



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

彭耀雄太平紳士
Mr Pang Yiu-hung, 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)

張遠芳太平紳士
Mr Cheung Yuen-fong, JP

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

秘書 SECRETARY

袁秀明女士
Ms Yuen Sau-ming, Anna

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

* 薛永恒太平紳士出任機電工程署署長至2020年4月21日
Mr Sit Wing-hang, Alfred, JP was Director of Electrical and Mechanical Services up to 21 April 2020

* 彭耀雄太平紳士出任機電工程署副署長/營運服務至2019年9月14日
Mr Pang Yiu-hung, JP was Deputy Director/Trading Services, EMSD up to 14 September 2019

管理委員會 MANAGEMENT BOARD



主席 CHAIRMAN

- 1 彭耀雄太平紳士**
Mr Pang Yiu-hung, 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)

- * 薛永恒太平紳士出任機電工程署署長至2020年4月21日
Mr Sit Wing-hang, Alfred, JP was Director of Electrical and Mechanical Services up to 21 April 2020
- * 彭耀雄太平紳士出任機電工程署副署長/營運服務至2019年9月14日
Mr Pang Yiu-hung, JP was Deputy Director/Trading Services, EMSD up to 14 September 2019
- * 張遠芳太平紳士出任機電工程署助理署長/2至2019年9月14日
Mr Cheung Yuen-fong, JP was Assistant Director/2, EMSD up to 14 September 2019

- * 機電工程署財政經理職位於2020年4月1日開始改名為機電工程署總庫務會計師/財政管理
The post title of Finance Manager, EMSD was renamed to Chief Treasury Accountant/Financial Management, EMSD with effect from 1 April 2020
- * 梁淑貞女士及劉啟榮先生出任署理機電工程署員工關係主任至2019年10月7日
Miss Leung Suk-ching, Olivia and Mr Lau Kai-sun were Acting Staff Relations Officers, EMSD up to 7 October 2019

成員 MEMBERS

- 2 張遠芳太平紳士**
Mr Cheung Yuen-fong, 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 黃偉光先生**
Mr Wong Wai-kwong
機電工程署助理署長/2
Assistant Director/2, EMSD
- 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
機電工程署總庫務會計師/財政管理
Chief Treasury Accountant/Financial Management, EMSD
- 7 劉志偉先生**
Mr Lau Chi-wai, Wilfred
署理機電工程署員工關係主任
Staff Relations Officer (Acting), EMSD

秘書 SECRETARY

- 8 袁秀明女士**
Ms Yuen Sau-ming, Anna
機電工程署主任秘書
Departmental Secretary, EMSD

業務回顧與前瞻 OPERATIONS REVIEW AND OUTLOOK

張遠芳太平紳士
Mr Cheung Yuen-fong, JP

機電工程署副署長 /
營運服務

Deputy Director/
Trading Services, EMSD

機電工程營運基金在2019/20年度的業務表現保持穩定，總收入為80.87億港元（2018/19年度：75.23億港元）。近年的業務增長主要來自服務需求持續增加，以及有賴客戶信任和員工努力。

業務增長 穩步向前

儘管本港受2019冠狀病毒病疫情及公眾活動影響，我們2019/20年度的收入回報率仍能維持6.2%，可見發展正面及符合我們的營運原則，即讓客戶保留資金，為服務對象創造最大價值。

在未來數年，不少新的政府大樓及基建項目將陸續落成啟用，例如蓮塘/香園圍口岸、東九文化中心、新的入境事務處總部和多條新隧道等，因此，長遠而言，我們預期營運基金的業務可保持增長。醫院管理局（醫管局）的第一個和第二個十年醫院發展計劃也同樣至關重要。作為醫管局的密切合作伙伴，我們已成立新部別，專責支援落實兩個十年醫院發展計劃的工作，為我們的業務注入新動力。

巨大挑戰 迅速應變

2019/20年度發生的公眾活動和2019冠狀病毒病疫情，為香港帶來前所未有的挑戰。有賴全體同事緊守崗位，我們才能順利支援客戶，共同渡過艱難時刻。公眾活動帶來的挑戰之一，是必須搶修大量受破壞的公共設施，包括約750個路口的交通燈。我們與其他政府部門通力合作，迅速擴展和調動維修團隊，徹夜搶修，務使受損的交通燈能盡快恢復正常運作。

海底隧道同樣因公眾活動而遭受嚴重破壞。為此，我們立即成立了24小時緊急應變小組，進行現場檢查、制訂復修策略、成立系統化匯報機制、進行現場測試、監察緊急的復修工作，以及協調超過一百人的機電署工作人員和業界伙伴搶修隧道。我們與各有關政府部門及業界伙伴日以繼夜、努力不懈，在清理現場後100小時內復修所有受損的隧道設施，確保隧道全面恢復運作，為市民提供服務。

The Electrical and Mechanical Services Trading Fund continued to see steady business performance in 2019/20, with total revenue at HK\$8,087 million (2018/19: HK\$7,523 million). The business growth in recent years was attributable to a sustained increase in service demand, the trust from our clients and the dedication of our staff.

LONG-TERM GROWTH

Despite the impact of the COVID-19 epidemic and the public order events, our return on revenue in 2019/20 held steady at 6.2%, which was a positive development consistent with our operating principle to help our clients retain funding to optimise value for their customers.

In coming years, we expect to see continued and long-term business growth for the EMSTF as new government buildings and infrastructures will be commissioned, such as the Liantang/Heung Yuen Wai Boundary Control Point, the Kowloon East Cultural Centre, the new Immigration Headquarters and several new tunnels. The first and second Ten-year Hospital Development Plans (HDPs) of the Hospital Authority (HA) are also of great significance. As a close partner of the HA, we set up a new Division dedicated to supporting the implementation of the HDPs, bringing fresh momentum to our business.

PROMPT RESPONSE TO UNPRECEDENTED CHALLENGES

The public order events and the COVID-19 epidemic in 2019/20 posed unprecedented challenges to Hong Kong. Thanks to the commitment of our colleagues, we were able to support our clients during these difficult times. One of the challenges arising from the public order events was the need to quickly repair numerous damaged public facilities, such as the traffic lights at around 750 road junctions. Working closely with other government departments, we promptly expanded and mobilised our maintenance team to conduct repair works for the traffic lights overnight, so that the damaged traffic lights could resume normal operation as soon as possible.

The Cross-Harbour Tunnel was also severely damaged due to the public order events. We set up a 24-hour dedicated emergency team immediately to carry out on-site inspections, to develop recovery strategy, to establish systematic reporting mechanism, to conduct on-site tests and monitoring of the exigency recovery works as well as to co-ordinate over 100 on-site working members of EMSD and trade partners for the urgent repair of the tunnel. We worked relentlessly with relevant government departments and trade partners, and made strenuous efforts to recover all damaged tunnel facilities within 100 hours after clearance of the site, enabling the tunnel to resume its full operation for members of the public.

業務回顧與前瞻 Operations Review and Outlook

至於2019冠狀病毒病疫情，我們於2003年協助客戶對抗嚴重急性呼吸系統綜合症的經驗，對今次抗疫工作有莫大幫助。疫情爆發後，我們馬上為28家公立醫院和100多家診所的空調和通風系統加強檢查及保養，又安裝了40多個發燒偵測系統和240多個「流動組合式—高效能空氣微粒子過濾器」，並將普通病房改為負壓病房供2019冠狀病毒病患者入住，務求在短時間內提升服務量。此外，我們也為190多輛救護車的空調系統進行清潔及消毒，並為200多輛救護車加裝空氣過濾網。

檢疫方面，我們調派了專責團隊，為相關的政府部門及機構提供技術意見，並參與改建檢疫中心的工作，以及為檢疫中心的機電設施提供維修保養服務。我們也運用部門的「機電創科網上平台」（「網上平台」），為客戶迅速物色市場上的抗疫創科方案。我們的團隊為客戶安裝智能發燒偵測系統，並為邊境口岸、政府辦公室和法院加強空調和通風系統，減低病毒傳播風險。

面對2019冠狀病毒病疫情等危機，客戶變得更樂於採納創科方案。我們將繼續密切留意疫情發展，並為客戶提供相應支援。

引領創科 促進合作

作為政府的「創新促成者」，我們肩負協助政府部門在工作上採用創科的重任，而所有策略業務單位也一直致力為客戶物色和測試各種創科方案，以滿足其業務需求。有關詳情載於本報告內。

在企業層面，機電署於2019年6月與五所本地大學和七家科研機構簽署合作備忘錄，以支援政府部門應用創科和利用「網上平台」提升服務。2019年8月，我們與粵港澳大灣區的三個重要團體，即廣東省科學技術協會、廣東省生產力促進中心及廣東省科學院簽署合作備忘錄，建立新的合作關係，進一步加強創科協作。創新是未來增長和進步的動力源頭，上述各種策略伙伴關係，將締造更緊密長遠的合作，為所有參與機構孕育更豐盛的創科機會，帶來莫大裨益。

With regard to the COVID-19 epidemic, the EMSTF's experience in helping clients fight the Severe Acute Respiratory Syndrome in 2003 was valuable to the anti-epidemic work this time. We promptly stepped up the examination and maintenance of air-conditioning and ventilation systems at 28 public hospitals and over 100 clinics, installed more than 40 fever screening systems and over 240 Mobile Modular High Efficiency Particulate Arrestance Filter Units, and converted general wards into negative pressure wards for COVID-19 patients to increase service capacity in a short period of time. We also carried out cleaning and disinfection of air-conditioning systems in over 190 ambulances, and installed additional air filters in more than 200 ambulances.

On the quarantine front, we assigned dedicated teams to provide technical advice to relevant government departments and organisations, participated in the conversion works of various quarantine centres, and provided maintenance services for their E&M facilities. We also leveraged our E&M InnoPortal to help clients quickly access innovation and technology (I&T) solutions from the market to help fight the virus. Our team helped clients install the Smart Fever Screening System, and enhanced the air-conditioning and ventilation systems at boundary control points, government offices and law courts to reduce the risk of infection.

In times of crisis such as the outbreak of COVID-19, clients became more ready to embrace I&T solutions. We will continue to monitor the situation and support our clients accordingly.

OUR ROLE AS GOVERNMENT'S INNOVATION FACILITATOR

Given our role as the Government's Innovation Facilitator to help government departments adopt I&T in their work, all our Strategic Business Units were dedicated to supporting our clients in identifying and testing various I&T solutions that suit their operational needs, the details of which are outlined in this report.

On a corporate level, the EMSD signed memoranda of co-operation (MoC) with five local universities and seven research institutions in June 2019 to support I&T application in government departments and enhance their services through the E&M InnoPortal. More partnerships were forged in August 2019 when we signed MoC with three prominent entities in the Guangdong-Hong Kong-Macao Greater Bay Area (GBA), namely the Guangdong Provincial Association for Science and Technology, the Guangdong Productivity Centre and the Guangdong Academy of Sciences, to enhance I&T co-operation. As innovation is the engine of growth and advancement, these strategic partnerships have great value for all parties concerned in enriching I&T opportunities through closer and long-term co-operation.

自2019年年中起，我們的「網上平台」已與廣東省華南技術轉移中心的網站「華轉網」連接。我們的目標是使「網上平台」成為搜尋本港政府部門及公營機構各種「創科願望」的首選網站，以及匯聚整個大灣區的供應商和合作伙伴所提供「創科方案」的平台。事實證明，「網上平台」也有效協助客戶迅速物色240多個合適的抗疫創科方案，包括有助消防及救護學院、大欖女懲教所和中央郵件中心能迅速設置使用消毒機械人。

屢獲嘉獎 碩果纍纍

年內，有賴上下員工的努力，營運基金贏得多個公營及私營機構頒發的獎項，表揚同事在公共服務、科技、創新、數碼化及培訓方面的傑出成就。我們的「非一般創新訓練」參賽項目，在2019年公務員優質服務獎勵計劃中勇奪「隊伍獎（內部支援）」金獎和「特別嘉許獎（創科應用）」，成績令人欣喜。此外，兩位營運基金技術員於2019年8月，在俄羅斯喀山舉行的第45屆世界技能大賽中贏得優異獎，再次證明本港技術員的機電技能，在國際間首屈一指。

與此同時，我們與懲教署共同開發的「懲教署『智慧監獄』」項目，也在2019年公務員優質服務獎勵計劃中榮獲優異獎。營運基金的多位同事，也憑着出色工作表現，分別獲得2019年公務員事務局局長嘉許狀、2019年申訴專員嘉許獎及2020年香港工程師學會創意獎。

此外，我們為香港兒童醫院和天水圍醫院設計的「建築信息模擬—資產管理」項目，獲「型建香港」頒發「最佳BIM政府部門大獎」，而我們為建造業零碳天地設計的「建築信息模擬—資產管理」項目，也贏得Autodesk香港的「BIM設計大獎」，實在令人鼓舞。

Since mid-2019, our E&M InnoPortal has been connected to the website of the South China Technology Commercialization Center. Our aim is to make the E&M InnoPortal the go-to website for searching "I&T wishes" of government departments and public organisations in Hong Kong, as well as a platform of "I&T solutions" offered by providers and co-operation partners from the entire GBA. Indeed, the E&M InnoPortal has proved effective in helping clients quickly access over 240 suitable I&T solutions to fight COVID-19, including the speedy deployment of disinfection robots at the Fire and Ambulance Services Academy, the Tai Lam Centre for Women and the Central Mail Centre.

YEAR OF AWARDS AND ACCOLADES

During the year, the EMSTF was honoured with awards from both public and private sectors for our colleagues' accomplishments in public service, technology, innovation, digitisation and training, an achievement we owe to our staff. We are particularly delighted that our "Training Beyond Innovation" submission won the Gold Prize in Team Award (Internal Support) and the Special Citation Award (Application of Innovation and Technology) in the Civil Service Outstanding Service Award Scheme 2019. Two EMSTF technicians also won the Medallions for Excellence in the 45th WorldSkills Competition held in Kazan, Russia, in August 2019, showing once again that Hong Kong technicians' skills are among the best in the international arena.

Meanwhile, our submission titled "Smart Prison" of Correctional Services Department" jointly developed with the Correctional Services Department won a Meritorious Award in the Civil Service Outstanding Service Award Scheme 2019. Other individual EMSTF colleagues were also honoured with the Secretary for the Civil Service's Commendation Award 2019, the Ombudsman's Awards 2019 and the Hong Kong Institution of Engineers Innovation Award 2020 for their outstanding performances.

We were also delighted to learn that the EMSD was awarded the "Best BIM Government Department Award" from buildingSMART Hong Kong for our Building Information Modelling – Asset Management (BIM-AM) projects for the Hong Kong Children's Hospital and the Tin Shui Wai Hospital, as well as the "BIM Award" from Autodesk Hong Kong for our BIM-AM work at the CIC-Zero Carbon Building.

業務回顧與前瞻

Operations Review and Outlook

策略計劃 樂見成效

儘管面對2019冠狀病毒病疫情，營運基金的第二個五年策略計劃仍然取得良好進展。五年計劃的三個主要策略，即「機電數碼化」、「培育團隊」和「科技・創新」，均帶動營運基金朝預期方向邁進。

「機電數碼化」方面，我們的重點工作之一，是在機電署總部大樓設立首個區域數碼監控中心，讓我們為客戶設施進行預測性維修保養。「培育團隊」方面，我們今年招聘更多年輕見習技術員，為機電業培育新血。此外，我們亦已全面更新訓練設施，包括增設數碼訓練中心，為訓練課程加入創新及數碼元素。

至於「科技・創新」方面，截至2020年3月，我們的「機電創科網上平台」已為客戶發布逾230個創科願望，並收到逾470個解決方案，當中60多個方案已開始進行測試，20多個方案更已順利完成。此外，我們繼續推行內部創新比賽等活動，以期培養部門的創意及協作文化。

來年展望

我們來年的工作重點，仍是致力推動和幫助客戶採納創科方案。我們會繼續不遺餘力，讓員工有更多機會接觸科技，例如「建築信息模擬 — 資產管理」和綜合樓宇管理系統等技術，以不斷創新的精神力求進步。

我們也將繼續保持與機電業界的良好合作。為鼓勵政府工程採用創科方案，我們會為機電維修保養的定期合約及工程合約的投標評分制度，引入創科元素。此外，我們正與業界伙伴合作，編撰一系列《機電資產最佳操作和維修作業守則》，涵蓋電氣、空調、消防、升降機及自動梯系統等範疇。該系列《守則》旨在協助大廈業主及物業設施管理公司，對機電服務供應商定下更高的水平和期望，從而鼓勵業界提供高於法定要求水平的服務。

STRATEGIC PLAN ON THE RIGHT TRACK

Despite the outbreak of COVID-19, the EMSTF's second Five-year Strategic Plan made good progress. The three strategies, namely "E&M Digitisation", "Excellent Work Team", and "Technology • Innovation", steered our development forward as planned.

One of the highlights of our work in "E&M Digitisation" was the launch of our first Regional Digital Control Centre at the EMSD Headquarters, which enabled us to carry out predictive maintenance for clients' facilities. On establishing an "Excellent Work Team", we have recruited more technician trainees this year to nurture new blood for the E&M industry. Also, we have comprehensively renewed our training facilities, such as establishment of new Digital Training Centre, to include innovation and digitised elements to our training scheme.

As for "Technology • Innovation", more than 230 I&T wishes from our clients have been posted on the E&M InnoPortal and over 470 solutions were received as of March 2020. Over 60 I&T project trials have kicked off, among which over 20 have been completed. Other measures, such as the internal inno-competitions, have continued to foster a culture of creativity and collaboration within the EMSD.

THE YEAR AHEAD

Facilitating our clients in adopting I&T solutions will continue to be our focus next year. We will also spare no efforts in ensuring that our staff have broad exposure to technologies such as BIM-AM and integrated Building Management System, so as to keep advancing through innovation.

We will keep our momentum in working with the E&M trade. To encourage adoption of I&T solutions in government works, we will introduce I&T elements to the marking schemes of tenders of E&M maintenance term contracts and works contracts. Also, we are collaborating with trade partners to formulate a series of booklets titled Best Practices for Operation and Maintenance of E&M Assets, covering electrical, air-conditioning, fire services, and lift and escalator systems. The booklets aim to help building owners and facility management companies set higher standards and expectations of their E&M service providers, thus motivating the trade to perform at a level higher than statutory requirements.

回顧2019/20年，我們衷心感謝所有客戶的信任和員工的承擔。一如既往，對於常務委員會和各個決策局給我們指導和支持，我們深表謝意。我們感謝各商會、大學及學者、專業團體、培訓及研究機構給予的意見和支持，也感謝為我們提供服務的顧問和承辦商，以及本港和中國內地的合作伙伴，讓我們順利提升服務和落實各種創科項目。

我們期待來年與所有持份者繼續合作無間。



張遠芳
機電工程署副署長／營運服務

Looking back at 2019/20, we must sincerely thank all our clients for their trust, and our staff for their commitment. As always, we owe our steady performance to the guidance and support of the Executive Board and policy bureaux, for which we are most grateful. Our appreciation goes to the trade associations, universities and academics, professional bodies and training and research institutions for their advice and support. We must also thank our consultants and contractors, as well as our co-operation partners in Hong Kong and the Mainland of China, without whom our service enhancements and I&T initiatives would not have been successful.

We look forward to yet another year of collaboration with all our stakeholders.



