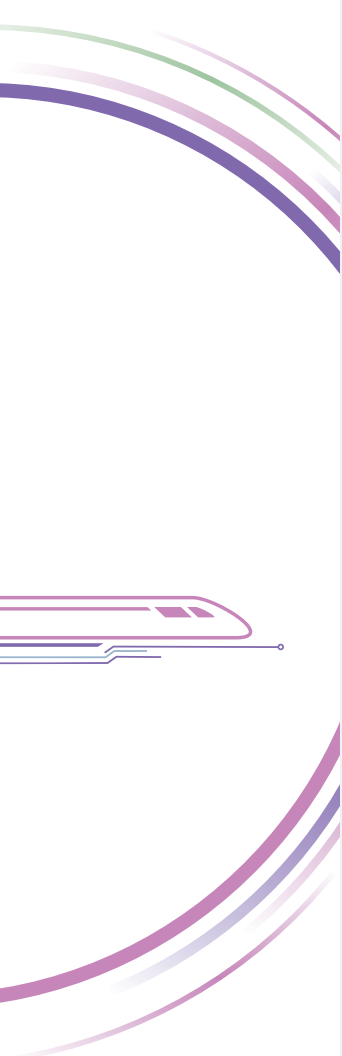


機電工程營運基金報告

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

林世雄太平紳士

Mr Lam Sai-hung, JP

發展局常任秘書長(工務)

Permanent Secretary for
Development (Works)

成員 MEMBERS

周紹喜太平紳士

Mr Chau Siu-hei, Francis, JP

發展局副秘書長(工務)³

Deputy Secretary for
Development (Works)³

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)

- * 韓志強太平紳士出任發展局常任秘書長(工務)至2018年10月12日
Mr Hon Chi-keung, JP was Permanent Secretary for Development (Works) up to 12 October 2018
- * 戴德謙太平紳士出任機電工程署副署長/營運服務至2018年9月11日
Mr Tai Tak-him, JP was Deputy Director/Trading Services, EMSD up to 11 September 2018
- * 羅肇嫻女士出任機電工程署主任秘書至2019年2月27日
Ms Lo Siu-han, Cynthia was Departmental Secretary, EMSD up to 27 February 2019
- * 湯東成先生出任署理機電工程署主任秘書至2019年3月31日
Mr Tong Tung-shing was Acting Departmental Secretary, EMSD up to 31 March 2019



秘書 SECRETARY

彭耀雄太平紳士
Mr Pang Yiu-hung, JP

機電工程署副署長/營運服務
Deputy Director/Trading Services, EMSD

袁秀明女士
Ms Yuen Sau-ming, Anna

機電工程署主任秘書
Departmental Secretary, EMSD



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 彭耀雄太平紳士
Mr Pang Yiu-hung, JP**

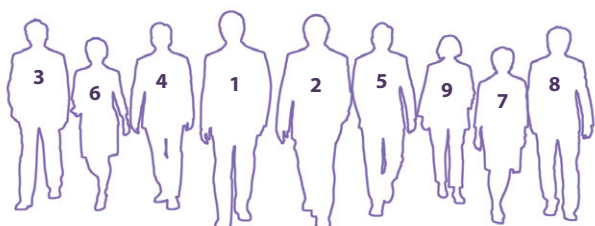
機電工程署副署長/
營運服務
Deputy Director/Trading
Services, EMSD

**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 張遠芳太平紳士
Mr Cheung Yuen-fong,
JP**

機電工程署助理署長/2
Assistant Director/2, EMSD





秘書 SECRETARY

5 陳志偉太平紳士
Mr Chan Chi-wai,
Richard, 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 梁淑貞女士
Miss Leung Suk-
ching, Olivia

署理機電工程署
員工關係主任
Acting Staff Relations
Officer, EMSD

8 劉啟樂先生
Mr Lau Kai-sun

署理機電工程署
員工關係主任
Acting Staff Relations
Officer, EMSD

9 袁秀明女士
Ms Yuen Sau-ming,
Anna

機電工程署主任秘書
Departmental Secretary,
EMSD

* 戴德謙太平紳士出任機電工程署副署長 / 營運服務至2018年9月11日
Mr Tai Tak-him, JP was Deputy Director/Trading Services, EMSD up to
11 September 2018

* 王文剛先生出任機電工程署員工關係主任至2018年5月25日
Mr Wong Man-kong was Staff Relations Officer, EMSD up to 25 May 2018

* 羅肇嫻女士出任機電工程署主任秘書至2019年2月27日
Ms Lo Siu-han, Cynthia was Departmental Secretary, EMSD up to
27 February 2019

* 湯東成先生出任署理機電工程署主任秘書至2019年3月31日
Mr Tong Tung-shing was Acting Departmental Secretary, EMSD up to
31 March 2019

業務回顧與前瞻

Operations Review and Outlook

彭耀雄太平紳士

Mr Pang Yiu-hung, JP

機電工程署副署長/
營運服務

Deputy Director/
Trading Services, EMSD



機電工程營運基金於2018/19年度再次錄得穩定表現，實有賴客戶的信任和員工的努力。年內，我們的業務也有所增長，主要來自服務需求上升，總收入為75.23億港元(2017/18年度：65.11億港元)，而收入回報率亦維持9.2%(2017/18年度：9.6%)的穩定水平。營運基金的業績也顯示，我們的生產力有持續上升的趨勢。

服務智能化

營運基金於2018/19年度有兩項成就尤其突出。首先，我們以更「智能化」的方式為客戶和公眾提供服務。其次，我們與業界和粵港澳大灣區的對口單位建立有效的連繫，並締造和加強具潛力的合作關係，為客戶和香港機電業界增值。

營運基金各方面的運作亦採用「智能化」方式提供服務。我們與客戶合作開發的智能發燒偵測系統和智慧監獄方案均具備創新及科技(創科)元素，正是智能化服務的明顯例子。

除了提供智能方案外，培育「智慧型」的員工團隊和在部門內建立「智慧型」的工作文化也同樣重要。年內，我們在員工培訓課程中新增了多個具備創科元素的單元，包括使用虛擬實境和擴增實境技術的課程單元。部分策略業務單位的辦公室採用嶄新的智能工作空間，以鼓勵員工進行討論、分享和協作。我們還舉辦了首屆「Inno@E&M 創新科技挑戰賽」，這個內部比賽鼓勵員工提交創科建議書，而24個優勝項目更獲部門資助，將會落實推行。

The Electrical and Mechanical Services Trading Fund saw another year of steady performance in 2018/19, thanks to the trust from our clients and the commitment of our staff. The year also recorded some business growth, mainly from an increase in service demand. The total revenue was HK\$7,523 million (2017/18: HK\$6,511 million) while the return on revenue held steady at 9.2% (2017/18: 9.6%). The results have also indicated a continuously rising trend in productivity.

The Smarter Way

Two achievements stood out in 2018/19. First, we were “smarter” in how we provided services to clients and the public. Second, we connected effectively with the trade and our counterparts in the Guangdong-Hong Kong-Macao Greater Bay Area (GBA), creating and strengthening links with the potential to add value to our clients and Hong Kong’s E&M sector.

The “smarter” way of service provision embraces many aspects of EMSTF operations. Solutions with innovation and technology (I&T) elements, such as the Smart Fever Screening System and the Smart Prison solutions developed with clients, are obvious examples.

Equally important was nurturing a “smart” workforce and a “smart” working culture within the EMSTF. During the year, we added many I&T-inspired modules to our staff training programme, including modules using virtual reality and augmented reality technologies. Several Strategic Business Units (SBUs) created new, intelligent office spaces to encourage staff discussion, sharing and co-working. We also organised the first Inno@E&M Challenge, an internal competition which stimulated I&T proposals from staff, with financial support provided for the implementation of 24 winning proposals.

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我們為客戶提供服務的方式也變得更「智能化」。隨着營運基金的新組織架構於2018年10月1日正式生效，工作分配變得更為有效，能達致更佳的協同效應和更以客為本。舉例來說，我們把所有邊境設施和運輸工程歸入同一個策略業務單位，原因是這兩類工程服務息息相關，把兩者合併不但有助提升我們的服務效率，更能夠為客戶提供一站式便利。

在企業層面，我們新推出的「顧客為本電子平台 — 工作管理」(工作管理電子平台)系統，配合經革新的客戶服務中心，使營運基金無論在工作流程「智能化」和與客戶溝通方面，都邁進了一大步。客戶服務中心接到客戶的故障報告後，工作管理電子平台系統便會自動透過流動應用程式，把有關的維修工作分配給前線員工，以便迅速跟進。同樣地，前線員工也可隨時透過流動應用程式，以文字、相片和短片向客戶服務中心報告他們的工作進度，讓中心可以及時向客戶提供狀況更新，並迅速回應客戶的查詢，為他們提供最新資訊。

建立大灣區合作網絡

2018/19年度是我們推行第二個五年策略計劃的第一年。計劃的目標是透過數碼化、科技和協作，令營運基金邁進「機電2.0」的新時代。在這前提下，《粵港澳大灣區發展規劃綱要》正好為營運基金以至本港整個機電業界提供合時和寶貴的機會，讓其受惠於創科合作發展。

年內，機電署主動與大灣區不同機構簽訂各項合作安排，主要協議包括與廣州市工貿技師學院簽訂的合作備忘錄，加強雙方在培訓機電技術員和見習技術員方面的合作；以及與廣州市人力資源和社會保障局簽訂的合作備忘錄，加強穗港兩地在促進機電人才發展方面的合作。

事實上，作為聯合培訓的第一步，我們由2018年4月開始已陸續安排見習技術員和前線員工到廣州參加製冷機和空調維修的短期培訓課程，而在2019年年內，廣州方面也會持續為我們的見習技術員舉辦其他機電範疇的類似課程。內地的校企合作培訓模式，是由技術員培訓學校與企業合作，為企業員工度身訂造培訓課程，形式獨特，或可令本港的機電業界受惠。

Our service delivery to clients became “smarter” too. As the new EMSTF organisational structure took effect on 1 October 2018, work allocation has been streamlined for better synergy and sharper customer focus. A good example is putting all boundary facilities and transport services under the same SBU. As the two service categories are closely related, this enhances our efficiency and provides one-stop convenience for clients.

On a corporate level, our new Customer Centric e-Platform - Job Management (CCeP-JM) system and the upgraded Customer Service Centre (CSC) have together taken the EMSTF one big step forward in smarter workflow and client communication. As soon as the CSC receives a client's fault call, the CCeP-JM system will automatically allocate the repair job to frontline staff via a mobile app for prompt action. By the same token, frontline staff can report their job progress to the CSC anytime on the mobile app via text, photos and video clips. This enables the CSC to provide timely status updates to clients and respond promptly to requests for information.

Networking in the Greater Bay Area

The year 2018/19 was the first year of our second Five-year Strategic Plan. It aims to enable the EMSTF to move towards a new era of E&M 2.0 via digitisation, technology and collaboration. Under this context, the Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area presents a timely and valuable opportunity for the EMSTF and, indeed, Hong Kong's entire E&M sector to benefit from I&T co-development.

During the year, the EMSD took the initiative to sign various co-operation arrangements with GBA entities. The key ones included a memorandum of co-operation (MoC) with the Guangzhou Industry and Trade Technician College to strengthen collaboration in training E&M technicians and trainees; and an MoC with the Guangzhou Municipal Human Resources and Social Security Bureau to enhance collaboration in E&M talent development in both Hong Kong and Guangzhou.

In fact, as a first step in joint training, we have been sending technician trainees and frontline staff to Guangzhou to attend short training courses in chiller and air-conditioning maintenance since April 2018. Similar courses in other E&M disciplines for our technician trainees will be held in Guangzhou throughout 2019. The Mainland's model, under which technician training schools collaborate with enterprises to tailor specific training programmes for their employees, is quite unique and may benefit Hong Kong's E&M sector, too.

至於引入更多來自大灣區企業的創科解決方案和技術，我們正與廣東省科學技術協會、廣東省生產力促進中心和廣東省科學院溝通，探討創科合作機會。我們也計劃向大灣區的初創企業推廣我們的「機電創科網上平台」，使這些企業能因應本港政府部門及公營機構於平台上發布的願望清單，提交創科解決方案，以供配對。

年內，我們多次安排客戶部門和業界代表前往深圳、廣州和東莞考察，讓他們與大灣區機構建立直接聯繫，並親身體驗這些城市可以提供的技術，以加快本港公營機構在數碼轉型及智慧城市發展方面的步伐。

我們希望這些安排有助營運基金更有效地聚焦於數碼化和創新工作，朝着「機電2.0」的時代邁進，同時提升人才培訓質素，特別是技術員和見習技術員的培訓，並為香港引進更多來自大灣區研發機構和初創企業的創科解決方案。

實施第二個五年策略計劃

2018/19年度是機電工程營運基金推行第二個五年策略計劃的第一年，年內落實了多項工作，而「機電數碼化」、「培育團隊」及「科技·創新」三個策略都順利開展。這些策略旨在實現我們「機電2.0」的願景，以及落實「透過與不同持份者的伙伴關係，創造公眾價值及改善社會」的企業目標。

我們因應五年策略計劃而推出多項措施，當中較重要的例子包括前文提及的工作管理電子平台系統和經革新的客戶服務中心，兩者目前均運作暢順。下一步是要應付技術層面上的挑戰，這對於我們的數碼化轉型工作至為關鍵。有關工作包括把我們的資產管理系統數碼化、為企業電腦系統進行升級、為400多幢政府建築物建立綜合樓宇管理系統，以及成立區域數碼控制中心，對樓宇內的資產進行中央遙距監察。

As to introducing more I&T solutions and technologies from GBA entities, we are communicating with the Guangdong Provincial Association for Science and Technology, the Guangdong Productivity Centre and the Guangdong Academy of Sciences for I&T co-operation. We are also planning to publicise our E&M InnoPortal to GBA start-ups so that they may submit their I&T solutions in response to the wish-list items posted on the portal by government departments and public organisations in Hong Kong for matching.

To enable our clients and the trade to establish direct contact with GBA organisations, we organised several visits to Shenzhen, Guangzhou and Dongguan for client departments and the E&M trade during the year, allowing them to experience first-hand the technologies these cities can offer to expedite the digital transformation and smart city development of our public sector.

We hope that these arrangements will help us better target our digitisation and innovation work as we move towards E&M 2.0 while also enhancing the quality of our manpower development, especially for technicians and trainees, and introducing more I&T solutions from research institutions and start-ups in the GBA into Hong Kong.

Implementing the Second Five-year Strategic Plan

Much was achieved in the implementation of the EMSTF's second strategic plan in 2018/19, the first of the five-year initiative. A good start was made in each of the three strategies under the plan, namely "E&M Digitisation", "Excellent Work Team" and "Technology · Innovation". These strategies aim to achieve our vision of E&M 2.0 and the corporate goal of "creating public value for community betterment through partnership with different stakeholders".

Notable examples of initiatives contributing to the plan include the launch of the new CCeP-JM system and the upgraded CSC mentioned above, which are operating smoothly. The next step is to tackle technical challenges that will be critical to our digital transformation, including the digitisation of our asset management system, the upgrading of the corporate computer system, the deployment of integrated Building Management System (iBMS) solutions to more than 400 government buildings, as well as the setting up of regional digital control centres for centralised remote monitoring of the building assets.

業務回顧與前瞻

Operations Review and Outlook

這些數碼化系統正式投入運作後，會為我們提供所需的數據和資訊，更能加強為客戶的機電設施提供預測性維修保養服務，並採用以人工智能為基礎的數據分析技術，使有關機電設施的運作表現能維持於最佳水平。兩者均有助把營運基金的操作及維修服務提升至更高水平。

前瞻

我們的同事一直積極跟進與大灣區機構簽訂的各項合作安排，以充分發揮有關合作備忘錄的作用，利惠我們與各個合作伙伴的創新和共創工作。我們將繼續聚焦於聯合人才培訓和技術交流，兩者都是營運基金和本港機電業界極感興趣的合作範疇。

此外，我們正計劃在2019/20年度簽訂更多合作備忘錄，例如我們將與五所本地大學及七間科研機構簽訂合作備忘錄，以建立機電創科聯盟；我們亦分別與廣東省科學技術協會及廣東省生產力促進中心簽訂合作備忘錄，這將是我們首次與大灣區機構簽訂創科合作安排。在2019年稍後時間，我們更會與廣東省科學院簽訂另一項創科合作備忘錄。

對於我們日益擴大的大灣區合作網絡，以及其為所有相關各方帶來的潛在效益，我們深感興奮。

致謝

根據營運基金最新的2018年客戶意見調查，客戶滿意指數達6.61分(以8分為滿分計)，創歷史新高，反映了客戶對我們的信任和支持，我們謹此衷心致謝。

我們必須感謝全體員工過去一年的貢獻和承擔，他們以積極實幹的精神，迎接不斷增加的工作項目。我們特別感謝同事在去年9月超強颱風「山竹」襲港期間，不眠不休地工作，令颱風對客戶機電系統的影響減至最低，並在風暴過後進行搶修，使各項設施的運作能盡快回復正常。

Once up and running, these digitised systems will provide us with the necessary data and information, enabling us to step up predictive maintenance for our clients' E&M facilities and adopt artificial intelligence-based data analytics to upkeep the operational performance of the plants at the best level. Both of these will take our operation and maintenance service to a new level.

