



自強不息
同創智慧未來
Striving
to Co-create a Smart Future

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抱負 VISION

致力提供優質機電工程服務，精益求精，以提升市民的生活質素。

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

使命 MISSION

客戶 CUSTOMER

提供優質的工程方案，以滿足客戶的需要。

Providing quality engineering solutions to satisfy our customers' needs.

員工 STAFF

建立一支卓越的員工隊伍，並維持和諧的工作環境。

Developing a competent workforce and maintaining a harmonious environment.

部門 ORGANISATION

掌握科技發展和流程改善，以提供更佳服務。

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



信念 VALUES

誠信 INTEGRITY

我們秉持誠信，維持良好道德操守。

We uphold honesty and integrity to embrace an ethical culture.

出色服務 SERVICE EXCELLENCE

我們提供安全可靠、高效率、具成本效益和優質的服務。

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

關懷 CARING

我們關懷員工、客戶和市民大眾，並重視環保。

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

以客為本 CUSTOMER FOCUS

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

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

承擔 COMMITMENT

我們言行一致，信守承諾。

We do what we promise.

常務委員會 Executive Board



主席 CHAIRMAN

林世雄太平紳士

Mr Lam Sai-hung, JP

發展局常任秘書長(工務)

Permanent Secretary for
Development (Works)

成員 MEMBERS

周紹喜太平紳士

Mr Chau Siu-hei, Francis, JP

發展局副秘書長(工務)3

Deputy Secretary for
Development (Works)3

薛永恒太平紳士

Mr Sit Wing-hang, Alfred, JP

機電工程營運基金總經理
(機電工程署署長)

General Manager, EMSTF
(Director of Electrical and
Mechanical Services)

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



秘書 SECRETARY

彭耀雄太平紳士

Mr Pang Yiu-hung, JP

機電工程署副署長／營運服務

Deputy Director/Trading Services, EMSD

袁秀明女士

Ms Yuen Sau-ming, Anna

機電工程署主任秘書

Departmental Secretary, EMSD



管理委員會 Management Board



主席 CHAIRMAN

1 薛永恒太平紳士
Mr Sit Wing-hang,
Alfred, JP

機電工程營運基金總經理
(機電工程署署長)
General Manager, EMSTF
(Director of Electrical and
Mechanical Services)

成員 MEMBERS

2 彭耀雄太平紳士
Mr Pang Yiu-hung, JP

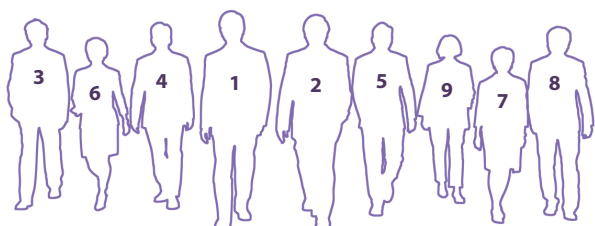
機電工程署副署長/
營運服務
Deputy Director/Trading
Services, EMSD

3 王錫章太平紳士
Mr Wong Sek-cheung,
JP

機電工程署助理署長/1
Assistant Director/1, EMSD

4 張遠芳太平紳士
Mr Cheung Yuen-fong,
JP

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





秘書 SECRETARY

5 陳志偉太平紳士
Mr Chan Chi-wai,
Richard, JP

機電工程署助理
署長 / 3
Assistant Director/3,
EMSD

6 李碧雲女士
Ms Li Pik-wan,
Clara

機電工程署財政
經理
Finance Manager,
EMSD

7 梁淑貞女士
Miss Leung Suk-
ching, Olivia

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

8 劉啟樂先生
Mr Lau Kai-sun

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

9 袁秀明女士
Ms Yuen Sau-ming,
Anna

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

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

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

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

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



機電工程營運基金(營運基金)於2018/19年度繼續表現良好，總收入為75.23億港元，收入回報維持於9.2%的穩定水平。

回顧上一個財政年度的工作，樂見我們一直忠於初衷，擔當客戶信賴的可靠伙伴，協力為公眾提供更佳服務。換言之，我們的工作核心是幫助客戶部門提升公共服務的質素。我們也本着這精神，竭盡所能，把我們的企業目標傳承給營運基金的後輩。

與客戶同行

為配合政府在公共服務方面推動更廣泛使用創新科技的策略，我們近年積極與客戶共同開發各種創科方案，以提高客戶的營運效率，更有不少項目屢獲殊榮，例如懲教署的智慧監獄系統及衛生署的智能發燒偵測系統等。我們的團隊與客戶合作無間，研發如何在其營運操作中應用先進技術，為日後客戶更廣泛運用創科作好準備。

除了推廣創科方案和促進創科研發外，營運基金團隊還探索如何應用創新方法持續作出改善，而「重新校驗」便是其中一例。營運基金團隊運用這嶄新節能措施，補足傳統行之有效的節能方法，例如進行翻新工程和採取良好的日常作業措施，目的是在現有的政府建築物中進一步擴闊節能空間。

營運基金在最新的2018年客戶意見調查中，客戶滿意指數創下歷史新高，以8分為滿分計達6.61分。這固然是一大喜訊，但我們不應自滿，更不應讓目光變得狹窄。提供全面而可靠的機電維修保養服務、保持系統的效率並避免發生故障，只是客戶的基本要求。

要真正令客戶感到滿意，關鍵是要清楚了解客戶為公眾提供服務的過程，再運用我們的專業工程知識，幫助客戶更貼心照顧最終用家的需要，令市民受惠。我們從營運基金二十多年的經驗中領會到，與客戶建立牢固持續的伙伴關係，對客戶確有重大價值。無論時勢是順境抑或逆境，我們都必須與客戶同行，這才是令客戶滿意的關鍵。多年來，營運基金的工作一直貫徹這種精神，竭誠提供服務。

The Electrical and Mechanical Services Trading Fund (EMSTF) continued to perform well in 2018/19, with the total revenue at HK\$7,523 million while the return on revenue remained steady at 9.2%.

As we review our work for the past financial year, it is gratifying to note that we have stayed true to our original purpose: being a trusted partner to help our clients better serve the public. This means our core concern is to help them improve their services to the community. It is also with this spirit that we strive to pass our corporate goal on to the future generations of the EMSTF colleagues.

Working Alongside Clients

Consistent with the Government strategy to promote and facilitate wider use of innovation and technology (I&T) in public services, we have been proactively co-developing with our clients a wide range of I&T solutions to enhance their operational efficiency. Award-winning examples include a Smart Prison System for the Correctional Services Department and a Smart Fever Screening System for the Department of Health. Our colleagues have worked together with our clients to apply advanced technologies in their operations and pave way for wider use of I&T in future.

Apart from promoting and facilitating I&T, the EMSTF team also explores application of new and innovative means for continuous improvement. Retro-commissioning is one of the examples. The EMSTF team applies this new energy-saving measure to supplement the well-established means like retrofitting or housekeeping measures with an aim of capturing further energy-saving potential in existing government buildings.

The EMSTF scored a record-high Customer Satisfaction Index of 6.61 on a scale of 8 in the latest Customer Opinion Survey 2018. While this is excellent news, we should neither be complacent nor unnecessarily narrow our focus. Providing a comprehensive and reliable E&M maintenance service that preserves the efficiency of systems and prevents failure is a basic requirement only.

To really satisfy our clients, the key is to understand the process by which they serve the public and then make use of our professional engineering knowledge to help them better serve their end-users. We have learnt from more than two decades of experience in the EMSTF that there is tremendous value in a strong and continued partnership with clients. Working side by side with clients in both good and bad times is the key to customer satisfaction. This partnership spirit has permeated EMSTF service throughout the years via our work.

