要角色。此外，員工還可以自由參加部門11個工會和一般政府人員工會組織所進行的集體談判。除了與工會的定期會議外，管理層還會不時組織輕鬆的聚會，如午餐會和茶會，就員工相關的問題交流意見。

為了讓我們的員工能就任何不善對待或不滿發表意見，我們還制訂了員工投訴程序，以確保所有員工的投訴都得到妥善處理。報告年度內沒有收到員工的投訴個案。

Staff Communication

We see our staff as our biggest think tank for striving towards more efficient and sustainable operation. In this regard, we have established several communication channels to engage them in regular exchange and conversation, so as to collect ideas for continual improvement and respond to their concerns.

Staff Satisfaction Survey

It is important to understand the level of staff satisfaction towards their job and the department, in order to maintain a motivated and stable workforce. To this end, we have appointed an independent research specialist to conduct staff satisfaction surveys on a biennial basis. The questionnaire survey collects feedback and opinion from all employees except directorate grade officers. In 2016/17, the overall staff satisfaction result achieved a record high rating of 6.8 on a scale of 10. Results of the survey enable us to identify improvement areas to establish a long-term and passionate workforce.

Staff Consultation Channels

Within EMSD, four departmental consultative committees and five divisional consultative committees take up the major role in expressing views and communicating concerns to the management. Besides, staff members are also free to join the 11 staff unions of the department, as well as general government staff unions for collective negotiations. In addition to regular joint meetings with staff unions, the management organises light-hearted occasions, like luncheon and tea gatherings, with unions to exchange views on staff related issues.

In case of any mistreatment or dissatisfaction expressed by our staff member, we have also established the Staff Complaints Procedures to ensure all staff complaints are properly dealt with. No complaint case was received from staff in the reporting year.

員工建議計劃

為了鼓勵員工提出創新意見以提高部門的生產力和表現，我們定期舉辦不同的員工建議計劃，例如工作改善計劃、員工建議書計劃及業務流程改善計劃，以表彰員工的貢獻和努力。該計劃鼓勵員工提交操作、職安健及節約資源等方面的建議書，以提升機電署的營運表現。於2016/17年度，我們共收到113項建議書。這些獲獎計劃的概念亦上傳到我們的內聯網，讓同事互相分享和交流。

Staff Suggestion Programmes

To motivate staff to come up with innovative ideas for improving the department's productivity and performance, we have been organising various staff suggestion programmes including the Work Improvement Team Scheme, the Staff Suggestions Scheme, and the Business Process Improvement, to acknowledge staff's contribution and additional effort. The schemes encourage staff to submit proposals on areas like operation, OSH, resources conservation, etc. to improve EMSD's operation performance. In 2016/17, a total of 113 proposals were received. These award-winning ideas were then uploaded to our intranet for sharing and exchange among colleagues.

員工活動

在報告年度，我們舉辦了多項員工活動。部分列表如下：

Staff Engagement Activities

During the year, various staff engagement activities were organised. Some of them are listed below.

規管服務於2016年12月9日和2017年2月21日舉行了本年度的管理工作坊。	Held the Regulatory Services' annual Management Workshops on 9 December 2016 and 21 February 2017.
機電工程營運基金於2016年11月11日及12月1日舉行了本年度的策略工作坊。	Organised two EMSTF's annual Strategy Formulation Workshops on 11 November and 1 December 2016.
機電工程營運基金於本年度舉行了五次針對內部客戶意見調查的焦點小組會議，收集前線業務單位的意見。	Held five sessions of EMSTF Internal Customer Opinion Survey – Focus Group Meeting to collect opinion from frontline business units.
於2016年12月舉行三場署長簡報會。	Arranged three sessions of Director's Briefing in December 2016.
首長級人員到訪了186個場地，進行員工親善探訪。	Carried out 186 ambassador visits by directorate officers at various venues.
於2016年8月和2017年3月與部門11個工會舉行兩次聯席會議。	Conducted two joint meetings with 11 staff unions of EMSD in August 2016 and March 2017.
於2017年1月至3月為部門的專業員工、外調的督察級、技術級及初級員工舉行六次周年論壇。	Ran six sessions of the Yearly Forums for professional staff, seconded inspectorate, technical and junior staff from January to March 2017.
員工福利組為抱恙或住院員工進行了4次家訪、39次醫院探訪、42次工作間探訪、474次電話問候及49次吊唁探訪。	Conducted 4 home visits, 39 hospital visits, 42 workplace visits, 474 goodwill phone calls and 49 condolence visits to sick or hospitalised staff, by the Staff Welfare Unit.

社會成效
Social Performance

聯繫我們的客戶

為向政府部門及公共機構提供優質和專業的機電服務，我們致力與客戶溝通及收集意見，持續改進機電工程營運基金的表現。自1997年起，我們每兩年均會委託獨立市場研究公司進行客戶意見調查。

在2016年進行的最新一輪客戶意見調查中，我們的客戶滿意指數達到6.45分（8分為滿分），創出歷史新高，足證我們過去持續推行多項改善措施的成效。透過是次調查，我們亦制訂出優化客戶服務的計劃，力求提供卓越的服務。

為了優化機電工程營運基金的日常工程項目及工作管理，我們正準備推出一個名為「顧客為本電子平台」的項目，再配合將來的客戶服務中心，將成為我們在五年策略計劃中加強客戶服務的重要措施。該平台將為我們的策略業務單位和客戶提供更有效及透明的溝通渠道，有助交流工作資訊及跟進項目進度。

針對面向公眾的規管服務，我們的客戶聯絡小組及各個安全諮詢委員會會定期與公眾代表見面，聽取他們對規管工作推廣活動的看法和建議。我們亦會進行公眾意見調查，了解市民對機電安全和能源效益的認知，並進行業界調查，探討業界對規管服務的看法。

ENGAGING OUR CLIENTS

As the service provider delivering high quality and professional E&M services to government departments and public bodies, we are devoted to communicating with our clients, with a view to solicit inputs for EMSTF's continuous improvement. We have engaged an independent market research company in conducting a Customer Opinion Survey (COS) every two years since the first COS in 1997.

In the latest round of COS conducted in 2016, survey results registered another record high Customer Satisfaction Index of 6.45 out of 8, which greatly affirmed our effort to enhance our services continuously. Based on the engagement results, we have formulated customer service improvement plans to strive for service excellence.