Cheung Yuen-fong
Deputy Director/Trading Services, EMSD

營運服務 TRADING SERVICES

合作無間 同心抗疫

2019冠狀病毒病疫情為我們的生活和經濟帶來了前所未有的挑戰。公共衛生是我們當前的首要工作，營運基金的所有策略業務單位全力為我們所有客戶提供支援，特別是醫院管理局（醫管局）、衛生署、紀律部隊如消防處等，共同一起齊心抗疫。

事實上，早在2020年1月香港確診首宗2019冠狀病毒病例之前，我們已經加強對醫管局及衛生署轄下28家公立醫院和100多家診所的空調和通風系統的檢查和維修保養的工作，並且在隔離病房、監察病房、急症室以及指定診所等高風險地方，為所有機電設備加強維修保養，為醫護人員提供安全的工作環境。

自疫情於2020年1月開始爆發至4月為止，我們的團隊檢查了現有的隔離病房，又重新啟用早前停用的負壓病房，並且在公立醫院和診所安裝了40多個發燒偵測系統。我們還設計、建造和安裝了240多個「流動組合式—高效能空氣微粒子過濾器」，將普通病房改裝為供2019冠狀病毒病患者使用的二線負壓病房。



我們的同事在二線負壓病房檢查「流動組合式—高效能空氣微粒子過濾器」的運作，務求為醫護人員及病人提供安全的工作和治療環境。

Our colleague is conducting inspection of the operation of the MMHU in a second-tier negative pressure isolation ward so as to create a safe environment for medical personnel to provide treatment to patients.

CONCERTED EFFORTS TO FIGHT COVID-19

The Coronavirus Disease 2019 (COVID-19) epidemic has brought unprecedented challenges to our lives and the economy. With public health as our top priority, all EMSTF Strategic Business Units work together to support our clients, especially the Hospital Authority (HA), the Department of Health (DH), the disciplined forces such as the Fire Services Department (FSD), and indeed all clients, in fighting the virus.

Even before Hong Kong confirming its first COVID-19 case in January 2020, we had already begun stepping up the examination and maintenance of air-conditioning and ventilation systems at 28 public hospitals and over 100 clinics under the HA and the DH, and had introduced enhanced maintenance for all E&M equipment in high-risk areas such as isolation wards, surveillance wards, accident and emergency departments and designated clinics, so as to provide a safe working environment for medical staff.

From the start of the outbreak in January to April 2020, our team also reviewed existing isolation wards, reactivated those negative pressure wards stepped down before, and installed over 40 fever screening systems at public hospitals and clinics. We also undertook the design, construction and installation of over 240 Mobile Modular High Efficiency Particulate Arrestance Filter Units (MMHUs) to convert general wards into second-tier negative pressure wards for COVID-19 patients.

我們對救護車的保養亦同樣升級。自從疫情2020年1月開始爆發至4月期間，我們為消防處190多輛救護車進行清潔及消毒，並在200多輛救護車的後置空調系統加裝了更高效能的空氣過濾網。我們還為曾經接載過確診患者的警車進行消毒。同時，我們一直在研究其他消毒方法，包括臭氧和納米光觸媒，以不斷提高我們的抗疫能力。

由於2019冠狀病毒傳染性極高，因此必須為確診個案的密切接觸者以及所有從中國內地（內地）或海外入境香港的人士進行隔離檢疫，避免病毒在社區廣泛傳播。各個政府部門和組織已提供不同場所改作檢疫中心之用。營運基金不僅安排專責團隊為改建工程提供意見及參與有關工作，並為有關機電設備提供持續保養維修服務。我們曾參與相關工作的檢疫設施包括暉明邨、駿洋邨、饒宗頤文化館翠雅山房、少年警訊永久活動中心暨青少年綜合訓練營、柴灣鯉魚門公園度假村、保良局賽馬會北潭涌度假營、竹篙灣檢疫中心，以及中山紀念公園體育館的臨時氣膜實驗室。

Our maintenance for ambulance is also stepped up. From the start of the outbreak in January to April 2020, we helped the FSD clean and disinfect over 190 ambulances and installed additional higher-efficiency air filters in the rear air-conditioning systems of over 200 ambulances. We also helped disinfect police vehicles used to transport confirmed patients. Meanwhile, we have been exploring other disinfection methods, including ozone and nano-photocatalyst, to continuously improve our capabilities.

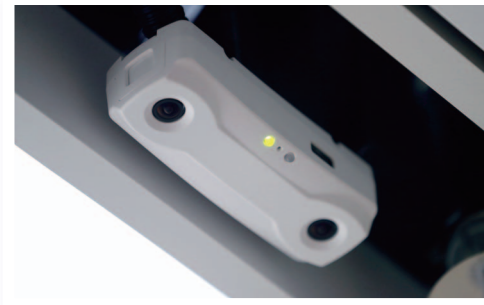
As COVID-19 is highly contagious, it is vital to quarantine people who are close contacts of confirmed cases, as well as all of those entering Hong Kong from the Mainland of China (Mainland) or overseas countries, in order to protect the community from widespread infection. Various government departments and organisations have made available different venues for conversion into quarantine centres. The EMSTF team has not only assigned dedicated teams to advise and participate in conversion works, but also provided ongoing E&M maintenance services for quarantine facilities such as Fai Ming Estate, Chun Yeung Estate, the Heritage Lodge of the Jao Tsung-I Academy, the Junior Police Call Permanent Activity Centre and Integrated Youth Training Camp, the Chai Wan Lei Yue Mun Park and Holiday Village, the Po Leung Kuk Jockey Club Pak Tam Chung Holiday Camp, the Penny's Bay Quarantine Centre, as well as the temporary air-inflated laboratory at Sun Yat Sen Memorial Park Sports Centre.

我們為救護車更換空調系統的空氣過濾網，並於出風口位置噴灑消毒劑。

We replace air filters for air-conditioning systems and disinfect the air vents by spraying disinfectant for ambulances.



營運服務 Trading Services



我們為入境事務處轄下場地安裝人流量統計系統。系統能實時計算人流進出的數據，一旦到達人數上限，入口顯示屏便會顯示警告信息。

We have installed at venues of the Immigration Department headcount sensor control systems that provide real-time information on people in and out of the venues. Once the number of people reaches the limit, an alert message will be shown at the display screen at the entrance.

為了維持入境事務處場地的運作，並盡量減低2019冠狀病毒病傳播的風險，我們在32間人事登記辦事處和智能身份證換領中心安裝了人流量統計系統，以便實時並持續監控辦事處和中心內的人數。一旦到達人數上限，職員會馬上採取措施控制人流，以保持社交距離。

To maintain the operation of the venues under the Immigration Department and minimise the risk of spreading COVID-19, headcount sensor control systems were installed in 32 Registration of Persons Offices and Smart Identity Card Replacement Centres. With these systems, real-time occupancy information inside the offices and centres is readily available for continuous headcount monitoring. Once the threshold limit is reached, immediate measures to control visitor flow are implemented to achieve social distancing.

在衛生署物色合適場地，例如亞洲國際博覽館以作臨時檢測中心，營運基金同樣會提供技術意見，協助衛生署就各個臨時檢測中心選址和設施進行技術評估，用作無症狀入境旅客等待2019冠狀病毒病檢測結果或自我隔離的地方。

Similarly, the EMSTF provided technical advice to the DH in identifying venues to be used as temporary test centres, such as the one at AsiaWorld-Expo. We also helped the DH conduct technical assessment of various potential sites and facilities to be used to house asymptomatic inbound travellers awaiting their COVID-19 test results or for self-quarantine purpose.

為協助衛生署加強對入境旅客的篩檢，我們在各個邊境口岸安裝發燒偵測系統，包括機電署獲獎的智能發燒偵測系統，調配額外流動發燒偵測系統到機場應對運作需要，以及為衛生署提供備用的熱成圖像體溫探測器。我們亦加強邊境口岸的空調和通風系統的檢查和維修保養，以確保口岸設施安全衛生。

To help the DH tighten the screening of inbound passengers, we installed fever screening systems, including our award-winning Smart Fever Screening System, at various boundary control points, deployed additional mobile fever screening systems to the airport to meet operational needs and made available spare thermal imaging units for the DH's deployment. Air-conditioning and ventilation systems at boundary control points also underwent enhanced inspection and maintenance to ensure their hygienic condition.

我們為政府產業署在港珠澳大橋香港口岸安裝發燒偵測系統。該系統能實時為職員自動檢測體溫，並即時提供體溫數據，有助提升邊境管制站的工作效率，讓人流更為暢順。

The fever screening system installed for the Government Property Agency at the Hong Kong-Zhuhai-Macao Bridge Hong Kong Port automatically detects in real time the temperatures of staff. It provides operators with real-time data, thus enhancing the operational efficiency at the border control point and facilitating the smooth flow of staff.



我們於機電署總部大樓地下大堂測試智能防疫通道。通道分為前後兩部分，前通道採用紅外線熱成圖像為人體測溫，另設有鞋底除塵消毒功能；後通道則設置殺菌消毒及淨化通風系統，對使用者隨身衣物進行全面消毒。

The Intelligent Epidemic Prevention Channel is being tested at the ground floor lobby of the EMSD Headquarters. Consisted of two sections, the first section of the channel provides temperature screening by an infrared thermal imager, and carries out dust removal and sanitising for shoes, while the second section thoroughly sterilises clothes and carry-on items of users with its sterilisation, air purification, and ventilation systems.



機電署協助懲教署組裝、測試和調校多部口罩生產機，以支援本港2019冠狀病毒病抗疫工作。

The EMSD carries out assembly, testing and commissioning of mask-making machines for the CSD in a bid to support the city's fight against COVID-19.

2020年2月，有部分在南沙下船的「世界夢號」郵輪旅客確診感染2019冠狀病毒病，郵輪隨即獲安排在啟德郵輪碼頭接受隔離檢疫。我們的員工加入政府調查團隊，提供專業意見。政府於同月成立了跨部門應變小組，集合各部門具備不同專業知識的同事進行調查工作，例如檢查長康邨及富亨邨確診個案的居住單位。機電署作為小組成員，隨時候命，為有關調查提供技術意見及支援。

In February 2020, the World Dream cruise ship was quarantined at Kai Tak Cruise Terminal after some passengers who disembarked at Nansha were confirmed to have infected with COVID-19. Our staff joined the investigation team and provided professional inputs. The EMSD was member of a Multi-Disciplinary Response Team set up by the Government in the same month to facilitate investigations that require technical expertise of different departments, such as examining the residential units of confirmed cases at Cheung Hong Estate and Fu Heng Estate. The EMSD stands ready to provide technical advice and support in these investigations.

醫院的病人衣服必須徹底清洗及消毒。深灣洗衣房經翻新後，於2019年第三季重新啟用，及時應付疫情爆發期間急升的洗衣需求。營運基金在六個月內協助醫管局更換了深灣洗衣房的老化水管、蒸氣管道和有關設備，並為採購洗衣設備提供技術支援，隨後更承接洗衣房機電系統的操作及維修保養服務。

Hospital clothing for patients must be thoroughly cleaned and disinfected. The re-opening of Shum Wan Laundry in the third quarter of 2019 after its renovation, was in time to meet the surge in demand for laundry services amid the COVID-19 outbreak. The EMSTF assisted the HA in replacing aged water pipes, steam pipelines and related equipment in a six-month period, provided technical support for acquisition of laundry equipment, and subsequently took up the O&M services for its E&M systems.

壁屋洗衣房也為公立醫院提供洗衣服務。我們在洗衣房測試了智能防疫通道，為所有進出洗衣房的人員進行消毒，以確保洗衣房及相連的壁屋懲教設施高度清潔。

Meanwhile, we tested an Intelligent Epidemic Prevention Channel for Pik Uk Laundry, which also provides laundry services to public hospitals. The system was designed to sanitise everyone entering and leaving the facility to ensure a high level of cleanliness in the laundry and the correctional facility in which it is situated.

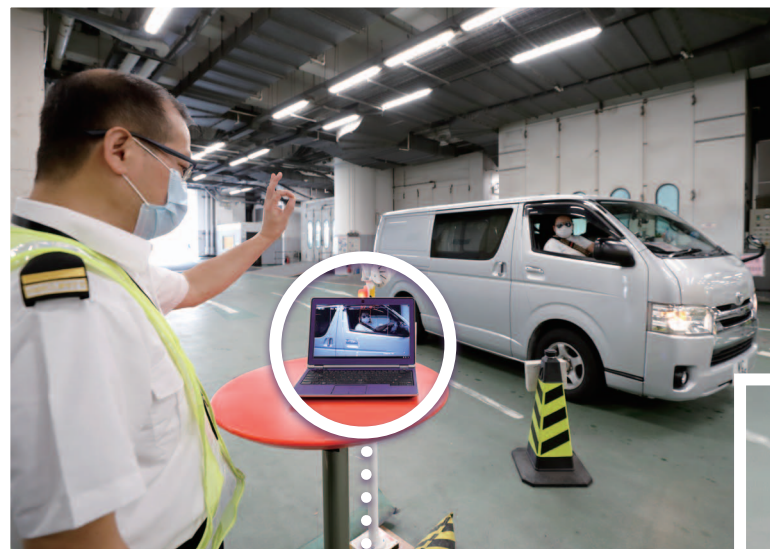
佩戴口罩能有效預防冠狀病毒病。懲教署委託營運基金在羅湖懲教所和赤柱監獄安裝、調校和測試五台新增的口罩生產機，以提高外科口罩產量，供應給所有政府部門。我們更為口罩生產機提供維修保養服務，這項服務雖然超出了我們一般的機電服務範疇，但為了公眾利益，我們勇於接受挑戰。

Wearing a face mask is an effective means of protection against COVID-19. The Correctional Services Department (CSD) has entrusted the EMSTF with installing, calibrating and commissioning five additional mask-making machines at the Lo Wu Correctional Institution and the Stanley Prison to step up production of surgical masks for all government departments. We also provide maintenance services for the mask-making machines, which is beyond our normal E&M service scope but a challenge we have readily taken on for the common good.

營運服務 Trading Services

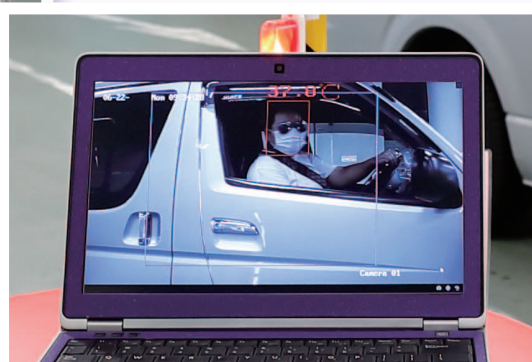
確保所有使用政府建築物的人士免受2019冠狀病毒病感染亦同樣重要。疫情爆發初期，我們幫助許多部門採購發燒偵測系統，以應付政府辦公室和法院等場地因需監測體溫而大增的工作量。至於確診個案的密切接觸者曾經到訪的政府建築物，我們亦進行了緊急清潔和消毒。此外，為準備因疫情而延遲至2020年4月下旬舉行的香港中學文憑考試，我們也為香港考試及評核局就試場內監測學生體溫及採購相關設備方面，提供專業意見。

這次疫情加快了創新科技(創科)解決方案的開發，有助減少人們接觸易受污染的物件表面，如升降機按鈕，務求減少病毒傳播。疫情期間，客戶對機械人的需求也大大增加，利用機器代替人手操作，減輕前線員工的工作量。



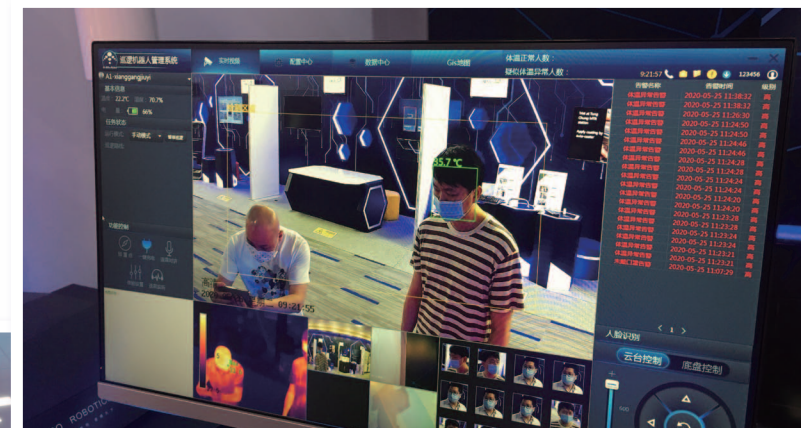
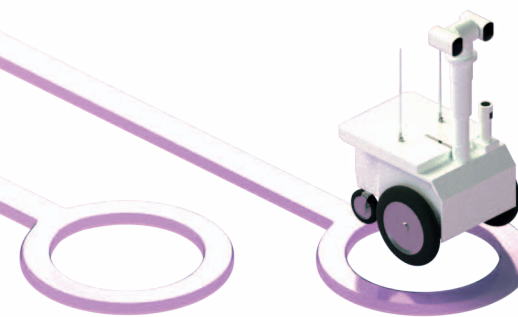
設於機電署總部大樓地下停車場的發燒偵測系統透過人臉識別技術，讓私家車及輕型貨車司機在車上接受體溫檢測，使檢測更為便捷。

The fever screening system installed in the carpark on the ground floor of the EMSD Headquarters uses facial recognition technology to conduct temperature screening for drivers of private cars and light goods vehicles inside the vehicles, boosting the efficiency and convenience of the screening.



It is also important to keep everyone using government buildings safe from COVID-19. During the early stage of the outbreak, we helped many departments procure fever screening systems to cope with the workload of body temperature monitoring at premises such as government offices and law courts. We also conducted emergency cleaning and disinfection at government buildings where close contacts of confirmed cases were found to have visited. Also, in preparation for the Hong Kong Diploma of Secondary Education Examination, which was postponed to late April 2020 due to the epidemic, we provided professional advice to the Hong Kong Examinations and Assessment Authority regarding body temperature monitoring of students at examination centres and gave advice on equipment procurement.

The epidemic has expedited the development of innovation and technology (I&T) solutions that help minimise human contact with easily contaminated surfaces, such as lift buttons, to reduce the spread of virus. Robots for manual tasks have been in demand to reduce the workload of frontline staff.



移動體溫探測機械人是我們透過「機電創科網上平台」物色的創科協作項目，用以在不同環境(例如社區、辦公室、隔離檢疫區等)執行巡邏測溫工作。這些機械人可採用自動遙遠控制，以減低人與人之間近距離接觸。

The mobile fever screening robot, which we sought from an I&T collaboration project from our E&M InnoPortal, can perform fever screening in different environments, such as the community, office, quarantine area, etc. Its automatic remote control function can be used to minimise close person-to-person contact.