總經理報告

General Manager's Report

創新促成者角色

機電工程署(機電署)獲政府委以重任，成為協助政府推動創新採購的促成者之一，並透過多種途徑協助客戶部門加快創新的步伐。機電署的「機電創科網上平台」(「網上平台」)是我們的關鍵線上工具。自2018年投入服務以來，「機電創科網上平台」把客戶部門和公營機構與初創企業、大學和科研機構聯繫在一起，進行項目配對，並在概念驗證和項目試驗方面進行更緊密合作。我們非常感謝各合作伙伴的支持，平台推出不足一年，已吸納了來自客戶部門的200個創科願望和來自初創企業的130個創科方案，繼而催生了50多個創科項目，目前項目數量更不斷增加，令人欣喜。

除了這個「網上平台」，我們在2018年9月還推出了一個名為「機電創科專區」的實體平台。在這個設於機電工程署總部大樓的展覽廳，客戶和訪客可親身體驗多個創科項目，包括一些營運基金與初創企業共同開發的項目，以及初創企業在機電署或其他政府場地進行測試的項目。「機電創科網上平台」及「機電創科專區」都深受歡迎，引領客戶探索初創企業、大學和科研機構在創科方面的巨大潛力，以滿足客戶部門的營運需要。

我們對現時的創科成績感到滿意，但仍有許多工作尚待完成，深盼政府部門及業界能夠充分利用「機電創科網上平台」和「機電創科專區」，加強跨界別的合作，提升公共服務，同時推動應用科研和開發工作，令社會整體受惠。此外，我們現正透過與本港12家主要創科方案供應商分別簽訂合作備忘錄，積極深化發展相關的策略伙伴關係，推動他們全力支持為「機電創科網上平台」的創科願望提供解決方案。

Our Role as Innovation Facilitator

Being entrusted with the role as one of the facilitators to support pro-innovation procurement in the Government, the Electrical and Mechanical Services Department (EMSD) deploys a variety of avenues to help client departments expedite innovation. Operational since 2018, our key online tool - E&M InnoPortal brings together client departments and public organisations with start-ups, universities and research institutions for project matching and closer collaboration in proof-of-concept and project trials. We are very grateful for the support of our partners that, as in just nearly a year of establishment, the E&M InnoPortal has captured 200 I&T wishes from client departments and 130 I&T solutions from start-ups, and then catalysed more than 50 I&T projects. We are happy to see that the number of projects continues to grow.

Apart from this online E&M InnoPortal, a tangible platform, namely an "E&M InnoZone" was also launched in September 2018. It is a showcase gallery at the EMSD Headquarters Building where clients and visitors may experience first-hand I&T projects which the EMSTF co-developed with start-ups, as well as start-up projects under trial at the EMSD or other government venues. Both the E&M InnoPortal and the E&M InnoZone have proved popular with our clients as their gateway to the vast potential of innovative solutions offered by start-ups, universities and research institutions in fulfilling their operational needs.

We are happy with the results so far, but much still needs to be done. We hope that government departments and the trade can fully utilise the E&M InnoPortal and the E&M InnoZone to strengthen cross-sector collaboration in enhancing public services, while driving applied research and development that will benefit the community as a whole. Furthermore, we are working to foster the EMSD's strategic partnership with 12 prominent I&T solution providers in Hong Kong by means of Memorandum of Co-operation (MoC), so as to leverage their full support to address the I&T wishes in the E&M InnoPortal.

靈活人才培訓

年內，創科應用已擴展到我們的培訓課程。部門新增使用了全息影像及三維投影、虛擬實境和擴增實境等創新技術元素的培訓單元，而總部大樓更開設了全新的互動學習中心，並提供上述培訓單元，以加強培訓課程。此外，又會新增技能評估中心及技能發展中心兩項培訓設施，以期進一步擴展培訓方案。

2019年2月發布的《粵港澳大灣區發展規劃綱要》為營運基金在培訓和其他方面都提供了新機遇。大灣區在機電系統設計和製造方面的實力，是全球領先地區之一，可以為我們的技術員和見習技術員帶來新體驗，提升技術。

年內，我們與廣州的培訓和政府機構簽署了兩份合作備忘錄，包括與廣州市工貿技師學院簽訂的合作備忘錄，以加強培訓機電技術員和見習技術員的合作；以及與廣州市人力資源和社會保障局簽訂的合作備忘錄，以加強機電人才發展方面的合作。我們在這些協議安排下的合作項目之一，就是幫助參加世界技能大賽的香港和中國的選手作好準備，共同提升技能和表現。

Agile Talent Development

The application of I&T also extended to our training programme during the year. We have introduced a number of I&T inspired training modules using hologram, virtual reality and augmented reality technologies. A new Interactive Learning Centre equipped with the said training modules was established at the EMSD Headquarters Building to enhance the delivery of our training courses. Moreover, our training portfolio will be further expanded by the commencement of two more new training facilities, namely Skill Assessment Centre and Skill Development Centre.

The promulgation of the Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area (GBA) in February 2019 has opened new opportunities for the EMSTF in many aspects such as training. When it comes to E&M system design and manufacturing, the GBA stands among the best regions in the world and can offer new experience to our technicians and technician trainees to enrich their skills.

During the year, we signed two MoCs with training and government organisations in Guangzhou, namely an MoC with the Guangzhou Industry and Trade Technician College (GITTC) to strengthen collaboration in training our E&M technicians and trainees and an MoC with the Guangzhou Municipal Human Resources and Social Security Bureau (HRSSGZ) to enhance collaboration in E&M talent development. One of the collaborative efforts we initiated under the co-operation arrangements was to jointly uplift the skills and performance of Hong Kong and the Mainland's contestants, preparing them well for the WorldSkills Competition.

總經理報告

General Manager's Report

薪火相傳

2018/19年度的喜訊之一是，機電署的一位工程師榮獲香港工程師學會頒發2019年度「傑出青年工程師獎」，以表揚她在工程專業的成就、對工程師學會工作的貢獻及社會服務的表現。另外，我們也有幾位工程師憑着其突破的創科設計，勇奪工程師學會「創意獎」。

繼近年一些見習技術員在「世界技能大賽」滿載而歸後，今年再有兩名見習技術員獲選出線，代表香港參加8月於俄羅斯喀山舉行的「世界技能大賽2019」。行文之際，兩人分別在「電氣安裝」和「空調製冷」項目中報捷，贏得優異獎佳績。

把知識和經驗世代相傳，對任何成功機構都至為重要，營運基金也不例外。上述獎項和榮譽，可說是我們多年來努力扶掖後輩，薪火相傳的成功例子。

多年來，我們積極為機電業樹立良好形象，不但竭力為業界吸納新血，還牽頭香港機電業推廣工作小組，舉辦如職業博覽等招募推廣活動，向年青人推介機電業的前景，也為來自本港各主要機電機構的新見習技術員，舉辦一年一度的「機電·啟航」迎新典禮，支持人才發展。

協作共創

我們看重國際視野，希望在本地、國家和國際層面爭取更多合作和交流空間，力求創新及優化營運工作。自2018/19年度起，我們致力加強與持份者的策略伙伴關係。除了與廣州市工貿技師學院和廣州市人力資源和社會保障局分別就發展機電人才簽訂了合作備忘錄外，我們現正研究與主要的創科方案供應商和機電培訓機構簽訂合作備忘錄。此外，隨着「機電創科網上平台」開放予國際創科方案供應商，我們目前正研究與國際創科業界進行進一步協作。

推動更靈活開放的協作和共創文化已是大勢所趨，甚或是時代標誌，對營運基金的未來發展也很重要。我們的客戶、同事、業界和其他持份者，亦更熱衷於尋求嶄新破格的方案，因此我們也必須建立和發展廣闊的合作網絡，方可找到更多、更廣的新意念和科技灼見，繼續推動創新發展。

Passing on the Torch

An excellent piece of news in 2018/19 was that one of our engineers won the prestigious Young Engineer of the Year Award 2019 from the Hong Kong Institution of Engineers (HKIE) for her achievements in the engineering profession, contribution to the institution work and social service. A few other engineers have also won HKIE Innovation Awards for their groundbreaking I&T designs.

Two of our technician trainees have qualified to take part in the WorldSkills Competition 2019 this August, in the footsteps of other technician trainees who had participated and won awards in previous WorldSkills Competitions. At the time of writing, we are delighted to know that they have won Medallions for Excellence in the Electrical Installations trade and the Refrigeration and Air-conditioning trade respectively in the WorldSkills Kazan 2019 in Russia.