For EMSTF's daily course of engineering project and job management, we are in preparation to launch a "Customer Centric e-Platform", together with the future Customer Service Centre, forming important initiatives to enhance customer service in our five-year strategic plan. The platform will be able to provide our Strategic Business Units and clients with a more efficient and transparent communication channel for job information exchange and project progress tracking.

For our Regulatory Services targeting at the general public, our Customer Liaison Group and various safety advisory committees meet regularly with stakeholders from the general public to listen to their thoughts and comments on our regulatory promotion activities. We also conduct surveys to gauge the public's rising awareness towards E&M safety and energy efficiency, and trade surveys to obtain feedback on Regulatory Services.

管理我們的供應鏈

在確保提供安全和優質的機電服務上，承辦商是我們的重要合作伙伴。在選擇承辦商時，我們會檢視他們過去的表現，並確保他們擁有一個完整的安全管理系統。我們亦鼓勵承辦商提供創新的想法，以提升他們在工地的表現。

MANAGING OUR SUPPLY CHAIN

Contractors are our important partners to ensure the delivery of safe and quality E&M services. When selecting contractors, we will review their past performance and ensure that they have a robust safety management system in place. We also encourage our contractors to generate innovative ideas for uplifting their performance on-site.



機電工程署代表及我們的承辦商參與第22屆公德地盤嘉許計劃。

EMSD representatives and our contractors participating in the 22nd Considerate Contractors Site Award Scheme.

於報告年內，我們共四項維修、保養、改建及加建工程合約於發展局及建造業議會合辦的第22屆公德地盤嘉許計劃中獲得銅獎/優異獎，肯定了承辦商在協助業界實現「零意外」上所作出的貢獻。

In the reporting year, four of our repair, maintenance, alteration and addition works contracts were granted Bronze/Merit Award in the 22nd Considerate Contractors Site Award Scheme, jointly organised by the Development Bureau and the Construction Industry Council. Contractors were acknowledged for their contribution towards achieving "Zero Accidents" in the industry.

聯繫社區

除致力提供專業的機電和規管服務外，我們亦積極參與行業知識分享活動及公眾活動，努力改善社區。

CONNECTING WITH THE COMMUNITY

Other than dedicating our professional knowledge through E&M and regulatory services, we strive for the betterment of the community by actively participating in industry knowledge sharing events and public engagement activities.



科技交流研討會2016促進先進工程科技發展的交流，從而提高業界的服務質素。

The Technology Sharing Seminars 2016 promoted exchange of advanced engineering technology developments so as to improve service quality.

業界知識分享活動

科技交流研討會系列及創科論壇

為慶祝機電工程營運基金成立二十周年，機電工程署在本年度舉辦了一系列的科技交流研討會及一場創科論壇。科技交流研討會共包括11場創新科技交流會和業界科技研討會，邀請學者就「新世代科技」、「電力科技」和「智能城市」等新興主題作出分享。而作為二十周年誌慶的壓軸活動，創科論壇以「想像∞創新∞香港」為主題，成功齊集了海外及本地專家、行業領袖及客戶代表，從建築物、交通、能源及可持續發展等多個範疇交流城市發展的最新趨勢。在業界和公眾的大力支持下，一連串的活動成功吸引了超過二千名參加者，與我們一同分享過去二十年的工作成果，並開啟未來。

Knowledge Sharing Events with Trades

Technology Sharing Seminars Series and EMSD Summit

Forming part of the EMSTF 20th Anniversary celebration, EMSD has organised a series of technology sharing seminars and the EMSD Summit in the reporting year. Comprising Innovation Technology Sharing and Trade Technology Seminars, 11 technology sharing seminars have been held to introduce on rising themes such as "Next-Gen Solutions", "Power Technologies" and "Smart City", where scholars were invited to deliver talks on innovative technological theories and concepts. As the grand finale event of the series of celebratory activities, the EMSD Summit with a theme of "Imaginovate Hong Kong" successfully gathered overseas and local experts, industry leaders and representatives from our clients to exchange on the latest trends of city development, from perspectives of buildings, transportation, energy and sustainability. With full support from the trade and the public, these events attracted over 2 000 attendants to join us in celebrating the fruits of our hard work in the previous 20 years and the way forward.

社會成效
Social Performance

淡水冷卻塔和建築物能源效益技術研討會

能源效益事務處的年度活動焦點 — 淡水冷卻塔和建築物能源效益技術研討會已於2016年12月16日圓滿舉行。一如往年，研討會吸引了600多名參加者。在研討會的第一部分，政府和業界代表就淡水冷卻塔的正確連接和淡水處理方法分享了他們的成功例子，以提升行業在正確安裝和管理淡水冷卻塔方面的知識。在研討會第二部分，我們與參加者分享了關於「建築物重新校驗」的實用建議，以說明根據《建築物能源效益條例》進行裝修工程時需注意的重點。

Technical Forum on Fresh Water Cooling Towers and Buildings Energy Efficiency

Our Energy Efficiency Office's annual highlight – Technical Forum on Fresh Water Cooling Towers (FWCT) and Buildings Energy Efficiency, was successfully held on 16 December 2016. Similar to previous years, the forum attracted over 600 attendees to participate in the event. In the first part of the forum, representatives from the government and the industry were invited to speak at the event and share their successful stories on topics related to proper water connection and water treatment methods, so as to enhance industry's knowledge on proper installation and management of FWCTs. At the second part of the forum, practical advice on the topic of "Building Retro-commissioning" was shared with the audience to highlight major points to note when conducting retrofitting works in accordance with the Buildings Energy Efficiency Ordinance.



環境局、香港貿易發展局及機電工程署代表於國際環保博覽2016合照留影。

Representatives from Environment Bureau, HKTDC and EMSD at Eco Expo Asia 2016.

國際環保博覽2016

國際環保博覽是由香港貿易發展局主辦、環境局協辦的年度活動。今年，能源效益事務處繼續獲邀參與展覽。在展覽上，我們向參觀者介紹「強制性能源效益標籤計劃」、「自願性能源效益標籤計劃」、《建築物能源效益條例》、電動車的最新發展，以及一些節省能源的貼士。另外，我們還介紹了「強制性能源效益標籤計劃」的優化方案，以及最新推出的「建築物能源效益守則」和「能源審核守則」網站。

Eco Expo Asia 2016

This year, EMSD Energy Efficiency Office continued to be invited as one of the exhibitors at the Eco Expo Asia, which was organised by the Hong Kong Trade Development Council (HKTDC) and supported by the Environment Bureau. At the exhibition, we introduced the Mandatory Energy Efficiency Labelling Scheme (MEELS), the Voluntary Energy Efficiency Labelling Scheme, the Buildings Energy Efficiency Ordinance, latest development in electric vehicles as well as some energy saving tips to our visitors. Besides, the enhancement of the MEELS and the newly released Building Energy Code and Energy Audit Code website were also highlighted during the event.