為了加快開發創科方案的步伐，我們於2020年2月在「機電創科網上平台」增設抗疫主題的專頁，發布客戶八個抗疫「創科願望」，反應熱烈，共收到超過240個創科方案，例如用於檢測體溫和送餐的移動機械人，以及利用納米技術為物件表面消毒抗菌的方案。同時，我們的團隊一直與初創企業和科研機構緊密合作，安排其創科方案原型在客戶場地進行測試。

香港經歷過2003年對抗嚴重急性呼吸系統綜合症(「沙士」)一役，汲取了寶貴經驗，對今次對抗冠狀病毒病發揮重要作用。2020年1月疫情甫爆發，我們的公共衛生系統及各種規格已準備就緒，市民也迅速加強個人防護和衛生。營運基金當年曾對抗「沙士」的員工隨即與年輕一代同事分享知識和經驗，讓他們建立抗疫所需要的心態和信心。另外，疫情期間全球供應鏈一度出現斷鏈危機，我們積極面對挑戰，與相關承辦商及供應商合作，致力確保設備及零部件的供應可以滿足需求。

2020年4月，我們成立了一個全新部別，支援醫管局落實兩個十年醫院發展計劃。兩個發展計劃涵蓋現有醫院的重建或擴建工程，及新醫院興建工程。由於新部別能夠參與醫院設計階段的工作，我們可以盡早提供意見，使日後的機電設施能為用戶及病人帶來最大效益。隨著醫院發展計劃逐步落實，加上我們與客戶合作無間，未來倘再爆發疫情，本港的抗疫能力也必會大大提升。

To speed up I&T solutions development, we set up a special anti-epidemic page on our E&M InnoPortal in February 2020, which received enthusiastic response of over 240 "I&T solutions" to eight "I&T wishes" from clients to fight COVID-19. Examples included mobile robots for fever detection and meal delivery, and nano technologies to sanitise surfaces. Meanwhile, our team has been working closely with start-ups and research institutes to test their I&T prototypes at client venues.

Hong Kong's experience in fighting the Severe Acute Respiratory Syndrome (SARS) in 2003 was valuable in the current battle against COVID-19, as the public health system and protocols to contain the virus were already in place in January 2020 and the community was quick to protect themselves and step up personal hygiene. Within the EMSTF, staff with experience fighting the SARS readily shared their knowledge and experience with younger colleagues to equip them with the necessary mindset and confidence. In addition, there was a crisis of suspension of global supply chain during the epidemic. To overcome the challenges, we worked with relevant contractors and suppliers to ensure that the supply of necessary equipment and parts could meet the demand.

In April 2020, a new Division was set up to support the HA in implementing its two Ten-year Hospital Development Plans (HDPs), which cover the redevelopment or expansion of existing hospitals and the construction of new ones. As the new Division can be involved at the hospital design stage, we can provide input early on to maximise the benefits of future E&M facilities for users and patients. The implementation of the HDPs and our close partnership with our clients will no doubt boost the city's capacity to fight future epidemic.

營運服務 Trading Services



與口罩機結緣 Close Encounters with Face Mask Machines

胡棟旋先生及其團隊負責羅湖懲教所機械設備的維修保養工作，他們在短時間內掌握組裝、測試和調校口罩生產機的技術，克服種種障礙，確保口罩生產機的可靠性和高產能。

Mr Wu Tai-suen and his team support the maintenance work of mechanical facilities at Lo Wu Correctional Institution. They have overcome all technical obstacles and equipped themselves with skills of assembly, testing and commissioning of mask-making machines in a short time to ensure reliability and high productivity of the machines.

自從2020年1月爆發2019冠狀病毒病以來，外科口罩需求隨即大幅上升。保安及車輛工程部二級監工胡棟旋先生帶領他的團隊，駐守羅湖懲教所，日常負責機械系統的維修保養工作。2020年2月初，幾台來自內地新口罩生產機運抵羅湖懲教所，以應付急升的口罩需求。胡先生臨危受命，擔起安裝和調校這批口罩生產機的重任。

胡先生說：「安裝和調校口罩生產機對我們來說是全新的工作。那批口罩機的款式和來源都各有不同，也沒有操作手冊，而原來來港負責安裝的技術人員，卻因內地封城而被迫延遲行程。」及後的數個月，胡先生和團隊經歷不少挑戰，然而憑着他們豐富的機械經驗，以及積極上網尋找資料，並向本地業界伙伴與熟悉口罩機操作的廠家取經，終於在極短時間內掌握所需知識。

他解釋道：「最難的地方是調校耳線機。」每台口罩生產機都配有兩部耳線機，而每部耳線機每分鐘可生產40條耳線。耳線的拉力必須恰當，口罩才能貼服地包住面部，因此耳線機的調校很重要，讓耳線不會太鬆或太緊。由於口罩機和耳線機都要24小時不停高速運作以滿足口罩需求，機器長時間密集式使用，必須時常進行調校並更換零部件。他憶述：「我們很快發覺，口罩機雖不涉及高科技，但口罩的製作步驟卻很繁複，而且對規格的要求也很高。幸好我們不久已掌握竅門，也能在本地找到全部所需的零部件。」

那數個月，胡先生的團隊每天24小時輪班工作，讓口罩機得以不停運作，同時亦要兼顧懲教署的其他日常維修保養工作。經歷今次的經驗，他有甚麼體會和心得？「看似簡單的事物，原來毫不簡單；每次總會學到新的東西。」

Demand for surgical masks suddenly shot up after the COVID-19 outbreak in January 2020. In early February 2020, Mr Wu Tai-suen, a works supervisor II at the Security and Vehicle Services Division, who heads up the resident team responsible for mechanical systems maintenance at Lo Wu Correctional Institution, was tasked with installing and calibrating several new mask-making machines from the Mainland to cope with increasing demand.

"Installing and calibrating mask-making machines was new to us" said Mr Wu. "The machines were of different types and origins, with no operating manuals. What's more, the technical person who was supposed to come to Hong Kong to set the machines up had his trip postponed due to the Mainland lockdown." What followed was a few months of challenging work and a steep learning curve, drawing on the team's mechanical experience, online research and advice from local trade partners and manufacturers familiar with mask machines.

"The biggest challenge was calibrating the earloop machines," he explained. Each mask-making machine comes with two earloop machines, each churning out 40 earloops per minute. The earloops must be of the right tensile strength so the mask can cover the face snugly, and calibration of the machine is important to make sure the earloops are not too tight or too loose. As the mask and earloop machines must operate 24x7 at high speed to satisfy demand, this heavy use meant they had to be calibrated often and their parts replaced frequently. "We soon realised that though the machines are not involved with high tech, the mask-making steps are complex and the specification requirements are actually very high," he recalled. "Luckily, we got the hang of it after a while and managed to find locally all the spare parts we need."

Mr Wu's team had to work round the clock in shifts in those months to keep the machines running, which was on top of normal maintenance duties for the CSD. Any insight from the experience? "What looks simple, may not be simple at all. There is always something new to learn," Mr Wu concluded.



爭分奪秒 改裝駿洋邨 Racing Against Time to Convert Chun Yeung Estate

鄧再展先生參與了駿洋邨檢疫中心的現場準備工作（例如煤氣熱水爐安裝）。他因有2003年應對沙士的經驗，所以對參與是次抗疫籌備工作可以心手相應。

Mr Tang Choi-chin participated in the on-site preparation works, such as Towngas water heater installation, at the Chun Yeung Estate quarantine centre. With the experience of fighting against SARS in 2003, he is proficient in taking part in the anti-epidemic preparation works this time.

2020年1月的農曆大除夕，因應衛生署的要求，衛生工程部總技術主任鄧再展先生收到上司電話，着他馬上安排團隊，準備將一個尚未入伙的新公共屋邨，改裝成2019冠狀病毒病檢疫中心。鄧先生於2003年「沙士」期間，曾參與建造負壓病房的工作，經驗豐富。他晝夜集齊同事並組織起團隊，馬上行動。不幸那屋邨的多項設施很快遭到破壞，因此已改裝完成的檢疫單位均未能使用。

政府迅速物色另一個位於火炭的新公共屋邨——駿洋邨，準備改裝為檢疫中心。鄧先生需要組織一個跨部別的團隊於2020年2月9日開始進場全力工作。他說：「營運基金的角色，是分階段為邨內其中約3 200個單位安裝超過16 000個照明燈泡，和每個單位安裝及檢測一台煤氣熱水爐，合共約3 200台。」

第一階段工程必須於2020年2月19日完成，以接收即將乘搭政府包機回港進行14天檢疫的首批「鑽石公主號」郵輪上的香港居民，因此時間十分緊迫。鄧先生回憶說：「我們在改裝駿洋邨上遇到的最大挑戰，是新裝煤氣熱水爐的檢測工作。雖然煤氣公司已提供人手幫忙安裝熱水爐，但爐具必須由營運基金的團隊進行檢測，而檢測過程需時。」

鄧先生更指出，政府2012年代號「翡翠」的跨部門聯合演習，測試病毒大流行時的緊急應變，對2020年的抗疫工作十分有用。「我有幸參加了八年前那次演習，所以今次進行任務時，能馬上與團隊成員分享所需知識，並消除部分同事對因工作受感染的疑慮。」

駿洋邨改裝工程最終準時完成，鄧先生總結說：「今次這個跨部別任務給我最深印象，是同事們表現的團隊互信及緊密合作精神。而『翡翠』演習也證明，培訓和經驗傳承至為重要。」

On Chinese New Year's Eve in January 2020, Mr Tang Choi-chin, a chief technical officer of our Health Sector Division, received a call from his senior asking him to quickly assemble a team to get ready to convert a new but unoccupied housing estate into a COVID-19 quarantine centre as requested by the DH. Mr Tang, with experience in building negative pressure wards during the SARS outbreak in 2003, mobilised a team overnight and took immediate action. Unfortunately, a number of facilities in the housing estate were promptly vandalised. Hence, the newly converted quarantine units could not be put into operation.

Chun Yeung Estate in Fo Tan, another new housing estate, was soon identified for conversion. Mr Tang needed to mobilise an inter-divisional team to commence the work there at full steam on 9 February 2020. "The EMSTF's role was to install more than 16 000 light bulbs in around 3 200 units, and to install and test around 3 200 gas water heaters, one in each unit by phases," he said.

Time was tight, and first-phase installation had to be completed by 19 February 2020 when the first batch of Hong Kong residents on board the Diamond Princess cruise ship, was expected to return to Hong Kong on a Government-chartered flight for their 14-day quarantine at the Estate. "It turned out that testing the gas water heaters was the biggest challenge," Mr Tang recalled. "Though Towngas had provided manpower to help install the water heaters, it was necessary for the EMSTF team to conduct the testing, which was time consuming."

According to Mr Tang, the Government's inter-departmental drill exercise code-named Jadeite in 2012 to test contingency actions in the event of a virus outbreak, proved highly valuable in 2020. "Thanks to the drill I participated eight years ago, I was able to equip team members this time with the necessary knowledge and resolve infection control concerns that some had," he said.

The conversion at Chun Yeung Estate was completed on time. "Our colleagues' team spirit of mutual trust and seamless collaboration in this cross-divisional mission was most impressive. Exercise Jadeite also proves the value of training and the importance of passing on experience," Mr Tang concluded.

營運服務 Trading Services

隨時候命 服務摯誠

一直以來，營運基金為政府部門及公營機構的機電系統提供操作、維修保養及項目管理服務，當中包括運輸基建及各種提供社區服務的建築物、場所及設施。我們的職責是支援客戶，為公眾提供無間斷的服務。

2019年6月至12月期間在本港發生的公眾活動，令大量運輸基建和政府設施嚴重受損。營運基金需要在短時間內完成大量緊急維修，挑戰前所未見。我們的同事竭誠支援客戶，日夜趕工，不遺餘力，為公眾維修受損設施，務求盡快令各種公共設施恢復正常運作。

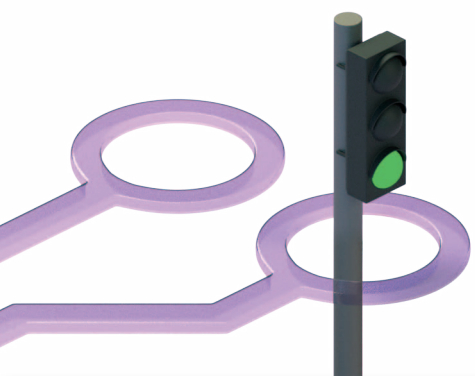
以交通燈為例，全港約750個路口的交通燈受嚴重破壞逾1 400次，部分控制電箱也同樣遭受破壞。我們迅速調動一支約160人的團隊，徹夜搶修，務求在翌日早上能讓受損的交通燈恢復正常運作。截至12月下旬，所有路口已恢復正常運作，但由於零部件需求急增，供應商的庫存耗盡，部分受損交通燈仍正等待備件以作修復。此外，我們也為部分交通燈及控制電箱加裝了額外保護措施。

DEDICATED AND READY TO SERVE AT ALL TIMES

The EMSTF has long provided government departments and public organisations with operation, maintenance and project management services for the E&M systems in transport infrastructure and a wide variety of buildings, venues and facilities which serve the community. It is our duty to support our clients in providing uninterrupted services to the public.

The public order events occurred in Hong Kong from June to December 2019 resulted in serious damage to a large number of transport infrastructures and government facilities, posing unprecedented challenges to the EMSTF as numerous urgent repairs had to be carried out in a very short period of time. Dedicated to supporting our clients, our colleagues worked relentlessly and made strenuous efforts to repair damaged facilities for members of the public, so that such facilities could swiftly resume normal operation.

Taking traffic lights as an example, at some 750 road junctions throughout Hong Kong, numerous traffic lights were severely damaged for more than 1 400 times, some controllers were also vandalised. A team of about 160 people was promptly mobilised to conduct repairs overnight, so that the damaged traffic lights could resume normal operation by the following morning. By late December, all road junctions had resumed normal operation, despite some damaged traffic lights were still awaiting spare parts as the sudden surge in demand exhausted suppliers' inventory. Extra protective equipment were installed at some traffic lights and controllers as a precaution.



機電署協助運輸署修復遭破壞的交通燈及控制電箱，以確保道路安全。

The EMSD assisted the Transport Department in repairing damaged traffic lights and controllers to ensure road safety.

立法會綜合大樓在去年的公眾活動中遭受嚴重破壞。機電署為其設施進行修復工程，協助加快立法會恢復運作。

The EMSD took part in the repair works of the facilities of the Legislative Council Complex that were severely damaged in the public order events taken place last year, so as to expedite the resumption of the operation of the Legislative Council.



數以百計的警車因公眾活動遭受破壞，當中包括特別用途車輛。我們迅速進行維修，並更換遭刺破的輪胎。此外，我們也在車輛加裝新的防護功能，加強保障操作人員的安全。對於政府總部、多幢政府辦公室大樓、社區會堂、多區的警署及紀律部隊宿舍內遭受破壞的機電設施，我們同樣盡快進行復修，並按需要加裝保安及監察設施。

Hundreds of police vehicles, including specialised vehicles, were also damaged from the public order events. Repairs were carried out promptly, and punctured tyres were replaced. In addition, new protective features were added to enhance the safety of vehicle operators. In response to the damaged E&M assets at the Central Government Offices, various government office buildings, town halls, police stations and disciplined services quarters, we carried out repair works as soon as possible, with additional security and monitoring facilities installed where necessary.

立法會綜合大樓和海底隧道（紅隧）也遭受嚴重破壞。立法會綜合大樓在2019年7月初遭受大肆破壞，必須全速維修，以便在2019年10月如期展開新的立法會會期。我們與客戶緊密合作，及時修復所有機電設施，同時也按需要加裝保安及監察設施。

The Legislative Council (LegCo) Complex and the Cross-Harbour Tunnel were both severely damaged. The LegCo Complex was extensively damaged in early July 2019 and had to be repaired at full speed so that the LegCo could commence its new session in October 2019. Working closely with the client, we managed to restore all E&M facilities in time. Similarly, extra security and monitoring facilities were installed where necessary.



去年11月，機電署與多個政府部門合力為遭受嚴重破壞的海底隧道行政大樓及海底隧道收費廣場進行多項緊急維修，並於100小時內迅速完成修復工程。

We co-ordinated with various government departments to conduct emergency repair works at the Cross-Harbour Tunnel Administration Building and the toll plaza of the Cross-Harbour Tunnel in November last year. The repair works were swiftly completed within 100 hours.

營運服務 Trading Services

紅隧於2019年11月遭受嚴重破壞，必須暫時關閉，導致另外兩條過海隧道於繁忙時段出現嚴重交通擠塞。我們與不同政府部門及業界伙伴緊密合作，迅速開展復修工程，尤其是受到嚴重破壞的收費廣場收費系統及行政大樓的控制系統。我們亦為隧道的所有機電系統進行「健康檢查」，確保隧道運作安全才重新啟用。紅隧最終在清理現場後100小時內恢復運作，把對市民造成的不便減至最少，再次凸顯營運基金勇於承擔及堅守核心價值的精神。

公眾活動發生期間，我們考慮到一些物質一旦進入醫院通風系統，或會對醫院運作造成影響，於是我們在醫院內的敏感地點暫時關閉了醫院通風系統的鮮風進氣口，並根據需要，為經常發生公眾活動地點附近的醫院，更換通風系統和醫療空氣系統的過濾網。此外，我們也就公共衛生檢測中心曾遭破壞的閉路電視和消防系統等，進行了維修及改善工程。

2020年農曆年宵市場於1月在本港部分公園及戶外遊樂場舉行。為確保活動順利進行和保障公眾安全，我們為各個年宵市場的照明和公共廣播系統提供緊急後備電源。此外，我們也確保有足夠人手隨時候命，以提供緊急支援。

The Cross-Harbour Tunnel was severely damaged in November 2019 and had to be temporarily shut down, resulting in serious traffic congestion at the other two harbour crossings during peak hours. We collaborated with different government departments and trade partners closely and swiftly to perform rectification works, in particular on the seriously damaged toll systems at the toll plaza and the control systems at the Administration Building. We also performed “health checks” for all E&M tunnel systems to ensure tunnel operation safety before re-opening. Operation of the Cross-Harbour Tunnel was resumed within 100 hours after site clearance to minimise the inconvenience to the public, demonstrating once again the core values and full commitment of the EMSTF.

Mindful of the possible impact of substances entering air ventilation systems of hospitals during public order events, we arranged temporary closure of fresh air intakes for air ventilation systems at sensitive locations within hospitals, and replaced filters for air ventilation systems and medical air systems on a need basis at hospitals near locations of frequent public order events. We also carried out repair and enhancement work at the Public Health Laboratory Centre, which suffered damage to its CCTV, fire services systems, etc.

The 2020 Lunar New Year Fairs were held in January at some parks and outdoor playgrounds in Hong Kong. To ensure smooth operation and public safety, we provided emergency power supply to all lighting and public announcement systems at the fairs. We also made sure that there were sufficient standby staff to provide emergency support.

新落成的救護車輛接待處和輕型車輛接待處空間寬敞，光線充足，並設有玻璃窗，使停泊的車輛一目了然。我們着重客戶服務，在接待處設有等候區域，可供休息。

The new reception offices for ambulances and light vehicles are spacious and well lit. Clients can also see the vehicles parked outside through the offices' glass windows. With customer service being one of our high priorities, we have set up in the reception offices a waiting lounge, where clients are welcome to take a rest.



我們為路政署購入橋樑檢測車，以進行不同橋樑結構（例如懸索橋和斜拉橋）的檢查及維修任務，保障工作安全並提高檢修效率。

We procured for the Highways Department two bridge inspection vehicles in order to facilitate the inspection and maintenance of different bridge structures, such as suspension bridges and cable-stayed bridges, guaranteeing work safety and raising the inspection and maintenance efficiency.