The continuation of knowledge and experience from one generation to the next is vital to any successful organisation and the EMSTF is no exception. These awards and honours are just some examples of the many positive outcomes of our continuous efforts over the years in nurturing the young generation of colleagues and passing on the torch.

Moreover, we have been fostering a positive image of the E&M trade to attract new blood over the years. We take the lead in the Hong Kong Electrical and Mechanical Trade Promotion Working Group in organising activities like career expos to introduce to young people the E&M career prospects, and an annual orientation event, "E&M Go!", for new trainees from leading E&M organisations in Hong Kong to support talent development.

Collaborate and Co-create

With a global perspective in mind, we call for more co-operation and exchange at local, national and international levels for our operation and innovation. Ever since 2018/19, we have been focusing on strengthening our strategic partnership with stakeholders. Besides the MoC we signed with the GITTC and the HRSSGZ on E&M talent development, we have also explored to enter into MoCs with prominent I&T solution providers and E&M training institutes. Furthermore, subsequent to our opening up of the E&M InnoPortal to international I&T solution providers, we are working to explore further collaborations with the international I&T sector.

The trend towards a more open and dynamic culture of collaboration and co-creation, probably a sign of the times, is important to the EMSTF's future development. Our clients, colleagues, the trades and other stakeholders are increasingly passionate about seeking out-of-the-box solutions, and we must build and nurture an extensive network so that it will enable us to tap into a sufficiently wide array of fresh ideas and technological insights if we want to continue to meet with success in innovation.

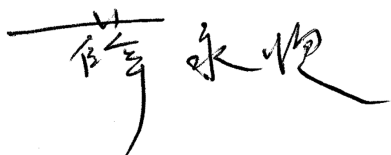
由衷謝意

本人非常感謝營運基金所有同事，不僅盡心盡力完成日常工作，更憑着熱誠和創意承擔很多新工作和挑戰。過去一年，我們在創科方面取得佳績，為許多客戶帶來裨益，實有賴各位同事坐言起行的拼搏精神。

我們也衷心感謝所有客戶的支持和信任。常務委員會為我們提供寶貴指導，各個政策局和政府部門給我們大力支持，很多專業團體、學者、培訓機構、業界及其他持份者，也為我們的工作作出重要貢獻，謹此衷心致謝。

我們也要感謝市民、傳媒、立法會議員及其他意見領袖，不斷給我們反饋和建議，讓我們緊貼社會脈搏。

我們來年會繼續努力，恪守初衷，為以香港為家的全體市民服務。



薛永恒
機電工程營運基金總經理

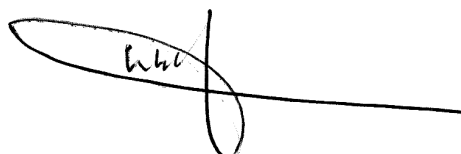
Heartfelt Appreciation

A big thanks must go to all the EMSTF colleagues, who were not only dedicated to their day-to-day work but also embraced many new duties and challenges with passion and creativity. The amazing results of our I&T work in the past year, which made a positive impact on many clients, would not have been possible without the can-do spirit of our colleagues.

Our heartfelt appreciation also goes to all our clients for their support and trust. The Executive Board has given us valuable guidance while various policy bureaux and government departments have provided us with strong support. Many professional bodies, academics, training institutes, the trades and other stakeholders have made important contributions to our work. We owe them all our sincere gratitude.

We must also thank the members of the public, media, Legislative Councillors and other opinion leaders who have helped us feel the pulse of the community through their feedback and suggestions.

In the year ahead, we will continue with our work and adhere to our original purpose of serving the people of this city which we call home.



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

○ 業務回顧與前瞻

Operations Review and Outlook

彭耀雄太平紳士

Mr Pang Yiu-hung, JP

機電工程署副署長/
營運服務

Deputy Director/
Trading Services, EMSD



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

服務智能化

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

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

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

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

The Smarter Way

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

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

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

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

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

建立大灣區合作網絡

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

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

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

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

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

Networking in the Greater Bay Area

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

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

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

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

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

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

實施第二個五年策略計劃

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

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

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

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

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

Implementing the Second Five-year Strategic Plan

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

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

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

前瞻

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

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

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

致謝

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

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

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

A Preview

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

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

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

Special Thanks

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

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

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

展望來年，我們期待與各持份者進一步合作，繼續邁向「機電 2.0」的新里程。



彭耀雄
機電工程署副署長／營運服務

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

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



Pang Yiu-hung
Deputy Director/Trading Services, EMSD

營運服務 Trading Services

活力都會生活

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

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

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

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

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

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

City of Vitality

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

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

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

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





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

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



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

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

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

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

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

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

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

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



營運服務 Trading Services

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

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

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

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

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

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

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

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



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

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

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

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

舒適室溫 時刻做到 Comfortable Temperature at All Times

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

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



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

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

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

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

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

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

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

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

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

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

營運服務 Trading Services

促進創新及科技

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

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

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



360°

http://bit.ly/emsd_emiz

Facilitating Innovation and Technology

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

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

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



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

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

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

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



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

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

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

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



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

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

營運服務 Trading Services

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

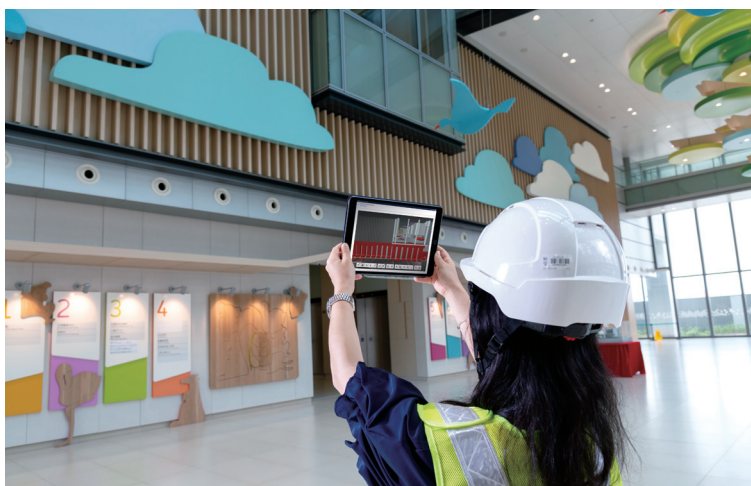
事實上，我們已開始在整座機電工程署總部大樓實施「建築信息模擬 — 資產管理」系統，為機電系統進行維修保養。我們現正為西九龍政府合署、天水圍醫院及香港兒童醫院等多幢新落成的政府及公共建築物建造有關系統。

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

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

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

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

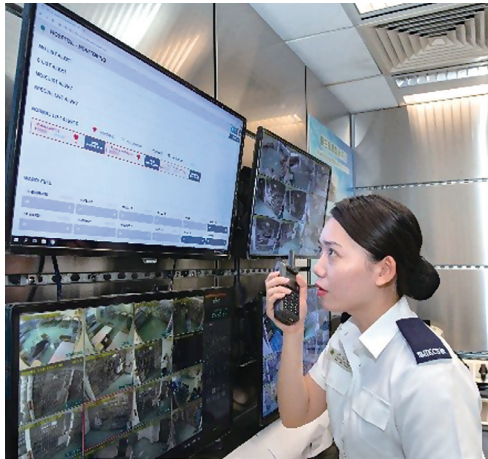


營運基金亦致力把實時技術加入「建築信息模擬 — 資產管理」系統，以便遙距監控機電設備。2019年，我們成功透過「建築信息模擬 — 資產管理」平台完成了建築信息模擬和物聯網技術的試用界面，使物聯網技術能補充目前樓宇管理系統未能涵蓋的信息，根據實際使用情況進一步優化機電系統的運作，以便落實智能工作間的措施。