A Preview

Our colleagues have been busy following up on the various co-operation arrangements established with GBA organisations so that our MoCs can be leveraged to the fullest extent to help us and all our partners innovate and co-create. Our focus will continue to be on joint manpower training and technology exchange, which are of great interest to the EMSTF and the local E&M trade.

Besides, we are planning to sign more MoCs in 2019/20, such as five with local universities and seven with research institutions to form an E&M-I&T alliance, another one with the Guangdong Provincial Association for Science and Technology and one with the Guangdong Productivity Centre. The latter two MoCs will be our first I&T co-operation arrangements with GBA organisations, to be followed by another MoC with the Guangdong Academy of Sciences on I&T collaboration later in 2019.

We are excited about our growing GBA co-operation network and its potential benefits for all parties concerned.

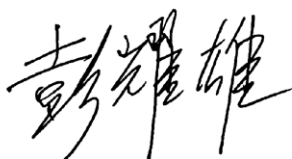
Special Thanks

The EMSTF would like to express our deep appreciation and gratitude to our clients for their trust and support, as reflected in the record-high Customer Satisfaction Index of 6.61 on a scale of 8 in our latest Customer Opinion Survey 2018.

We must thank all our staff for their dedication and can-do spirit in taking on an expanding portfolio of projects in the past year. Special thanks also go to colleagues who worked tirelessly last September to minimise the impact of super typhoon Mangkhut on clients' E&M systems and restore their normal operation as soon as possible after the storm.

有賴常務委員會和各個決策局的指導和支持，特別是對於我們擔當政府和公營機構「創新促成者」的新角色所給予的意見，機電工程營運基金方能保持穩定表現。我們衷心感謝機電業各行業組織、大學、學者、專業團體及培訓與研發機構提供的寶貴意見和支援。我們也感謝各顧問和承辦商，以及所有與我們簽訂合作備忘錄的本港和大灣區其他城市的合作伙伴。

展望來年，我們期待與各持份者進一步合作，繼續邁向「機電2.0」的新里程。



彭耀雄
機電工程署副署長/營運服務

The EMSTF's steady performance would not have been possible without the guidance and support of the Executive Board and policy bureaux, particularly in our new role as Innovation Facilitator for the Government and public sector. A big thank-you also goes to the trade associations, universities and academics, professional bodies and training and research institutions that gave us sound advice and support, to our consultants and contractors, as well as to all our co-operation partners in Hong Kong and other GBA cities under the various MoCs.

We look forward to collaborating further with all our stakeholders as we continue our journey towards E&M 2.0 in the coming year.



Pang Yiu-hung
Deputy Director/Trading Services, EMSD

營運服務

Trading Services

活力都會生活

香港生活節奏明快，充滿活力，是極富動感的國際都會。我們很高興能夠在這個大都會擔當重要角色，為多個政府部門的機電設施提供操作及維修保養服務，讓每位香港市民都可享受到世界級的都市生活，並體驗林林總總的市政、文化和休閒活動。

2018/19年度的亮點之一，是為香港藝術館的大型擴建及修葺工程項目完成機電工程。經過整整四年的翻新工程，全新面貌的藝術館將於2019年11月重新開放。擴建後，藝術館的展覽空間大幅增加約四成，達到10 000平方米，另新增四個展覽廳，使總數達12個。此外，藝術館還增建了新翼大樓，內設樓高九米、可供展示大型藝術品的展覽廳。

我們的團隊在整項翻新工程中一直悉力以赴，為康樂及文化事務署提供協助，就所有機電系統及設施(包括空調、閉路電視及廣播系統和傳感器)提供意見，確保能夠為展品提供最理想的溫度和濕度，而客戶對我們的表現亦表示讚賞。

年內另一個令人興奮的項目，是為2018年兩度發生火警的香港仔漁光道街市熟食中心，引進紫外光C結合臭氧技術的廚房排煙系統。我們為食物環境衛生署(食環署)提供嶄新解決方案，當油煙進入管道篷罩，結合紫外光和臭氧的技術便能於數秒鐘內將油煙的油分子迅速分解。紫外光和臭氧能把油分子化成水、氧氣、二氧化碳和聚合油脂等非黏性物質，有效防止油脂積聚在排煙管道內壁上。

我們為翻新後的香港藝術館「新空間」安裝多款射燈，以配合不同類型展覽的需要。射燈能沿着天花板上的軌道移動，並以電腦調校光暗。

We installed a variety of spotlights for "The Lab" of the renovated Hong Kong Museum of Art to cater for the needs of different types of exhibitions. The spotlights are movable along the tracks underneath the ceiling and are dimmable by computers.

City of Vitality

Upbeat and cosmopolitan, the Hong Kong lifestyle is among the most vibrant in the world. We are delighted to play a key role in operating and maintaining the E&M facilities of many government departments so that all people in Hong Kong can enjoy world-class urban living with a wide range of municipal, cultural and leisure activities.

A highlight in 2018/19 was the completion of E&M works for the major expansion and facelift of the Hong Kong Museum of Art, which will re-open in November 2019 after a four-year closure for renovation. The upgraded facility will provide 10 000 square meters of exhibition space, an increase of about 40%, with four new galleries to take the total to twelve. A new annex block has also been added, accommodating a nine-meter high gallery to display large-size artworks.

Our team supported the Leisure and Cultural Services Department throughout the renovation project, winning client's appreciation for our advice on all E&M systems and facilities, including air-conditioning, closed-circuit television and public address systems and sensors, to ensure optimal temperature and humidity for artworks on display.

Another exciting development in the year was the introduction of ultraviolet-C and ozone (UV-CN) kitchen exhaust treatment system at the Yue Kwong Road Market Cooked Food Centre in Aberdeen, where two fires broke out in 2018. Our innovative solution for the Food and Environmental Hygiene Department (FEHD) combines UV light and ozone technologies to decompose grease molecules in oily fumes within a few seconds of the fumes entering the canopy hood. UV-C light and ozone break down the grease molecules into non-sticky substances – water, oxygen, carbon dioxide and polymerised grease – to prevent grease from building up on the inner walls of the exhaust ductwork.





可移動式浸洗缸是一項新引入食環署轄下熟食中心的創新應用方案，利用超聲波清洗濾油隔。我們的同事正在示範如何使用浸洗缸，並展示用後的效果。

Our colleagues are demonstrating the use of a mobile soak tank and its cleaning results. The tank, which is an innovative application introduced to the FEHD's cooked food centre, uses ultrasound to clean oil filters.



我們正在檢查新安裝於漁光道街市熟食中心的紫外光C及臭氧設備，該設備以紫外光及臭氧分解油煙分子，減少管道內的油脂積聚。

We are inspecting the UV-CN equipment newly installed at the cooked food centre of the Yue Kwong Road Market, which uses UV-C light and ozone to decompose oily fume molecules and reduce accumulation of grease inside ductwork.

新系統經過一個月的測試並證實成功後，即在上述熟食中心的所有熟食攤檔全面安裝，而其後熟食中心已於2019年4月重新開放。我們也藉此機會改善排氣管道的設計，加裝活門以方便檢查和清潔管道內壁。新系統大大減低了熟食中心發生火警的風險，也提升了客戶對採用新科技的信心。

After a successful one-month pilot, the system was installed at all the cooked food stalls at the above-mentioned cooked food centre prior to its re-opening in April 2019. We also took the opportunity to improve the ductwork by adding an access door for easier checking and cleaning of the inner walls. The new system has greatly reduced potential fire hazards at the venue and boosted the client's appreciation for new technologies.

此外，我們正在開發另一相關的創新方案，就是利用超聲波清洗安裝在排煙管道篷罩中的濾油隔。針對積聚大量油脂的濾油隔，使用苛性鈉或水濼機等傳統方法是無法洗淨的。我們採用的新方法很簡單，就是把濾油隔放入與超聲波儀器連接的浸洗缸中，通過超高頻的超聲波震動洗滌，不用十分鐘便能把濾油隔徹底清洗乾淨。我們已在食環署轄下幾個街市進行該方案的原型設計示範，成效令客戶及熟食攤檔主十分滿意。我們現正與客戶及顧問公司跟進測試事宜，以及進行可行性研究和制訂策略性實施計劃。

In a related development, we are exploring an innovative solution that uses ultrasound to clean the oil filters installed in canopy hoods of exhaust systems. Traditional methods using caustic soda or water scrubbers are ineffective on oil filters with heavy grease build-up. Our new method is simple, by which the greasy oil filter is put into a soak tank connected to an ultrasound generator, and the filter is perfectly cleaned in less than ten minutes through super-high-frequency ultrasonic scrubbing. We have demonstrated the prototype at a few FEHD markets, to the satisfaction of the client and stall operators. We are now working with the client and consultant on further trials, a feasibility study and a strategic implementation plan.

我們的團隊為入境事務處的智能身份證換領中心裝設空調、屋宇裝備及其他相關設施，以支援換證中心的運作。

Our team equipped the Immigration Department's Smart Identity Card Replacement Centres (SIDCCs) with air-conditioning, building services and other related facilities to support the operation of the SIDCCs.



營運服務

Trading Services

隨着九個智能身份證換領中心(換證中心)順利移交入境事務處(入境處)，全港市民換領身份證計劃已如期於2018年年底展開。我們的團隊確保全部換證中心均妥為設計，並配備可靠的空調、屋宇裝備系統及所有相關設施，以便入境處能順利提供換證服務。

為推廣創新及科技(創科)，並幫助客戶為營運工作進行數碼化，藉此提升公共服務質素及效率，我們的工程師團隊不斷探索各種各樣的創科解決方案，而「智能眼碌碌」空調控制系統就是其中一例。這系統利用影像分析技術，實時收集人流數據，因應人流變化而自動調校空調風速，為公眾人士提供更舒適環境。

另一項創新解決方案是應用影像分析技術監控火化爐的運作。由於火焰顏色的變化能顯示火化過程的進度，我們的系統可以透過監察有關變化，縮短火化時間，從而優化燃料運用和減少廢氣排放。此外，我們的團隊亦正研發一個利用物聯網技術操作的時間顯示系統，利便在康樂場地收集和共享數據。

The Territory-wide Identity Card Replacement Exercise commenced as scheduled in late 2018 after the timely handover of nine Smart Identity Card Replacement Centres to the Immigration Department (ImmD). Our team made sure that the centres were properly designed and equipped with reliable air-conditioning, building services systems and all related facilities necessary for the smooth operation of the identity card replacement service by the ImmD.

As part of our efforts to promote innovation and technology (I&T) as well as help clients digitise their operations and provide better quality and efficient service to the public, our engineers have been exploring a variety of I&T solutions. The NeuroSmart Eyes Air-conditioning Control System, for example, uses video analytics technology to collect real-time data on people flow and adjust the air-flow rate accordingly, thus providing a more comfortable environment for the public.

Another innovative solution is applying video analytics technology to monitor cremator operation. By monitoring flame colour patterns, which indicate the progression of the cremation process, the system can optimise fuel utilisation and reduce emissions by shortening the cremation time. Also in the pipeline is an Internet of Things clock project at recreational venues that can facilitate data collection and sharing.

我們為水務署於天水圍新落成的水資源教育中心提供空調及供電系統的維修保養服務。

We provide maintenance services for the air-conditioning and power supply systems in the newly completed Water Resources Education Centre of the Water Supplies Department in Tin Shui Wai.



過去一年，我們與古物古蹟辦事處簽訂了新的服務水平協議，而在水務署新水資源教育中心的工作也接近完成。這座全新的大樓樓高六層，既是水資源教育中心的所在處，也是水務署新界西區辦事處，預計於2019年稍後時間啟用。

展望未來，東九文化中心將於2019/20年度後期落成，屆時我們會成立新的駐場團隊，負責其機電設施的操作及維修保養工作。待東九文化中心正式啟用後，大會堂低座將進行大型改善工程，我們現正就此作出準備。同時，香港郵政也計劃重置空郵中心，這將會是為其郵件分揀系統及其他郵政設施進行進一步數碼化及優化的良機。

Last year also saw the signing of a new Service Level Agreement (SLA) with the Antiquities and Monuments Office. Our work on the new Tin Shui Wai Water Resources Education Centre is also nearing completion. Scheduled for opening later in 2019, this new six-storey building will also serve as the New Territories West Regional Office of the Water Supplies Department.

Looking ahead, with the completion of the East Kowloon Cultural Centre (EKCC) in late 2019/20, we shall be setting up a new resident team to operate and maintain the E&M facilities therein. We are also preparing for major upgrading works at the City Hall Low Block upon the opening of the EKCC. Meanwhile, Hongkong Post is planning on reprovisioning the Air Mail Centre, which will be an opportunity to further digitise and upgrade its mail sorting system and other postal facilities.

舒適室溫 時刻做到 Comfortable Temperature at All Times

市政工程部工程師林壽星先生及其團隊成員所開發的「智能眼碌碌」空調控制系統，贏得香港工程師學會青年會員創意獎2019的優異獎。

The NeuroSmart Eyes Air-conditioning Control System developed by Mr Lam Sau-sing, an engineer at Municipal Sector Division, and his teammates won a merit award in the Hong Kong Institution of Engineers Innovation Awards for Young Members 2019.



博物館和展覽廳等場地的空調系統常有的問題，就是難以估計訪客人數，加上訪客在一天不同時間到訪，以致空調系統往往不能緊隨訪客數目變化而迅速調校溫度，令場地出現過暖或太冷的情況。有見及此，當市場上出現影像分析技術的時候，市政工程部工程師林壽星先生便與能源效益事務處兩位工程師組成一支團隊，嘗試把影像分析技術應用於空調控制系統，目的是運用更具智能和更迅速的方法調校溫度。

團隊終於成功研發「智能眼碌碌」空調控制系統，並獲頒發「香港工程師學會青年會員創意獎2019(組別II—創新應用)優異獎」。這系統運用影像分析技術，實時收集人流數據，並根據人羣密度的變化，迅速調校空調風速，為公眾提供更舒適的環境，特別適用於大型展覽廳或其他會不時出現人流變動的場地。

林先生表示：「這個項目概念已獲客戶同意，我們期望於2020年在科學館某個預定範圍測試相關技術。」

今次這個項目是由跨部別和跨工程學科的三人團隊研發，期間各人從不同的角度應對各種挑戰，林先生很享受參與過程。他們的下一步工作，是編寫項目軟件，使系統得以全面實施。

林先生的日常職責，是監察太空館、科學館、香港藝術館和即將落成的東九文化中心的機電設施的操作及維修保養工作。他期待「智能眼碌碌」空調控制系統全面投入服務，讓廣大市民享受舒適的環境。

A challenge with air-conditioning systems in venues such as museums and galleries where visitor numbers are unpredictable and vary throughout the day is that temperature adjustments in response to the visitors' visiting pattern occur too slowly, leaving the venues either too warm or too cold. When video analytics technology became available in the market, Mr Lam Sau-sing, an engineer with our Municipal Sector Division, formed a team with two engineers from the Energy Efficiency Office to try applying the technology to air-conditioning systems. The aim is to make temperature adjustments smarter and faster.

The outcome is the NeuroSmart Eyes Air-conditioning Control System, which won a merit award in the Hong Kong Institution of Engineers Innovation Awards for Young Members 2019 (Category II – An Innovative Application of Engineering Theories). The system is particularly suitable for large exhibition halls and other venues with dynamic changes in people flow. Using video analytics, the system can collect real-time data on people flow and promptly adjust the air-flow rate according to changes in crowd density, providing a more comfortable environment for the public.