營運基金感謝所有員工，在沉重壓力下努力完成維修工作。此外，我們也感謝客戶、相關部門及其樓宇管理人員的支持和緊密合作。我們會汲取經驗，協助客戶為各種機電設施進行所需加固保護，並制訂緊急行動清單和指引，加強保障員工日後在類似緊急情況下的安全。

The EMSTF is grateful to all staff who worked hard to complete repair work under stressful circumstances. Furthermore, we appreciate the support and close co-operation of our clients, relevant departments and their building management personnel. Learning from the experience, we will help clients make necessary reinforcement to their E&M facilities while also laying down emergency action checklists and guidelines to enhance the safety of staff during similar emergency situations in future.

為進一步加強客戶服務，我們於年內翻新了機電署總部分別用於救護車和輕型車輛的車輛接待處。接待處為客戶提供舒適的專用環境，也讓他們從辦事處內即時看到自己的車輛。我們也計劃為垃圾收集車設立類似的接待處。同時，我們的團隊一直與客戶合作，協助採購新的特別用途車輛，例如邊境口岸的流動X光車輛，以及機場三跑道系統的機場救援和消防車輛等。

To further enhance our customer services, we renovated two vehicle reception offices at the EMSD Headquarters during the year, one for ambulances and the other for light vehicles. A dedicated area with comfortable environment, the vehicle reception offices enable clients to see their vehicles from the office. A new reception office for refuse collection vehicles is under planning. Meanwhile, our team has been working with clients to help them procure new specialised vehicles, such as mobile X-ray vehicles for the boundary crossing facilities, new airport rescue and fire-fighting vehicles for the Three-runway System at the airport, etc.

特別用途車輛採購項目還包括兩輛橋樑檢測車。有關車輛已於2020年3月交付路政署，用以加強青馬大橋、汲水門大橋、汀九橋和昂船洲大橋的檢查和維修工作。橋樑檢測車配備轉盤和四支伸縮臂，可以迅速、暢順及安全地檢查橋樑的上層建築及橋底結構。

Among these specialised vehicle procurement projects, two additional bridge inspection vehicles (BIVs) were delivered to the Highways Department in March 2020 for enhancing the inspection and maintenance of the Tsing Ma Bridge, Kap Shui Mun Bridge, Ting Kau Bridge and Stonecutters Bridge. With the turntable and four extending booms of each BIV, quick, unhindered and safe access to both the superstructure and structure underneath the bridges is assured.

年內，車輛工程服務團隊的業務錄得理想增長，原因是許多客戶都與我們續訂較長年期的服務水平協議，例如香港海關、律政司、政府物流服務署、社會福利署、食物環境衛生署和衛生署，續訂的協議年期為五年至十年不等。

The vehicle engineering service team received a boost during the year as many clients renewed their Service Level Agreements (SLAs) with a longer duration, including the Customs and Excise Department, the Department of Justice, the Government Logistics Department, the Social Welfare Department, the Food and Environmental Hygiene Department and the Department of Health, with renewed SLAs ranging from five to ten years.

2019/20年度，我們與食物環境衛生署和康樂及文化事務署這兩個主要客戶簽訂新的服務水平協議，加強合作伙伴關係。新協議於2020年4月開始，為期六年。續訂年期較長的協議不單證明客戶對我們的服務非常滿意，更有利於維持雙方的穩定伙伴關係，讓我們為客戶籌劃更長遠的機電資產改善計劃。

During 2019/20, we fostered our partnerships with two major clients, namely the Food and Environmental Hygiene Department and the Leisure and Cultural Services Department, each with a six-year SLA commencing in April 2020. These renewals not only proved a high level of client satisfaction, but also provided us with more stability to plan for longer-term E&M asset improvement initiatives for clients.

營運服務 Trading Services



在2018年9月超強颱風「山竹」襲港期間，機械督察鄭偉倫先生秉持「急市民所急」的服務精神，連續40多小時處理與公眾渡輪碼頭相關的突發事件。他憑藉專業表現獲頒發2019年申訴專員嘉許獎。

During the passage of super typhoon Mangkhut in Hong Kong in September 2018, Mr Kwong Wai-lung, a mechanical inspector, dealt with emergencies related to public ferry piers for more than 40 consecutive hours, upholding the spirit of "addressing the community's pressing needs". In recognition of his professionalism, he was presented the Ombudsman's Award 2019.

年內，營運基金員工出色的客戶服務表現亦獲得嘉許。2018年超強颱風「山竹」襲港，使梅窩碼頭及紅磡(北)渡輪碼頭嚴重受損，我們的同事迅速為運輸署安排緊急維修工作，因而獲頒2019年申訴專員嘉許獎的「公職人員獎」。此外，我們的同事憑着研發「建構香港智慧監獄——移動及位置監察系統和維生指標監察系統」項目，以及「利用光纖傳感技術對升降機進行預測性保養」項目，分別在「香港工程師學會創意獎(青年會員組)2020」組別I及組別II獲頒優異獎。我們與懲教署聯合提交的「懲教署『智慧監獄』」項目，也在2019年公務員優質服務獎勵計劃中榮獲優異獎。

The EMSTF staff also won awards for our work for clients during the year. A colleague received the Ombudsman's Awards 2019 for Officers of Public Organisations for his work for the Transport Department in the prompt repairs of the Silvermine Bay Ferry Pier and the Hung Hom (North) Ferry Pier, which were severely damaged by super typhoon Mangkhut in 2018. Other colleagues won a Certificate of Merit (Category I) and a Certificate of Merit (Category II) in the Hong Kong Institution of Engineers Innovation Award 2020 (Young Member Group) for the project on the Development of Smart Prison in Hong Kong — Passage Surveillance and Health Signs Monitoring System, and the Development of Predictive Maintenance of Lifts Using Optical Fibre Sensing Technology respectively. The Correctional Services Department and the EMSD also won a Meritorious Award in the Civil Service Outstanding Service Award Scheme 2019 for our joint submission titled "Smart Prison" of Correctional Services Department".



我們透過非侵入式的光纖傳感技術監測升降機重要部件的運作和進行故障預測。該系統在監測到異常情況時，會即時發出故障預警，以確保升降機日常運作的安全及穩定性。

We monitor the operation of lift's critical parts and predict component faults using a non-invasive optical fibre sensing technology. If abnormalities are detected, the system would immediately issue an early fault warning, thereby ensuring the safety and reliability of lift operation.



搶修交通燈與海底隧道 回復正常運作 Restoring Normality to Traffic Lights and Cross-Harbour Tunnel

2019年下半年香港發生連串公眾活動，期間大量公共設施遭受破壞。同屬邊境及運輸工程部的高級工程師陳瑩瑩女士及工程師陳健康先生，帶領同事緊守崗位，為市民搶修損毀的交通燈及紅磡海底隧道。

The series of public order events taken place in the second half of 2019 in Hong Kong resulted in extensive damage to a large number of public facilities. Ms Chan Ying-ying, Dorothy, a senior engineer, and Mr Chan Kin-hong, Keith, an engineer, both under the Boundary Crossing Facilities and Transport Services Division, remained dedicated and led our colleagues to make strenuous efforts to repair damaged traffic lights and the Cross-Harbour Tunnel for the public.



2019年年中，邊境及運輸工程部工程師陳健康先生管理交通燈維修保養小組已有六年，然而陳先生和他的團隊從未遇上好像2019年下半年，因着全港約750個路口的交通燈遭受破壞，而需要維修那麼多的交通燈。

陳先生說：「那數個月的搶修工作，用盡了相當於十年的備用零部件數量，可見維修工程相當龐大。」他的團隊和數個承辦商通力合作，不斷通宵達旦搶修交通燈，盡量在第二天清早讓最多的交通燈能恢復正常運作，保障市民安全。由於部分控制電箱也遭受破壞，令情況較為複雜，往往需要掘路更換地下的電線。經過數月的艱辛工作，所有交通路口已於2019年12月回復正常運作，而所有復修工程亦在2020年7月全部完成。我們在較重要位置的交通燈和控制電箱也加裝了保護設施，以作預防。

與此同時，邊境及運輸工程部高級工程師陳瑩瑩女士也率領一支團隊，為於2019年11月遭嚴重破壞的紅磡海底隧道進行機電設施復修工作。她統籌及聯絡多個政府部門，並帶領一支超過一百人的機電署團隊在現場工作。政府的目標是要在清理現場後100小時內完成所有復修工作。

陳女士憶述：「為了把握寶貴的時間，我們馬上制訂快速復修計劃，並在進行半天的現場評估後，隨即展開搶修工作。」首要搶修的是收費系統，使它盡快回復正常運作，並要檢查隧道所有機電系統，以及尋找足夠的零部件進行各項復修工程。她補充：「尋找零部件是個很大挑戰。」幸好得到其他政府部門和業界伙伴幫忙，團隊終能齊備復修工程所需的零部件。所有復修工程全速進行後都能準時完成，海底隧道也於2019年11月27日早上五時順利重新開放。

陳女士對團隊能為便利市民作出努力，凸顯了機電工程營運基金的核心服務價值和承諾，感到很高興。

By mid-2019, Mr Chan Kin-hong, Keith, an engineer of the Boundary Crossing Facilities and Transport Services Division (BTSD), had been running its traffic lights maintenance unit for six years. Yet his team had never had to repair as many traffic lights as it would have to do in the second half year of 2019, when lights at some 750 road junctions were vandalised.

"The fact that we exhausted ten years' supply of spare parts in just a few months shows the scale of the repair works," said Mr Chan. Supported by several contractors, his team worked through numerous nights to repair traffic lights so that as many as possible could resume operation early next morning to ensure public safety. Some traffic light controllers were damaged too, which posed complications as road works would be necessary to replace the underground electric wiring. After months of hard work, all traffic junctions were back to operation by December 2019, and all repairs completed by July 2020. Protective measures were added to traffic lights and controllers at strategic locations as a precaution.

Meanwhile, BTSD senior engineer Ms Chan Ying-ying, Dorothy, led a team to repair the E&M facilities of the Cross-Harbour Tunnel, severely damaged in November 2019. Ms Chan co-ordinated and collaborated with various government departments and led a 100-plus EMSD team on-site. The Government's target was to complete all repairs within 100 hours after site clearance.

"To make the most of precious time, we developed a rapid recovery plan and began repair works immediately after a half-day on-site assessment," she recalled. Essential tasks were identified, such as resuming the normal operation of the toll systems, carrying out health checks for all E&M tunnel systems and finding enough spare parts for all repairs. "Sourcing spare parts was a challenge," she said. Thanks to the help from other government departments and trade partners, the team got the spare parts needed for restoring systems. After working at full speed, all repairs were completed on schedule, and the tunnel was re-opened smoothly at 5 a.m. on 27 November 2019.

Ms Chan felt proud that the team had contributed to making life convenient for the public, which demonstrated EMSTF's core service value and commitment.

營運服務 Trading Services

全力以赴 推廣創科

機電署自2019年4月起擔當政府部門的「創新促成者」，在2019/20年度繼續向本港公營機構積極推廣創新及科技(創科)。我們深明本地和區域合作對促進創科發展至為重要，因此在年內簽訂了多份合作備忘錄。

2019年6月，我們與五所本地大學和七間科研機構建立策略伙伴關係，合作支援政府部門應用創科，並推廣運用機電署的「機電創科網上平台」(「網上平台」)，以提升服務及工作效率。2019年8月，我們分別與三個團體，即廣東省科學技術協會、廣東省生產力促進中心及廣東省科學院，簽署合作備忘錄，加強粵港澳大灣區的創科合作。「網上平台」於2019年年中與廣東省華南技術轉移中心的網站「華轉網」連接，讓大灣區的初創企業及科研機構，可瀏覽營運基金客戶及香港公營機構羅列在「網上平台」的創科願望，而「網上平台」的用戶也可在「華轉網」搜尋和物色中國內地(內地)提供的創科方案，從而促進跨境合作。

2019年8月，機電署分別與廣東省科學技術協會(右)、廣東省生產力促進中心(左下)和廣東省科學院(右下)簽訂合作備忘錄，加強粵港創科交流及合作。

The EMSD signed memoranda of co-operation with the Guangdong Provincial Association for Science and Technology (right), the Guangdong Productivity Centre (bottom left) and the Guangdong Academy of Sciences (bottom right) respectively in August 2019 to enhance I&T exchange and co-operation between Guangdong and Hong Kong.



PROMOTING INNOVATION AND TECHNOLOGY

Hailed as "Innovation Facilitator" for government departments in Hong Kong since April 2019, the EMSD kept up the momentum in promoting innovation and technology (I&T) in the public sector in 2019/20. Fully aware of the importance of local and regional collaboration in I&T promotion, we signed several memoranda of co-operation (MoC) during the year.

In June 2019, a strategic partnership with five local universities and seven research institutions was formed to support the application of I&T in government departments and the use of our E&M InnoPortal, with a view to enhancing services and work efficiency. In August 2019, we signed MoC with three entities, namely the Guangdong Provincial Association for Science and Technology, the Guangdong Productivity Centre and the Guangdong Academy of Sciences, to enhance I&T co-operation in the Guangdong-Hong Kong-Macao Greater Bay Area (GBA). Our E&M InnoPortal was also connected to the website of the South China Technology Commercialization Center in mid-2019 so that the I&T wishes listed on the portal by clients and other public organisations are now accessible to GBA start-ups and research institutions, and I&T solutions from the Mainland of China (Mainland) are searchable by E&M InnoPortal users, thereby facilitating cross-border collaboration.

「機電創科專區」增添了更多由機電署與本地大學及科研機構合作的創科方案示範，涵蓋物聯網、自動化、人工智能等科技應用。

The enriched E&M InnoZone showcases our I&T collaborations with local universities and research institutions, covering the application of Internet of Things, automation, artificial intelligence and other technologies.



http://bit.ly/emsd_innozone



機電署已展開多項智能項目的試驗，當中包括智能人臉識別系統、智能停車場及智能洗手間管理系統。

We have launched several smart trial projects, including smart facial recognition system, smart carpark, and smart washroom management system.

我們的創新辦公室在2019/20年度的工作依然十分繁重，除了負責管理「網上平台」外，也要兼顧其他職責。我們透過「網上平台」，幫助客戶物色最合適的創科方案，並協助初創企業進行概念驗證和產品原型測試，讓客戶盡快把有關方案應用於部門營運工作。在機電署總部大樓成功測試的方案，包括智能洗手間、智能停車場及智能會議室等，另外也有其他方案在客戶場地進行測試。

自2018年推出以來，至2020年3月底，「網上平台」資料庫已經載列了政府部門和公營機構的230個創科願望，並吸引初創企業及大學提交了470個創科方案，以及成功配對多達60個項目。事實證明，「網上平台」對許多政府部門來說非常常用，這個便捷工具讓客戶初步了解市場的創科方案概況。此外，我們在「網上平台」設立了抗疫主題專頁，反應熱烈，截至2020年4月中，客戶就抗疫方案上載的八個「願望」，共獲得240多個回應，包括多個來自大灣區機構的方案。

創新辦公室豐富並更新了機電署總部「機電創科專區」的展品，在專區展出我們與政府部門、初創企業和大學合作的最新創科項目。另外，為培養部門的創科文化，我們於2019年12月舉行第二屆「Inno@E&M創新科技挑戰賽」。這項內部比賽分兩個組別邀請提交建議書，包括「客戶服務」組別及「內部支援」組別。

Our Inno-Office, which manages the E&M InnoPortal among its various duties, had another busy year in 2019/20. Through the portal, we have helped clients identify the most appropriate I&T proposals and facilitate start-ups' proof-of-concept and prototype testing to enable clients to apply the solutions to their departmental operations as quickly as possible. Solutions successfully trialled at our headquarters include a smart washroom, a smart carpark and a smart meeting room, with others also tested at client venues.

Launched in 2018, the E&M InnoPortal, with a database of 230 I&T wishes from government departments and public organisations, attracted 470 I&T solutions from start-ups and universities, and made 60 successful project matches as of end-March 2020. The E&M InnoPortal has also proved valuable to many departments, as it is a handy tool to initially canvass I&T solutions available in the market. Furthermore, a special anti-epidemic thematic page we set up under the E&M InnoPortal for the COVID-19 challenge has met with enthusiastic response, with eight "wishes" from clients garnering over 240 coronavirus-fighting solutions, including solutions from GBA entities, as of mid-April 2020.

The Inno-Office has also enriched and updated the E&M InnoZone at our headquarters with the latest I&T project collaborations from government departments, start-ups and universities. To foster a culture of I&T, we kicked off the second Inno@E&M Challenge in December 2019. This internal competition now invites proposals under two categories — "enhancing client services" and "internal support".

營運服務 Trading Services

環境局與機電署於2019年8月合辦「綠色創科日」，展示香港在節約能源及可再生能源方面的創新及科技成果，藉此向各界推動綠色新科技的應用。

The Environment Bureau and the EMSD jointly organised the Green I&T Day in August 2019 to showcase Hong Kong's innovation and technology achievements in relation to energy conservation and renewable energy. The event aimed to promote the application of new green technologies to various sectors in the community.



年內另一創科活動，是機電署與環境局於2019年8月在香港科學園合辦首個「綠色創科日」，展示本港在節能及可再生能源方面的創科成果。活動吸引了600多名參加者和30多個本地及內地參展商參與。事實上，自2019年4月以來，我們一直透過「網上平台」推廣有關能源效益的綠色創科項目，並計劃每年落實十個有關項目。

我們為懲教署推行的各項創科試驗計劃在年內均取得良好進展。透過雙方共同研發的一系列「智慧監獄」方案，包括智慧手帶、維生指標監察和移動及位置監察系統、為在囚人士提供的綜合智能通訊系統，以及利用機械人進行常規巡邏和違禁品搜索工作等研發項目，正在不同的懲教所進行測試。這些系統運用影像分析、物聯網及其他技術，旨在改善在囚人士的福祉，同時紓減客戶的人手壓力。

我們的團隊一直與醫院管理局合作推行「智能醫院」計劃。年內，東區尤德夫人那打素醫院和威爾斯親王醫院展開試驗項目，調派機械人運送牀單和衣物。由於機械人須在醫院內進行垂直和水平導航移動，我們作為院內機電設施操作及維修保養的負責人，必須確保不同的通道門和升降機都能與機械人溝通，令機械人可自行乘坐升降機到達正確的樓層，並按需要進出不同的走廊通道和房間。



機電署為東區尤德夫人那打素醫院的升降機及通道門設置與運輸機械人溝通的介面，確保運輸機械人在運送物資的過程中順利自動乘搭升降機和開門。圖中在該醫院服務的機械人能按預設路徑，將物品（例如牀單）運送至指定地點，從而減輕人力需求。

We set up communication interface between the lifts and passage doors at the Pamela Youde Nethersole Eastern Hospital and its delivery robot, thereby ensuring the robot's delivery by allowing the robot to ride lifts and open doors automatically and smoothly. The robot shown in the photos can deliver objects such as bed linens to a designated area via a pre-set route so as to reduce the manpower demand.

A related development was the first Green I&T Day co-organised with the Environment Bureau at the Hong Kong Science Park in August 2019 to showcase Hong Kong's I&T achievements in energy conservation and renewable energy. The event attracted over 600 participants and more than 30 local and Mainland exhibitors. Indeed, we have been promoting green I&T projects on energy efficiency via the E&M InnoPortal since April 2019. The plan is to implement ten green I&T projects each year.