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

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

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



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

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

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

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

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

至於部門內部，創新辦公室在2018/19年度舉辦了多項活動，培養部門的創新文化，「Inno@E&M 創新科技挑戰賽」便是其中之一例。這個內部比賽邀請機電署員工提交具潛質的創科建議，而部門則會提供資金及人手，讓得獎隊伍實施有關項目。比賽共有24個優勝項目將會落實推行，每個項目均為市場上未有提供的創科解決方案，有助滿足客戶的需要。此外，多個策略業務單位進行了辦公室翻新工程，在設計上融入鼓勵創新文化的元素，打造大量開放的连接空間，有利員工進行討論、分享和協作。

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

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

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

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

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

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

營運服務

Trading Services

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

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

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



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

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

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

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

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

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

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

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

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

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

小手帶大任務 Small Wristband Takes on Big Tasks

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

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



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

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

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

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

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

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

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

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

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

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

營運服務 Trading Services

健康與環保

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

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



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

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



http://bit.ly/emsd_hkch

Healthy and Green

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

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



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

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

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

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

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

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

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

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

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

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

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

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



營運服務 Trading Services



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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

營運服務 Trading Services

妙法偵測發燒旅客 Detecting Fever the Smart Way

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

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



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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

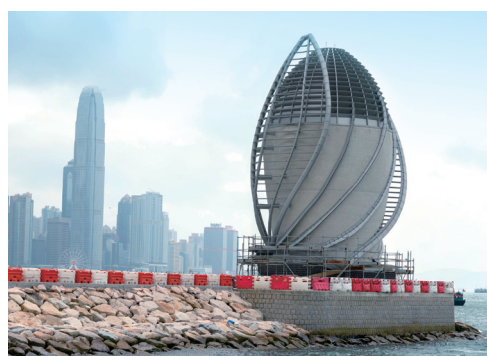
Mr Yiu's team has since been helping the client carry out improvement measures, such as relocating the doors of the main switch rooms and installing a new CCTV system, to get ready for the coming typhoon season.

營運服務 Trading Services

智慧出行

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

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



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

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

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

Intelligent Mobility

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

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



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

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



http://bit.ly/emsd_hkzmb

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

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

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

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

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

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

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

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

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



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

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

營運服務 Trading Services

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

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



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

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



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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

營運服務 Trading Services

參與大灣區發展

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

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

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

Participation in the Development of the Greater Bay Area

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

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

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

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

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



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

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



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

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

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

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

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

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

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

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

營運服務 Trading Services

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

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



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

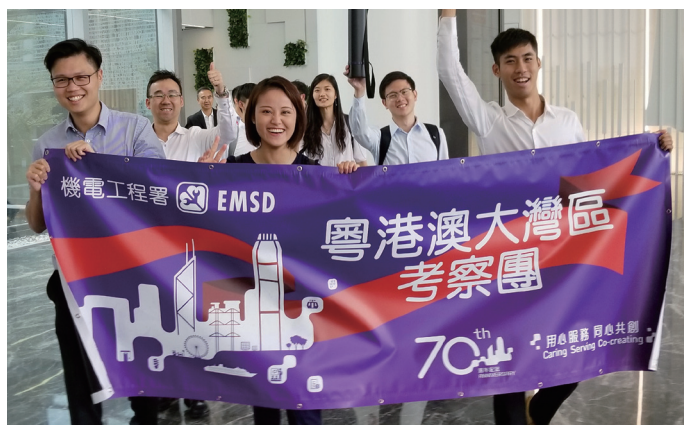
We organised a four-day visit to Shenzhen and Guangzhou in July 2018, joined by over 20 representatives from the E&M trade and the EMSD to visit the I&T enterprises and innovation entrepreneurship bases there. Delegates also exchanged views with academics to understand more about I&T development in the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

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

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

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

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



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

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

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

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

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



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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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



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

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



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

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

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

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

客戶意見調查 Customer Opinion Survey

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

客戶滿意指數 Customer Satisfaction Index



策略1：機電數碼化

Strategy 1: E&M Digitisation

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

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

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

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

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

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

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

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

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2018/19財政年度關鍵績效指標成績及表現承諾

KPI Results and Performance Pledges in FY 2018/19

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

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

² 數字為2018年的調查結果。

³ 數字為2019年的調查結果。

⁴ 此為警戒水平，並非目標。

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

⁶ 2018/19 財政年度經調整後的耗電量(扣除客戶使用量)。

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

² Result from the survey conducted in 2018.

³ Result from the survey conducted in 2019.

⁴ This is an alert level, not a target.

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

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

策略2：培育團隊

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

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

Strategy 2: Excellent Work Team

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

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



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

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



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

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

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

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

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

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



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

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

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新落成的互動學習中心於2018年9月啟用。該中心配備全息影像及三維投影系統、虛擬實境技術和「洞穴式自動虛擬環境」等高科技設施，以促進技術培訓。

The newly completed Interactive Learning Centre, which commenced operation in September 2018, is equipped with high technology facilities including holographic image system, virtual reality technology and Cave Automatic Virtual Environment to facilitate technical training.



http://bit.ly/emsd_ilc



互動學習中心配備虛擬實境設施，讓見習技術員在不受天氣或環境限制的情況下熟習維修技巧。

Equipped with virtual reality facilities, the Interactive Learning Centre enables technician trainees to hone their maintenance skills without regard to weather or environmental constraints.

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

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

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

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



http://bit.ly/emsd_cave

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

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



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

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



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

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

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

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

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

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



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

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



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

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

企業管理

Corporate Stewardship

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

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

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

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



策略3：科技・創新

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

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

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

Strategy 3: Technology • Innovation

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

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

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

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

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





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

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

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

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

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

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

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

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



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

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

企業管理

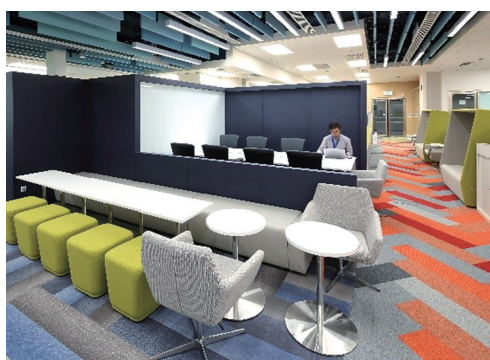
Corporate Stewardship

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

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

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

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



http://bit.ly/emsd_svsd

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

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

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

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

審計署署長報告

Report of the Director of Audit



香港特別行政區政府
審計署

獨立審計師報告 致立法會

意見

茲證明我已審核及審計列載於第56至83頁機電工程營運基金的財務報表，該等財務報表包括於2019年3月31日的財務狀況表與截至該日止年度的全面收益表、權益變動表和現金流量表，以及財務報表的附註，包括主要會計政策概要。

我認為，該等財務報表已按照香港會計師公會頒布的《香港財務報告準則》真實而中肯地反映機電工程營運基金於2019年3月31日的狀況及截至該日止年度的運作成果及現金流量，並已按照《營運基金條例》(第430章)第7(4)條所規定的方式妥為擬備。

意見的基礎

我已按照《營運基金條例》第7(5)條及審計署的審計準則進行審計。我根據該等準則而須承擔的責任，詳載於本報告「審計師就財務報表審計而須承擔的責任」部分。根據該等準則，我獨立於機電工程營運基金，並已按該等準則履行其他道德責任。我相信，我所獲得的審計憑證是充足和適當地為我的審計意見提供基礎。

機電工程營運基金總經理就財務報表須承擔的責任

機電工程營運基金總經理須負責按照香港會計師公會頒布的《香港財務報告準則》及《營運基金條例》第7(4)條擬備真實而中肯的財務報表，及落實其認為必要的內部控制，使財務報表不存有因欺詐或錯誤而導致的重大錯誤陳述。

Audit Commission The Government of the Hong Kong Special Administrative Region

INDEPENDENT AUDITOR'S REPORT To the Legislative Council

Opinion

I certify that I have examined and audited the financial statements of the Electrical and Mechanical Services Trading Fund set out on pages 56 to 83, which comprise the statement of financial position as at 31 March 2019, and the statement of comprehensive income, statement of changes in equity and statement of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In my opinion, the financial statements give a true and fair view of the state of affairs of the Electrical and Mechanical Services Trading Fund as at 31 March 2019, and of its results of operations and cash flows for the year then ended in accordance with Hong Kong Financial Reporting Standards ("HKFRSs") issued by the Hong Kong Institute of Certified Public Accountants ("HKICPA") and have been properly prepared in accordance with the manner provided in section 7(4) of the Trading Funds Ordinance (Cap. 430).