"The client has already endorsed the concept, and we expect to try out the technology in a section of the Science Museum in 2020," Mr Lam said.

Mr Lam enjoys working in this cross-division, multi-discipline project team, where all of the three team members bring different perspectives to tackle challenging issues. Their next step is to develop the software so that the project can be implemented at full scale.

As Mr Lam oversees the operation and maintenance of E&M facilities at the Space Museum, the Science Museum, the Hong Kong Museum of Art and the forthcoming East Kowloon Cultural Centre in his daily work, he looks forward to the day when the NeuroSmart Eyes Air-conditioning Control System is up and running for the enjoyment of all.

營運服務

Trading Services

促進創新及科技

為配合政府推動創新及科技(創科)的策略，營運基金擔當政府創科發展促成者的角色，在2018/19年度取得重大進展。

我們於2018年年初成立專責推動創科發展的創新辦公室，年內推出多項措施，以加快政府部門、公營機構及創科初創企業之間的配對和協作。我們的「機電創科網上平台」已上載了來自政府及公營機構數以百計的創科願望清單，並且透過羅列各政府部門及公營機構在創科方面的服務需求，以便與初創企業、大學和研究機構所提供的創科解決方案進行配對。年內，十多個成功配對的項目已在機電工程署總部大樓及其他政府場地展開原型測試。其中一個例子是智能外牆薄膜，這是一種安裝在窗戶上的特殊薄膜，可根據室內光度自動調節窗戶遮蔽度，以提高能源效益。另一例子是智能實時電池狀態和健康診斷系統，有助監察位於偏遠地方的太陽能街燈的功能。我們已支持一所本地大學就這個項目向「創新及科技支援計劃」申請資助，以在上水梧桐河進行測試。我們亦正對監察升降機震動情況的傳感器進行試驗，以便預測故障。

此外，創新辦公室還在機電工程署總部大樓設立了「機電創科專區」，展示政府部門、初創企業和大學之間的各项創科協作項目。其中一個大受訪客歡迎的互動展品為「洞穴式自動虛擬環境」系統。這系統以虛擬實境技術創建虛擬手術室，利便機電維修人員進行培訓。

Facilitating Innovation and Technology

In line with the Government's strategy to promote innovation and technology (I&T), the EMSTF made major strides in 2018/19 in its role as a facilitator of I&T development for the Government.

Our dedicated Inno-Office, established in early 2018, embarked on many initiatives during the year to expedite matching and collaboration among government departments, public bodies and I&T start-ups. Hundreds of wish-list items from the Government and the public sector have been uploaded onto the E&M InnoPortal, an online platform that publishes needs from government departments and public organisations for matching with I&T solutions provided by start-ups, universities and research institutions. Trial tests for over ten prototypes commenced during the year at the EMSD Headquarters Building and other government premises. One example is the smart façade, which is a special film mounted on windows that automatically adjusts the window opacity according to the indoor illumination level to enhance energy efficiency. Another example is the smart real-time battery state and health diagnostics system which facilitates monitoring of the functions of solar lamp posts in remote areas. We have supported a local university to apply for funding under the Innovation and Technology Support Programme to test the system at Ng Tung River in Sheung Shui. We are also conducting trial tests on sensors that monitor lift vibration for fault prediction.

Besides, the Inno-Office has also set up an E&M InnoZone in the EMSD Headquarters Building to showcase various I&T project collaborations among government departments, start-ups and universities. One of the interactive exhibits popular with visitors is the Cave Automatic Virtual Environment system, which features a virtual operating theatre using virtual reality technology to facilitate the training of E&M maintenance personnel.



360°

http://bit.ly/emsd_emiz



位於機電署總部大樓4樓的「機電創科專區」設有展覽區，展示我們與初創企業、大學及研發機構的創科協作項目，當中包括「洞穴式自動虛擬環境」及無人航拍機檢測設施。

There is an exhibition area in the E&M InnoZone on the 4/F of the EMSD Headquarters Building to showcase our I&T collaborative projects with start-ups, universities and research institutions, including the Cave Automatic Virtual Environment and the testing facility for unmanned aerial vehicles.

繼2017年成功舉辦第一屆「創新科技日」後，我們於2018年6月舉辦第二屆「創新科技日」，邀請了十間設於香港科學園的初創公司，向不同政府部門和公營機構展示他們的研發成果和應用意念。機電工程署亦於今年4月正式成為政府的「創新促成者」，為我們日後在推廣創科方面的工作鋪路，奠下了重要的里程碑。

然而，推廣創科的工作並非只是創新辦公室的責任，營運基金所有策略業務單位也會同心協力，做好有關工作。舉例來說，我們的綜合工程部正帶頭推行一項為期五年的計劃，透過採用綜合樓宇管理系統方案，為400多幢政府建築物的機電設備進行數碼化工程。我們的目標是在2019年年底前建立一個區域數碼控制中心，集中和遙距監察選定場地的綜合樓宇管理系統，並於2020年前完成36座建築物的數碼化工作。當區域數碼控制中心及各個綜合樓宇管理系統開始運作後，前線員工便可進行遙距監察及故障通報，而我們將能把數據分析法應用於機電系統上，逐步落實預測性維修保養工作。



以地理資訊為基礎建立的數碼文檔記錄系統，有助我們的工程人員快速獲取各項機電設施的技術資訊，以便進行維修工作。

The Geographic Information System-based digital documentation system assists our engineering staff in quickly obtaining the technical information of various E&M facilities to facilitate maintenance work.

Following the success of the first Innovative Technology Day held in 2017, a second one was held in June 2018, in which ten start-ups from the Hong Kong Science Park were invited to showcase their R&D results and application ideas to different government departments and public organisations. In April this year, the EMSD was also assigned as Innovation Facilitator for the Government, a significant milestone that paves the way for the EMSD's work in I&T promotion in the coming years.

It should be noted, however, that I&T promotion is not a task limited to the Inno-Office but the concerted effort of all our Strategic Business Units (SBUs). Our General Engineering Services Division, for example, is spearheading a five-year initiative to digitise the E&M equipment of more than 400 government buildings with the deployment of integrated Building Management System (iBMS) solutions. Our target is to set up a Regional Digital Control Centre (RDCC) for centralised remote monitoring of the iBMS systems of selected venues by the end of 2019 and to complete the digitisation of 36 buildings by 2020. With the RDCC and multiple iBMS systems in place, frontline staff will be empowered to perform remote monitoring and fault reporting, and we will be able to apply data analytics on E&M systems and move towards predictive maintenance.



同時，我們正開發一套以地理資訊系統為基礎的數碼文檔記錄系統。這系統能協助員工即時識別位置，並準確地檢索和詮釋被定位建築物的技術資訊，包括圖則、保養維修手冊及記錄等，對於機電人員接收新建建築物的日常維修保養工作大有幫助。

At the same time, a Geographic Information System-based digital documentation system, which can help with the identification of locations immediately and enable the accurate retrieval and contextual interpretation of technical information (including drawings, maintenance manuals and records, etc.) of a located building, is being developed. It will be very useful for E&M personnel when taking over the ongoing maintenance of new buildings.

營運服務

Trading Services

營運基金近年率先開發「建築信息模擬 — 資產管理」技術，並把有關技術推廣至業界，以應用於機電設施的維修保養工作。我們於2017年11月出版了首份《建築信息模擬 — 資產管理標準及指引》，為各政府部門及業界提供實用參考，例如供建造業議會在擬備《建築信息模擬標準 — 機械、電氣及管道》時作參考之用。2019年1月，我們採納業界有關實施「建築信息模擬 — 資產管理」系統的意見，推出了2.0版。

事實上，我們已開始在整座機電工程署總部大樓實施「建築信息模擬 — 資產管理」系統，為機電系統進行維修保養。我們現正為西九龍政府合署、天水圍醫院及香港兒童醫院等多幢新落成的政府及公共建築物建造有關系統。

透過「建築信息模擬 — 資產管理」系統，我們的工程人員只需使用平板電腦，便可以隨時隨地獲得整座香港兒童醫院的機電設施資訊。

Through the Building Information Modelling - Asset Management system, our engineering personnel can obtain information about E&M facilities of the entire Hong Kong Children's Hospital anytime and anywhere by simply using a tablet.

The EMSTF has pioneered the development of Building Information Modelling – Asset Management (BIM-AM) technology and promoted it to the trade for E&M maintenance in recent years. We published the first BIM-AM Standards and Guidelines in November 2017, which provides useful reference to all government departments and the trade, such as for preparing the Construction Industry Council Building Information Modelling Standards for Mechanical, Electrical and Plumbing. In January 2019, Version 2.0 was launched, incorporating feedback from the trade regarding the implementation of BIM-AM system.

Indeed, we have commenced the implementation of BIM-AM system in the entire EMSD Headquarters Building for the maintenance of E&M systems. We are now building the BIM-AM system for several new government and public buildings, such as West Kowloon Government Offices, Tin Shui Wai Hospital and Hong Kong Children's Hospital.

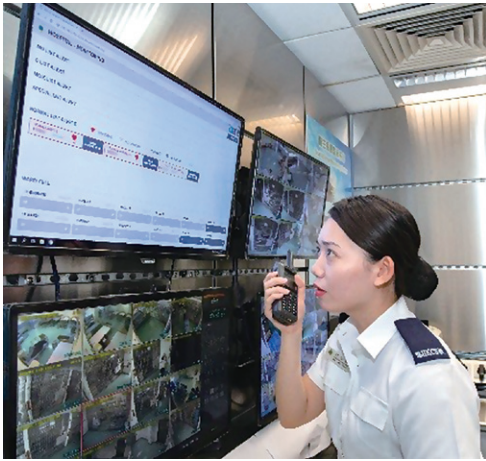


營運基金亦致力把實時技術加入「建築信息模擬 — 資產管理」系統，以便遙距監控機電設備。2019年，我們成功透過「建築信息模擬 — 資產管理」平台完成了建築信息模擬和物聯網技術的試用界面，使物聯網技術能補充目前樓宇管理系統未能涵蓋的信息，根據實際使用情況進一步優化機電系統的運作，以便落實智能工作間的措施。

政府於2017年公布《香港智慧城市藍圖》後，營運基金便一直致力協助推行當中載述的各項措施。在「智慧出行」方面，我們一直與運輸署合作，安裝交通探測器及多線道路不停車繳費系統，同時也為該署就電子道路收費系統進行的研究提供支援，特別是該系統日後運作所需的車內儀器。

The EMSTF also makes every endeavour to integrate real-time technologies into the BIM-AM system to facilitate remote monitoring of E&M equipment. In 2019, we successfully completed the trial interface of BIM and Internet of Things (IoT) technology through the BIM-AM platform. With this interface, IoT technology can supplement the information which is not covered by the current building management system to further optimise the operation of E&M systems according to actual usage for smart workplace initiatives.

The EMSTF has been working to help implement the various initiatives set out in the Government's Hong Kong Smart City Blueprint published in 2017. On "Smart Mobility", we have been working with the Transport Department on the installation of traffic detectors and multi-lane free-flow tolling system. Meanwhile, we are also supporting the Transport Department in its study of an electronic road pricing system, in particular an in-vehicle unit that will enable the system to function in the future.



我們與懲教署合作推動發展「智慧手帶」，協助懲教署職員了解在囚人士的身體健康狀況。

We collaborated with the Correctional Services Department (CSD) to develop a Smart Wristband, assisting the CSD officers to understand the health conditions of persons in custody.

在「智慧政府」方面，我們的智慧監獄項目和智能發燒偵測系統均曾獲獎，且是利用創科協助政府部門提高營運效率的好例子。至於「智慧環境」，我們除了使政府建築物及場地更智能化和更具能源效益外，亦參與了一項先導計劃，為起動九龍東辦事處安裝智慧燈柱，監察路邊空氣質素及相關排放物的數量。與此同時，我們的團隊也參與在安達臣道石礦場重建用地興建物聯網基礎設施的籌備工作。

For “Smart Government”, our award-winning Smart Prison project and the Smart Fever Screening System are good examples of using I&T to help government departments operate with greater efficiency. As to “Smart Environment”, in addition to making government buildings and venues more intelligent and energy efficient, we have also participated in a pilot project to erect smart lamp posts for the Energizing Kowloon East Office to monitor roadside air quality and related emissions. At the same time, our team is involved in preparations to build an IoT infrastructure at the Anderson Road Quarry redevelopment site.

我們亦透過採購安排推廣創科。為配合最新的《施政報告》，政府於2019年4月推出支持創新的採購政策，使提出創新方案的標書有更大機會贏得政府合約。同時，政府將加強與創科初創公司和中小型企業交流，並改善發放有關採購資訊的方法，以協助他們參與政府採購。

Promotion of I&T can also be achieved through procurement arrangements. In line with the latest Policy Address, the Government introduced a pro-innovation procurement policy in April 2019, giving innovative proposals a better chance of winning government contracts. The Government will also enhance exchange with I&T start-ups and small and medium-sized enterprises as well as improving the dissemination of procurement information to facilitate their participation in government procurement.

「機電創科網上平台」正好配合支持創新的採購政策，為創科解決方案的供應方（初創企業、大學和研究機構）及需求方（政府部門和公營機構）提供平台，就特定創科解決方案進行市場研究，是加快採購過程的重要一步。

The E&M InnoPortal will be an excellent tool to support the pro-innovation procurement policy as it provides a platform for both the supply side (start-ups, universities and research institutions) and the demand side (government departments and public organisations) to conduct market research for specific I&T solutions, which is an important step to accelerate the procurement process.

至於部門內部，創新辦公室在2018/19年度舉辦了多項活動，培養部門的創新文化，「Inno@E&M 創新科技挑戰賽」便是其中一例。這個內部比賽邀請機電署員工提交具潛質的創科建議，而部門則會提供資金及人手，讓得獎隊伍實施有關項目。比賽共有24個優勝項目將會落實推行，每個項目均為市場上未有提供的創科解決方案，有助滿足客戶的需要。此外，多個策略業務單位進行了辦公室翻新工程，在設計上融入鼓勵創新文化的元素，打造大量開放的连接空間，有利員工進行討論、分享和協作。

Internally, the Inno-Office organised various events during 2018/19 to foster our I&T culture, a notable one being the Inno@E&M Challenge, an internal competition which invites potential I&T proposals from EMSD staff and provides winning teams with funding and manpower for project implementation. A total of 24 winning projects will be implemented, each delivering an I&T solution which is not yet available in the market and helps fulfill our clients' needs. Many SBUs have also renovated their offices with pro-innovation design features, offering plenty of open, connected spaces conducive to staff discussion, sharing and co-working.

展望2019/20年度，機電工程署將會就創科發展等範疇簽署多項合作協議；而創新辦公室會繼續優化「機電創科網上平台」，並加強創科方面的聯繫交流活動。

In 2019/20, the EMSD will sign various co-operation agreements in such areas as I&T development, while the Inno-Office will continue to enrich the E&M InnoPortal and step up its I&T networking activities.

營運服務

Trading Services

創新辦公室促進創新及科技 Inno-Office Boosts Innovation and Technology

高級工程師林鑫駿先生一直對創新科技發展充滿熱誠，致力提升創新辦公室的潛力和推動機電署的創新文化。

Mr Tommy Lam Kam-chun, a senior engineer, has always been passionate about the development of innovation and technology, striving to enhance the potential of Inno-Office and promote a culture of innovation in the EMSD.