Good progress was made during the year in our various I&T trial projects for the Correctional Services Department (CSD). The Smart Prison solutions jointly developed with the CSD and being tested at different correctional institutions include a Smart Wristband, a Health Signs Monitoring and Passage Surveillance System, an integrated intelligent communication system for persons in custody (PICs), and several projects exploring the use of robots for routine patrols and contraband searches. Using video analytics, Internet of Things (IoT) and other technologies, the systems aim to better serve the well-being of PICs and reduce manpower pressure on the client.

Meanwhile, our team has been working with the Hospital Authority on her "Smart Hospital" Project. One trial project is the deployment of robots to transport bed linen and clothing items at the Pamela Youde Nethersole Eastern Hospital and Prince of Wales Hospital. As the robot must be able to navigate vertically and horizontally in the hospital, our role as the O&M agent of the hospitals' E&M facilities is to enable the lifts and various doors to communicate with the robot so that it can automatically take the lift to the right floor and enter and exit corridors and rooms as required.



機電署總部大樓的首個區域數碼監控中心提供多項服務，包括遙距設備監控、故障系統警示和能源管理等，以協助客戶提升機電資產的運作效率和能源效益。

The first Regional Digital Control Centre at the EMSD Headquarters offers various services, such as remote equipment monitoring, fault alert, energy management, etc., to enhance operational efficiency and energy efficiency of our clients' E&M assets.



營運基金是開發和推廣「建築信息模擬 — 資產管理」技術的先驅。繼2017年出版第一份《建築信息模擬 — 資產管理標準及指引》後，我們於2019年推出第二版，當中採納了業界提供的意見。隨着愈來愈多用戶應用這項技術，我們會不斷優化和更新有關標準及指引。

機電署在建築信息模擬技術上佔有領導地位，在Autodesk香港建築信息模擬設計大獎2019中贏得多個獎項，包括憑建造業零碳天地的智能操作及維修保養項目勇奪「設計大獎」，以及憑機電署總部客戶服務中心翻新工程而獲頒發「榮譽獎」，更有一位同事榮膺「Young BIMer of the Year」獎項。此外，機電署為香港兒童醫院及天水圍醫院設計的「建築信息模擬 — 資產管理」項目，也獲「型建香港」頒發「最佳BIM政府部門大獎」。

The EMSTF has also been a pioneer in the development and promotion of Building Information Modelling – Asset Management (BIM-AM) technology. Further to our publication of the first BIM-AM Standards and Guidelines in 2017, we published a second edition in 2019, incorporating input from the industry. Our aim is to continuously refine and update the Standards and Guidelines as more users deploy the technology.

In recognition of our BIM leadership, we won multiple accolades in the Autodesk Hong Kong BIM Awards 2019, including a "BIM Award" for our work in BIM-AM for smart O&M at the CIC-Zero Carbon Building and an "Honourable Mention" for the renovation of the EMSD Headquarters' Customer Service Centre. And what's more, one of our colleagues took home the "Young BIMer of the Year" title. The EMSD also received the "Best BIM Government Department Award" from buildingSMART Hong Kong for its BIM-AM projects for the Hong Kong Children's Hospital and the Tin Shui Wai Hospital.

年內另一項令人鼓舞的發展，是我們運用「政府物聯網」加強建築信息模擬技術的應用。「政府物聯網」是全港政府部門通用的物聯網平台，用作中央數據監察和分析及物聯網應用開發。我們於2019年年初進行試驗計劃，透過「建築信息模擬 — 資產管理」平台，成功整合物聯網技術與建築信息模擬的介面。我們與相關政府部門磋商後，認為「建築信息模擬 — 資產管理」與「政府物聯網」進一步整合後，將有龐大發展潛力，預計日後會獲廣泛採用，有助我們優化政府建築物的表現和改善公共服務。

This year, we also saw an exciting development which related to leveraging the Government-Wide IoT Network (GWIN), a territory-wide government IoT platform for centralised data monitoring and analysis and IoT application development, to enhance BIM applications. We successfully integrated our BIM interface with IoT technology through the BIM-AM platform in a trial in early 2019. After further discussion with relevant government departments, we have recognised the potential for further integrating BIM-AM with the GWIN, which will be widely deployed in due course. This integration can help us optimise the performance of government buildings and improve public services.

營運服務 Trading Services



我們的同事於西九龍政府合署展示一套以地理資訊系統為基礎的「數碼文檔記錄系統」。該系統有助機電人員透過定位技術，快速而準確地檢索建築物內的技術資訊，提升維修保養工作的效率。

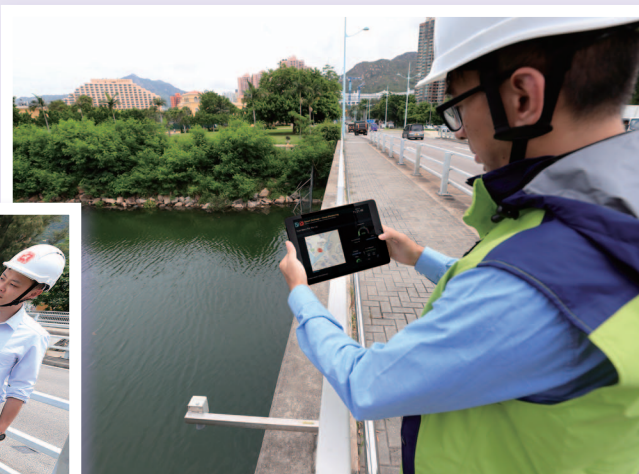
Our colleagues are demonstrating the use of a Geographic Information System-based Digital Documentation System at the West Kowloon Government Offices. With the use of positioning technology, the system enables prompt and accurate retrieval of technical information in a building, thereby enhancing the efficiency of maintenance work.

舉例來說，機電署的區域數碼監控中心可監察政府大樓內空調系統的實時數據，讓我們更有效地進行預測性保養、處理故障和維修，甚至可實時找出大樓物業設施管理的問題。我們的「建築信息模擬 — 資產管理」平台日後與「政府物聯通」整合後，不僅有助機電設備的維修保養，更可透過各種流動應用程式的功能，加強物業設施管理。就以智能洗手間為例，應用程式可提醒前線物業管理人員適時補充消耗品，並為使用者指示空置廁格的位置。

另一相關發展是在2019年第三季推出以地理資訊系統為基礎的「數碼文檔記錄系統」。前線員工現可使用流動電話或平板電腦，輕易檢索指定地點的所有機電設施的技術資訊，包括圖則、維修保養手冊及記錄，大大提升了在操作及維修保養方面的工作效率。營運基金的策略業務單位會根據各自的業務情況，繼續規劃如何採用這個數碼文檔系統，以滿足客戶的個別需求。

我們與渠務署開發「智慧渠務 — 洪水監察系統」先導計劃，透過物聯網技術和新式傳感器，實時監測不同風暴潮點及越堤浪點的水位情況。

We develop the pilot project, Smart Drainage — Flood Monitoring System, which uses the technology of IoT and new type of sensors, with the Drainage Services Department to monitor real-time water level status at different storm surge spots and overtopping wave spots.



For example, real-time data from an air-conditioning system in a government building can be monitored at our Regional Digital Control Centre for more efficient predictive maintenance, troubleshooting and repairs, and even real-time identification of facility management issues. When integrated with the GWIN, the BIM-AM platform will facilitate not only E&M maintenance but also facility management through such features of mobile applications as alerting frontline building management staff to replenish consumables in a smart washroom and directing users to vacant cubicles.

A related development was the launch of our Geographic Information System-based Digital Documentation System (DDS) in the third quarter of 2019. Using mobile phones or tablets, frontline staff can now easily retrieve technical information on all E&M facilities in a specific location, such as drawings, maintenance manuals and records. This is a major boost to the efficiency of our O&M work. Our Strategic Business Units will continue to work on the deployment of the DDS in their own context to suit their clients' unique needs.

物聯網可應用於戶外環境，發展潛力無限。在2019年7月至8月的短短數星期內，我們為渠務署在七個較易受風暴潮影響及三個較易受越堤浪影響的地點安裝了物聯網傳感器，試驗結果證明系統能有效幫助渠務署實時監察風暴潮情況，即使地勢險要也不受影響。隨着「政府物聯通」建設工作日臻完善，各種創新應用方案也會應運而生，我們期待積極參與其中。

創新科技現正融入我們的日常客戶工作。就以香港國際機場的三跑道系統項目而言，營運基金團隊一直協助香港海關、入境事務處和香港警務處，為其機電及電子系統的設計、建造及未來的調校工作進行監控，並藉此機會協助有關部門為各種新設施注入創科元素，例如在X光行李掃描系統加入人工智能技術，從而更快和更準確地識別可疑物件。

The potential of IoT, which includes outdoor applications, is indeed limitless. In just a few weeks from July to August 2019, we successfully installed IoT sensors at seven storm surge spots and three overtopping wave spots for the Drainage Services Department (DSD). The trial results have proved effective in helping the DSD monitor storm surge levels in real time, even where the terrain is difficult. As the construction of the GWIN progresses, more innovative applications will follow, and we look forward to playing an active role.

I&T permeate our day-to-day client work too. Working on the Three-runway System (3RS) at the Hong Kong International Airport, the EMSTF team has been helping the Customs and Excise Department, the Immigration Department and the Hong Kong Police Force monitor the design, construction and future commissioning of the various E&M and electronic systems to be installed at the 3RS. We have also taken the opportunity to help them add I&T elements like artificial intelligence into the new facilities, such as the X-ray baggage scanning system, for faster and more accurate identification of suspicious objects.

建基於物聯網的跨境渡輪航班資料顯示系統透過應用物聯網技術，更新航班的出發時間及目的地，並顯示中港城碼頭的特定資料（例如天氣情況）。該系統同時收集有關附近機電設備運作情況的資料，以作遠程監測。

The IoT-based Sailing Information Display System leverages IoT technologies to update passengers on the departure time and destination, and display specific information of the China Ferry Terminal such as the weather conditions. It also collects information about the operating status of the nearby E&M equipment for remote monitoring.



位於將軍澳的新入境事務處總部是另一例子。該大樓預計於2023年落成，我們就大樓的各項機電系統設計及設施數碼化的工作，向客戶提供意見，期望新總部大樓成為一幢能惠及用戶與大眾的智能建築物。

展望未來，我們將充分利用「政府物聯通」，甚或市場已推出的第五代流動網絡技術，加強創科工作，並履行機電署作為政府「創新促成者」的職責。

Another example is the new Immigration Headquarters in Tseung Kwan O, scheduled for completion in 2023. We provided input to the client on the design of the various E&M systems and ways to digitise its facilities so that the new headquarters will be an intelligent building that creates value for users and the public.

Looking ahead, we will make good use of the GWIN, and perhaps also 5G technology already available in the market, to enhance our I&T work and discharge our duty as the Government's Innovation Facilitator.

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區域數碼監控中心：願景成真 Regional Digital Control Centre: Vision Comes to Life

蘇博文先生及其團隊負責設計及落實機電署首個區域數碼監控中心計劃，致力實踐機電數碼化的工作，積極為建構智慧城市奠定基礎。

Mr So Pok-man, Patrick, and his team are responsible for the design and implementation of the EMSD's first Regional Digital Control Centre with an aim to achieve E&M digitisation and lay the foundation for building a smart city.

站在機電署首個區域數碼監控中心的大型發光二極管儀表板前，彷彿置身科幻電影。儀表板顯示各種機電系統操作數據，可追蹤空調系統能源效益表現和升降機及自動梯狀態，並化成生動的視像圖表，更能隨時擷取及分析多種數據，方便作出搶修設施決定，也有助進行預測性維修保養及實踐實時設施管理。

監督及落實區域數碼監控中心這個先導項目的是綜合工程部工程師蘇博文先生。按照計劃，400幢由綜合工程部維修保養、每幢每年耗電50萬度電以上的主要政府大樓，未來都會陸續接駁至這個區域數碼監控中心，以監察和優化各幢大樓的能源效益表現和機電系統操作效率。

蘇先生說：「區域數碼監控中心是機電工程營運基金第二個五年策略計劃的措施之一。」2018年，他和團隊獲委派任務，把區域數碼監控中心這個新願景變為事實。由於項目概念嶄新，市場並沒有現成的技術方案，團隊於是與初創企業合作，進行設計和建造工程。區域數碼監控中心已於2020年2月開始運作。

蘇先生指出：「長遠而言，區域數碼監控中心是管理智慧型建築物的未來方向。」過去五至七年落成的較新政府大樓，都已安裝了綜合樓宇管理系統，通過該系統，營運基金具有獨特優勢可存取這些政府大樓機電設施的數據庫。當數據庫與機器學習及人工智能等功能結合，數據庫便能產生各種有用的數據工具，將建築物變得更具智慧、更環保。首個區域數碼監控中心的硬件和軟件設計，能讓它們在開放平台上運作，方便機電署日後的其他區域數碼監控中心互相溝通。

Standing in front of the huge light-emitting diode dashboard in the EMSD's first Regional Digital Control Centre (RDCC) is like being in a sci-fi movie. Graphical visualisations of operational data, tracking everything from the energy efficiency performance of air-conditioning systems to the status of lifts and escalators, can be called up and analysed to enable rapid troubleshooting, more effective predictive maintenance and even real-time facility management.

Overseeing the implementation of this pilot RDCC is Mr So Pok-man, Patrick, an engineer of the General Engineering Services Division (GESD). This RDCC will eventually be connected to 400 major government buildings maintained by the GESD, each with annual electricity consumption of over 500 000 kWh, to monitor and optimise their E&M systems' energy efficiency and operational performance.

"RDCC is one of the initiatives under the second EMSTF Five-year Strategic Plan," Mr So noted. In 2018, he and his team were tasked with turning the RDCC vision into reality. As the concept was new and no off-the-shelf solution was available, the team partnered with a start-up to work on design and implementation. The RDCC began operations in February 2020.

"In the long run, RDCC is the way forward for the management of smart buildings," Mr So said. The EMSTF also has the unique advantage of having access to a rich database of government building E&M facilities, especially from newer buildings that have deployed integrated Building Management Systems in the past five to seven years. Once integrated with machine learning and artificial intelligence, the database will generate useful digital tools to help make buildings smarter and greener. Both the hardware and software have been designed to run on an open platform so that all future EMSD RDCCs can communicate with each other.

香港年青公務人員 以中國人員身分赴聯合國任職 Hong Kong Young Public Officers to Work at the United Nations as Chinese Personnel

自2014年開始一直參與BIM-AM項目研發的工程師袁彪洪先生，於2019年勇奪「Young BIMer of the Year」獎項，可見他在BIM-AM發展方面的貢獻備受業界肯定。

Mr Yuen Piu-hung, Francis, an engineer who has been involved in the development of BIM-AM projects since 2014, was awarded the "Young BIMer of the Year" in 2019, a recognition of his contribution in the development of BIM-AM in the trade.

2018年12月，數碼科技部工程師袁彪洪先生經他的職系首長，收到公務員事務局電郵通告，內容是政府招募年青公務人員，參與聯合國初級專業人員計劃。獲成功取錄的申請人將獲派往美國或歐洲的聯合國機構，以中國人員身分成為初級專業人員於當地工作，為期兩年。袁先生跟太太商量後，她也十分支持，於是決定申請。

「競爭相當激烈。」他說。經過香港一連串面試後，初步入選的候選人獲邀於2019年7月往北京，參加為期一周培訓，內容涵蓋國家政策、外交事務及管治策略等。候選人在培訓期間的表現，也是評審一部分。

政府最終選定五位年青公務人員，並由中國外交部推薦，參與今次的聯合國初級專業人員計劃，其中包括袁先生和機電署另一位工程師。袁先生將前往日內瓦的聯合國辦事處工作兩年。他說：「這是個很獨特的機會，讓我們能在多元文化的環境下，接觸不同的處事角度和考量因素。我非常期待。」

It all began in December 2018, when Mr Yuen Piu-hung, Francis, an engineer of the Digitalisation and Technology Division, received an email notice from the Civil Service Bureau via his head of grade. It was a call from the Government for young public officers to take part in the United Nations (UN) Junior Professional Officer (JPO) Programme. Successful candidates would be posted to UN agencies in the US or Europe to work as JPOs for two years as Chinese personnel. After talking to his wife, who was very supportive, Mr Yuen put in his application.

"Competition was keen," he said. After going through a series of interviews in Hong Kong, shortlisted candidates were invited to Beijing in July 2019 for a one-week training on China's national policies, foreign affairs and governance strategies. Candidates' performance in the training formed part of the assessment.

Mr Yuen and another EMSD engineer were two of five young public officers from the Government eventually recommended by the Ministry of Foreign Affairs of the People's Republic of China (PRC) to participate in the UN's JPO Programme. Mr Yuen will be working in the UN office in Geneva for two years. "I am really looking forward to this unique opportunity to gain more experience in a multi-cultural environment with diverse perspectives and considerations," he said.



行政長官林鄭月娥女士（前排左四）於2019年12月出席首批由國家推送的中華人民共和國香港特別行政區青年赴聯合國任職發布儀式。機電署袁彪洪先生（後排左二）及陳莉婷女士（後排右二）為五位參與聯合國初級專業人員計劃的公務人員之一。

Mrs Carrie Lam (4th left, front row), the Chief Executive, attended the Launch Ceremony of the First Batch of the Hong Kong Special Administrative Region of the PRC JPOs Recommended by the Central Government of the PRC to the UN in December 2019. Mr Yuen Piu-hung, Francis (2nd left, back row) and Ms Chan Lee-ting, Joe (2nd right, back row) from the EMSD were two of five public officers to participate in the UN JPO Programme.

營運服務 Trading Services

實踐綠化 動感之都

香港是個人口逾700萬的大都會，這個活力之都不僅以勤奮和效率見稱，更不斷追求快人一步、着着領先。營運基金負責為多個政府部門及公營機構的機電設施提供操作及維修保養服務，擔當重要角色，更積極支援所有客戶不斷改善公共服務。

政府承諾在2015至2020年的五年間，以2013/14年度為基準，把政府建築物的耗電量減少5%，並採取更廣泛措施以應對氣候變化。為了支持政府的舉措，我們協助客戶落實了不少能源效益項目，例如更換老化的製冷機和照明系統，為客戶大大減少了耗電量。由於勢頭良好和成績理想，政府在2019年《施政報告》中提出更進取的「綠色能源目標」，就是以2018/19年度為基準，在2024/25年度或之前把政府整體的能源使用量進一步減少6%。新措施的重點是推動政府建築物使用可再生能源，當中涵蓋電力、氣體及其他能源。



我們為金鐘道政府合署安裝高效能海水冷卻製冷機組，利用較低的全球暖化潛值的製冷劑，提升空調供應的可靠性和能源效益表現，並減低溫室氣體排放。

We installed high efficiency seawater-cooled chillers, using refrigerant with low global warming potential, in the Queensway Government Offices to enhance the reliability of air-conditioning supply and energy efficiency performance, and reduce greenhouse gas emission.



SUPPORTING A VIBRANT AND GREEN CITY

Hong Kong, a metropolis with over seven million people, enjoys a vibrancy that is not only due to its hard work and efficiency, but also to its drive to always stay one step ahead. The EMSTF plays a key role in operating and maintaining the E&M facilities of many government departments and public organisations, and we enthusiastically support all our clients in their continuous improvement of public services.