Basis for opinion

I conducted my audit in accordance with section 7(5) of the Trading Funds Ordinance and the Audit Commission auditing standards. My responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the financial statements* section of my report. I am independent of the Electrical and Mechanical Services Trading Fund in accordance with those standards, and I have fulfilled my other ethical responsibilities in accordance with those standards. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Responsibilities of the General Manager, Electrical and Mechanical Services Trading Fund for the financial statements

The General Manager, Electrical and Mechanical Services Trading Fund is responsible for the preparation of financial statements that give a true and fair view in accordance with HKFRSs issued by the HKICPA and section 7(4) of the Trading Funds Ordinance, and for such internal control as the General Manager, Electrical and Mechanical Services Trading Fund determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

審計署署長報告

Report of the Director of Audit

機電工程營運基金總經理就財務報表須承擔的責任 (續)

在擬備財務報表時，機電工程營運基金總經理須負責評估機電工程營運基金持續經營的能力，以及在適用情況下披露與持續經營有關的事項，並以持續經營作為會計基礎。

審計師就財務報表審計而須承擔的責任

我的目標是就整體財務報表是否不存有任何因欺詐或錯誤而導致的重大錯誤陳述取得合理保證，並發出包括我意見的審計師報告。合理保證是高水平的保證，但不能確保按審計署審計準則進行的審計定能發現所存在的任何重大錯誤陳述。錯誤陳述可以由欺詐或錯誤引起，如果合理預期它們個別或滙總起來可能影響財務報表使用者所作出的經濟決定，則會被視作重大錯誤陳述。

在根據審計署審計準則進行審計的過程中，我會運用專業判斷並秉持專業懷疑態度。我亦會：

- 識別和評估因欺詐或錯誤而導致財務報表存有重大錯誤陳述的風險；設計及執行審計程序以應對這些風險；以及取得充足和適當的審計憑證，作為我意見的基礎。由於欺詐可能涉及串謀、偽造、蓄意遺漏、虛假陳述，或凌駕內部控制的情況，因此未能發現因欺詐而導致重大錯誤陳述的風險，較未能發現因錯誤而導致者為高；
- 了解與審計相關的內部控制，以設計適當的審計程序。然而，此舉並非旨在對機電工程營運基金內部控制的有效性發表意見；
- 評價機電工程營運基金總經理所採用的會計政策是否恰當，以及其作出的會計估計和相關資料披露是否合理；

Responsibilities of the General Manager, Electrical and Mechanical Services Trading Fund for the financial statements (continued)

In preparing the financial statements, the General Manager, Electrical and Mechanical Services Trading Fund is responsible for assessing the Electrical and Mechanical Services Trading Fund's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting.

Auditor's responsibilities for the audit of the financial statements

My objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Audit Commission auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with the Audit Commission auditing standards, I exercise professional judgment and maintain professional skepticism throughout the audit. I also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Electrical and Mechanical Services Trading Fund's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the General Manager, Electrical and Mechanical Services Trading Fund;

審計署署長報告

Report of the Director of Audit

審計師就財務報表審計而須承擔的責任(續)

- 判定機電工程營運基金總經理以持續經營作為會計基礎的做法是否恰當，並根據所得的審計憑證，判定是否存在與事件或情況有關，而且可能對機電工程營運基金持續經營的能力構成重大疑慮的重大不確定性。如果我認為存在重大不確定性，則有必要在審計師報告中請使用者留意財務報表中的相關資料披露。假若所披露的相關資料不足，我便須發出非無保留意見的審計師報告。我的結論是基於截至審計師報告日止所取得的審計憑證。然而，未來事件或情況可能導致機電工程營運基金不能繼續持續經營；及
- 評價財務報表的整體列報方式、結構和內容，包括披露資料，以及財務報表是否中肯反映交易和事項。

審計署署長
(署理審計署助理署長陳瑞蘭
代行)

審計署
香灣仔
告士打道7號
入境事務大樓26樓

2019年9月27日

Auditor's responsibilities for the audit of the financial statements (continued)

- conclude on the appropriateness of the General Manager, Electrical and Mechanical Services Trading Fund's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Electrical and Mechanical Services Trading Fund's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Electrical and Mechanical Services Trading Fund to cease to continue as a going concern; and
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

Hildy Chan
Assistant Director of Audit (Acting)
for Director of Audit

Audit Commission
26th Floor
Immigration Tower
7 Gloucester Road
Wanchai, Hong Kong

27 September 2019

全面收益表

Statement of Comprehensive Income

截至2019年3月31日止年度
(以港幣千元位列示)

for the year ended 31 March 2019
(Expressed in thousands of Hong Kong dollars)

		附註 Note	2019	2018
來自客戶合約之收入	Revenue from contracts with customers	(4)	7,523,152	6,511,314
運作成本	Operating costs	(5)	(6,831,292)	(5,883,684)
運作盈利	Profit from operations		691,860	627,630
其他收入	Other income	(6)	226,210	199,189
年度盈利	Profit for the year		918,070	826,819
其他全面收益	Other comprehensive income		–	–
年度總全面收益	Total comprehensive income for the year		918,070	826,819
固定資產回報率	Rate of return on fixed assets	(7)	69.6%	76.6%

第61至83頁的附註為本
財務報表的一部分。

The notes on pages 61 to 83 form part of these financial statements.

財務狀況表

Statement of Financial Position

於2019年3月31日
(以港幣千元位列示)

as at 31 March 2019
(Expressed in thousands of Hong Kong dollars)

		附註 Note	2019	2018
非流動資產	Non-current assets			
物業、設備及器材	Property, plant and equipment	(8)	1,009,851	884,514
無形資產	Intangible assets	(9)	61,296	31,275
外匯基金存款	Placement with the Exchange Fund	(10)	3,000,000	3,000,000
			4,071,147	3,915,789
流動資產	Current assets			
存貨	Inventories		55,446	61,244
外匯基金存款	Placement with the Exchange Fund	(10)	893,237	722,024
應收帳款及其他應收款項	Trade and other receivables	(11), (12(a))	42,012	48,189
應收關連人士帳款	Amounts due from related parties	(12(a)), (20)	341,576	281,087
銀行存款	Bank deposits		5,080,000	4,220,000
現金及銀行結餘	Cash and bank balances		14,568	17,749
			6,426,839	5,350,293
流動負債	Current liabilities			
客戶按金	Customers' deposits	(13)	(1,536,863)	(1,317,419)
應付帳款及其他應付款項	Trade and other payables		(1,090,241)	(892,456)
應付關連人士帳款	Amounts due to related parties	(20)	(192,646)	(182,634)
僱員福利撥備	Provision for employee benefits	(14)	(89,557)	(76,510)
遞延收入	Deferred revenue	(12(b))	(1,518,949)	(1,633,040)
			(4,428,256)	(4,102,059)
流動資產淨額	Net current assets		1,998,583	1,248,234
總資產減去流動負債	Total assets less current liabilities		6,069,730	5,164,023
非流動負債	Non-current liabilities			
僱員福利撥備	Provision for employee benefits	(14)	(463,211)	(475,574)
資產淨額	NET ASSETS		5,606,519	4,688,449

財務狀況表

Statement of Financial Position

於2019年3月31日
(以港幣千元位列示)

as at 31 March 2019
(Expressed in thousands of Hong Kong dollars)

		附註 Note	2019	2018
資本及儲備	CAPITAL AND RESERVES			
營運基金資本	Trading fund capital	(15)	706,600	706,600
保留盈利	Retained earnings	(16)	4,899,919	3,981,849
			5,606,519	4,688,449

第61至83頁的附註為本
財務報表的一部分。

The notes on pages 61 to 83 form part of these financial statements.