自2018年2月機電署成立創新辦公室以來，高級工程師林鑫駿先生對於客戶部門在應用創科方面的積極反應，以及對創新辦公室在培養部門的創新文化方面取得的成績，感到十分鼓舞。

林先生說：「政府於2019年4月正式確認機電署為政府部門的『創新促成者』，我們即抓緊時間，協助客戶部門物色本地初創企業和大學的創科解決方案。另外，我們也以機電署總部大樓作為試驗場地，讓初創企業和大學測試其產品原型，藉此填補香港創科生態系統的不足。」

創新辦公室的宗旨，是為香港打造一個以需求為主導的創科生態系統，促進概念驗證的過程和擴大其規模，從而加快創新的速度，使其更為有效。創新辦公室除了推出「機電創科網上平台」，為客戶的科技發展需要與創科解決方案進行配對外，更在機電署總部大樓設立「機電創科專區」，展示配對過程中產生的創科解決方案。過去一年多以來，創新辦公室成功舉辦了兩屆「創新科技日」。稍後，機電署將分別與五所本地大學和七間研究機構簽訂12份合作備忘錄。粵港澳大灣區市場龐大，創科實力雄厚，機遇處處。「機電創科網上平台」會在適當時候開放予大灣區的初創企業，此舉應有助擴大香港機電業界至大灣區。

創新辦公室架構精簡，由機電署數碼科技部的同事提供技術發展支援。林先生感謝一眾同事對創新辦公室的支持，以及機電署管理層對創科發展的承擔，使其團隊敢於作出新嘗試。

他說：「大家對創新辦公室的期望甚高，因此確有壓力，但我們會繼續努力加把勁，只要是關於創新的工作，我們都會全力以赴去做。」

Ever since setting up the EMSD's Inno-Office in February 2018, Mr Tommy Lam Kam-chun, our senior engineer, has been thrilled by client departments' enthusiasm for the adoption of I&T and energised by the accomplishment of the Inno-Office in fostering the Department's innovation culture.

"Formally recognised by the Government as an Innovation Facilitator for government departments since April 2019, the EMSD has lost no time in helping client departments explore I&T solutions from local start-ups and universities," said Mr Lam. "We also fill an important gap in Hong Kong's I&T ecosystem by making available our headquarters building as a venue for start-ups and universities to conduct trial tests of their product prototypes."

The Inno-Office aims to nourish a demand-driven I&T ecosystem for Hong Kong and expedite and scale up the proof-of-concept process, thus speeding up innovation and making it more effective. It has launched an online platform, the E&M InnoPortal, to match the technology development needs with I&T solutions. An E&M InnoZone has also been set up at the EMSD Headquarters Building to showcase I&T solutions arising from this matching process. Over the past year or so, the Inno-Office successfully organised two Innovative Technology Days. Also, the EMSD will sign 12 memoranda of co-operation with five local universities and seven research institutions. The Greater Bay Area (GBA), with its enormous market and strong I&T capabilities, presents another opportunity. The E&M InnoPortal will be opened to GBA start-ups when the time comes, which should also help Hong Kong's E&M sector expand into the GBA.

With a slim structure, the Inno-Office receives technology development support from colleagues in the EMSD's Digitalisation and Technology Division. Mr Lam is grateful to fellow colleagues for their support to the Inno-Office and the EMSD management for its commitment to I&T development, which empowers his team to try out new ideas.

"Expectations are high, and the pressure is real, but we will continue to step up to take responsibility for all things innovation."

小手帶大任務 Small Wristband Takes on Big Tasks

保安及車輛工程部工程師張家麒先生和他的團隊成員一直支援懲教署開發智慧監獄系統，該系統在第47屆日內瓦國際發明展榮獲金獎。

Mr Cheung Ka-kei, an engineer at Security and Vehicle Services Division, and his teammates have been supporting the Correctional Services Department in developing the Smart Prison System which won a Gold Medal in the 47th International Exhibition of Inventions of Geneva.



保安及車輛工程部工程師張家麒先生認為機電署能成功發揮促成者的角色，提升客戶對創科解決方案的興趣。他說：「機電署於2017年12月舉辦首個『創新科技日』，當天展出的創科項目，令出席的懲教署高層管理人員留下深刻印象，後來更決定投放更多資源發展創科項目，以提升部門的運作效率。」

由於香港的人力資源緊絀，創科對懲教署這類客戶部門確是非常吸引的選擇，既可為一些合適的人力密集工序進行自動化，又不會影響保安水平。舉例來說，張先生的團隊一直支援懲教署開發智慧監獄系統，其中的「智慧手帶」更具備維生指標監察系統和移動及位置監察系統功能。「智慧手帶」能透過量度在囚人士的心跳率，讓懲教署職員監察其健康狀況。手帶也可監察在囚人士在監獄內指定路線上的準確位置，讓押送人員可騰出時間處理其他工作。

「智慧手帶」於2019年4月舉行的第47屆日內瓦國際發明展上獲評判高度評價，並贏得金獎。

張先生表示：「有別於大部分場地，懲教院所如要採用創科方案，可能需要改動某些運作程序。」換言之，懲教署須仔細分析應用創科對院所運作帶來的變化，務求使創科能提升日常工作的管理及運作效率。張先生目前正與懲教署合作，試行「智慧手帶」，並與一間初創企業合作，為懲教署的監獄打造一個巡邏機械人。

張先生說：「我們很高興香港的創新技術應用獲得國際認同，而客戶部門採取由上而下的方式應用創科，大概是最有效的方法。」

Mr Cheung Ka-kei, an engineer at our Security and Vehicle Services Division, considered that the EMSD had been fulfilled its facilitating role in enhancing clients' interest in I&T solutions. "The senior management of the Correctional Services Department (CSD) was so impressed by the I&T projects showcased at the EMSD's first Innovative Technology Day in December 2017 that the Department began investing more in I&T projects to make its operations more efficient," Mr Cheung said.

Given Hong Kong's tight manpower supply, I&T is an attractive option for clients such as the CSD to automate suitable labour-intensive procedures without compromising security. For example, Mr Cheung's team has been supporting the CSD in its development of a Smart Prison System, with the Smart Wristband functioning as Health Signs Monitoring and Passage Surveillance Systems. The Smart Wristband enables CSD officers to monitor the health conditions of persons in custody (PICs) through measuring their heart rates and a PIC's exact location on a prescribed route in the prison, thus freeing the escorts for other tasks.

The Smart Wristband was highly praised by judges at the 47th International Exhibition of Inventions of Geneva held in April 2019 and won a Gold Medal.

"Unlike most other venues, certain operational procedures of correctional institutions may need to be modified for the deployment of I&T," noted Mr Cheung. This means the CSD has to analyse carefully changes brought to the institutions by the introduction of I&T so as to raise management and operation efficiency of daily work. Mr Cheung is now working with the CSD on a pilot implementation of the Smart Wristband and collaborating with a start-up to build a patrolling robot for CSD prisons.

"We are happy that Hong Kong's innovative technology application has won international recognition, and that clients are taking a top-down approach in deploying I&T, which is probably the most effective approach," he said.

營運服務

Trading Services

健康與環保

每個城市都嚮往健康、安全和環保。過去一年，我們很高興能協助客戶部門滿足公眾在這幾方面的期望。

香港兒童醫院在2018年12月落成啟用，我們負責醫院機電系統的操作和維修保養工作。在2018/19年度，我們亦為東區尤德夫人那打素醫院完成高壓氧治療中心的裝設工作，這是全港第一個設於醫院的高壓氧治療設施。我們的團隊協助為這個項目進行可行性研究、評審標書、安裝設施和申請高壓氧治療牌照，並提供持續的緊急支援和維修保養服務。此外，我們與菲臘牙科醫院的服務水平協議亦由2019/20年度起續約三年，確保病人可繼續享用保養完善的機電設施。

Healthy and Green

Every city aspires to be healthy, safe and green. We are delighted to have supported our client departments to meet the public's expectations in these areas in the past year.

During 2018/19, we took on the operation and maintenance of E&M systems at Hong Kong Children's Hospital, which opened in December 2018, and completed the installation work of the hyperbaric oxygen therapy (HBOT) centre at Pamela Youde Nethersole Eastern Hospital, the first HBOT facility in a hospital in Hong Kong. Our team was involved in the feasibility study, tender assessment and installation of the facility, as well as applying for HBOT chamber licence and providing ongoing emergency support and maintenance services. Besides, we also renewed our Service Level Agreement with Prince Philip Dental Hospital for another three years from 2019/20, providing an assurance that its patients will continue to enjoy well-maintained E&M facilities.



香港兒童醫院於2018年12月啟用，我們為該院的各项機電系統(例如區域供冷系統熱交換器及太陽能熱水系統等)提供操作及維修保養服務。

The Hong Kong Children's Hospital (HKCH) was opened in December 2018. We provide operation and maintenance services for various E&M systems (such as heat exchanger of the district cooling system and solar water heating system, etc.) in the HKCH.



我們為東區尤德夫人那打素醫院的高壓氧治療中心提供專業工程服務，包括進行可行性研究、投標評審和安裝各項機電系統。

We offer professional engineering services for the hyperbaric oxygen therapy centre at the Pamela Youde Nethersole Eastern Hospital, including conducting feasibility study, tender assessment and installation of various E&M systems.



http://bit.ly/emsd_hkch

年內的另一發展是籌備於2019/20年度在營運基金之下成立一個專責部別，負責支援醫院管理局(醫管局)推行第一及第二個十年醫院發展計劃。這兩個醫院發

In a separate development, we were making preparations during the year to create a dedicated division under the EMSTF in 2019/20 to support the Hospital Authority (HA) in implementing its first and second Ten-year Hospital Development Plans

展計劃的總預算開支達4,700億元，讓醫管局可適時在主要的公營醫院展開多個發展項目，以應付人口老化和醫療需求不斷增加的挑戰。第一個十年醫院發展計劃涵蓋瑪麗醫院、威爾斯親王醫院及瑪嘉烈醫院等的重建或擴建工程，以及新醫院的興建工程，包括在啟德發展區興建一間新急症醫院。

作為醫管局現時的機電服務提供者，我們會致力為有關醫院發展計劃提供工程支援服務，以確保現有醫院建築物內的公共醫療服務能維持正常、令原址重建的醫院由施工階段無縫過渡至運作階段，以及確保醫院發展計劃下各間新建和重建醫院內所裝設的工程系統質素良好。

為提升客戶的現有設備，我們採購了兩台新的流動傷者治療車輛。當發生大型事故時，這些車輛會被派往事故現場搶救傷者。每台治療車輛均設有手術室，可供醫療和救護人員為傷者先進行緊急手術才轉送醫院。為盡量減少手術室內的空氣被外面的空氣污染，空調系統能將室內氣壓提高，以防止外面未經過濾的空氣倒流到室內。手術室內亦有其他必需的設備，例如手術燈、維生儀器及電動液壓擔架平台。電動液壓擔架平台的設計獨特，容許醫療和救護人員在進行手術時調校擔架高度，而其底座還可作充氣墊，使傷者在運送期間更加舒適。手術室旁的另一間隔為治療室，用作治療和搶救擔架床上的傷者。車輛亦配備廢水收集系統。這次引入最新型的流動傷者治療車輛，反映我們積極主動協助客戶為市民提供最先進優良的服務。

(HDPs). With a combined budget of about \$470 billion, the two ten-year plans ensure the commencement of development projects of major public hospitals in due course for the HA to cope with the challenges of ageing population and increasing healthcare demands. The first ten-year plan covers the redevelopment or expansion of Queen Mary Hospital, Prince of Wales Hospital, and Princess Margaret Hospital, among others, as well as the construction of new hospitals such as a new acute hospital at Kai Tak Development Area.

As the incumbent E&M service provider for the HA, we will provide engineering support services for the HDP projects with a view to ensuring normal public health services in existing hospital buildings, achieving seamless transition from construction phase to operation phase of the hospitals to be redeveloped in-situ, and safeguarding the quality of engineering systems to be installed in the new and redeveloped hospitals under the HDP.

To upgrade existing equipment for clients, we have procured two new mobile casualty treatment centres (MCTCs) which will be dispatched to large-scale incidents to provide life-saving treatments. Each vehicle is equipped with an operating theatre which allows the medical and ambulance staff to conduct emergent surgeries before transferring the casualties to the hospital. With a view to minimising the air inside the operating theatre being contaminated by the outside air, the air-conditioning system can maintain the pressure inside at a level higher than the surrounding to prevent backflow of non-filtered air. The operating theatre also has other essential devices, such as surgical light, life-supporting equipment and electro-hydraulic stretcher platform. The design of the electro-hydraulic stretcher platform is unique as it allows the height of the stretcher to be adjusted for operations and its base can serve as an air-cushioning to enhance riding comfort of the patient during transportation. The other vehicle compartment next to the operating theatre is for providing medical and rescue treatment to patients on stretcher. The vehicle also equipped with wastewater collection system. The introduction of the latest MCTC model marks our proactive effort to help the client provide this state-of-the-art service to the public.

我們為消防處採購的流動傷者治療車，其前半部分為小型手術室，後半部分則用作傷者分流或開會用途。

The front portion of the mobile casualty treatment centre we procured for the Fire Services Department is a small operating theatre, while the rear portion is used for patient triage or meeting purposes.



營運服務

Trading Services



我們憑藉為屯門學童牙科診所加裝自行研發的數碼化空調、配電及能源管理系統，獲英國屋宇裝備工程師學會頒發「最佳小型項目/協作數碼獎2018」。

We received the Digital Award 2018 for the Best Small Project/ Collaboration from the Chartered Institution of Building Services Engineers for the installation of self-developed digitised air-conditioning, electricity distribution and energy management system at the Tuen Mun School Dental Clinic.

同事的努力在年內獲得肯定並贏取了不少獎項，我們對此感到欣喜。機電署成功把屯門學童牙科診所的空調和配電系統數碼化，以便進行實時遙距監察、故障預測和提升系統表現及能源分析能力，並憑此項目在2018年榮獲英國屋宇裝備工程師學會頒發「最佳小型項目/協作數碼獎」。

機電署另一團隊聯同香港科技大學及衛生署合作研發的智能發燒偵測系統，榮獲「香港工程師學會青年會員創意獎2019(組別I—發明)大獎」。這系統能在邊境管制站實時自動檢測人體溫度，讓職員獲得實時體溫數據，以追蹤疑似發燒人士，因此有助提升衛生署在邊境管制站執行健康檢查工作的效率，同時減少對人流的阻礙。有關系統的原型設計已經完成，稍後會在選定的邊境管制站進行測試。

至於安全及保安方面，我們繼續與懲教署合作發展多項智慧監獄方案，以提升其監察及保安系統的效率。影像分析監察系統是其中一例，這系統主要透過智能閉路電視偵測在囚人士的違規或自殘行為，現正於壁屋監獄進行試驗。另一例子是引入須配合物聯網技術應用，且具備維生指標監察系統和移動及位置監察系統功能的智慧手帶。在2019年4月初舉行的第47屆日內瓦國際發明展上，大會評判高度評價智慧手帶並頒予金獎。此外，我們亦研發了緝毒機械臂系統，以取代人手檢查在囚人士的排泄物是否藏有毒品。

香港警務處的車隊管理進一步數碼化，有助提高車隊的管理效率。我們和客戶共同研究開發創新方案，以更全面監察車隊司機的駕駛行為和進行車輛遙距故障診斷。我們的目標是糅合這些智慧功能，為警車車隊設計新一代的綜合車隊管理系統。

We are pleased to report that our efforts won recognition and several awards during the year. The EMSD received the Digital Award 2018 for the Best Small Project/ Collaboration from the Chartered Institution of Building Services Engineers for successfully digitising the air-conditioning and electricity distribution systems at the Tuen Mun School Dental Clinic to facilitate real-time remote monitoring and fault prediction as well as to enhance system performance and energy use analysis.

Another EMSD team was awarded a grand prize in the Hong Kong Institution of Engineers Innovation Awards for Young Members 2019 (Category I – An Invention) for developing the Smart Fever Screening System in collaboration with the Hong Kong University of Science and Technology and the Department of Health (DH). The system automatically detects in real time the human temperature at boundary control points. It can also provide the operators with real-time data for tracking the location of febrile suspects, thus enhancing the operational efficiency of the DH for health screening at border control points and minimising obstruction to people flow. A prototype of the system has been completed and site trials at selected boundary control points will be conducted later.

Moving on to safety and security, we continued to work during the year with the Correctional Services Department on several Smart Prison solutions to enhance the efficiency of its monitoring and security systems. An example is the Video Analytic Monitoring System that detects irregularities or self-harm behaviours of persons in custody through smart closed-circuit televisions (CCTVs), which is being tested in Pik Uk Prison. Another example is the introduction of the Smart Wristband that ties in with the application of Internet of Things technology and functions as Health Signs Monitoring and Passage Surveillance Systems. The Smart Wristband was highly praised by judges at the 47th International Exhibition of Inventions of Geneva, held in early April 2019, where it won a Gold Medal. Besides, we also developed the Drug-detection Robotic Arm System which can replace the manual inspection of drug products in the excreta of persons in custody.