In support of the Government's pledge to reduce electricity consumption in government buildings by 5% over the five years from 2015 to 2020 with 2013/14 as the baseline, and its wider efforts to combat climate change, we have helped clients implement many energy efficiency projects, such as replacement of ageing chillers and lighting systems. These projects have significantly reduced electricity consumption. Building on the momentum and good results, the Government has pledged a more progressive "Green Energy Target" in the 2019 Policy Address, i.e. a further reduction of the use of energy within the whole government by 6% by 2024/25 using 2018/19 as the baseline. With a focus on promoting the use of renewable energy (RE) in government buildings, the new initiative will cover electricity, gas and other energy sources.

我們為沙田田心警署安裝太陽能發電系統，並提供工程設計及管理工作。該系統產生的可再生能源可供作警署日常電力所需。

We carried out design, management and installation work for the solar PV system on the rooftop of Tin Sum Police Station, Shatin. The PV system provides renewable power to meet the electricity needs of the venue.



我們為啟德跑道公園安裝太陽能燈柱。太陽能燈柱利用陽光發電，供晚上照明之用，大大優化能源使用。

We installed the solar lamp poles at Kai Tak Runway Park. Powered by solar energy for lighting at night, the solar lamp poles largely optimise energy use.



我們已開始為這新一輪的節能計劃進行準備工作。營運基金團隊已就多幢政府建築物展開廣泛調查（特別是建築物天台），以找出在安裝太陽能板方面是否有任何結構限制。在未來幾年，我們會致力為政府建築物及設施安裝太陽能板及其他可再生能源系統。

We have already begun to lay the groundwork for this new round of energy-saving projects. Our team has conducted extensive surveys on many government buildings, particularly their rooftops, to identify any structural constraints for photovoltaic (PV) panel installation. Over the next few years, we will be busy installing PV and other RE systems at government buildings and facilities.

為了配合政府推出可貫通全港政府部門的「政府物聯網」物聯網平台，用作中央數據監察和分析及物聯網應用開發，我們會藉此機會在政府建築物的天台安裝傳感器，把機電設施（例如製冷機和太陽能發電系統）的實時數據，透過「政府物聯網」傳送至客戶場地的綜合樓宇管理系統，以進行資產監控、故障報告和預測性維修保養。收集所得的大數據將有助作出更佳分析，用以優化建築物的運作表現，達致節能效果。

In line with the rollout of the Government-Wide Internet of Things (IoT) Network (GWIN), a territory-wide government IoT platform for centralised data monitoring and analysis and IoT application development, we will take the opportunity to also install sensors on rooftops of government buildings so that real-time data from E&M facilities (e.g. chillers and PV systems) can be transmitted via the GWIN to our integrated Building Management System (iBMS) at client venues for asset monitoring, fault reporting and predictive maintenance. The big data collected will enable more intelligent analysis for optimisation of building performance, thus saving energy.

營運基金現行五年策略計劃的重點措施之一，是採用綜合樓宇管理系統方案，為400多幢政府建築物（當中約180幢為市政設施）的機電設備進行數碼化。設於機電署總部的首個區域數碼監控中心已按計劃於2019年年底落成，初步連接了約20個政府場地，這數目日後會逐漸增加。

One of the key initiatives of the EMSTF's current Five-year Strategic Plan is to digitalise the E&M equipment of more than 400 government buildings, of which some 180 are municipal facilities, with the deployment of iBMS solutions. As planned, our first Regional Digital Control Centre was set up in late 2019 at the EMSD Headquarters, initially connecting about 20 government venues. That number will increase over time.

除了採用可再生能源和物聯網方案之外，我們也開始使用重新校驗，以提升現有建築物（例如法院大樓和政府辦公室大樓）的運作表現。隨着科技進步，重新校驗已成了為現有建築物進行「健康檢查」的有效方法，並可優化建築物的能源效益及整體表現。我們會鼓勵更多客戶採用重新校驗。

In addition to deploying RE and IoT solutions, we have also started using retro-commissioning to enhance the performance of existing venues, e.g. law courts and various government offices buildings. Advancements in technology have made retro-commissioning an effective way to conduct "health checks" on existing buildings and optimise their energy efficiency as well as overall performance. We will encourage more clients to adopt the practice.

營運服務 Trading Services

我們協助食環署在轄下的熟食中心應用可移動式浸洗缸。同事把積聚油脂的濾油隔放入連接超聲波儀器的浸洗缸中，透過超高频超聲波震動徹底清潔濾油隔。

We assisted the FEHD in using mobile soak tanks in their cooked food centres. Our colleagues put the greasy oil filter into the tank, which is connected to an ultrasound generator. The filter is then cleaned thoroughly through super-high-frequency ultrasonic scrubbing.



就市政設施而言，我們去年為食物環境衛生署（食環署）轄下街市的熟食中心引進的紫外光C及臭氧廚房排煙系統，已證明能有效防止排煙管道內的油脂積聚，從而減低這些設施的火警風險。我們現正為大埔墟街市及田灣街市的熟食中心安裝有關系統。此外，我們早前也引入了浸洗缸，利用超聲波為熟食攤檔清洗抽油煙機濾油隔，同樣反應理想，並會在大埔墟街市及田灣街市的熟食中心安裝。我們會把這些新技術推廣至其他熟食中心。

As to municipal facilities, the ultraviolet-C (UV-C) ozone kitchen exhaust treatment system that we introduced last year to cooked food centres in markets under the Food and Environmental Hygiene Department (FEHD) has proved highly effective in preventing grease build-up in exhaust air ducts and, hence, reducing fire risk at these facilities. Installation is now in progress at the cooked food centres in Tai Po Hui Market and Tin Wan Market. Likewise, a soak tank that uses ultrasound to clean oil filters installed in exhaust hoods at cooked food stalls, which we introduced earlier, has met with a good response and will also be installed at the cooked food centres in Tai Po Hui Market and Tin Wan Market. We will promote these new technologies to other cooked food centres.

年內，我們利用人工智能和影像分析技術優化火化效率，預計於2020年完成來自三家不同公司的技術測試。有關團隊的工作亦獲得認同，一位前線員工獲頒2019年公務員事務局局長嘉許狀，以表揚他多年來為火葬場提供專業及傑出的服務。

During the year, we have been using artificial intelligence (AI) and video analytics technologies to optimise the performance of cremators, and expect to complete the testing of technologies from three different companies in 2020. Indeed, our team's work received public recognition as one of our frontline colleagues was honoured with the Secretary for the Civil Service's Commendation Award 2019 for his professional and outstanding work in crematorium service over the years.

我們現正研發一套應用影像分析及人工智能技術的火化系統，以優化火化過程、減少燃料消耗和空氣污染物排放量，以及提升火化效能。

We are developing an AI-based video analytics technology for cremation system in order to optimise the cremation process, reduce fuel consumption and air pollutant emission, and enhance cremation efficiency.



機電署在蓮塘/香園圍口岸安裝、測試及校驗車輛自動清關支援系統，為口岸啟用作好準備。

We conduct installation, testing and commissioning for the Automatic Vehicle Clearance Support System at the Liantang/Heung Yuen Wai Boundary Control Point to prepare for its commissioning.

營運基金在運輸基建和城市設施的操作及維修保養和項目工程方面，在年內均取得良好進展。舉例來說，我們為香港海關和入境事務處在新建的蓮塘/香園圍口岸安裝各類機電及電子系統，口岸項目將於2020年8月投入運作。至於我們一直與運輸署合作引入的「不停車繳費系統」，我們已成立專責團隊，準備把新系統推展至全港所有政府收費隧道，而第一個「不停車繳費系統」將於2022年年中全面投入服務。此外，我們為屯門至赤鱗角連接路的北面連接路的新隧道及中九龍幹線提供顧問及技術諮詢服務，以確保項目的機電設計具成本效益，以及可配合政府相關的公共工程設計和符合相關技術標準。

The EMSTF made good progress during the year in its O&M and project work in transport infrastructure and city facilities. For instance, the new boundary control point at Liantang/Heung Yuen Wai, for which we installed various E&M and electronic systems for the Customs and Excise Department and the Immigration Department, will be put into operation in August 2020. As to the free-flow tolling system (FFTS) that we have been working on for the Transport Department (TD), we have formed a dedicated team to implement the new system at all government tolled-tunnels. The first FFTS will be fully implemented by mid-2022. Besides, we provided consultancy and technical advisory services for the new Northern Connection Tunnel of the Tuen Mun-Chek Lap Kok Link and the Central Kowloon Route to ensure that the E&M design is cost-effective and compatible with the design of the Government's associated public works as well as the relevant technical standards.

數碼時代為我們帶來不少機遇和挑戰。營運基金現正朝着「機電2.0」的願景進發，並已着手推行一系列機電數碼化策略，以協助客戶與時並進，緊貼數碼時代的公共服務需要。我們本着這個精神，在年內加緊協助客戶落實多項資產管理系統數碼化項目，提升我們的「建築信息模擬－資產管理」平台及「政府物聯通」的相關工作，以及持續推展綜合樓宇管理系統。

The digital age presents many opportunities and challenges. In keeping with our "E&M 2.0" vision, we have embarked on a number of E&M digitisation strategies to help our clients keep abreast of public service needs in the digital age. It is with this spirit that we have stepped up our work in helping clients implement their various Asset Management System digitisation projects, our Building Information Modelling – Asset Management platform and related efforts with regard to the GWIN, as well as ongoing iBMS implementation.

展望未來，我們會繼續協助客戶更換老化的機電系統，特別是空調系統。我們會為新的青衣驗車中心提供機電維修保養服務，該中心預計於2021年啟用。

Going forward, we will continue to help clients replace their ageing E&M systems, in particular air-conditioning systems. The EMSTF will also provide E&M maintenance services to the new Tsing Yi Vehicle Examination Centre, scheduled to open in 2021.

營運服務 Trading Services



機電署協助運輸署安裝並試驗新一代停車收費錶系統。該系統為《香港智慧城市藍圖》的項目之一，可支援多種付費方式，包括以流動應用程式遙距繳費，並配備佔用傳感器以提供實時空置泊車位資訊。

We assist the TD to install and test the new generation parking meter system, one of the initiatives set out in the Smart City Blueprint for Hong Kong. The system supports multiple payment means, including remote payment through mobile applications, and is equipped with occupancy sensors to provide real-time information about parking space availability.

運輸服務方面，新一代停車收費錶系統的開發快將完成，初步預計安裝工程會在2020年年底前陸續展開，並於2022年上半年全面完成。新系統正計劃引入多項創新功能，可支援多種電子繳費模式，包括以非接觸式信用卡、快速支付系統（「轉數快」）、二維碼及流動應用程式繳費。新系統亦會配備佔用傳感器，以偵測相關的路旁停車位是否已被佔用，而有關的實時資訊會經運輸署的流動應用程式及網站發放予駕駛者參考，利便他們尋找泊車位，亦有助減少車輛在路上徘徊尋找空置停車位所產生的交通流量。

為改善交通環境和善用土地，我們一直為起動九龍東辦事處提供項目服務，就新蒲崗四美街的體育館設施及公眾停車場設計和推行「地下垂直升降式和橫向移動式」自動泊車系統。有關系統配備智能物流及控制系統，將可節省建築成本，以及提高停車場的營運效率和流量。事實上，自動泊車系統是智慧城市計劃的一部分，未來幾年將有更多不同類型的自動泊車系統在政府場地展開先導計劃。

就東九文化中心而言，我們新的駐場團隊已準備就緒，在2020/21年度啟用時負責場地的機電設施操作及維修保養工作。東九文化中心是個令人期待的新場地，設有多項嶄新設施，其中由電腦控制的先進舞台燈光系統，正是我們將負責操作和維修保養的設施之一，團隊現正積極準備，隨時候命。

As for transport services, the development of new generation of parking meter system will soon be completed and the installation of new parking meters is planned to commence by phases from end of 2020 for completion in the first half of 2022. New innovative features planned to be introduced to the new system, including support for various electronic payment means using contactless credit cards, Faster Payment System (FPS), QR code and mobile applications. New parking meters will each be fitted with an occupancy sensor to detect whether the relevant on-street parking space is occupied or not. The real-time data will be disseminated to motorists for reference through the TD's mobile application and website. This information will assist the motorists in finding parking spaces and reduce the traffic generated by vehicles circulating in search of vacant parking spaces.

To improve traffic environment and land utilisation, we have been providing project services to the Energizing Kowloon East Office for the design and implementation of an underground vertical lifting and horizontal sliding (VLHS) automated car parking system for the Sports Centre Facilities cum Public Vehicle Park at Sze Mei Street in San Po Kong. The VLHS system will save building cost and also improve the operational efficiency and throughput of the carpark with its intelligent logistic and control system. Indeed, as part of the smart city initiatives, many more pilot projects on different types of automatic parking systems will be implemented in government venues in the coming years.

As to the East Kowloon Cultural Centre (EKCC), our new resident team stands ready to take up the O&M work of its E&M facilities when it opens in 2020/21. Among the EKCC's new features is a state-of-the-art computerised stage lighting system that our team is getting ready for, as part of our O&M services for this exciting new venue.



火化爐維修保養 技藝爐火純青 Perfecting the Art of Cremator Maintenance

傅景威先生已從事火化爐磚維修工作近40年。他表示爐內空間狹小，在進行修補爐磚裂縫、檢查爐磚狀況等工作時，可謂考驗耐力。

Mr Fu King-wai, who has been handling brick-repairing work for cremators for almost 40 years, considers his duty to be a test of endurance. He has to repair cracked bricks and conduct condition checking of bricks inside the cremator with limited space.

市政工程部一級監工傅景威先生，近四十年來一直鑽研火化爐的維修保養，鍊成爐火純青的高超技藝。他於1982年加入機電署，曾在本港大部分政府火葬場工作，去年更榮獲2019年公務員事務局局長嘉許狀，表揚他多年來在這方面的貢獻，確是實至名歸。

傅先生說：「早年的海外火化爐製造商不肯向我們提供爐的設計圖則，我唯有站在火化爐門口，默默觀察製造商派來的人員怎樣砌爐磚，用鉛筆畫下來做參考。」當年那火化爐足有三層樓高，沿鋼框內圍需要鋪砌五層爐磚，製造商花了一個多月才把爐磚砌好。經過一個月細心觀察和親手繪圖記錄，傅先生開始對爐磚和火化爐產生興趣，後來更發展成終身事業。

他說：「有時一塊破損了的爐磚，可能深埋在幾層『健康』的爐磚之間，因此在更換破損了的爐磚後，我們必須懂得怎樣把『健康』的爐磚重新正確鋪砌，不然整個結構或會有倒塌危險。」傅先生擁有豐富的火化爐系統知識，堪稱一部活字典，也是火化爐操作及維修保養和解難的專家。他的團隊也察覺到，科技對改善火化爐監察和系統表現、以至加強同事的職業安全都大有幫助，因此近年已率先引進各種科技方案和儀器，幫助工作。此外，他也領導團隊致力執行火化爐嚴格的定期維修保養工作，包括每兩天至六天一次的定期維修保養，還有每年一次的大維修，拆開火化爐所有部件，徹底清潔和修理。

傅先生現於葵涌火葬場工作，時刻銘記團隊的使命，就是提供優質的火化爐系統操作及維修保養服務，讓逝者有尊嚴地走完最後一程，並將骨灰於火化翌日即交回家屬。離退休只有兩年，傅先生期望交棒給新一代，並寄語年青人必須「有耐性、重經驗」。

Mr Fu King-wai has spent almost 40 years perfecting the art of cremator maintenance. Now a works supervisor I of our Municipal Sector Division, he has served at most government crematoria in Hong Kong since joining the EMSD in 1982. The Secretary for the Civil Service's Commendation Award 2019 that he received last year was a well-earned recognition of his outstanding contribution.

"In the old days, the overseas cremator manufacturer would not release the design drawings to us. I had no choice but to stand at the cremator door and quietly observe how the manufacturer's people laid the firebricks, making a pencil drawing as a guide," Mr Fu explained. It took a full month for the manufacturer's people to lay all five layers of firebricks against the cremator's metal frame, which was as tall as a three-storey building. This month of careful observation and drawing sparked Mr Fu's interest in firebricks and cremators, leading to a life-long vocation.

"Since a damaged brick may be buried between layers of 'healthy' bricks, it is important that we can correctly re-lay the 'healthy' bricks after replacing the damaged one, otherwise the whole structure may collapse," he said. He is also a walking encyclopaedia of cremator systems and an expert in O&M and troubleshooting. Recognising the great potential of technology in improving cremator system monitoring and performance as well as occupational safety, his team has piloted many technological solutions and devices in recent years. This was on top of carrying out rigorous scheduled maintenance of cremators every two to six days, plus an annual overhaul that sees all parts dismantled, cleaned and repaired.

Now working at Kwai Chung Crematorium, Mr Fu never forgets that the team's mission is to provide quality O&M service so that the deceased can complete their last journey with dignity and the family can receive the ashes promptly, on the day after cremation. Two years to retirement, Mr Fu looks forward to passing the baton to the younger generation, for whom he advises "patience and experience".

企業管理 CORPORATE STEWARDSHIP

香港年內發生多次公眾活動，兼受2019冠狀病毒病全球大流行影響，令營運基金第二個五年策略計劃的第二年推展工作遇上前所未有的挑戰。本年報的前幾章已詳述我們各策略業務單位的工作，而我們的支援單位也努力尋求各種創新方法，務求盡量減少公眾活動和疫情對營運基金正常運作的影響，同時繼續落實第二個五年策略計劃中的三大策略，即「機電數碼化」、「培育團隊」和「科技・創新」。

營運基金同寅羣策羣力，致力落實這些策略，逐步實現「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，並朝着「機電2.0」的願景邁進。過去一年，我們實現了策略計劃中幾個里程碑，例如實施了多項機電數碼化工作並獲得獎項、深化我們與本地、國家及外國的技術交流和擴展培訓領域，以及支援政府的創新採購政策。機電署十分重視作為政府「創新促成者」的角色，致力為政府的創新採購政策訂下恰當的運作流程及利用「機電創科網上平台」為客戶部門物色創新的機電解決方案。我們會繼續努力履行「創新促成者」的職責，並全力落實營運基金的策略計劃。

以下是我們2019/20年度各支援單位的重點工作。為配合策略計劃，我們的工作主要集中在五方面，即建立團隊、優質服務、創新科技(創科)、關懷員工，以及創意文化。

The second year of the EMSTF's second Five-year Strategic Plan met with unprecedented challenges as public order events and the COVID-19 pandemic affected Hong Kong. In addition to our Strategic Business Units' (SBUs) efforts mentioned in previous chapters, our support units have sought innovative ways to minimise impacts on the EMSTF's normal operation while also continuing to implement the three main strategies of the second Five-year Strategic Plan, namely "E&M Digitisation", "Excellent Work Team" and "Technology・Innovation".

Through a concerted effort to implement these strategies, the EMSTF moved closer towards the corporate goal of "creating public value for community betterment through partnership with different stakeholders" and achieving our vision of "E&M 2.0". The past year saw several milestones in the Strategic Plan achieved, such as implementing multiple E&M digitisation works and winning awards; deepening technical collaborations and expanding training fields with local, national and international institutions; and supporting the pro-innovation government procurement policy. As an Innovation Facilitator for the Government, we take our role seriously and spare no effort in setting up appropriate operation procedure for the pro-innovation government procurement policy and seeking for suitable E&M solutions for client departments with the use of E&M InnoPortal. We will continue to discharge our duty as Innovation Facilitator and implement our Strategic Plan with full momentum.