公眾參與活動

我們致力提高公眾對能源效益、機電安全和機電工程應用的意識，以達致可持續發展。以下是部分於報告年內進行的公眾參與活動。

Public Engagement Initiatives

With achieving sustainable development as our ultimate goal, we are dedicated to raising the public's awareness towards energy efficiency, E&M safety, and E&M engineering application. Some of our public engagement activities during the reporting year are highlighted below.

慳電熄一熄青年獎

為了教育年輕一代關於節能的重要性，在環境局的支持下，我們於2015年推出了「慳電熄一熄青年獎」。比賽分成三個組別，開放予25歲或以下的學生和青少年參加。參加者需要為其家庭或相關機構提出具創意的計劃書，並附上實際可行的行動計劃以減少能源消耗。於2016年7月，小學組白金得獎隊伍獲邀參加零碳野外樂活體驗營，讓參加者體驗低碳生活理念及節能的重要性。至於中學組及公開組白金獎的得獎隊伍，則被邀請參加了低碳城市學習團，於2016年8月訪問了瑞典和丹麥的地方政府和環保組織，了解如何將環境考慮納入城市規劃當中。

Youth Energy Saving Award

Aiming at educating the younger generation about the importance of energy saving, we launched the Youth Energy Saving Award with support from the Environment Bureau in 2015. Comprising three categories, the competition is open to students and young people up to the age of 25. Competitors are invited to come up with creative proposals supplemented with pragmatic action plans to reduce energy consumption for their home or associated organisation. In July 2016, platinum award winning teams of the primary school category were invited to a zero carbon environmental camp, where participants experienced concepts of low carbon living and importance of energy conservation. For the platinum award winning teams of open group and secondary school categories, a low-carbon city study mission was organised in August 2016 for them to visit local authorities and various environmental organisations in Sweden and Denmark to understand how environmental considerations could be strategically incorporated into urban planning.

參與零碳野外樂活體驗營(右)和低碳城市學習團(下)的獲勝隊伍。

Winning teams at the zero carbon environmental camp (right) and low-carbon city study mission (bottom).





社會成效
Social Performance

機電安全健步嘉年華2016

「機電安全健步嘉年華2016」由香港機電工程商聯會與香港機電業工會聯合會合辦，於2016年12月4日在屯門大欖涌舉行，旨在團結及加強業界的伙伴關係。機電工程署約有30多位員工及家屬齊齊參與。

E&M Safety Walk and Carnival Fair 2016

Jointly organised by the Hong Kong Federation of Electrical and Mechanical Contractors and the Federation of Hong Kong Electrical and Mechanical Industries Trade Unions, the E&M Safety Walk and Carnival Fair 2016 was held on 4 December 2016 in Tai Lam Chung, Tuen Mun. With the aim to unite and strengthen partnership within the E&M industry, the event engaged over 30 EMSD staff and their family members this year.

機電工程署員工及家屬齊齊參與健步嘉年華。

EMSD staff and their family members participated in the walk.



機電青少年大使計劃

機電青少年大使計劃的目的是讓一群年輕人成為機電工程署的大使，讓他們在日常生活中協助推廣機電安全、能源效益及機電工程發展。計劃於年內舉辦了各種活動，以擴闊大使們的視野。例如於2016年7月，我們為60位大使組織了一連串的考察活動，其中包括參觀機電工程署總部、零碳天地及工業貿易大樓。考察期間，大使親身接觸了綠色建築、環保科技及可再生能源的實際應用。通過提高他們對機電工程的興趣，我們希望培育出一班充滿活力的年輕人，透過推廣機電安全和能源效益為社區服務。

E&M Young Ambassador Scheme

The E&M Young Ambassador Scheme has been organised to empower a team of youngsters to become ambassadors of EMSD and help promote E&M safety, energy efficiency, and E&M engineering development in their daily lives. Various events and activities were organised throughout the year to enhance the ambassadors' exposure. For example, a series of visits was organised for over 60 ambassadors in July 2016, including visits to EMSD Headquarters, Zero Carbon Building, and the Trade and Industry Tower. During the visits, ambassadors were introduced to actual applications of green buildings, green technologies, and renewable energy. By raising their interests in E&M engineering, we hope to cultivate a team of dynamic young citizens to serve the community by promoting E&M Safety and energy efficiency.



機電青少年大使參觀機電工程署總部。

E&M Young Ambassadors visiting EMSD Headquarters.



參與「遊走機電大世界」城市定向賽的青少年。

Youngsters participating in the "Run! The E&M World!" City Orienteering Competition.





到訪教育及職業博覽2017的青少年。

Youths visiting the Education & Careers Expo 2017.

「遊走機電大世界」及2017年教育及職業博覽

為吸引更多年輕人加入機電行業，機電工程署和香港機電業推廣工作小組利用各種機會接觸目標群組。在2016年年底，我們組織了「遊走機電大世界」城市定向賽，吸引了超過450名參賽者，讓他們有機會以輕鬆的比賽形式到訪各種機電相關設施。我們亦參加了各種職業博覽，包括由貿發局組織的教育及職業博覽2017，以引起年輕人對機電行業的興趣。

"Run! The E&M World!" and Education & Careers Expo 2017

To attract more young people to join the E&M industry, EMSD and the Hong Kong E&M Trade Promotion Working Group had made use of various opportunities to reach out to the target group. In late 2016, we have organised the "Run! The E&M World!" City Orienteering Competition which attracted over 450 participants, giving them a chance to visit various E&M related facilities in form of a light-hearted race. We have also participated in various career expos, including the Education & Careers Expo 2017 organised by the HKTDC, so as to arouse young people's interest in the E&M industry.

「點菜易」手機應用程式

作為一群專業人員，我們的員工義工隊積極將技術知識應用於有利社會的措施上。團隊與香港失明人協進會合作開發出一款可以從網上資料庫中讀出菜單的手機應用程式，照顧視障人士的需要。該應用程式為社會帶來了正面影響，榮獲香港工程師學會青年會員創意獎2017（組別I）大獎。

"Tap My Dish" Mobile Application

As a group of professionals, our staff voluntary service team has proactively applied their technical knowledge into initiatives that benefit the society. The team partnered with the Hong Kong Blind Union to develop a mobile application which could read out menus from an online database, specially serving the needs of people with visual impairment. The application won the Hong Kong Institution of Engineers Innovation Awards for Young Members 2017 – Category I for its positive impact on the society.