Further digitisation of the Hong Kong Police Force vehicle fleet can make its management work more effective. With the client, we have been exploring innovative solutions to better monitor drivers' behaviour and conduct remote fault diagnosis. Our aim is to combine all these smart features into a new-generation Integrated Fleet Management System for the Police fleet.

我們為馬頭角道政府合署安裝了一台由中央控制及監察系統監察的風冷式製冷機，為場地提供穩定的空調供應。

We installed at the Ma Tau Kok Road Government Offices an air-cooled chiller monitored by the Central Control and Monitoring System to provide stable air-conditioning to the venue.



20多年來，機電工程營運基金積極主動，協助客戶節約能源和落實更環保的營運方針。以市政服務為例，我們的同事在2018/19年度協助客戶推行各項節能項目，當中包括更換製冷機組、風櫃和照明系統，每年節省約720萬度電。政府大樓亦擁有很好的節能潛力，例如最近馬頭角道政府合署便更換了製冷機組，每年可節省76 000度電。

我們亦持續尋找運用可再生能源方案的機會。舉例來說，雖然在過程中需要克服不少技術挑戰，例如部分天台空間有限、某些舊建築物的結構能否承托等，但我們仍成功在一些政府建築物的天台安裝了太陽能板。此外，我們亦協助漁農自然護理署在離岸海產養殖魚排上安裝太陽能板。如項目試驗成功，將有助這類離岸魚排生產可再生能源，為魚場設備提供電力，無需依賴岸上的發電機組。

隨着社會對用後即棄塑膠瓶危害環境的意識日益提高，政府已禁止在所有政府體育和康樂場地的自動售賣機出售瓶裝水。為了配合這項可持續發展措施，我們現正協助環境保護署（環保署）在這些場地加裝500部飲水機，以迎合市民的需要。此外，我們會為環保署加裝電動車充電設施，以鼓勵在香港使用環保車輛。

展望2019/20年度，我們的重點工作之一是成立一個新部別，協助政府和醫管局實施兩個十年醫院發展計劃。與此同時，我們會更廣泛利用創新科技，協助紀律部隊提高運作效率，為香港提供一個更安全和環保的生活環境。

For over two decades, the EMSTF has taken proactive measures to help clients save energy and become greener in their operations. Take municipal services as an example. During 2018/19, our colleagues helped clients in the municipal sector carry out various energy-saving projects, including replacement of chillers, air-handling units and lighting systems, saving a total of about 7.2 million kWh per year. Government buildings also offer good potential for energy saving, such as in the recent chiller plant replacement at the Ma Tau Kok Road Government Offices, which achieved an annual energy saving of 76 000 kWh.

We also continued to look out for opportunities to implement renewable energy (RE) solutions. A good example is the installation of solar panels on rooftops of government buildings, though we need to overcome technical challenges, such as limited roof space and the structural feasibility of certain older buildings. A related initiative is to assist the Agriculture, Fisheries and Conservation Department in installing solar panels on offshore mariculture rafts. If our trials prove successful, the project will help fish farms generate RE on the rafts for their equipment needs without having to rely on electricity from their onshore power generators.

With increasing community awareness of the harm of disposable plastic bottles, the Government has banned the sale of bottled water in vending machines at all government sports and recreational venues. To support this sustainability measure, we are now helping the Environmental Protection Department (EPD) install 500 additional drinking fountains at these venues to cater to the public's needs. Besides, we will install more chargers for electric vehicles for the EPD to boost the use of green vehicles in Hong Kong.

Going into 2019/20, one of our focus areas is to set up a new division to help the Government and the HA implement the two ten-year HDPs. At the same time, we will deploy innovative technologies more extensively to help the disciplined forces enhance their operational efficiency so that Hong Kong will become safer while enjoying an eco-friendly environment.

營運服務

Trading Services

妙法偵測發燒旅客

Detecting Fever the Smart Way

衛生工程部工程師蕭曉暉先生及同事聯同香港科技大學研發的智能發燒偵測系統，有助邊境口岸快速及準確地追蹤發燒人士。該系統更獲得「香港工程師學會青年會員創意獎2019（組別I—發明）大獎」。

Mr Siu Hiu-fai, an engineer at Health Sector Division, and his colleagues jointly developed with the Hong Kong University of Science and Technology the Smart Fever Screening System, which facilitates prompt and accurate tracking of febrile persons at boundary control points. The system won a grand prize of the Hong Kong Institution of Engineers Innovation Awards for Young Members 2019 (Category I - An Invention).



香港有多個邊境管制站，需要有一套可靠的系統偵測發燒旅客。現有的紅外線發燒篩查系統有兩大缺點。首先，它不能區分發燒人士和熱的物件，例如一杯熱咖啡。其次，系統在追蹤疑似發燒的旅客時，由於需要人手不斷注視屏幕進行監察，因此必須有另一名員工負責尋找和截停該名旅客。這兩個缺點使人手安排未能發揮最大效用。

為協助衛生署解決這個問題，衛生工程部工程師蕭曉暉先生和他的團隊聯同香港科技大學合力研發了一套智能發燒偵測系統，運用電腦視覺及人工智能科技，實時自動偵測疑似發燒的旅客，並追蹤至入境櫃檯，讓櫃檯職員向相關旅客查問。此舉可免除人手監察屏幕，也無須在中途尋找和截停疑似發燒的旅客，既為衛生署節省人手，也提高偵測發燒工作的成效。

智能發燒偵測系統榮獲「香港工程師學會青年會員創意獎2019(組別I—發明)大獎」。團隊現正協助衛生署在若干選定的場地進行測試，目的是逐步在所有邊境管制站推行新系統。

蕭先生表示：「為了真正了解衛生署前線同事的日常運作需要，並釋除各場地管理人員的疑慮，我們到訪多個邊境管制站，直接與不同持份者溝通。」團隊更在現場觀察各類旅客（例如每天大清早過關來港上學的學童）使用邊境口岸服務的模式。他又說：「這個未必是革命性的項目，卻可提升公共服務質素。」

With various boundary control points, Hong Kong needs a reliable fever screening system. The existing infra-red fever screening system has two shortcomings. First, it cannot distinguish a febrile person from a hot object, such as a cup of coffee. Second, tracking a suspected febrile passenger requires constant manual monitoring of the screen, along with another staff member to identify and stop him or her. Neither is an efficient use of manpower.

To help the DH tackle the issue, Mr Siu Hiu-fai, an engineer of our Health Sector Division, and his team co-developed the Smart Fever Screening System with the Hong Kong University of Science and Technology. Using computer vision and artificial intelligence technologies, the system will automatically identify febrile passengers in real time and track them to the arrival counters, where they can be interviewed. This eliminates the need for manual monitoring and the hassle of identifying and intercepting passengers in person along the way. It will both save manpower for the DH and make fever screening more effective.

The system was awarded a grand prize in the Hong Kong Institution of Engineers Innovation Awards for Young Members 2019 (Category I – An Invention). The team is also helping the DH with pilot trials at selected venues, with the aim of eventually rolling out the system at all boundary control points.

“To really understand the operational needs of frontline DH staff and address the concerns of venue managers, we visited many border control points to communicate directly with different stakeholders,” said Mr Siu. The team also observed the border usage patterns of different passenger types, such as children crossing the border early every morning to attend schools in Hong Kong, etc. “The project may not be revolutionary, but it can enhance our public services,” he added.

超強颱風下保護客戶設施的安全 Safeguarding Client's Facilities in a Super Typhoon

助理工程師姚柱匡先生及其團隊協助政府物流服務署及建築署為政府物料營運中心內的消防泵圍起高牆，並搬遷原來的電掣房入口，以消除水浸危機，為颱風季節做好準備。

To prepare for the typhoon season, Mr Yiu Chu-hong, an assistant engineer, and his team assisted the Government Logistics Department and the Architectural Services Department to surround the fire pump in the Government Logistics Centre with high walls and relocate the original entrance of the switch room to eliminate the risk of flooding.



氣候變化帶來超強颱風，好像去年9月襲港的「山竹」，就大幅損毀了全城不少設施，包括位於柴灣海旁的政府物料營運中心（營運中心）。營運中心落成的年代，颱風遠不及今天的強勁，加上位處海邊，大樓的兩個電掣房又在臨海的地面層，面對現今的颱風，極易發生水浸。

綜合工程部的助理工程師姚柱匡先生詳細闡述「山竹」迫近香港期間，他的團隊怎樣盡力減低颱風對營運中心的破壞。

他說：「首要工作是確保營運中心內的印刷機不受影響，因為《施政報告》的印刷本必須在10月準備就緒。」「山竹」迫近香港時，他的團隊已做好所有必需的防風措施，例如安裝防水閘、準備抽水泵等。姚先生也跟香港電燈有限公司（港燈）做好聯繫，事先制訂了颱風期間的緊急應變措施，又敦促相關的承辦商準備充足的電線等物料，供緊急維修之用。

雖然做了大量準備工作，但「山竹」襲港期間，營運中心一個電掣房仍發生水浸。幸好團隊事前已與港燈做好協調，港燈便按事前安排，遙控切斷營運中心的電力供應。此外，後備發電機也馬上以人手關掉，以確保安全。

姚先生指出：「在颱風吹襲的整段時間內，有兩位前線員工自願留守營運中心，保護客戶的場地設施。」對於同事的高度承擔，他十分欣賞。颱風過後，修復工作馬上開始，翌日已局部恢復電力供應。由於印刷機完好無損，當電力供應完全恢復後，印刷工作即逐步回復正常。

姚先生和他的團隊事後也協助客戶進行各項改善工程，例如改動兩個電掣房的大門位置，以及加裝新的閉路電視系統，為來年的颱風季節做好準備。

Climate change has brought about super typhoons such as Mangkhut, which hit Hong Kong last September and caused extensive damage to the city's facilities, including the Government Logistics Centre (GLC) on the Chai Wan waterfront. The GLC was built at a time when typhoons were much less severe. Its waterfront location, especially the siting of its two main switch rooms on the ground floor facing the sea, makes it vulnerable to flooding during typhoons today.

Mr Yiu Chu-hong, an assistant engineer of our General Engineering Services Division, explained how his team minimised the impact of the approaching storm on the GLC.

“Our priority was to keep the printing facilities at the GLC intact, as hard copies of the Policy Address had to be available by October,” Mr Yiu said. As Mangkhut approached, his team made the necessary preparations, e.g. installing flood prevention gates, readying water pumps, etc. Mr Yiu also liaised with the Hongkong Electric Company Limited (HEC) in advance to make contingency arrangements and asked contractors to prepare an adequate supply of electric cables, etc. in case of urgent repairs.

Despite the preparations, one switch room was flooded by seawater when Mangkhut hit Hong Kong. However, thanks to prior co-ordination with the HEC, the GLC main power system was remotely switched off. The standby generator was also promptly turned off manually to ensure safety.

“Two frontline staff members volunteered to stay on at the GLC throughout the typhoon to safeguard the facilities at the venue,” Mr Yiu noted, showing great appreciation for their commitment. Repair works began as soon as the typhoon was over, with the electricity supply partially resumed the following day. With no printing press damage, printing resumed gradually as the power supply returned to normal.

Mr Yiu's team has since been helping the client carry out improvement measures, such as relocating the doors of the main switch rooms and installing a new CCTV system, to get ready for the coming typhoon season.

營運服務

Trading Services

智慧出行

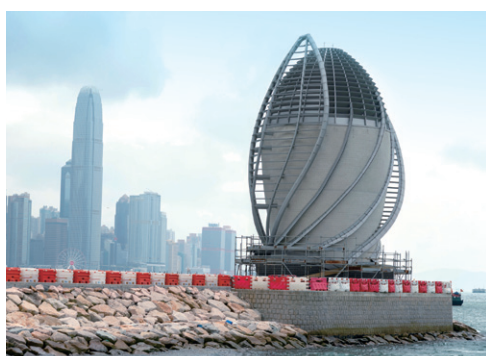
「智慧出行」是政府於2017年公布的《香港智慧城市藍圖》中的六個主要範疇之一。一直以來，營運基金為相關政府部門的運輸基建和機電設施，提供操作、維修保養及項目管理服務。作為政府創新及科技(創科)發展的促成者，營運基金具備優勢，能協助客戶部門加快進行設施數碼化及部署創科應用。

在2018/19年度，香港有三個重要的運輸基建項目落成啟用，即廣深港高速鐵路香港段(高鐵)、港珠澳大橋和中環灣仔繞道。我們分別就高鐵及港珠澳大橋的所有機電設施，為入境事務處、香港海關及路政署提供操作及維修保養服務，也就中環灣仔繞道的機電設施，為運輸署提供諮詢、技術支援及監察服務，確保所有設施運作暢順。

Intelligent Mobility

Smart mobility is one of the six major areas in the Government's Hong Kong Smart City Blueprint, published in 2017. The EMSTF has long been providing operation, maintenance and project management services to relevant departments for their transport infrastructure and E&M facilities. As the Government's facilitator of innovation and technology (I&T) development, the EMSTF is well positioned to help our client departments expedite the digitisation of their facilities and deployment of I&T applications.

The year 2018/19 saw the opening of three milestone transport infrastructure projects in Hong Kong, namely the Hong Kong Section of the Guangzhou-Shenzhen-Hong Kong High Speed Rail (HSR), the Hong Kong-Zhuhai-Macao Bridge (HZMB) and the Central-Wan Chai Bypass. We have taken up operation and maintenance services for all E&M facilities at the HSR and HZMB for the Immigration Department, Customs and Excise Department and Highways Department, as well as providing advisory, technical support and monitoring services for E&M facilities at the Central-Wan Chai Bypass to the Transport Department (TD), with all operating smoothly.



我們為運輸署提供中環灣仔繞道機電設施的諮詢、技術支援及監管服務。圖為繞道的東面排風口，隧道內的廢氣會由空氣淨化系統淨化，然後經排風口排出。

We provide advisory, technical support and monitoring services for the E&M facilities of the Central-Wan Chai Bypass to the Transport Department. The Picture is the East Vent Shaft of the Air Purification System which purifies exhaust air in the tunnel and then discharges treated air through vent shafts.



我們為港珠澳大橋香港口岸和三條連接路的建築物內的機電裝置(例如貨物檢查設施)，提供維修保養服務。

We provide maintenance services for the E&M installations (e.g. cargo checking facilities) in the buildings at the Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing and the three associated slip roads.



360°

http://bit.ly/emsd_hkzmb

我們一直與運輸署合作，加快發展效率更高的政府隧道繳費系統。年內，我們在多條政府隧道完成安裝電子繳費系統，並已就引入無收費亭及電子化的不停車繳費系統作好準備，使隧道交通更快捷暢順。將軍澳—藍田隧道在2021年落成啟用後，便會在該處實施首個不停車繳費系統。根據不停車繳費系統，駕駛人士只需在車輛貼上芯片標籤，即一個帶有無線射頻識別技術的車內感應器。當車輛駛經隧道時，不停車繳費系統便可使用其路面設備讀取車內感應器以

We have been working with the TD to expedite the development of more efficient toll payment systems for government tunnels. During the year, we completed the installation of an e-payment system at various government tunnels and made good progress on preparations for the introduction of a toll booth-free, electronic free-flow tolling system (FFTS) to make tunnel traffic faster and smoother. The first FFTS will be implemented at the Tseung Kwan O-Lam Tin Tunnel upon its commissioning in 2021. Under the FFTS, all that a driver has to do is to affix to his vehicle a chip-tag, i.e. an in-vehicle unit (IVU) enabled with radio frequency identification technology. As a vehicle passes through the toll point, the FFTS will detect the vehicle using its

探測有關車輛，或透過自動車牌識別系統識別車牌上的車輛登記號碼。隧道費將從預先向運輸署登記的繳款帳戶直接扣除，或以欠款形式隨後繳交，讓駕駛人士無須停車繳費。政府的目標是在將軍澳 — 藍田隧道落成啟用後的兩至三年內，把不停車繳費系統逐步推展至全港所有現有政府收費隧道。

鑑於香港地小車多，智能泊車方案往往深受駕駛人士歡迎。政府於2018年年初委託顧問公司進行研究，選定六個適合興建不同類型智能停車場的地點。同時，運輸署正考慮於荃灣、深水埗及上環的三幅短期租約用地，安裝智能泊車系統以進行先導試驗計劃。

這些智能泊車系統配備運送車輛的機械裝置，以及自動搜尋泊車位置和存取停泊車輛的設施。營運基金亦在總部安裝了機械化泊車系統，以供運輸署作為進行技術測試的試驗場地。透過這個試驗計劃，營運基金為運輸署提供開發智能泊車系統方面的技術支援，又與業界分享經驗，以助該署興建類似的智能泊車系統。



我們在機電署總部裝設了室內及室外機械化泊車系統，以增加泊車位數目。我們將與運輸署及業界分享有關裝設智能泊車系統的經驗。

We have installed Indoor and Outdoor Mechanised Parking Systems at the EMSD Headquarters to increase parking capacity. The experience gained in respect of the installation of the smart parking system will be shared with the Transport Department and the trade.

field equipment to read the IVU or recognise the vehicle registration mark on the vehicle number plate via an Automatic Number Plate Recognition System. The toll fee will be deducted through direct debit from a pre-registered payment account with the TD or by payment in arrears later, with no need for motorists to stop and pay. The Government aims to implement the FFTS at all existing government tolled-tunnels one by one within about two to three years after the commissioning of the Tseung Kwan O – Lam Tin Tunnel.