薛永恒
總經理
機電工程營運基金

SIT WING HANG
General Manager
Electrical and Mechanical Services Trading Fund

2019年9月27日

27 September 2019

權益變動表

Statement of Changes in Equity

截至2019年3月31日止年度
(以港幣千元位列示)

for the year ended 31 March 2019
(Expressed in thousands of Hong Kong dollars)

		2019	2018
在年初的結餘	Balance at beginning of year	4,688,449	3,861,630
年度總全面收益	Total comprehensive income for the year	918,070	826,819
在年終的結餘	Balance at end of year	5,606,519	4,688,449

第61至83頁的附註為本
財務報表的一部分。

The notes on pages 61 to 83 form part of these financial statements.

現金流量表

Statement of Cash Flows

截至2019年3月31日止年度
(以港幣千元位列示)

for the year ended 31 March 2019
(Expressed in thousands of Hong Kong dollars)

	附註 Note	2019	2018
營運活動的現金流量	Cash flows from operating activities		
運作盈利	Profit from operations	691,860	627,630
折舊及攤銷	Depreciation and amortisation	63,740	41,225
出售物業、設備及器材的收益	Gain on disposal of property, plant and equipment	(254)	(61)
存貨的減少	Decrease in inventories	5,798	9,894
應收帳款及其他應收款項的增加	Increase in trade and other receivables	(297)	(51)
應收關連人士帳款的增加	Increase in amounts due from related parties	(60,489)	(64,289)
客戶按金的增加/(減少)	Increase/(Decrease) in customers' deposits	219,444	(38,674)
應付帳款及其他應付款項的增加	Increase in trade and other payables	197,785	68,765
應付關連人士帳款的增加	Increase in amounts due to related parties	10,012	5,367
僱員福利撥備的增加/(減少)	Increase/(Decrease) in provision for employee benefits	684	(3,033)
遞延收入的(減少)/增加	(Decrease)/Increase in deferred revenue	(114,091)	449,078
已付名義利得稅	Notional profits tax paid	–	(10,874)
來自營運活動的現金淨額	Net cash from operating activities	1,014,192	1,084,977
投資活動的現金流量	Cash flows from investing activities		
原定期限為3個月以上的 銀行存款的增加	Increase in bank deposits with original maturities over three months	(1,345,000)	(840,000)
外匯基金存款的增加	Increase in placement with the Exchange Fund	(171,213)	(101,378)
購置物業、設備及器材以及 無形資產	Purchase of property, plant and equipment and intangible assets	(219,098)	(99,819)
出售物業、設備及器材所得	Proceeds from disposal of property, plant and equipment	254	89
已收利息	Interest received	232,684	127,510
用於投資活動的現金淨額	Net cash used in investing activities	(1,502,373)	(913,598)
現金及等同現金的 (減少)/增加淨額	Net (decrease)/increase in cash and cash equivalents	(488,181)	171,379
在年初的現金及等同現金	Cash and cash equivalents at beginning of year	867,749	696,370
在年終的現金及等同現金	Cash and cash equivalents at end of year (17)	379,568	867,749

第61至83頁的附註為本
財務報表的一部分。

The notes on pages 61 to 83 form part of these financial statements.

財務報表附註

Notes to the Financial Statements

(除另有註明外，所有金額均以港幣千元位列示)

(Amounts expressed in thousands of Hong Kong dollars, unless otherwise stated)

1 總論

前立法局在1996年6月26日根據《營運基金條例》(第430章)第3、4及6條通過決議，在1996年8月1日成立機電工程營運基金(「基金」)，為客戶提供全面的機電及電子工程服務、車輛工程服務以及工程及顧問服務。

政府各決策局、各部門及各自主機構均可自由選擇採用本基金或其他服務機構的服務，以切合他們部分或全部的機電服務需要。

GENERAL

The Electrical and Mechanical Services Trading Fund (the Fund) was established on 1 August 1996 under the Legislative Council Resolution passed on 26 June 1996 pursuant to sections 3, 4 and 6 of the Trading Funds Ordinance (Cap. 430) to provide comprehensive electrical, mechanical and electronic services, vehicle services, and project and consultancy services to clients.

Government bureaux, departments and autonomous bodies have the freedom to use the services of the Fund or to choose alternative service providers to meet part or all of their electrical and mechanical service needs.

2 主要會計政策

2.1 符合準則聲明

本財務報表是按照香港公認的會計原則及所有適用的香港財務報告準則(此詞是統稱，當中包括香港會計師公會頒布的所有適用的個別香港財務報告準則、香港會計準則及詮釋)編製。基金採納的主要會計政策摘要如下。

香港會計師公會頒布了若干新增及經修訂的香港財務報告準則並於本會計期首次生效或可供提前採納。基金因首度採納其中適用的準則而引致在本財務報表反映的本會計期及前會計期的會計政策的改變(如有)載於附註3。

2.2 編製財務報表的基礎

本財務報表的編製基礎均以原值成本法計量。

編製符合香港財務報告準則的財務報表需要管理層作出判斷、估計及假設。該等判斷、估計及假設會影響會計政策的實施，以及資產與負債和收入與支出的呈報款額。該等估計及相關的假設，均按以往經驗及其他在有關情況下被認為合適的因素而制訂。倘若沒有其他現成數據可供參考，則會採用該等估計及假設作為判斷有關資產及負債的帳面值的基礎。估計結果或會與實際價值有所不同。

SIGNIFICANT ACCOUNTING POLICIES

Statement of compliance

These financial statements have been prepared in accordance with accounting principles generally accepted in Hong Kong and all applicable Hong Kong Financial Reporting Standards (HKFRSs), a collective term which includes all applicable individual Hong Kong Financial Reporting Standards, Hong Kong Accounting Standards (HKASs) and Interpretations issued by the Hong Kong Institute of Certified Public Accountants (HKICPA). A summary of the significant accounting policies adopted by the Fund is set out below.

The HKICPA has issued certain new and revised HKFRSs that are first effective or available for early adoption for the current accounting period of the Fund. Note 3 provides information on the changes, if any, in accounting policies resulting from initial application of these developments to the extent that they are relevant to the Fund for the current and prior accounting periods reflected in these financial statements.

Basis of preparation of the financial statements

The measurement basis used in the preparation of these financial statements is historical cost.

The preparation of financial statements in conformity with HKFRSs requires management to make judgements, estimates and assumptions that affect the application of policies and reported amounts of assets and liabilities, income and expenses. The estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgements about carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

2 主要會計政策 (續)

2.2 編製財務報表的基礎 (續)

該等估計及其所依據的假設會作持續檢討。如修訂會計估計只會影響當年的會計期，當年的會計期內會確認有關修訂；如修訂會影響當年及未來的會計期，則會在當年及未來的會計期內確認有關修訂。

基金在實施會計政策方面並不涉及任何關鍵的會計判斷。無論對未來作出的假設，或在報告日估計過程中所存在的不明朗因素，皆不足以構成重大風險，導致資產和負債的帳面金額在來年大幅修訂。

2.3 金融資產及金融負債

2.3.1 初始確認及計量

基金的金融資產包括外匯基金存款、應收帳款及其他應收款項、應收關連人士帳款、銀行存款及現金及銀行結餘。

基金的金融負債包括客戶按金、應付帳款及其他應付款項、應付關連人士帳款及僱員福利撥備。

基金在成為有關金融工具的合約其中一方之日確認有關金融資產及金融負債。於初始確認時，金融資產及金融負債按公平值計量，再加上或減去因收購該等金融資產或發行該等金融負債而直接引致的交易成本。

SIGNIFICANT ACCOUNTING POLICIES (continued)

Basis of preparation of the financial statements (continued)

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

There are no critical accounting judgements involved in the application of the Fund's accounting policies. There are also no key assumptions concerning the future, or other key sources of estimation uncertainty at the reporting date, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities in the next year.

Financial assets and financial liabilities

Initial recognition and measurement

The Fund's financial assets comprise placement with the Exchange Fund, trade and other receivables, amounts due from related parties, bank deposits, and cash and bank balances.

The Fund's financial liabilities comprise customers' deposits, trade and other payables, amounts due to related parties and provision for employee benefits.

The Fund recognises financial assets and financial liabilities on the date it becomes a party to the contractual provisions of the instrument. At initial recognition, financial assets and financial liabilities are measured at fair value plus or minus transaction costs that are directly attributable to the acquisition of the financial assets or the issue of the financial liabilities.