The following are some highlights of our support units' works during 2019/20. Consistent with our Strategic Plan, they centre around five aspects: capacity building, quality service, innovation and technology (I&T), caring for staff, and a creative work culture.

踏入第二個五年策略計劃的第二年，我們積極落實「機電數碼化」、「培育團隊」和「科技・創新」三大策略，為客戶提供優質的機電工程服務。圖為策略計劃的宣傳小冊子。

Stepping into the second year of the second Five-year Strategic Plan, we are actively implementing the three main strategies of "E&M Digitisation", "Excellent Work Team" and "Technology・Innovation", to deliver excellent E&M service to clients. Pictured is the promotional leaflet of the Strategic Plan.



2019/20財政年度關鍵績效指標成績及表現承諾

Key Performance Indicator Results and Performance Pledges in FY 2019/20



客戶滿意指數 [以8分為滿分計]
Customer Satisfaction Index (CSI)
[on an 8-point scale]

目標 Target **6.6** 成績 Result **6.61¹**



每月電話調查客戶滿意度 (%)
Percentage of Satisfaction
Level Based on Monthly
Customer Feedback (%)

目標 Target **99**

成績 Result **99.87**



達到服務水平協議所訂的
表現目標 (%)
Percentage of Service Level
Agreement (SLA) Service
Performance Target Compliance (%)

目標 Target **99**

成績 Result **99.98**



新業務及業務增長 (百萬元)
New Business and Growth of Business (\$M)

目標 Target **497.6** 成績 Result **565.1**

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)



目標 Target **5.0²**

成績 Result **3.95**

員工建議計劃的
建議書³ (份)
Awards for Staff Suggestion
Scheme Proposal (no.)



目標 Target **75**

成績 Result **104**

年內續訂的服務水平
協議 (%)
Percentage of
SLA Renewed
during the Year (%)



目標 Target **95**

成績 Result **95.9**



違反法例次數 (宗)
Statutory Non-compliance (no.)

目標 Target **0** 成績 Result **0**



耗電量³ (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]

目標 Target **10 296 800⁴** 成績 Result **9 679 465⁵**



收入回報率 (%)
Return on Revenue (%)

目標 Target **2.1** 成績 Result **6.2**



員工滿意度指數³ [以10分為滿分計]
Staff Satisfaction Rating
[on a 10-point scale]

目標 Target **7.0** 成績 Result **6.8⁶**

¹ 數字為2018年的調查結果。下一次調查將於2020年第四季進行。
² 此為警戒水平，並非目標。
³ 此項目適用於機電工程署整個部門，其他項目只適用於機電工程營運基金。
⁴ 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5%用電量計算。
⁵ 2019/20財政年度經調整後的耗電量(扣除客戶使用量)。
⁶ 數字為2019年的調查結果，跟上一次的調查結果相同。

¹ Result from the survey conducted in 2018. The next survey will be conducted in the fourth quarter of 2020.
² This is an alert level, not a target.
³ This item applies to the EMSD as a whole. Other items apply to the EMSTF only.
⁴ The target is calculated using the electricity consumption (exclude client usage) in FY 2013/14 as the baseline with 5% energy saving.
⁵ Normalised electricity consumption (exclude client usage) as of FY 2019/20.
⁶ Result from the survey conducted in 2019, the same as in previous survey.

企業管理 Corporate Stewardship



技能發展中心於2020年2月正式投入服務，提供符合「世界技能大賽」標準的場地作為培訓基地，包括空調製冷培訓基地及電氣安裝培訓基地；另設有數碼訓練中心，配備先進的數碼科技培訓設施，以提升學員的技術水平。

The Skill Development Centre was put into operation in February 2020, providing the Refrigeration and Air-Conditioning Training Base and the Electrical Installations Training Base, which meet the standards required for venues of the WorldSkills Competition, as well as featuring a Digital Training Centre equipped with advanced digital technology training facilities to boost technical skills of trainees.



http://bit.ly/emsd_sdc

投放資源 建立團隊

要進行數碼化，我們需要一支具有國際視野、專業知識及最佳作業方式的優秀工作團隊。此舉的目的，是要確保營運基金的團隊精通創科、目光遠大，並且具有競爭力及豐富國際經驗。

機電署於2018年就機電人才發展與廣州市人力資源和社會保障局（人社局）等中國內地（內地）對口單位簽訂多項合作備忘錄後，進一步深化與人社局的合作。年內，機電署安排了20多名在職員工及82名見習技術員到廣州參加各項技術培訓課程，涵蓋空調系統、電氣安裝、屋宇裝備及車輛維修。

與人社局的另一項合作計劃，是在廣州及香港設立六個培訓基地，以進行合作培訓、業界交流，以及為「世界技能大賽」作聯合集訓。2019年7月，我們在機電署總部大樓為穗港機電人才培訓基地舉行揭牌儀式，慶祝兩地合作。在有關安排下，機電署總部已設立兩個培訓基地，為國家隊及香港代表隊提供訓練，並獲內地和香港專家支持，務求選手達到「世界技能大賽」要求的國際水平。這兩個培訓基地分別是空調製冷培訓基地及電氣安裝培訓基地，設於機電署總部大樓新裝修的技能發展中心。新培訓基地將加強穗港聯合培訓計劃，並提升我們的技能水平。

INVESTING IN CAPACITY BUILDING

We need an excellent work team with global perspectives, professional expertise and best practices for digitisation. The aim is to ensure that the EMSTF is equipped with a highly competent and I&T-savvy team that has a broad outlook and good international exposure.

Following the EMSD's signing of several memoranda of co-operation with counterparts from the Mainland of China (Mainland), including the Guangzhou Municipal Human Resources and Social Security Bureau (HRSSGZ), on joint E&M talent development in 2018, we have stepped up co-operation with the HRSSGZ. During the year, more than 20 in-service EMSD staff and 82 technician trainees participated in various technical training programmes in Guangzhou, covering air-conditioning systems, electrical installations, building services and vehicle maintenance.

Another joint initiative with the HRSSGZ was the establishment of six training bases in Guangzhou and Hong Kong for collaborative training, exchange with the trade, and joint training for the WorldSkills Competition. In July 2019, a plaque unveiling ceremony for the Guangzhou-Hong Kong E&M Talent Training Bases was held at the EMSD Headquarters (HQs) to celebrate the collaboration. Under the arrangement, two training bases at our HQs were set up to jointly prepare the national teams and Hong Kong representatives to attain the international standards required at the WorldSkills Competition, with support from experts from the Mainland and Hong Kong. The two training bases, namely the Refrigeration and Air-conditioning Training Base and the Electrical Installations Training Base, are located in our newly refurbished Skill Development Centre (SDC). The new bases will enhance Guangzhou-Hong Kong joint training initiatives and uplift our technical skills.



隨著穗港機電人才培訓基地成立，兩地機電人才的培訓和交流得以加強，我們的見習技術員有機會向內地學員學習及互相切磋，累積多方面的經驗，更好地裝備自己。

After the setting up of Guangzhou-Hong Kong E&M Talent Training Bases, the training and exchange of E&M talents in both places can be strengthened. Our technician trainees have the opportunities to learn from and share views with their Mainland counterparts, and accumulate diversified experiences to better equip themselves.

2019年8月，兩名機電署技術員代表中國香港參加於俄羅斯舉行的第45屆「世界技能大賽」，並在「電氣安裝」和「空調製冷」項目中取得優異獎，為港爭光。

In August 2019, two EMSD technicians represented Hong Kong, China to participate in the 45th WorldSkills Competition in Russia, and won Medallions for Excellence in the "Electrical Installations" trade and the "Refrigeration and Air-conditioning" trade, bringing glory to Hong Kong.



事實上，有兩名營運基金的技術員於2019年年初在廣州參加聯合集訓，繼而於2019年8月在俄羅斯喀山舉行的第45屆「世界技能大賽」中贏得優異獎。

機電署的技能發展中心還設有一個數碼訓練中心，配備先進的科技培訓設施，以提升學員的數碼技能。同時，機電署總部地下的技能評估中心已於年內落成啟用，為所有見習技術員提供基礎技能訓練及評估。

Indeed, two EMSTF technicians who took part in joint training in Guangzhou in early 2019 won Medallions for Excellence in the 45th WorldSkills Competition held in Kazan, Russia, in August 2019.

The SDC also features a Digital Training Centre equipped with advanced technology training facilities to boost trainees' digitisation skills. Meanwhile, a new Skill Assessment Centre on the ground floor of the EMSD HQs was put into operation during the year to provide basic skill training and assessment to all our technician trainees.



機電署在2019年公務員優質服務獎勵計劃中榮獲多個獎項，包括「非一般創新訓練」項目奪得「隊伍獎（內部支援）」金獎及「特別嘉許獎（創科應用）」、「顧客為本電子平台」項目奪得「隊伍獎（內部支援）」優異獎等，成績斐然。

The EMSD has achieved encouraging results in the Civil Service Outstanding Service Award Scheme 2019, and several awards received including a Gold Prize in Team Award (Internal Support) and a Special Citation Award (Application of Innovation and Technology) for the "Training Beyond Innovation" project, a Meritorious Award in Team Award (Internal Support) for the "Customer Centric e-Platform" project, etc.

企業管理 Corporate Stewardship

2019年12月，機電署獲香港工業專業評審局頒發「智慧學習型機構榮譽獎」，成為首個獲頒此獎項的政府部門。

In December 2019, the EMSD was awarded the Learning Organisation Honorary Award by the Professional Validation Council of Hong Kong Industries, making it the first government department to receive this award.



我們致力在培訓中引進創科元素，亦為部門帶來相關的好消息。在2019年公務員優質服務獎勵計劃中，機電署以題為「非一般創新訓練」的參賽項目獲得嘉許，勇奪「隊伍獎(內部支援)」金獎和「特別嘉許獎(創科應用)」。此外，香港工業專業評審局於2019年12月向機電署頒發「智慧學習型機構榮譽獎」，表揚我們在培訓、學習和管理文化，以及推動行業發展方面的努力。

我們在整體人才培訓發展方面的表現亦獲得僱員再培訓局(ERB)嘉許，該局於2020年的「ERB人才企業嘉許計劃」中向機電署頒授「人才企業」的資格。該計劃旨在推廣人才培訓及發展文化，共有458家來自30多個行業的機構獲嘉許為「人才企業」。

同時，我們繼續與機電業界合作，吸引年輕人才投身機電行業。機電署在香港機電業推廣工作小組再次擔任領導角色，並於9月舉辦「機電·啟航2019」迎新典禮，超過700名來自公私營機構的年輕機電學員出席，慶祝訓練課程開展。是次活動以「協作·同行」為主題，並邀得政務司司長擔任主禮嘉賓。出席者都盡情參與互動遊戲和欣賞YouTube網紅的精彩短片。

機電署與業界於9月舉辦了「機電·啟航2019」迎新典禮，活動主題為「協作·同行」，由政務司司長張建宗先生擔任主禮嘉賓，並邀請700多名機電業青年學員出席。

The "E&M GO! 2019" orientation ceremony organised by the EMSD and the trade in September, with the theme of "Engagement • Connect", was officiated by the Chief Secretary for Administration, Mr Matthew Cheung and attended by more than 700 young E&M trainees.



In a related piece of good news, our efforts in bringing I&T to training were recognised in the Civil Service Outstanding Service Award Scheme 2019, where we won the Gold Prize in the Team Award (Internal Support) and the Special Citation Award (Application of Innovation and Technology) for a submission titled "Training Beyond Innovation". Moreover, the EMSD was awarded the Learning Organisation Honorary Award by the Professional Validation Council of Hong Kong Industries in December 2019 in recognition of our efforts in training, learning and management culture, and industry development.

Our achievements in overall manpower development also gained recognition in 2020 in the ERB Manpower Developer Award Scheme, organised by the Employees Retraining Board (ERB), which accredited the EMSD with the status of a Manpower Developer (MD). The Scheme aims to cultivate a culture of manpower training and development, under which a total of 458 organisations from over 30 industries were accredited as MDs.

Meanwhile, we continued with our joint efforts with the E&M trade to attract young talent to the industry. We again took a leading role in the Hong Kong Electrical and Mechanical Trade Promotion Working Group and organised "E&M GO! 2019" orientation ceremony in September, with over 700 young E&M trainees from both public and private organisations attending to celebrate the start of their technician training. Officiated by the Chief Secretary for Administration, the event under the theme of "Engagement • Connect" allowed participants to enjoy interactive games and video clips by popular YouTubers.



2019年的「品質及安全日」主題為「非一般的創新訓練」，以推廣創新的訓練設施和模式，並表揚員工積極分享最佳個案，提升機電服務的品質及安全。

With the theme of "Innovative Training", the Quality and Safety Day 2019 aimed to promote innovative training facilities and methods, and recognise the efforts of staff in sharing of best practices so as to enhance the quality and safety of E&M services.

提升優質服務

品質及安全是員工培訓與發展不可或缺的一環。我們於2019年11月舉行的年度「品質及安全日」以「非一般創新訓練」為主題，吸引了超過250名參加者出席，一同聆聽「最佳改善個案獎」、「最佳職安健改善個案獎」及「最佳環保個案獎」的得獎隊伍分享最佳作業方法。此外，我們於2019年12月舉行承辦商研討會，重點討論工地安全習慣，以確保承辦商遵守良好的安全守則。由營運基金監督的承辦商工地，更於第25屆公德地盤嘉許計劃中贏得一項銅獎和兩項優異獎。

多年來，機電署為提高服務水平不斷求進，獲香港品質保證局嘉許為「多元體系管理機構」和「整全體系管理機構」。

ENHANCING QUALITY SERVICE

Quality and safety are an integral part of staff development. Our annual Quality and Safety Day, held in November 2019 with "Innovative Training" as the theme, attracted more than 250 participants to learn best practices from the winners of the Best Service Delivery Enhancement Award, the Best Occupational Health and Safety Enhancement Project Award and the Best Green Project Award. A Contractors Forum was also held in December 2019, with a focus on safety habits at work sites to ensure that contractors observe good safety practices. Contractor work sites under our supervision also won one Bronze Award and two Merit Awards in the 25th Considerate Contractors Site Award Scheme.

In recognition of our continuous efforts in enhancing service standards over the years, the Hong Kong Quality Assurance Agency has commended the EMSD as an Outstanding Organisation with Comprehensive Management Systems and an Outstanding Organisation with Holistic Management Systems.

機電署樂於嘗試各種管理工具，以提升服務質素，並於2019年獲香港品質保證局嘉許為「多元體系管理機構」和「整全體系管理機構」，可見我們的努力再次獲得肯定。

The EMSD was commended by the Hong Kong Quality Assurance Agency as an Outstanding Organisation with Comprehensive Management Systems and an Outstanding Organisation with Holistic Management Systems in 2019 in recognition of its efforts in adopting various management tools to improve service quality.



企業管理 Corporate Stewardship

機電署亦致力提供最高水平的服務，對賄賂和貪腐行為採取零容忍態度。基於這原則，我們已於2019年12月取得ISO 37001:2016防貪管理體系標準認證。

我們的客戶服務中心是不少客戶聯絡營運基金的首個接觸點。雖然2019冠狀病毒病於2020年1月開始爆發，客戶服務中心仍必須維持全天候24小時運作。維持客戶服務中心如常運作的同時，我們採取了多項預防措施以盡量減低感染風險，例如重新設計員工值勤時間表及座位編排、把客戶服務中心團隊分成不同小組。我們又加強後備方案，例如預留空間，一旦遇上必須撤離現場以進行徹底清潔的情況，可把客戶服務中心遷至其他地方，以維持服務。迄今，客戶服務中心為客戶提供的優質服務從無間斷，而員工的工作環境也一直保持衛生。

客戶服務中心更與我們的邊境及運輸工程部合作，把地理資訊系統結合資產管理系統，讓我們能夠採取主動，預早為交通燈系統進行維修保養。有關合作項目「治未病 化被動為主動」在2019年公務員優質服務獎勵計劃中獲得「隊伍獎（一般服務）」特別嘉許獎（創科應用）。

此外，值得注意的是我們的「顧客為本電子平台」項目也在2019年公務員優質服務獎勵計劃中的隊伍獎（內部支援）組別奪得優異獎。這個流動網上工作管理系統於2017/18年度推出，大大提高了我們的營運效率，有助匯報工作進度，加強與客戶的溝通。

另外，我們去年出版的《機電工程署二零一八至一九年年報》再次獲得美國通訊專業聯盟的肯定，在「2019 Vision Awards」中榮獲政府組別銀獎和50份最佳中文年報，並且在2020年第34屆ARC國際年報大獎的「非牟利機構（印刷版年報）：政府機構及辦公室」組別及「特定年報：合併年報及可持續發展報告」組別榮獲銅獎，成績令人鼓舞。

《機電工程署二零一八至一九年年報》於美國通訊專業聯盟舉辦的「2019 Vision Awards」中榮獲政府組別銀獎及50份最佳中文年報，並於2020年第34屆ARC國際年報大獎的「非牟利機構（印刷版年報）：政府機構及辦公室」組別及「特定年報：合併年報及可持續發展報告」組別榮獲銅獎。

The EMSD Annual Report 2018/19 won Silver Award – Government Industry and Top 50 Chinese Reports in the 2019 Vision Awards organised by the League of American Communications Professionals, and bronze award in both the Non-Profit Organisation (Print A.R.): Government Agencies & Offices category and the Specialised A.R.: Combined Annual and Sustainability Report category of the 34th International ARC Awards in 2020.



The EMSD is also committed to delivering the highest standards of service with zero tolerance for bribery and corruption. Accordingly, we were awarded the certification of ISO 37001:2016 Anti-Bribery Management System in December 2019.

As the first point of contact for many clients, our Customer Service Centre (CSC) had to continue 24 x 7 operation despite the COVID-19 outbreak that began in January 2020. To minimise the risk of infection while ensuring continuous CSC service, we implemented preventive measures such as re-designing the roster and seating arrangements, splitting our CSC team into different groups. We also enhanced back-up plans, making provision to relocate the CSC to ensure continuous operation if the premises had to be vacated for deep cleaning, for example. To date, the CSC has maintained uninterrupted, quality services to clients and a healthy environment for staff.

The CSC also worked together with our Boundary Crossing Facilities and Transport Services Division to integrate the Geographic Information System with an asset management system, which enables and supports proactive maintenance of traffic lights. Their joint “From Reactive to Proactive Maintenance” project won a Special Citation Award (Application of Innovation and Technology) in Team Award (General Service) in the Civil Service Outstanding Service Award Scheme 2019.

Also worth noting is a Meritorious Award in Team Award (Internal Support) in the Civil Service Outstanding Service Award Scheme 2019 for our “Customer Centric e-Platform” project launched in 2017/18, a mobile online job management system that has significantly enhanced our operational efficiency and communication with clients on project progress updates.

Moreover, the Electrical and Mechanical Services Department Annual Report 2018/19 published last year has been once again recognised by the League of American Communications Professionals. We won the Silver Award – Government Industry and Top 50 Chinese Reports in the 2019 Vision Awards. In addition, that annual report also won bronze award in both the Non-Profit Organisation (Print A.R.): Government Agencies & Offices category and the Specialised A.R.: Combined Annual and Sustainability Report category of the 34th International ARC Awards in 2020. The results were very encouraging.



機電署與五所本地大學及七家科研機構於2019年6月簽署《機電創科網上平台合作備忘錄》，建立策略合作伙伴關係。

The EMSD established strategic partnerships with five local universities and seven technological research institutions by signing the Memorandum of Co-operation for E&M InnoPortal in June 2019.