我們的員工義工隊為視障人士開發了「點菜易」手機應用程式。

Our staff voluntary service team developed the mobile application "Tap my Dish" for people with visual impairment.





「點菜易」手機應用程式的版面。

Layout of the "Tap my Dish" mobile application.

社會成效
Social Performance

其他社區活動

報告年內，我們與其他政府部門和公共機構密切合作，為公眾舉辦多項社區活動。主要活動的摘要如下：

Other Engagement Activities

In the reporting year, we have worked closely with other government departments and public organisations to host a wide range of engagement activities for the public. A summary of the major events is highlighted below.

逾3 000個團體簽署2016的「節能約章」，包括約1 900家商場和商鋪、辦公大樓和辦公室，約800座屋苑和住宅大廈，約250個非政府機構旗下物業，以及約80所參與的學校和專上學院。他們承諾在2016年6月至9月期間，保持平均室內溫度在攝氏24至26度之間、關掉不需要使用的電器，並盡可能選購具能源效益的產品。	Over 3 000 participants have signed up for the Energy Saving Charter 2016, including around 1 900 shopping malls, shops and office premises, some 800 housing estates and residential buildings, some 250 properties of non-governmental organisations and about 80 schools and tertiary education institutions. They pledged to maintain an average indoor temperature of 24-26 degrees Celsius, switch off electrical appliances when not in use, and procure energy efficient appliances as far as possible, from June to September 2016.
為機構或學校舉行154場講座或探訪，宣傳能源效益及節能。	Delivered or organised 154 talks and visits to organisations/schools to promote energy efficiency and conservation.
為多個機構舉行25場簡報會，宣傳有關《建築物能源效益條例》下，《建築物能源效益守則》及《能源審核守則》的強制實施事宜。	Delivered 25 presentations to various organisations to promote the mandatory implementation of the Building Energy Code and Energy Audit Code under the Buildings Energy Efficiency Ordinance.
於2016年6月前往第四批需進行第一次能源審核的商業建築物，以推廣《建築物能源效益條例》，並提醒業主有關的能源審核要求。	Visited the fourth batch of commercial buildings, which are required to carry out the first energy audits, in June 2016 to promote the Buildings Energy Efficiency Ordinance and to remind building owners of the relevant energy audit requirements.
舉行81次外展講座，也接待了296個參觀團參觀機電工程署總部教育徑，共15 995位訪客，向各機構和學校宣傳能源效益和節能。	Organised 81 outreach talks and 296 visits to the Education Path of EMSD Headquarters for 15 995 visitors from different organisations and schools to promote energy efficiency and conservation.
往全港幼稚園、小學、特殊學校、社區中心及老人中心進行271次外展講座，向約35 000位參加者宣傳電力安全。	Visited 271 kindergartens, primary schools, special schools, community centres and elderly centres, reaching about 35 000 participants to promote electrical safety.
往全港幼稚園、青年中心及老人中心進行479次外展講座，向30 000多名參加者講解機動遊戲機、升降機和自動梯的安全使用方法。	Visited 479 kindergartens, youth centres and elderly centres, reaching over 30 000 participants to promote the safe use of amusement rides, lifts and escalators.
舉行70次學校展覽，宣傳「強制性能源效益標籤計劃」。	Conducted 70 school exhibitions on the Mandatory Energy Efficiency Labelling Scheme (MEELS).
於2017年1月，就第三階段「強制性能源效益標籤計劃」而建議修訂的工作守則舉行簡介會。	Carried out briefing sessions in January 2017 on proposed revisions of the Code of Practice for the third phase of MEELS.
為業界人士就《供電電纜(保護)規例》的要求，舉行44場安全講座及研討會，參加者包括政府工務部門、顧問公司、承辦商、合資格人士、一般工地員工等。	Delivered 44 safety talks and seminars on the requirements of Electricity Supply Lines (Protection) Regulation to the trades, including government works departments, consultants, contractors, competent persons, general site staff, etc.
為業界代表、升降機/自動梯擁有人、業主立案法團成員，和物業管理公司員工，舉辦15場簡介會、技術及安全講座與研討會。	Conducted 15 briefing sessions, technical and safety talks and seminars for trade representatives, lift/escalator owners, members of incorporated owners and building management staff.
舉辦了推廣日及走訪1 200間車輛維修工場，向車輛維修業界和公眾推廣「車輛維修工場自願註冊計劃」及「車輛維修技工自願註冊計劃」。	Organised a Promotion Day and visited over 1 200 vehicle maintenance workshops, to promote the Voluntary Registration Scheme for Vehicle Maintenance Workshops and the Voluntary Registration Scheme for Vehicle Mechanics to the vehicle maintenance trade and the general public.
推行註冊電業工程人員持續進修計劃，為註冊電業工程人員舉行270場講座及研討會。	Conducted 270 talks and seminars on the implementation of the Continuing Professional Development Scheme for Registered Electrical Workers.
與食物環境衛生署合辦了六場氣體安全講座，目標在提高食物業牌照申請人，對於在食肆及食物製備場所內，作供應飲食用途石油氣裝置規定的了解。	Conducted six seminars on gas safety with the Food and Environmental Hygiene Department, which target on applicants of food business licences to improve their understanding of the requirements of liquefied petroleum gas installations for catering purposes in restaurants and food preparation establishments.
探訪了四個寮屋和村屋區的居民，講解家居氣體安全。	Visited four squatter areas and villages to promote domestic gas safety to the residents.
為氣體業界及不同的工程承辦商，舉辦了17場氣體安全講座，並進行了198個工地巡查，宣傳有關避免損毀氣體喉管的方法。	Conducted 17 gas safety seminars for gas traders and different contractors, and 198 trench inspections to construction sites to promote safety practices on avoiding damage to gas pipes.