Given Hong Kong's limited space, smart parking solutions are always welcomed by motorists. The Government commissioned a consultancy study in early 2018 to identify six sites suitable for different types of automated car parks. In the meantime, the TD is contemplating the installation of automated parking systems (APSS) at three short-term tenancy sites in Tsuen Wan, Sham Shui Po and Sheung Wan for pilot trials.

These APSS are equipped with mechanical devices for transportation of vehicles and an apparatus that allows for automatic location and retrieval of parked vehicles. The EMSTF has also installed mechanised car parking systems at its headquarters, which are used as a testing ground for the TD to conduct technical tests. By this pilot project, the EMSTF provides technical support to the TD on the development of smart car parking system and shares with the trade the experience for the construction of similar types of smart parking systems.



同時，我們一直與運輸署合作，探索實施各類「智慧出行」措施的科技方案，例如以新一代電子泊車咪錶取代現有的泊車咪錶。新電子咪錶可支援多種電子支付方式，更可接受駕駛人士透過流動應用程式遙距繳付泊車費。為路旁停車位及政府停車場安裝車輛佔用傳感器，有助駕駛人士以遙距方式尋找空置停車位、節省時間，並減少他們尋找空置停車位時造成的不必要交通流量。收集停車位的佔用數據，亦有助運輸署監察停車位的使用率，以進行政策規劃。此外，在路標塔架上裝設更先進精密的交通探測器，會為駕駛人士提供更準確的實時交通資訊。

Meanwhile, we have been working with the TD to explore technology solutions for the implementation of smart mobility initiatives, such as replacement of existing parking meters with a new generation of electronic parking meters that will support multiple electronic payment means as well as remote payment via mobile applications. The installation of vehicle occupancy sensors for on-street parking spaces and government car parks will facilitate motorists in searching for available parking spaces remotely, saving time for motorists and reducing unnecessary traffic caused by vehicles looking for vacant parking spaces. The collection of parking space occupancy data also allows the TD to monitor the utilisation rate of parking spaces for policy planning. Furthermore, the adoption of more sophisticated traffic detectors on road sign gantries will provide more accurate, real-time information on traffic conditions to motorists.

營運服務

Trading Services

在2018/19年度，營運基金的其他車輛業務包括為香港國際機場未來第三條跑道禁區內新增的兩個消防局，採購14部用於飛機救援的消防車輛。至於在機電署總部的政府車隊維修保養工場，我們的車輛預約系統運作暢順，現適用於數類車輛。下一步工作，是把整個車輛預約系統的程序數碼化，以進一步提升其效率。此外，我們的團隊亦會更集中為使用新型和環保燃料的車輛鑽研相關的維修保養服務，預計此類車輛將會是市場的未來趨勢。

Other vehicle businesses of the EMSTF in 2018/19 included an assignment to procure 14 aircraft rescue and fire-fighting vehicles for two additional fire airside stations that will serve the future third runway system at the Hong Kong International Airport (HKIA). Back at the maintenance depot for the government fleet at the EMSD Headquarters, our Advance Vehicle Booking System (AVBS) is operating smoothly for several types of vehicles and the next step is to digitise the entire AVBS process to further enhance its efficiency. Our team will also focus more on the maintenance of vehicles using new and eco-friendly fuel, which are expected to become the future trend.



我們為港澳碼頭更換了製冷機組、風櫃機組及照明設備，讓市民可享用更具能源效益的設施。

We replaced chiller plants, air-handling units and lighting systems for the Hong Kong-Macau Ferry Terminal, enabling members of the public to enjoy more energy-efficient facilities.



我們的團隊盡心盡責提供服務，在去年獲得多個獎項，包括為行人天橋升降機進行緊急維修的同事獲頒申訴專員公署嘉許獎，而在香港國際機場工作的同事也贏得機場管理局的兩項安全運動獎，以表揚其卓越服務。

In the past year, our colleagues won several awards for their dedicated services, including an Ombudsman's Award for a colleague's work in prompt repairs for footbridge lifts, and two Airport Authority's Safety Campaign Awards for colleagues at the HKIA in recognition of their outstanding services.

展望2019/20年度，我們將積極發展不停車繳費系統及其他創科項目，繼續推動「智慧出行」，將香港打造成一個更高效率和更環保的城市。

Looking forward to 2019/20, we will keep up the momentum to achieve intelligent mobility through the development of the FFTS and other I&T projects that help make Hong Kong a more efficient and environment-friendly city.

迅速修復 順利出行 Speedy Solution for a Smooth Journey

邊境及運輸工程部工程師李家俊先生快速及有效地處理行人天橋升降機機門的維修工作，榮獲2018年申訴專員嘉許獎。

Mr Lee Ka-chun, an engineer at Boundary Crossing Facilities and Transport Services Division, was awarded an Ombudsman's Award 2018 for his prompt and effective handling of the repair work for a footbridge lift door.



在2018年3月，邊境及運輸工程部工程師李家俊先生接到一個非政府機構的電話，指九龍灣啟業邨某行人天橋升降機的玻璃門破損。該機構提倡為殘疾人士提供無障礙通道設施，促請李先生加快修理，讓升降機盡早回復正常服務，以減低對輪椅使用者帶來的不便。

李先生所屬的團隊負責全港行人天橋上的升降機和自動梯的操作及維修保養，於是馬上採用一個較快捷的方案，為破損的升降機安裝一道臨時金屬門，使升降機翌日便恢復正常服務。假如按正常程序，即透過承辦商訂購新的玻璃門，再安排付貨和安裝，一般需要六至八星期才能完成工程。

李先生迅速高效地處理這宗個案，因而獲頒2018年申訴專員嘉許獎。他表示：「我們很高興能夠幫助市民，讓他們出行更方便。」

事後，李先生的團隊更敦促承辦商必須常備升降機玻璃門存貨，讓維修工作做得更快，確保升降機有高的可用率，方便市民出行。

與承辦商維持良好的合作關係非常重要。即使在2018年9月超強颱風「山竹」襲港後，由於承辦商提供支援，並在事前與我們一同作好準備，大部分在颱風中毀壞的行人天橋升降機，均能在一星期內成功修復，提供正常服務。

他說：「作為政府部門，我們必須未雨綢繆、多走一步，亦必須視承辦商為合作伙伴，才能達致最大的工作成效。」

In March 2018, Mr Lee Ka-chun, an engineer of our Boundary Crossing Facilities and Transport Services Division, received a phone call from a non-governmental organisation (NGO) about a broken glass door at a footbridge lift in Kai Yip Estate, Kowloon Bay. The NGO, which advocates barrier-free access for the disabled, urged Mr Lee to expedite the repair works so that the lift service could resume normal as soon as possible to minimise the inconvenience caused to wheelchair users.

Mr Lee, whose team oversees the operation and maintenance of all footbridge lifts and escalators in Hong Kong, took prompt action to have a temporary metal door installed. With this fast-track solution, lift service resumed normal the next day. If the normal procedure was adopted, which would involve ordering a new glass door via the contractor, delivery and installation, the works would typically have to take six to eight weeks to complete.

Mr Lee received an Ombudsman's Award 2018 for his effective handling of the case. "It is our pleasure to be able to help people and make their journeys more convenient," he said.

Mr Lee's team now urges its contractors to keep glass lift doors in stock at all times to enable speedy repairs, thus ensuring high availability of footbridge lifts for the public.

Maintaining a good working relationship with contractors is very important. Even after super typhoon Mangkhut struck Hong Kong in September 2018, most of the damaged footbridge lifts were successfully repaired and resumed normal service in less than a week, thanks to contractors' support and joint forward planning.

"As a government department, we must think ahead, go the extra mile and treat contractors as collaborating partners in order to achieve optimal results," Mr Lee said.

營運服務

Trading Services

參與大灣區發展

國家於2019年2月公布《粵港澳大灣區發展規劃綱要》，標誌着大灣區發展的新里程碑。機電工程署除了在2018年參與大灣區發展外，亦會在《規劃綱要》的推動下，更積極地融入這個國家發展計劃，引入更多創新及科技(創科)，藉以加強我們的機電服務。

我們的創新辦公室已在研究能否邀請大灣區的初創企業和研究機構，為上載於「機電創科網上平台」的願望清單提供創科解決方案，以及就個別項目進行跨境合作以開發創科產品。如「機電創科網上平台」開放予大灣區的初創企業提供解決方案，我們的客戶將直接受惠於整個大灣區的龐大創造力及科技專才。

舉例來說，營運基金目前正忙於為新的蓮塘/香園圍口岸邊境管制站準備機電設施，務使管制站能如期於2019年啟用。待新管制站投入服務後，我們的團隊便能投放更多時間和精力，為現有的各邊境管制站進行保安系統升級工程。我們於2018年年初到大灣區進行考察時，曾與當地多間企業的代表會面，探討潛在可行的「智能過境」技術，例如無須使用X光亦可檢查貨物及掃描乘客的嶄新系統。我們期待朝着這個方向作進一步討論。

Participation in the Development of the Greater Bay Area

The promulgation of the Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area in February 2019 has signified a new milestone in the development of the Greater Bay Area (GBA). Apart from participating in the development of the GBA in 2018, the EMSD will integrate more into this national development plan and bring in more innovation and technology (I&T) to strengthen our E&M services under the impetus of the Outline Development Plan.

Our Inno-Office has been exploring the possibility of inviting start-ups and research institutions from the wider GBA to provide I&T solutions for the wish-list items posted on the E&M InnoPortal and allow for cross-boundary collaboration on I&T product development for specific projects. Once the E&M InnoPortal is open to solutions offered by GBA start-ups, our clients will benefit directly from the creativity and technological expertise of the entire GBA.

For instance, the EMSTF is currently working on the E&M facilities at the new Liantang/Heung Yuen Wai Boundary Control Point to meet its schedule for opening in 2019. Upon commissioning of this new control point, our team will then be able to devote more time and effort to upgrading the security systems at existing boundary control points. During a GBA tour in early 2018, we met with various firms to explore potentially useful “smart-crossing” technologies, such as new systems that inspect goods and scan passengers without the use of X-rays. We look forward to having further discussions in this direction.

機電署於2018年6月與廣州市工貿技師學院簽訂《人才培訓合作備忘錄》，以加強粵港兩地技術培訓機構的協作和交流，並提升機電業技術員的水平。

The EMSD and the GITTC signed in June 2018 the Memorandum of Co-operation for Talent Training to strengthen collaboration and exchange between technical training institutions in Guangdong and Hong Kong, as well as to enhance the standards of E&M technicians.



事實上，機電工程署已與大灣區兩個公營機構展開正式合作。我們分別於2018年6月和11月與廣州市工貿技師學院及廣州市人力資源和社會保障局簽訂合作備忘錄。兩項安排均以機電人才發展方面的合作為重點，對穗港兩地的機電業界將有莫大裨益。

In fact, the EMSD has already started formal collaboration with two public organisations in the GBA. We signed memoranda of co-operation with the Guangzhou Industry and Trade Technician College (GITTC) in June 2018 and the Guangzhou Municipal Human Resources and Social Security Bureau in November 2018. Both arrangements focus on collaboration in E&M talent development, which will greatly benefit the E&M sectors in Hong Kong and Guangzhou.



我們的技術職系同事前往廣州參加由機電署與廣州市工貿技師學院合辦的製冷與空調培訓課程，藉以提升他們的維修保養知識及技術水平。

Our technical grade colleagues travelled to Guangzhou to participate in the refrigeration and air-conditioning training course for technicians jointly organised by the EMSD and the GITTC in order to enhance their maintenance knowledge and technical capabilities.

有關合作安排已初見成效。機電工程署的20名前線員工於2018年年底和2019年年初前往廣州參加設有兩部分的空調培訓課程，而82名見習技術員將於今年夏天參加四個有關空調、屋宇裝備、電氣及車輛維修的培訓課程。此外，機電工程署亦與廣州市的技師學院合作，為我們兩名見習技術員進行密集式培訓，為他們參加今年8月在俄羅斯喀山舉行的2019年「世界技能大賽」備戰。

Such collaboration has already yielded initial results. Twenty EMSD frontline staff members participated in a two-part air-conditioning training course in Guangzhou in late 2018 and early 2019, while 82 EMSD technician trainees will take part in four training courses in air-conditioning, building services, electrical and vehicle maintenance this summer. In addition, the EMSD has also jointly organised intensive training programmes with the technician colleges in Guangzhou for two of our technician trainees in preparation for the WorldSkills Competition 2019 to be held in Kazan, Russia, this August.

兩名參賽者均已在內地及香港接受密集式訓練，將代表香港前往喀山分別出戰「空調製冷」及「電氣安裝」兩個項目。有關訓練還協助他們在多個海外比賽中獲獎，包括澳洲的全球技能挑戰賽、廣州邀請賽和於重慶舉行的一帶一路國際技能大賽，為喀山大賽作熱身準備。

Both contestants have received intensive training in the Mainland and Hong Kong and will represent Hong Kong to compete in the "Refrigeration and Air-conditioning" and "Electrical Installations" trades in Kazan respectively. The training has also helped them win awards in various overseas competitions, such as the Global Skills Challenge in Australia, the Guangzhou Invitational Competition, and the Belt and Road International Skills Competition in Chongqing, as part of their preparations for the Kazan contest.

我們的合作範圍並不限於培訓方面。機電工程署於2018年11月與香港、澳門及內地六間機構簽署合作備忘錄，以推動大灣區發展和應用建築物重新校驗。重新校驗好比為建築物進行定期健康檢查和採取相應的改善措施，讓現有建築物的業主能優化其樓宇系統和設備，以提高運作效率，從而減低營運成本和提升能源效益。隨着老化建築物的數目增加，重新校驗在香港和大灣區其他城市將有極大的應用潛力。

Our scope of co-operation is not limited to training. In November 2018, the EMSD signed a memorandum of co-operation with six organisations from Hong Kong, Macao and the Mainland to promote the development and application of retro-commissioning (RCx) of buildings in the GBA. Similar to conducting regular health checks with follow-up improvement measures, RCx is a solution for owners of existing buildings to fine-tune their building systems and equipment in order to optimise operational efficiency, thus reducing operating costs and enhancing energy efficiency. As the number of ageing buildings increases, there will be enormous potential to apply RCx in Hong Kong and other GBA cities.

營運服務

Trading Services

機電署於2018年11月與廣州市人力資源和社會保障局簽訂《機電人才發展合作備忘錄》，加強雙方在促進機電人才發展方面的合作。

The EMSD signed the Memorandum of Co-operation on E&M Talent Development with the Guangzhou Municipal Human Resources and Social Security Bureau in November 2018 to enhance collaboration in the development of E&M talent in both places.



我們於2018年7月舉辦了為期四天的考察團，讓20多名機電業界代表及機電工程署人員參觀深圳和廣州的創科企業及創新創業基地。考察團成員亦與學者交換意見，了解更多關於大灣區創科發展的事宜。

大灣區內林林總總的科技均有助加快香港的智慧城市發展，因此我們多次安排與客戶部門的代表共同到大灣區考察，以取得第一手的創科資訊，推動香港的創科發展。

來年，我們預期將與大灣區在機電人才發展、能源效益及創科發展方面展開進一步的合作。

We organised a four-day visit to Shenzhen and Guangzhou in July 2018, joined by over 20 representatives from the E&M trade and the EMSD to visit the I&T enterprises and innovation entrepreneurship bases there. Delegates also exchanged views with academics to understand more about I&T development in the GBA.