財務報表附註

Notes to the Financial Statements

2 主要會計政策 (續)

2.3 金融資產及金融負債 (續)

2.3.2 2018年4月1日起的分類及其後計量

在採納香港財務報告準則第9號「金融工具」(附註3.1)後，基金將其所有金融資產分類為其後以實際利率法按攤銷成本值計量，因為有關金融資產以收取合約現金流為目的的業務模式而持有，且合約現金流僅為所支付的本金及利息。金融資產的虧損準備根據附註2.3.5所述的預期信用虧損模型計量。

實際利率法是計算金融資產或金融負債的攤銷成本值，以及攤分及確認有關期間的利息收入或支出的方法。實際利率是指可將該金融資產或金融負債在有效期間內的預計現金收支，折現成該金融資產的帳面總值或金融負債的攤銷成本值所適用的貼現率。基金在計算實際利率時，會考慮該金融工具的所有合約條款以估計現金流量，但不會計及預期信用虧損。有關計算包括與實際利率相關的所有收取自或支付予合約各方的費用、交易成本及所有其他溢價或折讓。

基金將其所有金融負債分類為其後以實際利率法按攤銷成本值計量。

基金僅在管理某金融資產的業務模式出現變動時，才將有關資產重新分類。金融負債不作重新分類。

SIGNIFICANT ACCOUNTING POLICIES (continued)

Financial assets and financial liabilities (continued)

Classification and subsequent measurement from 1 April 2018

After the adoption of HKFRS 9 “Financial Instruments” (note 3.1), the Fund classifies all financial assets as subsequently measured at amortised cost using the effective interest method, on the basis that they are held within a business model whose objective is to hold them for collection of contractual cash flows and the contractual cash flows represent solely payments of principal and interest. The measurement of loss allowances for financial assets is based on the expected credit loss model as described in note 2.3.5.

The effective interest method is a method of calculating the amortised cost of a financial asset or a financial liability and of allocating and recognising the interest income or interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial asset or financial liability to the gross carrying amount of the financial asset or to the amortised cost of the financial liability. When calculating the effective interest rate, the Fund estimates the expected cash flows by considering all contractual terms of the financial instrument but does not consider the expected credit losses. The calculation includes all fees paid or received between parties to the contract that are an integral part of the effective interest rate, transaction costs and all other premiums or discounts.

The Fund classifies all financial liabilities as subsequently measured at amortised cost using the effective interest method.

The Fund reclassifies a financial asset when and only when it changes its business model for managing the asset. A financial liability is not reclassified.

2 主要會計政策 (續)

2.3 金融資產及金融負債 (續)

2.3.3 2018年4月1日前的分類及其後計量

根據香港會計準則第39號「金融工具：確認及計量」，基金的金融資產為非衍生金融資產，它們具有固定或可以確定的金額，但在活躍市場並沒有報價，而基金亦無意將之持有作買賣用途。此類金融資產被基金列作貸出款項及應收帳款，採用實際利率法按攤銷成本值扣除任何減值虧損（如有）列帳（附註2.3.6）。

2018年4月1日前基金的金融負債的分類及其後計量與2018年4月1日起的相同（附註2.3.2）。

2.3.4 註銷確認

當從金融資產收取現金流量的合約權利屆滿時，或該金融資產連同擁有權的絕大部分風險及回報已轉讓時，該金融資產會被註銷確認。

當合約指明的債務被解除或取消，或到期時，該金融負債會被註銷確認。

2.3.5 2018年4月1日起的金融資產減值

自採納香港財務報告準則第9號（附註3.1）後，基金就按攤銷成本值計量的金融資產（應收帳款除外）採用由3個階段組成的方法計量預期信用虧損及確認相應的虧損準備及減值虧損或回撥，預期信用虧損的計量基礎取決於自初始確認以來的信用風險變化：

第1階段：12個月的預期信用虧損

若自初始確認以來，金融工具的信用風險並無大幅增加，永久預期信用虧損中反映在報告日後12個月內可能發生的違約事件引致的預期信用虧損的部分予以確認。

SIGNIFICANT ACCOUNTING POLICIES (continued)

Financial assets and financial liabilities (continued)

Classification and subsequent measurement prior to 1 April 2018

Under HKAS 39 "Financial Instruments: Recognition and Measurement", the Fund's financial assets, which were non-derivative financial assets with fixed or determinable payments that were not quoted in an active market and which the Fund had no intention of trading, were classified as loans and receivables and were carried at amortised cost using the effective interest method less impairment losses, if any (note 2.3.6).

The classification of the Fund's financial liabilities and their subsequent measurement prior to 1 April 2018 were the same as those from 1 April 2018 (note 2.3.2).

Derecognition

A financial asset is derecognised when the contractual rights to receive the cash flows from the financial asset expire, or where the financial asset together with substantially all the risks and rewards of ownership have been transferred.

A financial liability is derecognised when the obligation specified in the contract is discharged or cancelled, or when it expires.

Impairment of financial assets from 1 April 2018

After the adoption of HKFRS 9 (note 3.1), the Fund applies a three-stage approach to measure expected credit losses on financial assets (other than trade receivables) measured at amortised cost and to recognise the corresponding loss allowances and impairment losses or reversals, with the change in credit risk since initial recognition determining the measurement bases for expected credit losses:

Stage 1: 12-month expected credit losses

For financial instruments for which there has not been a significant increase in credit risk since initial recognition, the portion of the lifetime expected credit losses that represent the expected credit losses that result from default events that are possible within the 12 months after the reporting date are recognised.

財務報表附註

Notes to the Financial Statements

2 主要會計政策(續)

2.3 金融資產及金融負債(續)

2.3.5 2018年4月1日起的金融資產減值(續)

第2階段：永久預期信用虧損 – 非信用減值

若自初始確認以來，金融工具的信用風險大幅增加，但並非信用減值，永久預期信用虧損(反映在金融工具的預期有效期內所有可能出現的違約事件引致的預期信用虧損)予以確認。

第3階段：永久預期信用虧損 – 信用減值

若金融工具已視作信用減值，會確認永久預期信用虧損，利息收入則應用實際利率計入攤銷成本值而非帳面值總額計算。

應收帳款的虧損準備一直按相等於永久預期信用虧損的金額計量。

如何釐定信用風險大幅增加

在每個報告日，基金藉比較金融工具於報告日及於初始確認日期在餘下的預期有效期內出現違約的風險，以評估金融工具的信用風險有否大幅增加。有關評估會考慮數量及質量歷史資料，以及具前瞻性的資料。若發生一項或多於一項對某金融資產的估計未來現金流量有不利影響的事件，該金融資產會被評定為信用減值。

基金在個別或綜合基礎上評估自初始確認以來信用風險有否大幅增加。就綜合評估而言，金融工具按共同信用風險特質的基準歸類，並考慮投資類別、信用風險評級及其他相關因素。

SIGNIFICANT ACCOUNTING POLICIES (continued)

Financial assets and financial liabilities (continued)

Impairment of financial assets from 1 April 2018 (continued)

Stage 2: Lifetime expected credit losses – not credit impaired

For financial instruments for which there has been a significant increase in credit risk since initial recognition but that are not credit impaired, lifetime expected credit losses representing the expected credit losses that result from all possible default events over the expected life of the financial instrument are recognised.

Stage 3: Lifetime expected credit losses – credit impaired

For financial instruments that have become credit impaired, lifetime expected credit losses are recognised and interest income is calculated by applying the effective interest rate to the amortised cost rather than the gross carrying amount.

Loss allowances for trade receivables are always measured at an amount equal to lifetime expected credit losses.

Determining significant increases in credit risk

At each reporting date, the Fund assesses whether there has been a significant increase in credit risk for financial instruments since initial recognition by comparing the risk of default occurring over the remaining expected life as at the reporting date with that as at the date of initial recognition. The assessment considers quantitative and qualitative historical information as well as forward-looking information. A financial asset is assessed to be credit impaired when one or more events that have a detrimental impact on the estimated future cash flows of that financial asset have occurred.