全球報告倡議組織內容索引
GRI Content Index

Materiality Disclosures Service
Electrical and Mechanical Services Department (HKSARG)
Nov 2017

一般標準披露 General Standard Disclosures	描述 Description	互相參照/註釋/省略資料的原因 Cross-reference/Comments/ Reasons for Omissions	外部認證 External Assurance
策略及分析 STRATEGY AND ANALYSIS			
G4-1	機構最高決策人的聲明 Statement from the most senior decision-maker of the organisation	機電工程署二零一六至一七年年報 EMSD Annual Report 2016/17	✓
機構簡介 ORGANISATIONAL PROFILE			
G4-3	機構名稱 Name of the organisation	關於本報告 About this Report	✓
G4-4	主要品牌、產品及服務 Primary brands, products, and services	實現可持續發展 Sustainability at EMSD	✓
G4-5	機構總部位置 Location of the organisation's headquarters	香港 Hong Kong	✓
G4-6	機構營運所在地之數目 Number of countries where the organisation operates	只在香港 Only in Hong Kong	✓
G4-7	擁有權的性質及法律形式 Nature of ownership and legal form	屬於香港特區政府的一部分 Part of the Hong Kong SAR Government	✓
G4-8	所服務的市場 Markets served	香港 Hong Kong	✓
G4-9	機構規模 Scale of the organisation	社會成效 Social Performance	✓
G4-10	僱員總數 Number of total employees	社會成效 Social Performance 數據摘要 Summary of Statistics	✓
G4-11	受集體協商協議保障的總僱員百分比 Percentage of total employees covered by collective bargaining agreements	共有 11 個機電工程署工會由員工以自願性質參與，另有9個員工協商委員會代表不同職級的機電工程署員工就員工福利與部門溝通。 There are 11 EMSD staff unions joined on voluntary basis. There are also 9 Departmental Consultative Committees who are representatives of all grades and ranks of EMSD staff to liaise with the Department for the well-being of the staff.	✓
G4-12	機構的供應鏈 Organisation's supply chain	機電工程署聘請了2 448名供應商，他們大多負責提供機電安裝、運作及保養相關的配件/設備及服務。 There are 2 448 suppliers engaged by EMSD. They are mainly involved in provision of parts/equipment and services related to E&M installation, operation and maintenance.	✓
G4-13	於報告期內機構規模、架構、擁有權或供應鏈的重大改變 Significant changes during the reporting period regarding the organisation's size, structure, ownership, or its supply chain	關於本報告 About this Report	✓
G4-14	機構是否及如何按預警方針及原則行事 Report whether and how the precautionary approach or principle is addressed by the organisation	實現可持續發展 Sustainability at EMSD	✓
G4-15	機構對外界發起的經濟、環境及社會約章、原則或其他倡議的參與或支持 Externally developed economic, environmental and social charters, principles, or other initiatives to which the organisation subscribes or which it endorses	實現可持續發展 Sustainability at EMSD 環保成效 Environmental Performance	✓
G4-16	機構參與的聯會及(或)本地/國際倡議組織 Memberships of associations and/or national/international advocacy organisations	機電工程署屬於以下協會的成員： EMSD holds membership in the following associations. 1) 能源工程師學會 Association of Energy Engineers 2) 香港綠色建築議會 Hong Kong Green Building Council 3) 香港照明學會 CIE (Hong Kong) Limited 4) 國際鐵路安全議會 International Railway Safety Council	✓
已確定的重要議題 IDENTIFIED MATERIAL ASPECTS AND BOUNDARIES			
G4-17	機構綜合財務報表或同等文件內包含的實體 Entities included in the organisation's consolidated financial statements	關於本報告 About this Report	✓
G4-18	界定報告內容及議題界限的過程，以及機構如何於已界定的報告內容實行報告原則 Process for defining the report content and the Aspect Boundaries and how the organisation has implemented the Reporting Principles for Defining Report Content	關於本報告 About this Report	✓
G4-19	決定報告內容過程中界定的重要議題 Material Aspects identified in the process for defining report content	關於本報告 About this Report	✓
已確定的重要議題 IDENTIFIED MATERIAL ASPECTS AND BOUNDARIES			
G4-20	機構內各重要議題的界限 Aspect Boundary of each Material Aspect within the organisation	關於本報告 About this Report	✓
G4-21	機構外各重要議題的界限 Aspect Boundary of each Material Aspect outside the organisation	關於本報告 About this Report	✓
G4-22	解釋重整舊報告所載信息的結果及原因 Effect of any restatements of information provided in previous reports, and the reasons for such restatements	為了保持匯報用電量數據的一致性，我們於本年度統一了計算方法，以匯報往年的用電量結果。 To maintain the consistency of the electricity consumption data reported, we chose to report the previous years' results based on a same calculation method this year.	✓
G4-23	報告的範圍及議題界限與以往報告的重大分別 Report significant changes from previous reporting periods in the Scope and Aspect Boundaries	關於本報告 About this Report	✓
持份者之參與 STAKEHOLDER ENGAGEMENT			
G4-24	機構的持份者群組清單 List of stakeholder groups engaged by the organisation	關於本報告 About this Report 實現可持續發展 Sustainability at EMSD	✓
G4-25	界定及挑選相關持份者之基準 Basis for identification and selection of stakeholders with whom to engage	關於本報告 About this Report	✓
G4-26	與持份者溝通的方式 Approach to stakeholder engagement	關於本報告 About this Report 實現可持續發展 Sustainability at EMSD	✓
G4-27	於持份者參與的過程中提出的主要項目及關注事項，以及機構的應對 Key topics and concerns that have been raised through stakeholder engagement, and how the organisation has responded to those key topics and concerns	關於本報告 About this Report	✓
報告概況 REPORT PROFILE			
G4-28	匯報期 Reporting period for information provided	關於本報告 About this Report	✓
G4-29	上一份報告的日期 Date of most recent previous report	2016年12月 December 2016	✓
G4-30	匯報周期 Reporting cycle	關於本報告 About this Report	✓
G4-31	查詢報告或報告內容的聯絡方式 Contact point for questions regarding the report or its contents	關於本報告 About this Report	✓
G4-32	GRI內容索引，包括揀選的「符合」選項及外部認證參考(如有) GRI Content Index, the 'in accordance' option the organisation has chosen and the reference to the external assurance (if any)	關於本報告 About this Report 全球報告倡議組織內容索引 GRI Content Index	✓
G4-33	為報告尋求外部認證的政策及現行措施 Policy and current practice with regard to seeking external assurance for the report	關於本報告 About this Report	✓
管治 GOVERNANCE			
G4-34	機構的管治架構 Governance structure of the organisation	機電工程署二零一六至一七年年報 EMSD Annual Report 2016/17	✓
G4-36	機構有否任命管理階層負責檢視經濟、環境和社會議題 Appointment of executive-level position(s) with responsibility for economic, environmental and social topics	我們的高級管理層參與了品質、環境及生產力策導委員會以及內部環保採購工作小組。 Our senior management staff participates in Quality, Environmental & Productivity Steering Committee and internal working group on green procurement.	✓
道德與誠信 ETHICS AND INTEGRITY			
G4-56	機構的價值觀、原則、標準和行為規範 Organisation's values, principles, standards and norms of behaviour	機電工程署二零一六至一七年年報 EMSD Annual Report 2016/17	✓