The GBA could offer a wide range of technologies to help expedite our smart city development. Therefore, we have arranged joint visits to the GBA with our client departments to obtain first-hand I&T information for promoting I&T development in Hong Kong.

In the year ahead, it is expected that further collaboration in E&M talent development, energy efficiency as well as I&T development in the GBA will take place.



大灣區考察團參觀了廣州和深圳的創科企業和主要創科基地，以了解兩地在創科方面的最新發展，並促進香港與內地機電業界在創科和人才培訓等領域的合作，為未來發掘更多發展機遇。

Delegations to the Greater Bay Area visited the I&T enterprises and major I&T bases in Guangzhou and Shenzhen to learn about the latest I&T developments in both places, and facilitate co-operation between the E&M trades in Hong Kong and the Mainland in the fields of I&T and talent training, with a view to exploring more development opportunities in future.

大灣區培訓菁英人才 Greater Bay Area Trains Top Talents

在撰寫本文期間，陳宇泰先生(右)及郭振銘先生(左)在2019年8月於俄羅斯喀山舉行的第45屆「世界技能大賽」中贏得優異獎。陳先生參加「電氣安裝」項目，而郭先生則出戰「空調製冷」項目。

At the time of writing, both Mr Chan Yu-tai (right) and Mr Kwok Chun-ming (left) have won Medallions for Excellence in the 45th WorldSkills Competition in Kazan, Russia, held in August 2019. Mr Chan competed in the “Electrical Installations” trade and Mr Kwok in the “Refrigeration and Air-conditioning” trade.



機電工程署見習技術員陳宇泰先生和郭振銘先生目前正為今年8月於俄羅斯喀山舉行的「世界技能大賽2019」備戰。世界技能大賽被譽為技能界奧林匹克，說他們正接受奧運式的賽前密集訓練，一點也不誇張。

陳先生和郭先生分別於2015年和2017年加入機電署的技術員訓練計劃，憑藉在電氣安裝方面的才能和空調系統安裝方面的實力，二人很快便已嶄露頭角。上司為他們提供重點培訓，並給予強大支援，使他們贏出多項內部比賽之餘，更在香港及澳洲的世界技能大賽取得佳績。陳先生和郭先生將代表香港參加在喀山舉行的「世界技能大賽2019」，分別出戰「電氣安裝」及「空調製冷」項目。

經過多次比賽和密集訓練，兩位技術員現已進入最後階段，集中磨煉技術和提升心理質素，以應付這場全球大賽。二人最近分別於廣州市技師學院及廣州市工貿技師學院受訓，並與參加喀山世界技能大賽的其他大灣區選手一起集訓，獲益良多。

二人在廣州接受嚴格訓練，每天由早上8時30分至下午5時集訓，晚上還要進行討論。他們說：「不過，我們從內地專家、導師和曾參加世界技能大賽的前選手身上學習了很多。那裏的競爭氣氛雖比香港濃厚，但我們也結識了不少朋友。」

良好的體能對空調安裝工作十分重要，因為要把冷氣喉管拗曲至符合比賽要求的弧度，需要很大氣力。因此，郭先生進行了更嚴格的體能鍛煉，藉以增強體力。同時，陳先生很高興有機會拓闊眼界，並會把經驗傳授給師弟師妹。

世界技能大賽的賽例規定，每人一生只能參賽一次，並須在22歲前參賽。陳先生和郭先生現正全力備戰，把握這個一生只得一次的機會，為機電署和香港爭光。

It is no exaggeration to say that Mr Chan Yu-tai and Mr Kwok Chun-ming, both technician trainees at the EMSD, have adopted an Olympic-style training regime as they prepare for the WorldSkills Kazan 2019, also known as “Skills Olympics”, in Russia this August.

Mr Chan’s talent in electrical installation and Mr Kwok’s strength in air-conditioning system installation were spotted soon after they joined the EMSD’s Technician Training Scheme in 2015 and 2017 respectively. They were given focused training and strong back-up by their supervisors, and won many internal competitions as well as WorldSkills Competitions in Hong Kong and Australia. Mr Chan and Mr Kwok will represent Hong Kong in the “Electrical Installations” and “Refrigeration and Air-conditioning” trades respectively at WorldSkills Kazan 2019.

With numerous competitions and training programmes all the way through, both trainees are now in the final stages of honing their skills and mental agility for the global competition. Training sessions for the two trainees at the Guangzhou Technician College and the Guangzhou Industry and Trade Technician College respectively and other GBA contenders also proved valuable.

It was tough training in Guangzhou, from 8:30 am to 5:00 pm every day, followed by discussions in the evenings. “However, we learnt a great deal from the Mainland experts, trainers and former WorldSkills contestants. The atmosphere there was more competitive, but we made many friends, too,” they said.

Physical strength is important in air-conditioning installation, as bending ducts and tubing to a prescribed curvature can be strenuous. Mr Kwok has hence taken up more rigorous physical exercises to build up his strength. Meanwhile, Mr Chan is appreciative of the opportunity to broaden his perspective and will pass on the experience to younger trainees at the EMSD.

The rules of the WorldSkills Competition state that individuals may take part only once and must be under the age of 22. Mr Chan and Mr Kwok are thus doing their best to prepare for this once-in-a-lifetime event and shine for the EMSD and Hong Kong.

企業管理

Corporate Stewardship

踏入2018/19年度，機電工程營運基金開展了第二個五年策略計劃，在「機電數碼化」、「培育團隊」及「科技·創新」三大策略方面均有好的開始。我們正利用這些策略來實現「機電2.0」的願景及營運基金的企業目標，即「透過與不同持份者的伙伴關係，創造公眾價值及改善社會」。本章概述我們落實這些策略的進展，並分享一些企業亮點。

去年是機電工程署成立七十周年，部門舉辦了連串慶祝活動，並於2018年9月舉行壓軸典禮，邀得財政司司長蒞臨主持。數百名政府主要官員、業界代表及各界社會賢達亦應邀出席，場面熱鬧。

Kicking off the EMSTF's second Five-year Strategic Plan in 2018/19, we made a good start on each of our three main strategies, namely "E&M Digitisation", "Excellent Work Team" and "Technology · Innovation". These strategies are being deployed to achieve our vision of "E&M 2.0" and the corporate goal of "creating public value for community betterment through partnership with different stakeholders". In this chapter, we outline our progress under these strategies and share a few corporate highlights.

The past year saw a series of EMSD 70th anniversary celebrations, which culminated in a ceremony in September 2018 officiated by the Financial Secretary and attended by hundreds of key government officials, trade representatives and dignitaries from many sectors.



機電工程署七十周年典禮於2018年9月舉行，由財政司司長陳茂波先生(上圖)擔任主禮嘉賓。

The EMSD 70th Anniversary Ceremony was held in September 2018, with the Financial Secretary, Mr Paul Chan (top), as our officiating guest.



另一亮點是營運基金的2018年客戶意見調查，當中客戶滿意指數及整體服務競爭力指數分別取得6.61分及6.64分(以8分為滿分計)，兩者均創歷史新高。為配合我們作為創新及科技(創科)促成者的角色，2018年的調查首次加入「創新能力」一項，並取得6.26分。這分數將成為衡量我們日後創科表現的基線。

我們的關鍵績效指標成績也值得注意。營運基金在2018/19年度大部分績效指標的表現均達標，部分更超標完成，例如客戶滿意指數為6.61分，高於6.6分的目標；而每名員工年內接受訓練的日數平均為5.37天，也高於4.5天的目標。

Another highlight was the EMSTF Customer Opinion Survey 2018, which returned record-high results: a Customer Satisfaction Index of 6.61 and an Overall Service Competitiveness Index of 6.64 on a scale of 8. Consistent with our role as a facilitator of innovation and technology (I&T), we introduced a new dimension to the Survey, i.e. "Ability for Innovation", and obtained a score of 6.26, which will serve as the baseline to gauge our future I&T performance.

The results of our Key Performance Indicators (KPIs) are noteworthy, too. The EMSTF met most of its KPI targets for 2018/19 and exceeded them in several areas. Examples are the Customer Satisfaction Index of 6.61 against a target of 6.6 and 5.37 training days per staff member against a target of 4.5 days, to name a few.

客戶意見調查 Customer Opinion Survey

整體服務競爭力指數 Overall Service Competitiveness Index

客戶滿意指數 Customer Satisfaction Index



策略1：機電數碼化

Strategy 1: E&M Digitisation

這個策略的要點，是提供數碼化機電服務及創新方案，以配合智慧城市發展和應對氣候變化的政策。就此，我們的策略業務單位一直致力共同為客戶訂製各種創科方案，並與業界伙伴合作，訂立最佳作業方法，有關詳情已載述於較前章節。

The gist of this strategy is to provide digitised E&M services and innovative solutions in tandem with smart city development and policies to tackle climate change. In this regard, our Strategic Business Units (SBUs) have been busy co-developing I&T solutions tailor-made for our clients as well as collaborating with trade partners to develop best practices, details of which are already set out in earlier chapters.

在企業層面，我們的創新辦公室於2018年6月正式推出「機電創科網上平台」，是營運基金協助客戶實現數碼化轉型的主要措施。截至2019年3月底，我們透過「機電創科網上平台」收集了超過150個創科願望，並收到90多個潛在的創科解決方案，涵蓋的創新技術範圍廣泛，包括人工智能和資訊分析、能源效益和可再生能源、能源儲存和轉移、機械人應用等。目前有50多個創科項目正在機電工程署總部大樓或其他合適的政府場地進行試驗。

On a corporate level, a major step to assist clients in achieving digital transformation was the official launch of the E&M InnoPortal in June 2018 by our Inno-Office. As at end-March 2019, more than 150 I&T wishes were collected through the E&M InnoPortal, with over 90 prospective I&T solutions received, covering a wide range of innovative technologies, including artificial intelligence and information analysis, energy efficiency and renewable energy, energy storage and transfer, robotic application, etc. More than 50 I&T trials are being conducted either at the EMSD Headquarters Building or other appropriate government premises.

創新辦公室作為我們與外間機構在創科事宜和合作方面的首個接觸點，年內與香港科技園公司合辦第二屆「創新科技日」，展示初創企業和大學的創科項目，藉以提高客戶部門和公營機構對有關項目的興趣。

As our first point of contact with external parties on I&T matters and collaboration, the Inno-Office also co-organised the second Innovative Technology Day with the Hong Kong Science and Technology Parks Corporation to showcase I&T projects by start-ups and universities, with a view to generating interest from client departments and public organisations.

機電工程署的重點活動之一，是營運服務與規管服務每兩年一度合辦的研討會。最近一次的研討會於2018年11月在香港科學園舉行，以「共創智慧未來」為主題，吸引逾350名客戶和業界代表及本地和海外的專家和學者參與。與會者就智慧城市發展進行深入討論，並就創科議題分享意見，對客戶的數碼化工作甚有裨益。

One of the EMSD's signature events is the biennial symposium jointly organised by Trading Services and Regulatory Services. The latest symposium was held at the Hong Kong Science Park in November 2018 under the theme "Co-creating a Smart Future". Over 350 participants attended, including our clients, trade representatives as well as local and overseas experts and academics. They had in-depth discussions on smart city development and shared I&T insights highly relevant to clients' digitisation work.

2018/19財政年度關鍵績效指標成績及表現承諾

KPI Results and Performance Pledges in FY 2018/19

項目 Item	關鍵績效指標 (單位) ¹ Key Performance Indicators (Unit) ¹	目標 Target	成績 Results
1.	收入回報率 (%) Return on Revenue (%)	1.8	9.2
2.	新業務及業務增長 (百萬元) New Business and Growth of Business (\$M)	394	734.2
3.	客戶滿意指數 [以8分為滿分計] Customer Satisfaction Index (CSI) [on an 8-point scale]	6.6	6.61 ²
4.	年內續訂的服務水平協議 (%) Percentage of Service Level Agreement (SLA) Renewed during the Year (%)	95	100
5.	每月電話調查客戶滿意度 (%) Percentage of Satisfaction Level Based on Monthly Customer Feedback (%)	99	99.95
6.	營運基金員工的訓練日數 (每名員工接受訓練的日數) Training Days of EMSTF Staff (no. of training days per staff)	4.5	5.37
7.	員工滿意度指數 [以10分為滿分計] Staff Satisfaction Rating [on a 10-point scale]	7.0	6.8 ³
8.	員工建議計劃的建議書 (份) Awards for Staff Suggestion Scheme Proposal (no.)	75	116
9.	達到服務水平協議所訂的表現目標 (%) Percentage of SLA Service Performance Target Compliance (%)	99	99.98
10.	每千名營運基金員工須呈報的累積意外宗數 (每千人計算) Accumulated Reportable Accidents per 1 000 EMSTF Staff (no. per 1 000 staff)	5.0 ⁴	4.38
11.	違反法例次數 (宗) Statutory Non-compliance (no.)	0	0
12.	耗電量 (千瓦小時) [機電署總部大樓、企業數據中心及各策略業務單位場地] Electricity Consumption (kWh) [EMSD Headquarters Building, Corporate Data Centre and all SBUs Venues]	10 405 200 ⁵	9 625 397 ⁶

¹ 除第7、第8及第12項適用於機電工程署整個部門外，表內各項目只適用於機電工程營運基金。

² 數字為2018年的調查結果。

³ 數字為2019年的調查結果。

⁴ 此為警戒水平，並非目標。

⁵ 目標耗電量以2013/14財政年度的耗電量(扣除客戶使用量)為基線，再節省4%用電量計算。

⁶ 2018/19財政年度經調整後的耗電量(扣除客戶使用量)。

¹ All items apply to the EMSTF only, except items 7, 8 and 12 which apply to the EMSD as a whole.

² Result from the survey conducted in 2018.

³ Result from the survey conducted in 2019.

⁴ This is an alert level, not a target.

⁵ The target is calculated using the electricity consumption (exclude client usage) in FY 2013/14 as the baseline with 4% energy saving.

⁶ Normalised electricity consumption (exclude client usage) as of FY 2018/19.

策略2：培育團隊

這個策略旨在培育一支具備國際視野及數碼化專門技術的卓越團隊。因此，營運基金致力促進本地、國家及國際層面的合作和交流，並擴大培訓範圍，以涵蓋數碼化技術和創科。

就此，機電工程署於2018年與本地及內地的對口單位簽訂了多份合作備忘錄。此外，營運基金由2018年4月起至2019年全年內，也陸續安排見習技術員和 frontline 員工到廣州參加短期培訓課程。

Strategy 2: Excellent Work Team

Aiming to establish an excellent work team with global perspectives and professional expertise for digitisation, this strategy calls for more co-operation and exchange at local, national and international levels and expansion of the training scope to cover digitisation and I&T.

In this regard, the EMSD signed several memoranda of co-operation with local and Mainland counterparts in 2018. Furthermore, the EMSTF has been sending technician trainees and frontline staff to Guangzhou for short training courses since April 2018 and throughout 2019.



香港機電業推廣工作小組在機電署牽頭下舉辦了機電業博覽2019，以「機電新動力」為主題，向年青人介紹關於機電工程領域的培訓、職業前景和晉升途徑的最新資訊。

Led by the EMSD, the Hong Kong Electrical and Mechanical Trade Promotion Working Group organised the E&M Expo 2019 with the theme of "E&M New Momentum", introducing to the young people the latest information on training, career prospects and promotion pathways in the E&M engineering field.



機電工程署早於2012年牽頭成立香港機電業推廣工作小組，以推動機電業招募及培訓新血為主要工作。工作小組於年內繼續致力進行有關工作，包括在2019年3月在職業訓練局葵涌大樓舉辦年度活動機電業博覽。另一焦點活動為2018年9月舉行的第二屆「機電·啟航」迎新典禮，由政務司司長擔任主禮嘉賓，有逾660名新見習技術員出席，他們來自本港多個主要公營及私營機構舉辦的各類技術員培訓計劃。迎新典禮歡迎新學員加入機電行業，展開事業新篇章，而他們的家人也一同出席慶祝。活動當日更設有電子競技形式的互動問答遊戲，所有出席人士均可透過流動電話參與。

As early as 2012, the EMSD has facilitated in setting up the Hong Kong E&M Trade Promotion Working Group to mainly promote the recruitment and training of new talents for the E&M industry. The Working Group has continued with its efforts, such as organising the annual E&M Expo held in March 2019 at the Vocational Training Council Kwai Chung Complex. Another highlight was the second "E&M Go!" ceremony officiated by the Chief Secretary for Administration in September 2018. The event was attended by over 660 new trainees from various schemes organised by leading public and private organisations in Hong Kong. The ceremony celebrated the beginning of a new chapter for the trainees, with their family members in attendance. All participants were welcome to take an interactive mobile quiz in eSports style.