推動創新科技

我們熱衷於推動創新科技。首要任務之一，是配合智慧城市發展和應對氣候變化的政策，並提供創新的解決方案。

營運基金的創新辦公室於2018年推出「機電創科網上平台」。2019年6月，我們舉辦了創科研討會暨簽署儀式，與五所本地大學及七間科研機構簽署12份合作備忘錄，旨在加強與創科業界的合作伙伴關係，以支持營運基金在科技領域的工作。

我們在年內舉辦各種活動，協助客戶物色創科解決方案及合作伙伴，以助他們進行數碼化轉型。其中一項活動是我們於2019年8月與環境局合辦的首個「綠色創科日」，當日展示了參展機構在節能及可再生能源方面的創科成就，吸引了600多名參加者。

2020年1月，我們與香港科技园公司及政府資訊科技總監辦公室合作，在香港科學園舉辦「創新及科技日x傳感器測試平台工作坊」。工作坊提供了一個平台，讓政府部門及科學園園區公司共同分享物聯網技術的應用，以及配對潛在的合作伙伴，約有220名參加者出席。



「創新及科技日x傳感器測試平台工作坊」吸引了多位政府部門和機構代表出席，共同探討本港物聯網及相關技術的發展，同時為各個政府部門及香港科技园的園區公司提供配對平台，推動創科合作。

I&T Day x Sensor Hub Workshop attracted many participants from various government departments and institutions to discuss the development of IoT and related technologies in Hong Kong, and to provide a matching platform for government departments and companies from the HKSP, promoting co-operation on innovative technology.

DRIVING INNOVATION AND TECHNOLOGY

We are passionate about driving innovation and technology. One of our top priorities is to provide innovative solutions in tandem with smart city development and policies to tackle climate change.

Our Inno-Office launched the E&M InnoPortal in 2018. In June 2019, we organised an I&T Seminar cum Signing Ceremony for signing 12 memoranda of co-operation with five local universities and seven research institutions, under which we aim to foster partnership with the I&T sector to support the EMSTF's work in the technology area.

Various events were held during the year to help our clients identify I&T solutions and partners for their digital transformation. One such event was our first Green I&T Day, held jointly with the Environment Bureau in August 2019 attracting over 600 participants, to showcase I&T achievements in energy conservation and renewable energy.

In January 2020, we co-organised the Innovative Technology Day (I&T Day) x Sensor Hub Workshop at the Hong Kong Science Park (HKSP) with the Hong Kong Science and Technology Parks Corporation and the Office of the Government Chief Information Officer. The workshop, which attracted about 220 participants, served as a platform for government departments and companies from the HKSP to share the applications of Internet of Things (IoT) technology and match with potential partners.

企業管理 Corporate Stewardship

機電署流動應用程式E&M Connect及「機電行業通」已於2019年12月推出，不但為員工提供最新資訊，加強溝通，亦讓市民及業界能隨時隨地使用各項電子服務和獲取機電署最新資訊，便利生活。圖為機電署流動應用程式的宣傳海報。

The EMSD mobile apps E&M Connect and E&M Trade App were launched in December 2019, providing latest updates to EMSD staff and enhancing communications. Members of the public and the trade can also access various electronic services and obtain the EMSD news anytime and anywhere, bringing convenience to life. Pictured is the promotional poster of the EMSD mobile apps.



此外，機電署於2019年12月推出E&M Connect及「機電行業通」流動應用程式，是部門運用數碼科技為業界及市民提供更優質服務的好例子。

E&M Connect應用程式的「慳電計」功能，有助市民在選購節能的家用電器時作出更明智的選擇。用戶只需利用智能電話的內置相機掃描電器上的能源標籤，應用程式便可即時比較不同產品的能源效益表現，以及估算產品的每年耗電量。

應用程式還備有「機電地圖」，利用智能電話的全球定位功能，在地圖上顯示所在位置附近的註冊電業承辦商及瓶裝石油氣分銷商，只需輕按搜索結果，程式便會立即把用戶與服務供應商連繫起來。E&M Connect亦與「機電行業通」應用程式連結，方便註冊電業工程人員、註冊升降機/自動梯工程師及註冊升降機/自動梯工程人員獲得有關其行業的主要資訊，以及搜尋他們參與持續專業進修的情況和記錄，以資參考。此外，E&M Connect還提供機電署的最新重要資訊，而用戶亦可在點擊圖像後快速連接「機電創科網上平台」。

受2019冠狀病毒病疫情影響，機電署難以安排求職者親臨面試，因此我們利用科技進行網上面試。我們於2020年3月成立了跨部別專責小組，負責物色配備合適的保安措施和私隱保障功能，並且最適宜設置於機電署內的視像會議方案。截至2020年4月底，我們已透過網上系統，為將於8月展開的見習工程師訓練計劃的400多名求職者完成首階段面試。



Moreover, a good example of using digital technology to better serve the trade and the public is the EMSD mobile applications (apps) E&M Connect and E&M Trade App launched in December 2019.

The Energy Saver feature of E&M Connect facilitates the public in making smarter choices when purchasing energy-efficient household electrical appliances. The user only needs to scan the energy label on an electrical appliance with the built-in camera of a smartphone. The app will instantly compare the energy efficiency performance of different appliances and estimate their annual electricity consumption.

The app also features the E&M Finder, which uses the smartphone's GPS function to generate a map with locations of registered electrical contractors and LPG cylinder distributors in the vicinity. A tap on the search result will instantly connect the user with the service provider. The E&M Connect also links up to the E&M Trade App that can retrieve key information for registered electrical workers, registered lift/escalator engineers and registered lift/escalator workers pertaining to their trades, as well as their Continuing Professional Development participation and records for reference. Key EMSD updates and quick access by clicking an image to the E&M InnoPortal are available on E&M Connect, too.

Technology was deployed to enable online job interviews when COVID-19 made it difficult to interview candidates in person. A special cross-division taskforce was formed in March 2020 to identify the most appropriate on-premise video conferencing solution with applicable security measures and privacy protection arrangements to be put in place. By the end of April 2020, we had used the online system to complete first-round interviews for over 400 candidates for the Engineering Graduate Training Scheme that will commence this August.

2020年初機電署見習工程師訓練計劃的首階段遴選工作因疫情受阻，部門決定以遙距方式進行評核，引入資訊保安妥善的網上面試系統，最終於4月底成功為400多名求職者進行網上面試。

The first round of selection for the Engineering Graduate Training Scheme of the EMSD was affected by the epidemic in early 2020, the EMSD hence decided to conduct remote assessments by introducing an information-secured online interview system and more than 400 candidates were successfully interviewed online by the end of April.

關懷員工

除了必須保持我們工作團隊的技術專長，為客戶提供更佳的服務外，我們同樣關心員工的福祉。我們非常重視員工的滿意度，並定期進行滿意度調查。2019年員工滿意度調查收到2 000多份填妥的問卷，回應率為38%，滿意指數為6.8分(以10分為滿分計)，與上一次調查結果相同。我們在調查後舉行了20場小組討論會，以收集參加者的意見，從而制訂部門行動計劃。

年內，營運基金不遺餘力鼓勵員工保持工作與生活平衡。舉例來說，我們把2019年4月定為「員工攜手同行月」，舉辦一連串活動，包括「菓」然有愛水果日、榮休聯歡會、家人同行上班日，以及推出「署長感言」網誌。此外，我們於2019年6月推出「好人好事嘉許計劃」，提名熱心服務社區的員工參加，以表揚其動人好事。

CARING OUR STAFF

Beside upkeeping the technical expertise of our work teams to serve our clients better, we care for staff well-being too. We take staff satisfaction seriously and measure the satisfaction level regularly. The 2019 Staff Satisfaction Survey, which received more than 2 000 completed questionnaires representing a response rate of 38%, recorded a satisfaction level of 6.8 on a scale of 10, the same as in previous survey. Qualitative findings from the 20 post-survey focus groups were used to formulate a departmental action plan.

We spared no effort in enhancing staff's work-life balance during the year. For example, April 2019 was made the "Hand-in-Hand with Staff Month", with activities like fruit day, retirement parties and family member workplace visits, plus the launch of the Directors' Thoughts blog. Another new initiative was the "Good People, Good Deeds Commendation Scheme" introduced in June 2019 to nominate and award staff who have performed inspiring deeds to serve the community with heart.

我們在2019年4月舉辦了一連串活動，例如「菓」然有愛水果日(右)和家人同行上班日(下)，藉此推廣部門的關愛文化，並提升員工的歸屬感。

To promote a caring culture in the EMSD and boost staff's sense of belonging, we organised a series of engagement activities in April 2019, such as fruit day (right) and bring family to work day (bottom).



我們於2019年6月推出「好人好事嘉許計劃」，鼓勵同事提名好人好事的個案，以表揚他們竭誠服務社會的精神。最後，五個取得最高票數的個案獲獎。

The "Good People, Good Deeds Commendation Scheme" was launched in June 2019 to encourage nomination of staff who have performed good deeds, and recognise colleagues for their dedicated service to the community. Awards were finally presented to the five entries with the highest votes.

企業管理 Corporate Stewardship

為幫助同事紓緩壓力，部門舉辦了一系列「EM員工鬆一鬆」活動，包括「音樂茶座」（右上）、「電競體驗坊」（右下）和鬆一鬆拉筋活動（左下）等，吸引逾1 500名同事參與。

To help colleagues relieve stress, we held a series of "EM Staff Chill-out" activities, including Lunch Concerts (top right), VR video game experience session (bottom right) and stretching classes (bottom left), which attracted over 1 500 colleagues.



2019年下半年的公眾活動為員工帶來沉重壓力，於是我們在2019年9月中至11月中旬間推出了一系列創意活動「EM員工鬆一鬆」，亮點包括大受歡迎的「音樂茶座」，由機電署自家樂隊RADII先後在總部大堂及員工食堂，為一眾熱情觀眾表演。此外，我們邀請了來自本地茶餐廳的「金茶王」親臨總部大堂，即場示範港式奶茶沖調技巧，並為在場人士炮製香滑奶茶。其他趣味活動包括「電競體驗坊」、鬆一鬆拉筋活動、「輕鬆跑一會」晚間緩步跑及「穴」按愈鬆中式穴位按摩工作坊等，共吸引了1 500多名同事參加，好評如潮。我們會繼續舉辦「EM員工鬆一鬆」系列活動，並會引進更多創新意念。

In view of the added pressure caused by public order events in the second half of 2019 on our staff, we launched from mid-September to mid-November 2019 an innovative series of "EM Staff Chill-out" activities, such as the highly popular Lunch Concerts, where the EMSD's own rock band RADII performed to an enthusiastic audience in the HQs lobby and staff canteen. Separately, an award-winning milk tea master from a local restaurant was invited to demonstrate his brewing skills in the HQs lobby and share the delicious beverage with attendees. Other fun activities included a Virtual Reality (VR) video game experience session, stretching classes, evening jogging, and Chinese massage workshops. The activities attracted more than 1 500 participants with excellent feedback. We will continue the series with ever more innovative ideas.

機電署十分重視員工的工作與生活平衡，因此特別舉辦了一系列有益身心的活動，例如「危機轉化 心靈解困」工作坊，讓參加者能放鬆繃緊的身體和情緒。The EMSD values a lot work-life balance among staff and therefore, a series of activities beneficial to mental and physical health were held, such as the workshop on stress management and psychotherapy, for participants to relieve their tension both physically and mentally.



我們繼續委託非政府機構為我們所有員工，包括借調的員工，提供輔導服務。該機構設有一條專用電話熱線，為員工提供不限次數的諮詢服務，而我們亦舉辦了多場以精神、情緒及身體健康為主題的工作坊。在有需要時，我們更會安排輔導員提供羣組危機介入輔導服務。機電署還簽署了由食物及衛生局推行的《精神健康職場約章》，承諾創造一個包容及精神健康友善的工作環境。

Meanwhile, our counselling services for all staff, including seconded staff, provided by non-governmental organisations, have continued. A designated hotline is available to staff for unlimited consultations, and we have held various workshops on mental, emotional and physical health topics. Counsellors for group crisis intervention are available when necessary. The EMSD also signed the Mental Health Workplace Charter organised by the Food and Health Bureau, which is a pledge to create an inclusive and mental health-friendly workplace.

大樓地下大堂的咖啡亭也於2020年1月重新開業，命名為E² CAFÉ，由新的營運商經營，為員工及訪客提供手調餐飲及小食。

The coffee kiosk in the lobby also re-opened in January 2020 under a new operator and has been named E² CAFÉ, where staff and visitors may purchase craft beverages and light refreshments.

另一方面，資訊保安妥善的網上系統已成功應用於部門的視像會議活動，包括在2019冠狀病毒病疫情期間與客戶及同事進行的視像會議，以及同事在家工作的安排。是次經驗相當寶貴，有助我們日後增加使用視像會議方案，甚至應用於培訓方面。同時，我們讓更多員工能使用部門的虛擬私人網絡，使同事於抗疫期間安心在家工作，釋除網絡保安疑慮。

In a separate development, an information-secured online system has been successfully applied to video conferencing activities with clients and colleagues as well as work-from-home arrangements during COVID-19. The experience gained is valuable to help us scale up the use of video conferencing and even in training in future. Concurrently, we have made our Virtual Private Network available to more staff to help them work from home securely.



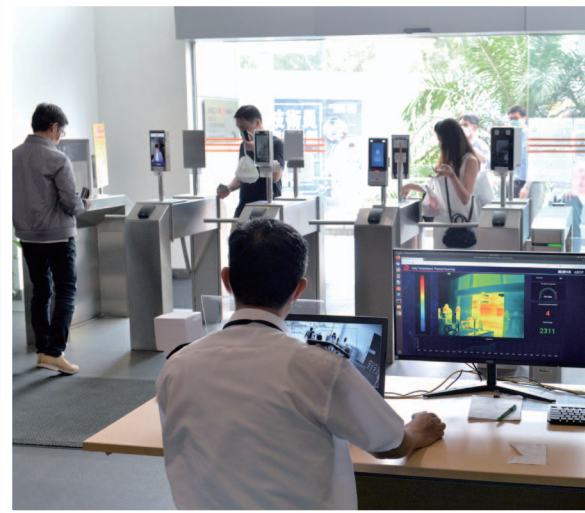
E² CAFÉ於2020年1月正式開業，不但為機電署職員及訪客提供手調餐飲及小食，更為弱勢社群創造就業機會，實踐企業社會責任。

The E² CAFÉ, which was officially opened in January 2020, not only provides EMSD staff and visitors with craft beverages and light refreshments, but also creates employment opportunities for the disadvantaged, fulfilling corporate social responsibility.

企業管理 Corporate Stewardship

為配合防疫工作，機電署於總部大樓各主要出入口設置發燒偵測系統，由保安員監察紅外線熱成圖像，以檢查進入大樓人士的體溫。

To tie in with the anti-epidemic measures, the EMSD has installed fever screening systems at major entrances of the headquarters. The security personnel is monitoring and checking the body temperatures of people entering the building through the infrared thermal images.



培養具備創意的工作文化

營運基金的策略重點之一，是締造新的組織架構、文化、工作模式及環境，以及發展業界伙伴關係，把營運基金發展為樂於善用創新科技的機構。

2019冠狀病毒病及公眾活動帶來了前所未見的挑戰，我們採取了多項創新措施以作應對。在抗疫方面，我們除了加強對機電署總部大樓進行清潔外，還在大樓入口及員工食堂入口安裝體溫檢查站，並重新安排食堂座位以保持社交距離，以及在升降機機廂內引入二維碼功能，讓使用者無需觸碰升降機按鈕也可選擇樓層。為了進一步加快科技應用，我們正計劃進行試驗，利用機械人在物料倉內自動運送零部件和其他庫存物料。

儘管2019冠狀病毒病疫情對正常招標及提供服務造成嚴重影響，但我們依然為我們的策略業務單位作出一切招標上的必要支援，讓他們在這艱難時刻仍可繼續提供服務。此外，為配合發展局的中期紓困措施，我們協調落實向營運基金的承辦商派發一次過的特別預付款項，幫助建造業渡過疫情難關。

為了營造新的工作文化，我們繼續採用創新設計元素，年內陸續為辦公室進行翻新工程。以機電署總部6樓的數碼科技部為例，現代化的辦公室設計為員工提供舒適的工作環境和不少共融空間，有助提升工作效率。

CULTIVATING A CREATIVE WORK CULTURE

One strategic focus of the EMSTF is to create new organisational structures, cultures, working modes and environments as well as trade partnerships, thereby developing the organisation into one that is willing to leverage innovative technology.

Various innovative measures were taken to tackle unprecedented challenges arising from COVID-19 and the public order events. To beat the virus, besides stepping up cleaning of the EMSD HQs, we supported the installation of body temperature check points at the building entrances and staff canteen entrance, re-arranged the staff canteen setting for social distancing, and introduced a QR code feature inside lift cars so that users could select the floor without touching the lift buttons. To further expedite the adoption of technology, we are planning a trial of robots for automatic delivery of parts and other inventory inside our storehouse.

Despite the fact that COVID-19 caused major disruptions to normal tendering and service delivery, we provided all necessary tendering support to SBUs to enable their continuous service delivery during this difficult time. In addition, echoing the interim relief measures by the Development Bureau, we co-ordinated the implementation of a one-off “special advance payment” to our contractors to support the construction industry in the epidemic.

To foster a new work culture, we continued to renovate our offices with pro-innovation design features during the year. For example, the modern office design of the Digitalisation and Technology Division on the 6/F of the EMSD HQs offers staff a comfortable working environment and provides more connecting space to boost work efficiency.

我們與不同的項目團隊協調，開展機電署總部大樓的改造工程，包括翻新大樓的露天廣場等多項優化工程。露天廣場優化工程於2019年11月展開，增添不少特色設計，例如優化園藝設計、新增人工水景、建造水耕種植花園，以及擴建和安裝嵌有太陽能發電系統的天篷，以擴闊遮蓋範圍，並同時生產可再生能源。其他改善工程還包括重鋪設有紋路的壓模混凝土行車路，以及安裝設計極富創意的太陽能樹等。

露天廣場翻新工程大致於2021年年初完成，屆時將為同事和市民提供一個優美舒適的綠化環境及共用空間，可作休憩、聚會和教育用途。

We co-ordinated with various project teams in implementing the EMSD HQs modification project, which comprises various improvement works including the renovation of the piazza. The piazza improvement works began in November 2019 and consist of numerous features, such as enhancing the landscape design, adding water features, creating a hydroponic garden, and enlarging the canopy sheltering space by expanding the canopy as well as embedding building integrated photovoltaic system into the canopy to generate renewable energy. Other improvements include repaving the carriageway with stamped concrete and installing solar trees with innovative design, etc.

Scheduled for completion in the beginning of 2021, the refurbished piazza will provide a relaxing and pleasant green environment with communal, gathering and educational space for our colleagues and the public.



2019年11月，機電署總部大樓露天廣場展開了翻新工程，優化園藝設計，綠化外牆，並安裝可再生能源設施。露天廣場會以全新面貌登場，將社區與大自然融為一體。

In November 2019, a renovation project was launched at the piazza of EMSD Headquarters Building, featuring enhancement of landscape design, greening of external walls and installation of renewable energy facilities. The new look of piazza will integrate the community with nature.