全球報告倡議組織內容索引
GRI Content Index

特定標準披露 Specific Standard Disclosures	描述 Description	互相參照/註釋/省略資料的原因 Cross-reference/Comments/ Reasons for Omissions	外部認證 External Assurance
類別：經濟 CATEGORY: ECONOMIC			
財務表現 ECONOMIC PERFORMANCE			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	機電工程署二零一六至一七年年報 EMSD Annual Report 2016/17	✓
G4-EC1	機構產生和分配的直接經濟價值 Direct economic value generated and distributed	機電工程署二零一六至一七年年報 EMSD Annual Report 2016/17	✓
間接經濟影響 INDIRECT ECONOMIC IMPACTS			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	機電工程署二零一六至一七年年報 EMSD Annual Report 2016/17	✓
G4-EC7	開展基礎設施投資與支援性服務的情況及其影響 Development and impact of infrastructure investments and services supported	機電工程署二零一六至一七年年報 EMSD Annual Report 2016/17	✓
部門的採購政策 PROCUREMENT PRACTICES			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	環保成效 Environmental Performance	✓
G4-EC9	在重要運營地點，向當地供應商採購支出的比例 Proportion of spending on local suppliers at significant locations of operation	物料供應分部的服務及產品主要購自本地供應商/承辦商或分銷商。海外供應商於2016/17年度只佔大約2%。 Acquisition of services and goods handled by Supplies sub-division are mainly from local suppliers/contractors or local agents. Only around 2% of suppliers are from overseas in 2016/17.	✓
類別：環境 CATEGORY: ENVIRONMENTAL			
物料 MATERIALS			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	環保成效 Environmental Performance	✓
G4-EN1	所用物料的重量或體積 Materials used by weight or volume	數據摘要 Summary of Statistics	✓
能源 ENERGY			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	環保成效 Environmental Performance	✓
G4-EN3	機構內部的能源消耗量 Energy consumption within the organisation	環保成效 Environmental Performance 數據摘要 Summary of Statistics	✓
水 WATER			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	環保成效 Environmental Performance	✓
G4-EN8	按源頭說明的總耗水量 Total water withdrawal by source	環保成效 Environmental Performance 數據摘要 Summary of Statistics	✓
生物多樣性 BIODIVERSITY			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	環保成效 Environmental Performance	✓
G4-EN11	機構在環境保護區或其他具有重要生物多樣性價值的地區或其毗鄰地區，擁有、租賃或管理的運營點 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	所有運營點均不在環境保護區或其他具有重要生物多樣性價值的地區或其毗鄰地區。 No operation sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	✓
排放 EMISSIONS			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	環保成效 Environmental Performance	✓
G4-EN15	直接溫室氣體排放量(範疇一) Direct greenhouse gas (GHG) emissions (Scope 1)	數據摘要 Summary of Statistics	✓
G4-EN16	能源間接溫室氣體排放量(範疇二) Energy indirect greenhouse gas (GHG) emissions (Scope 2)	數據摘要 Summary of Statistics	✓
污水和廢物 EFFLUENTS AND WASTE			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	環保成效 Environmental Performance	✓
G4-EN23	按類別及處理方法分類的廢棄物總重量 Total weight of waste by type and disposal method	環保成效 Environmental Performance 數據摘要 Summary of Statistics	✓
運輸 TRANSPORT			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	環保成效 Environmental Performance	✓
G4-EN30	為機構運營而運輸產品、其他貨物及物料以及員工交通所產生的重大環境影響 Significant environmental impacts of transporting products and other goods and materials for the organisation's operations, and transporting members of the workforce	環保成效 Environmental Performance	✓
供應商的環境評估 SUPPLIER ENVIRONMENTAL ASSESSMENT			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	環保成效 Environmental Performance	✓
G4-EN32	使用環境標準篩選的新供應商的比例 Percentage of new suppliers that were screened using environmental criteria	環保成效 Environmental Performance	✓

類別：社會 CATEGORY: SOCIAL			
勞工措施和工作 LABOUR PRACTICES AND DECENT WORK			
僱員關係 EMPLOYMENT			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	社會成效 Social Performance	✓
G4-LA1	按年齡組別、性別及地區劃分的新進員工和離職員工總數及比例 Total number and rates of new employee hires and employee turnover by age group, gender and region	數據摘要 Summary of Statistics	✓
G4-LA2	按重要運營地點劃分，不提供給臨時或兼職員工，只提供給全職員工的福利 Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation	公務員及非公務員僱員如符合相關規定及守則要求，均享有醫療及牙醫服務、教育津貼、年假、房屋津貼等。 Employees appointed on civil service and non-civil service terms are entitled with medical and dental services, education allowance, leave and passage, housing benefit, etc. if they meet the eligibility criteria as stipulated in the relevant rules and regulations.	✓
職業健康與安全 OCCUPATIONAL HEALTH AND SAFETY			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	社會成效 Social Performance	✓
G4-LA5	由勞資雙方組建的職工健康與安全委員會中，能幫助員工監督和評價健康與安全相關專案的員工代表所佔的百分比 Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programmes	社會成效 Social Performance	✓
G4-LA7	從事職業病高發職業或高職業病風險職業的工人 Workers with high incidence or high risk of diseases related to their occupation	社會成效 Social Performance	✓
培訓與教育 TRAINING AND EDUCATION			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	社會成效 Social Performance	✓
G4-LA10	為加強員工持續就業能力及協助員工管理職業生涯終止的技能管理及終生學習計畫 Programmes for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	社會成效 Social Performance	✓
多元化與平等機會 DIVERSITY AND EQUAL OPPORTUNITY			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	社會成效 Social Performance	✓
G4-LA12	按性別、年齡組別、少數族裔成員及其他多元化指標劃分，治理機構成員和各類員工的組成 Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity	社會成效 Social Performance 數據摘要 Summary of Statistics	✓
員工申訴機制 LABOUR PRACTICES GRIEVANCE MECHANISMS			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	員工可根據部門通告訂明的投訴指引，為員工政策及人事等相關問題作出投訴。 Staff may lodge a complaint on employment related issues in accordance with our departmental circular on staff complaints.	✓
G4-LA16	經由正式申訴機制提交、處理和解決的勞工問題申訴的數量 Number of grievances about labour practices filed, addressed, and resolved through formal grievance mechanisms	沒有 Nil	✓
人權 HUMAN RIGHTS			
強迫與強制性勞工 FORCED OR COMPULSORY LABOUR			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	實現可持續發展 Sustainability at EMSD	✓
G4-HR6	已發現具有嚴重強迫或強制勞動事件風險的運營點和供應商，以及有助於消除一切形式的強迫或強制勞動的措施 Operations and suppliers identified as having significant risk for incidents of forced or compulsory labour, and measures to contribute to the elimination of all forms of forced or compulsory labour	沒有發現任何運營點和供應商具有嚴重強迫或強制勞動事件風險。 No operations and suppliers were identified to have high risk of force or compulsory labour.	✓
產品責任 PRODUCT RESPONSIBILITY			
產品及服務標籤 PRODUCT AND SERVICE LABELLING			
G4-DMA	通用管理方法披露(DMA) Generic Disclosures on Management Approach	社會成效 Social Performance	✓
G4-PR5	客戶滿意度調查的結果 Results of surveys measuring customer satisfaction	社會成效 Social Performance	✓