機電工程署於2018/19年度為員工提供的訓練日數超過24 000天，涵蓋的主題甚廣，包括創科及機電範疇的最新知識、管理技巧、個人效能和其他軟技能等。

In 2018/19, over 24 000 days of training were provided to staff, covering diverse subjects from latest knowhow in I&T and E&M disciplines to management techniques, personal effectiveness and other soft skills.

衛生工程部技術職系同事修畢由機電署與香港大學專業進修學院合辦的第一屆「生物醫學工程技術員文憑課程」。

Technical grade staff of the Health Sector Division completed the first Diploma for Biomedical Engineering Technician programme jointly organised by the EMSD and the HKU School of Professional and Continuing Education.



我們在2018年為前線員工推出不少重要的新培訓課程，當中包括與香港大學專業進修學院合辦的「生物醫學工程技術員文憑課程」。這是本港首個同類課程，並已獲香港學術及職業資歷評審局認可，屬資歷架構下第三級別的課程，顯示其課程質素及水平得到保證。

Among the notable new courses introduced in 2018 for frontline staff was the Diploma for Biomedical Engineering Technician programme, the first of its kind in Hong Kong. Jointly developed with the HKU School of Professional and Continuing Education, the course has been accredited by the Hong Kong Council for Accreditation of Academic and Vocational Qualifications at Level 3 of the Qualifications Framework, an assurance of its quality and standards.

企業管理 Corporate Stewardship



新落成的互動學習中心於2018年9月啟用。該中心配備全息影像及三維投影系統、虛擬實境技術和「洞穴式自動虛擬環境」等高科技設施，以促進技術培訓。
The newly completed Interactive Learning Centre, which commenced operation in September 2018, is equipped with high technology facilities including holographic image system, virtual reality technology and Cave Automatic Virtual Environment to facilitate technical training.



http://bit.ly/emsd_ilc



互動學習中心配備虛擬實境設施，讓見習技術員在不受天氣或環境限制的情況下熟習維修技巧。
Equipped with virtual reality facilities, the Interactive Learning Centre enables technician trainees to hone their maintenance skills without regard to weather or environmental constraints.

我們以身作則，繼續運用新技術改善前線員工的技術培訓設施。經過多月的建造和籌備，全新的互動學習中心已於2018年9月在總部大樓正式啟用。互動學習中心的嶄新培訓設施利用全息影像及三維投影和虛擬實境技術，讓學員在不受制於天氣或場地具有潛在危險的環境下練習技能。

To lead by example, we have continued to apply new technologies to transform our technical training facilities for frontline staff. After months of construction and preparation, a new Interactive Learning Centre (ILC) was opened at our headquarters in September 2018. The ILC features new training facilities using hologram or virtual reality technology that allow trainees to practise their skills without being constrained by weather or potentially hazardous site conditions.

互動學習中心的另一亮點是「洞穴式自動虛擬環境」，這系統可以將三維場景投射到房間大小立方體的多面牆壁和天花板上，創建虛擬設施，例如醫院手術室，供學員在像真度高和安全的環境中熟習維修保養程序。

Another highlight of the ILC is the Cave Automatic Virtual Environment, a system that can project three-dimensional scenes onto the walls and ceiling of a room-sized cube to create a virtual facility such as a hospital operating theatre. This allows trainees to familiarise themselves with maintenance procedures in a highly realistic and safe environment.



http://bit.ly/emsd_cave

「洞穴式自動虛擬環境」系統把虛擬的醫院工作環境投射到由五個平面所構成的立體空間，讓見習技術員在不影響醫院運作的情況下，熟悉實際工作環境(例如手術室)和熟習維修程序。

The Cave Automatic Virtual Environment system projects the virtual working environment of a hospital onto the five faces of a cube-sized room, enabling technician trainees to familiarise themselves with the actual working environment (such as an operating theatre) and maintenance procedures without interrupting the hospital's operation.



「品質及安全日」於2018年11月舉行，以表揚員工在推廣部門持續改善品質及安全方面的貢獻。「品質、環境及生產力推廣計劃」勝出隊伍正演繹得獎個案。

The Quality and Safety Day was held in November 2018 in recognition of the contribution of our staff in promoting the Department's continuous improvement on quality and safety. The award winning team of the Quality, Environmental and Productivity Promotion Programme is performing their winning project.



要建立一支高效的團隊，創科培訓固然重要，但品質、安全和員工福祉亦不容忽視。我們於2018年11月在香港科學館舉辦一年一度的「品質及安全日」，讓員工有機會分享持續改善工作效率的最佳作業方法。表現出色的團隊分別獲頒發「最佳增值服務獎」、「最佳改善個案獎」、「最佳職安健改善個案獎」和「最佳環保個案獎」。

我們明白承辦商的安全表現也同樣重要，因此於2018年7月舉辦以安全創新為主題的承辦商研討會，讓機電工程署人員及嘉賓講者與130多名承辦商員工分享他們在安全、創新及其他相關範疇的經驗。

我們繼續委託香港基督教服務處為所有員工(包括借調至其他部門的人員)提供輔導服務。年內，上述機構為我們的員工舉辦了多場關於精神、情緒和身體健康的簡介會和工作坊，並在有需要時安排輔導員提供羣組危機介入輔導環節，目的是促進同事的全面身心健康，推廣工作與生活平衡。

Whilst I&T training is important as we continue to build an effective team, so too are quality, safety and staff well-being. Our annual Quality and Safety Day held in November 2018 at the Hong Kong Science Museum offered staff a chance to share their best practices for continuous improvement. Outstanding teams received the Best Service Delivery Enhancement Awards, Best Improvement Project Awards, Best Occupational Health and Safety Enhancement Project Awards and Best Green Project Awards.

We are mindful that contractors' safety performance is important too. A Contractors Forum themed "Innovation for Safety" was held in July 2018, in which EMSD officers and guest speakers shared their experiences in safety, innovation and other related aspects with over 130 staff members from our contractors.

We continued to commission the Hong Kong Christian Service to provide counselling services to all staff, including those seconded to other departments. Briefings and workshops on mental, emotional and physical health were held throughout the year, while counsellors were available to provide group crisis intervention sessions where necessary. The aim is to promote all-round health and work-life balance to our colleagues.



「EM創新EM Fun」遊藝會於2019年2月舉行，同事攜同家人參與，樂在其中。是次遊藝會加入數項創新元素，包括機械人參與的開幕儀式、電子點票及電競地帶等。

Colleagues and their family members participated in and enjoyed the EMSD Fun Day which was held in February 2019. Several innovative elements were added on the Fun Day, including an opening ceremony with robot, electronic counting of votes and an eSports zone, etc.



我們舉辦了多個有關精神、情緒和身體健康的工作坊，以促進同事的工作與生活平衡和健康生活。參與「古法養生：拉走亞健康」工作坊的同事正進行眼部周圍的穴位按摩，消除疲勞。

We organised a number of workshops on mental, emotional and physical health to promote work-life balance and healthy living among colleagues. Participants of the "Say Goodbye to Subhealth" workshop are performing acupressure exercises around their eyes to eliminate fatigue.

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另外，機電工程署三位同事於2018年獲頒公務員事務局局長嘉許狀，表揚他們對部門以至廣大市民的持續優秀服務。同時，2018/19年度員工滿意度調查的結果大致令人滿意，以10分為滿分計，整體滿意度指數為6.8分，與2016年上一次調查得出的滿意度指數相同。

Also worth noting was that three EMSD colleagues received the Secretary for the Civil Service's Commendation Awards in 2018 for their sustained excellent service provided to the Department and the public. Meanwhile, results of the 2018/19 Staff Satisfaction Survey remained generally satisfactory, with an overall satisfaction rating of 6.8 out of 10, the same score as in the previous round in 2016.

在2018年公務員事務局局長嘉許狀頒發典禮上，本署有三位同事獲頒嘉許狀，以表揚他們持續優秀的工作表現及對部門作出的貢獻。

Three EMSD colleagues were awarded commendation in the Secretary for the Civil Service's Commendation Award Presentation Ceremony 2018 in recognition of their continued excellent performance at work and contribution to the Department.



策略3：科技·創新

這個策略的重點是建立新的組織架構、文化、工作模式和環境，使營運基金發展成為樂於採用創新科技和推動機電服務數碼化的機構。

營運基金架構重組是年內一項重要舉措，目的是為客戶提供以客為本、一站式、綜合和全面的機電操作、維修保養及項目管理服務；透過區域化的架構提供服務，從而提高效率 and 善用資源；以及推動創科的發展和應用，以提升工作成效和效率，並提供創新解決方案，以滿足客戶需要。

營運基金的新架構已於2018年10月1日實施。新架構由七個部別組成，包括邊境及運輸工程部、保安及車輛工程部、綜合工程部、衛生工程部、市政工程、數碼科技部和企業服務部。

Strategy 3: Technology · Innovation

This strategy focuses on creating new organisational structures, cultures, working modes and environments, thereby developing the EMSTF into an organisation that is willing to leverage innovative technology and promote the digitisation of E&M services.

A key initiative was the re-organisation of the EMSTF, the objectives of which are to provide client-focused, one-stop, integrated and comprehensive E&M operation, maintenance and project management services; enhance efficiency and optimise resources through more regionalised delivery of services; and drive the development and application of I&T to enhance work effectiveness and efficiency as well as provide innovative solutions to meet clients' needs.

The new EMSTF structure, which was effected on 1 October 2018, comprises seven divisions, namely the Boundary Crossing Facilities and Transport Services Division, Security and Vehicle Services Division, General Engineering Services Division, Health Sector Division, Municipal Sector Division, Digitalisation and Technology Division and Corporate Services Division.

我們舉辦了策略制訂工作坊，優化第二個五年策略計劃，力求在創科方面持續革新，為客戶提供數碼化機電工程方案，並以社會利益為依歸，創造最大的公眾價值。

The Strategic Formulation Workshop was conducted to refine the second Five-year Strategic Plan, in which we would strive to continuously innovate in the areas of innovation and technology, provide digitised E&M engineering solutions for clients and maximise public value with the interests of the community in mind.





「Inno@E&M 創新科技挑戰賽」啟動禮於2018年7月舉行。該比賽邀請機電署全體同事參與，鼓勵大家提出應用創科的方案，而得獎方案將獲得資助，並由專責人員實踐項目。

The launching ceremony of the Inno@E&M Challenge, a competition that invites and encourages submission of I&T application proposals from all EMSD staff, was held in July 2018. The winning proposals will be provided with funding for project implementation by dedicated officers.

新成立的數碼科技部(包括創新辦公室)主要協助營運基金把握創科商機，並在日常運作的各個方面充分利用創科。營運基金的新架構將有助部門更好地履行「創新促成者」的角色，務求推動在政府採用創新的機電方案。

The Digitalisation and Technology Division, which includes the Inno-Office, is newly created to help the EMSTF capture I&T business opportunities and fully leverage I&T in all aspects of its operation. The new EMSTF structure will also enable the Department to better perform its designated role as the Innovation Facilitator to promote the adoption of innovative E&M solutions in the Government.

為了培養創科文化，創新辦公室在年內為部門舉辦了多項活動，例如「Inno@E&M 創新科技挑戰賽」。成功進入比賽第二階段的24個參賽項目將會落實推行，每個項目均為市場提供新的創科方案，有助滿足客戶的要求和我們的營運需要。

To foster an I&T culture, the Inno-Office organised various internal events during the year. An example was the Inno@E&M Challenge, under which 24 projects that entered the second stage would be put into implementation, each delivering a new-to-market I&T solution that helps address our clients' requests and our operation needs.

此外，我們還為員工舉辦了一連串創科活動，包括以人工智能、數據分析技術和支持創新的政府採購政策等為主題的簡介會和工作坊，以及參觀香港和深圳兩地的科技企業。

An InnoEvent Series was also organised for staff during the year, comprising briefings and workshops on topics such as artificial intelligence, data analytics and pro-innovation government procurement policy, as well as visits to technology enterprises in Hong Kong and Shenzhen.



年內，我們舉辦了一連串創科活動，當中包括多個創新科技交流日及研討會，例如於2018年9月舉行的「人工智能和數據分析工作坊」及2019年2月舉行的「智能機械人研討會」等。

During the year, we organised an InnoEvent Series, including a number of Inno Theme Days and seminars, such as the workshop on Artificial Intelligence and Data Analytics in September 2018 and the Robotic Innovation and Technology Seminar in February 2019, etc.

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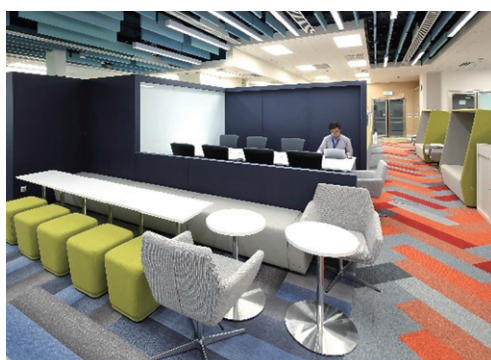
Corporate Stewardship

企業服務部推出了各種新工作模式，令員工的工作更智能化，例如經優化的客戶服務中心，配合新推出的「顧客為本電子平台—工作管理」系統，協助我們更迅捷有效地處理客戶查詢，同時主動為客戶提供及時的工作進度更新。客戶服務中心的所有員工均已接受培訓，掌握無紙作業的數碼化工作流程，能透過流動應用程式而非電話或傳真方式向前線員工分派維修保養工作。前線員工亦已完成培訓，同樣能透過流動應用程式，實時追蹤和匯報工作進度，以便客戶服務中心的人員隨時透過網上平台檢索有關資料，迅速解答客戶的查詢。

為了創造有利創新和協作的新環境，部分策略業務單位在年內翻新了辦公室。新辦公室的設計融入鼓勵創新文化的元素，包括採用更具活力的色調和自然採光，以及打造大量開放的连接空間，方便員工進行討論、分享和協作。

The Corporate Services Division has introduced various new working modes to help staff work smarter. One example is the newly upgraded Customer Service Centre (CSC) with the newly launched Customer Centric e-Platform - Job Management system, which combine to help us handle customer enquiries more promptly and effectively while giving clients proactive and timely updates of work progress. All CSC staff were trained to use paperless and digitised workflow to dispatch maintenance jobs to frontline staff via mobile apps instead of telephone or fax, while frontline staff were trained to track and report job progress in real time via mobile apps so that CSC staff may retrieve the information from the online platforms anytime to answer customer enquiries promptly.

To create new environments conducive to innovation and collaboration, several SBUs renovated their offices during the year with pro-innovation design features. These include adopting office design with more vibrant colour schemes and natural sunlight, as well as creating plenty of open and connected spaces to facilitate staff discussion, sharing and co-working.



http://bit.ly/emsd_svsd

我們運用新的辦公室空間概念，翻新了保安及車輛工程部辦公室(左)和設於衛生工程部辦公室的茶水間(右)，為員工締造更舒適的工作環境之餘，亦提供更多共融空間。

A new office space concept was adopted in the renovation of the office of the Security and Vehicle Services Division (left) and the pantry in the office of the Health Sector Division (right). This not only creates a more comfortable working environment, but also provides more connecting space.

另一舉措是在機電工程署總部大樓設立「機電創科專區」，展示政府部門、初創企業和大學之間的各项創科協作項目，目前約有20項展品。「機電創科專區」是部門「創科之旅」參觀活動中，深受總部大樓訪客歡迎的景點，加上全新的互動學習中心，為員工、客戶及其他持份者打造出令人耳目一新和啟迪創意的環境。

Another initiative was the setting up of an E&M InnoZone at the EMSD Headquarters Building to showcase I&T project collaborations among government departments, start-ups and universities. Around 20 exhibits are currently featured there. As part of the InnoTour, the E&M InnoZone is highly popular with visitors to our headquarters and, together with the new ILC, creates a refreshing and stimulating environment for staff, clients and other stakeholders.