統計資料摘要
Summary of Statistics

環境 Environment

	單位 Unit	2014/15	2015/16	2016/17
物料 Material (G4-EN1)				
紙張 Paper	令 ream	26 344	26 645	26 167
油漆及溶劑 Paint & Solvent	升 L	17 289	13 371	14 449
潤滑油 Lubrication Oil	升 L	66 339	75 621	84 742
油脂 Grease	公斤 kg	1 457	2 161	1 200
製冷劑 Refrigerant	公斤 kg	14 988	11 963	13 376
工業用氣體 Industrial Gas	立方米 m^3	418	410	454
蓄電池電解液 Battery Electrolyte	升 L	219	185	185
原子車胎 Tubeless Tyre	條 No.	10 982	9 569	9 153
外車胎 Outer Cover Tyre	條 No.	2 435	1 444	1 320
車胎內膽 Inner Tube	條 No.	1 773	524	460
能源 Energy (G4-EN3)				
柴油 Diesel	升 L	131 762	139 926	133 184
汽油 Gasoline	升 L	373 451	351 939	324 864
電力[1] Electricity[1]	'000千瓦小時 '000 kWh	14 920	14 998	14 521
煤氣 Towngas	兆焦耳 MJ	19 392	0	0
水 Water (G4-EN8)				
水 Water	立方米 m^3	42 547	40 226	36 422
溫室氣體排放 GHG Emissions (G4-EN15, G4-EN16)[2]				
直接排放(範疇一)[3] Direct Emissions (Scope 1)[3]	噸 tonnes	未能提供數據 Figure not available	1 333.7	1 240.6
能源間接排放(範疇二) Energy Indirect Emissions (Scope 2)	噸 tonnes	10 482	10 542	7 929.1
污水及廢物 Effluent and Wastes (G4-EN23)				
廢紙 Waste Paper	公斤 kg	25 589	35 788	35 557
碳粉盒 Toner Cartridges	個 No.	3 174	2 765	3 020
即棄電池 Disposable Batteries	公斤 kg	18 697	17 204	18 440
可充電電池 Rechargeable Batteries	公斤 kg	未能提供數據 Figure not available	未能提供數據 Figure not available	18 561[4]
金屬廢料 Metal Scraps	公斤 kg	22 974	21 907	20 583
廢油 Waste Oil	升 L	99 876	91 970	101 303
舊車胎 Used Vehicle Tyre	條 No.	13 323	10 464	10 516
含水銀照明燈 Spent Mercury Lamp	盞 No.	136 535	154 624	134 552

1 為了保持匯報用電量數據的一致性，我們於本年度統一了計算方法，以匯報往年的用電量結果。
To maintain the consistency of the electricity consumption data reported, we chose to report the previous years' results based on a same calculation method this year.

2 參考《香港建築物(商業、住宅或公共用途)的溫室氣體排放及減除的審計和報告指引》(由環境保護署及機電工程署發佈)。
Made reference to the Guidelines to Account for and Report on Greenhouse Gas Emissions and Removals for Buildings of Commercial, Residential or Institutional Purposes in Hong Kong (by Environmental Protection Department & EMSD).

3 包括柴油、汽油及煤氣的相關溫室氣體排放。
Including emissions associated with diesel, gasoline and towngas consumption.

4 機電工程署於2016/17年度開始購置可充電電池，取代某些電器中的一次性電池。
EMSD started to purchase rechargeable batteries in 2016/17 to replace disposable batteries in some of the electrical appliances.

社會 Social

僱員人數 Employees Statistics (G4-10, G4-LA12)[4, 5]

	截至2017年3月31日 As of 31 March 2017	百分比 Percentage
總人數 Total number	5 283	–
男女分佈 By Gender		
男性 Male	4 708	89.1%
女性 Female	575	10.9%
合約類型分佈 By Employment Type		
常任制 Permanent	3 770	71.4%
合約制 Contract	1 513	28.6%
年齡分佈 By Age Group		
50歲或以上 Aged 50 and above	1 657	31.4%
30–49歲 Aged 30–49	2 590	49.0%
29歲或以下 Aged 29 and under	1 036	19.6%

2016/17新入職員工 2016/17 New Hires (G4-LA1)

	截至2017年3月31日 As of 31 March 2017	百分比 Percentage
總人數 Total number	521	佔總員工9.9% 9.9% of total employee
年齡分佈 By Age Group		
50歲或以上 Aged 50 and above	34	6.5%
30–49歲 Aged 30–49	105	20.2%
29歲或以下 Aged 29 and under	382	73.3%
男女分佈 By Gender		
男性 Male	469	90.0%
女性 Female	52	10.0%

4 沒有僱用非正式員工。
There is no informal staff employed by EMSD.

5 所有員工均在香港工作。
All staff are based in Hong Kong.

統計資料摘要
Summary of Statistics

離職員工 Turnover (G4-LA1)

	截至 2017 年 3 月 31 日 As of 31 March 2017	百分比 Percentage
總人數 Total number	471	佔總員工 8.9% 8.9% of total employee
年齡分佈 By Age Group		
50 歲或以上 Aged 50 and above	241	51.2%
30–49 歲 Aged 30–49	109	23.2%
29 歲或以下 Aged 29 and under	121	25.7%
男女分佈 By Gender		
男性 Male	407	86.4%
女性 Female	64	13.6%

管理層的結構 Composition of Senior Management (G4-LA12)

	截至 2017 年 3 月 31 日 As of 31 March 2017	百分比 Percentage
總管理層人數 Total number of senior management staff	128	佔總員工 2.4% 2.4% of total employee
年齡分佈 By Age Group		
50 歲或以上 Aged 50 and above	80	62.5%
30–49 歲 Aged 30–49	48	37.5%
29 歲或以下 Aged 29 and under	0	0
男女分佈 By Gender		
男性 Male	119	93.0%
女性 Female	9	7.0%

其他社會指標 Other Social Indicators

	單位 Unit	2014/15	2015/16	2016/17
須予呈報意外宗數 Reportable Accidents	宗/千名員工 No./1 000 staff	4.5	4.09	4.9
員工滿意度 Staff Satisfaction	分（滿分為 10 分） Score (out of 10)	6.4	不適用 Not Applicable	6.8
平均培訓日數（目標：4.5） Average Training Days (Target: 4.5)	日/員工 Days/staff	4.72	4.37	5.41

核實聲明
Verification Statement

SGS

驗證聲明

香港通用檢測認證有限公司對
《社會及環保報告 2016/17》
驗證聲明

驗證的性質和範圍
香港通用檢測認證有限公司獲機電工程署(以下簡稱機電署)委託，對《社會及環保報告 2016/17》(以下簡稱報告)進行獨立驗證。根據 SGS 可持續發展報告驗證方法，驗證範圍包括機電署於 2016 年 4 月 1 日至 2017 年 3 月 31 日有關可持續發展的表現。

報告中的資訊及報告由機電署負責。香港通用檢測認證有限公司並未參與報告任何材料的準備工作。我們的責任是根據以下規定，對驗證範圍內提供的文本、數據、圖表和聲明表達意見，旨在告知機電署的所有持份者。

本報告以高級審查規格進行驗證，所用規章用於：

- 評估報告內容的真實性及
- 根據《全球報告倡議組織 (GRI) G4 可持續發展報告指南》「核心選項」來評估報告。

驗證方法包括驗證前調研、於公司總部採訪相關管理層及員工、進行文檔和記錄審查和確認。獨立審計的財務帳戶中的財務資料，並未作為本驗證流程的組成部分與來源資料進行核對。

獨立性與能力聲明
香港通用檢測認證有限公司確認我們相對於機電署的獨立性，對該機構、其附屬機構和持份者不存在偏見和利益衝突。驗證團隊是由具備與此項任務有關的知識、經驗和資質的人員組成，當中包括 ISO 14001 主任審核員、SA 8000 審核員、ISO 26000 審核員、OHSAS 18001 審核員及可持續發展報告培訓講師。

查證/驗證意見
基於描述的驗證方法和已進行的驗證，報告中包含的資訊和數據是準確的、可靠的，而且對機電署可持續發展的表現提供了客觀和中肯的陳述，使我們感到滿意。驗證團隊認為，報告符合《全球報告倡議組織 (GRI) G4 可持續發展報告指南》「核心選項」，可供機電署的持份者使用。

簽字：
代表香港通用檢測認證有限公司

曾偉明
高級總監，中國及香港
認證及企業優化

梁耀基
主任驗證員
認證及企業優化

2017 年 11 月 30 日
www.sgs.com

SGS

ASSURANCE STATEMENT

SGS STATEMENT ON ASSURANCE
《Social and Environmental Report 2016/17》

NATURE AND SCOPE OF THE ASSURANCE
SGS Hong Kong Limited was commissioned by Electrical and Mechanical Services Department (thereafter as "EMSD") to conduct an independent assurance of the *Social and Environmental Report 2016/17* (thereafter as the "Report"). The scope of the assurance, based on the SGS Sustainability Report Assurance methodology, included the performance of EMSD from 1st April 2016 to 31st March 2017.

The information in the Report and its presentation are the responsibility of EMSD. SGS has not been involved in the preparation of any of the material included in the Report. Our responsibility is to express an opinion on the text, data, graphs and statements within the mentioned scope of assurance set out below with the intention to inform all EMSD's stakeholders.

The Report has been assured at a high level of scrutiny using our protocols for:
- Evaluation of content veracity and
- Evaluation of the Report in accordance with the Core option of the *Global Reporting Initiative (GRI) G4 Sustainability Reporting Guidelines*.

The assurance methodology comprised a combination of pre-assurance research, interviews with the management and employees at headquarters, documentation and record review.
Financial data drawn directly from independently audited financial accounts has not been checked back to source as part of this assurance process.

STATEMENT OF INDEPENDENCE AND COMPETENCE
SGS affirms our independence from EMSD, being free from bias and conflicts of interest with organization, its subsidiaries and stakeholders. The assurance team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised lead auditors of ISO 14001, auditors of SA 8000, ISO 26000, OHSAS 18001 and Trainer in Sustainability Reporting.

ASSURANCE OPINION
On the basis of the methodology described and the verification work performed, we are satisfied that the information and data contained within the Report verified is accurate, reliable and provides a fair and balanced representation of EMSD sustainability performance. The assurance team is of the opinion that the Report conforms to the Core option of the *GRI G4 Sustainability Reporting Guidelines*. It can be used by EMSD's stakeholders.

Signed:
For and on behalf of SGS Hong Kong Limited

Ben Tsang
Senior Director, China and Hong Kong
Certification and Business Enhancement

Patrick Leung
Lead Assuror
Certification and Business Enhancement

30 November 2017
www.sgs.com

鳴謝
Acknowledgments

在年報製作過程中，承蒙下列部門及機構提供協助，機電工程署特此鳴謝。
The EMSD would like to express its sincere thanks to the following departments and organisations for their support and cooperation in the course of preparing this annual report (list in alphabetical order).

懲教署	Correctional Services Department
衞生署	Department of Health
食物環境衞生署	Food and Environmental Hygiene Department
政府飛行服務隊	Government Flying Service
民政事務總署	Home Affairs Department
香港迪士尼樂園	Hong Kong Disneyland
香港消防處	Hong Kong Fire Services Department
香港警務處	Hong Kong Police Force
醫院管理局	Hospital Authority
司法機構	Judiciary
康樂及文化事務署	Leisure and Cultural Services Department
海事處	Marine Department
香港鐵路有限公司	MTR Corporation Limited
昂坪360有限公司	Ngong Ping 360 Limited
選舉事務處	Registration and Electoral Office
香港中華煤氣有限公司	The Hong Kong and China Gas Company Limited
天水圍醫院	Tin Shui Wai Hospital
運輸署	Transport Department
屯門醫院	Tuen Mun Hospital

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EMSD

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