The Fund assesses whether there has been a significant increase in credit risk since initial recognition on an individual or collective basis. For collective assessment, financial instruments are grouped on the basis of shared credit risk characteristics, taking into account investment type, credit risk ratings and other relevant factors.

2 主要會計政策 (續)**2.3 金融資產及金融負債 (續)****2.3.5 2018年4月1日起的金融資產減值(續)***如何釐定信用風險大幅增加(續)*

外部信用評級為投資級別的銀行存款被視為屬低信用風險。其他金融工具若其違約風險低，且交易對手或借款入具備雄厚實力在短期內履行其合約現金流量責任，會被視為屬低信用風險。此等金融工具的信用風險會被評定為自初始確認以來並無大幅增加。

若金融資產無法收回，該金融資產會與相關虧損準備撇銷。該等資產在完成所有必要程序及釐定虧損金額後撇銷。其後收回先前被撇銷的金額會在全面收益表內確認。

計量預期信用虧損

金融工具的預期信用虧損是對該金融工具在預期有效期內的公平及經概率加權估計的信用虧損(即所有短缺現金的現值)。現金短缺為按照合約應付予基金的現金流量與基金預期會收到的現金流量兩者間的差距。若金融資產在報告日視作信用減值，基金根據該資產的帳面值總額與以折現方式按該資產的原訂實際利率計算的估計未來現金流量的現值兩者間的差距計量預期信用虧損。

2.3.6 2018年4月1日前的金融資產減值

金融資產的帳面值會在每個報告日作出評估，以確定是否有客觀的減值證據。若存在減值證據，減值虧損會以該資產的帳面值與其原本的實際利率用折現方式計算其預期未來現金流量的現值之間的差額，在全面收益表內確認。如其後減值虧損降低，並證實與在確認減值虧損後出現的事件相關，則該減值虧損會在全面收益表內回撥。

SIGNIFICANT ACCOUNTING POLICIES (continued)**Financial assets and financial liabilities (continued)****Impairment of financial assets from 1 April 2018 (continued)***Determining significant increases in credit risk (continued)*

Placements with banks with an external credit rating of investment grade are considered to have a low credit risk. Other financial instruments are considered to have a low credit risk if they have a low risk of default and the counterparty or borrower has a strong capacity to meet its contractual cash flow obligations in the near term. The credit risk on these financial instruments is assessed as not having increased significantly since initial recognition.

When a financial asset is uncollectible, it is written off against the related loss allowance. Such assets are written off after all the necessary procedures have been completed and the amount of the loss has been determined. Subsequent recoveries of amounts previously written off are recognised in the statement of comprehensive income.

Measurement of expected credit losses

Expected credit losses of a financial instrument are an unbiased and probability-weighted estimate of credit losses (i.e. the present value of all cash shortfalls) over the expected life of the financial instrument. A cash shortfall is the difference between the cash flows due to the Fund in accordance with the contract and the cash flows that the Fund expects to receive. For a financial asset that is credit impaired at the reporting date, the Fund measures the expected credit losses as the difference between the asset's gross carrying amount and the present value of estimated future cash flows discounted at the asset's original effective interest rate.

Impairment of financial assets prior to 1 April 2018

The carrying amount of financial assets was reviewed at each reporting date to determine whether there was objective evidence of impairment. If any impairment evidence existed, an impairment loss was recognised in the statement of comprehensive income as the difference between the asset's carrying amount and the present value of estimated future cash flows discounted at the asset's original effective interest rate. If in a subsequent period, the amount of such impairment loss decreased and the decrease could be linked objectively to an event occurring after the impairment loss had been recognised, the impairment loss was reversed through the statement of comprehensive income.

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2 主要會計政策(續)

2.4 名義利得稅

根據《稅務條例》(第112章)基金並無稅務責任，但於2017年12月27日前，香港特別行政區政府(「政府」)要求基金向政府支付一筆款項以代替利得稅(即名義利得稅)，該款項是根據《稅務條例》的規定所計算。以下是基金就名義利得稅所採納的會計政策：

2.4.1 年度名義利得稅支出包括本期稅項及遞延稅項資產和負債的變動。

2.4.2 本期稅項為本年度對應課稅收入按報告日已生效或實際有效的稅率計算的預計應付稅項，並包括以往年度應付稅項的任何調整。

2.4.3 遞延稅項資產及負債是由財務匯報的資產及負債帳面值與其課稅基礎計算之間的可扣稅及應課稅暫時性差異而產生。遞延稅項資產也可由未使用稅務虧損及稅項抵免而產生。

所有遞延稅項負債及未來可能有應課稅盈利予以抵銷的遞延稅項資產，均予確認。

遞延稅項的確認金額是根據該資產及負債的帳面值之預期變現或清償方式，按在報告日已生效或實際有效的稅率計算。遞延稅項資產及負債均不貼現計算。

遞延稅項資產的帳面值在每個報告日重新審閱，對預期不再有足夠的應課稅盈利以實現相關稅務利益的遞延稅項資產予以扣減。有關扣減會在日後有可能產生足夠應課稅溢利時回撥。

然而，自2017年12月27日起，基金無須再支付名義利得稅。於2017年12月27日，應付名義利得稅結餘及遞延稅項負債結餘已被註銷確認，而相關收入則在截至2018年3月31日止年度內全面收益表中確認(附註6)。

SIGNIFICANT ACCOUNTING POLICIES (continued)

Notional profits tax

The Fund has no tax liability under the Inland Revenue Ordinance (Cap.112). However, prior to 27 December 2017, the Government of the Hong Kong Special Administrative Region (the Government) had required the Fund to pay to the Government an amount in lieu of profits tax (i.e. notional profits tax) calculated on the basis of the provisions of the Inland Revenue Ordinance. The accounting policies adopted by the Fund for notional profits tax were as follows:

Notional profits tax expense for the year comprised current tax and movements in deferred tax assets and liabilities.

Current tax was the expected tax payable on the taxable income for the year, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to tax payable in respect of previous years.

Deferred tax assets and liabilities arose from deductible and taxable temporary differences respectively, being the differences between the carrying amounts of assets and liabilities for financial reporting purposes and their tax bases. Deferred tax assets also arose from unused tax losses and unused tax credits.

All deferred tax liabilities, and all deferred tax assets to the extent that it was probable that future taxable profits would be available against which the assets could be utilised, were recognised.

The amount of deferred tax recognised was measured based on the expected manner of realisation or settlement of the carrying amount of the assets and liabilities, using tax rates enacted or substantively enacted at the reporting date. Deferred tax assets and liabilities were not discounted.

The carrying amount of a deferred tax asset was reviewed at each reporting date and was reduced to the extent that it was no longer probable that sufficient taxable profit would be available to allow the related tax benefit to be utilised. Any such reduction was reversed to the extent that it became probable that sufficient taxable profit would be available.

However, the Fund is no longer required to pay notional profits tax with effect from 27 December 2017. The balance of notional profits tax payable and the balance of deferred tax liabilities as at 27 December 2017 were derecognised, with the corresponding income recognised in the statement of comprehensive income for the year ended 31 March 2018 (note 6).

2 主要會計政策 (續)**2.5 物業、設備及器材**

於1996年8月1日撥歸基金的物業、設備及器材，最初的成本是按前立法局所通過成立基金的決議案中所列的估值入帳。由1996年8月1日起新購的物業、設備及器材均按購入價入帳。

以下物業、設備及器材以成本值扣除累計折舊及任何減值虧損列帳（附註2.7）：

- 建築物；以及
- 設備及器材，包括電腦器材、車輛、傢具及固定裝置，以及其他器材。

折舊是按照物業、設備及器材的估計可使用年期以直線法攤銷扣除估計剩餘值的成本值，計算方法如下：

- 建築物	10 - 35 年
- 電腦器材	4 - 20 年
- 車輛	5 - 9 年
- 傢具及固定裝置	5 - 7 年
- 其他器材	5 - 20 年

基金的建築物所在土地，視為非折舊資產。

出售物業、設備及器材的損益以出售所得淨額與資產的帳面值之間的差額來決定，並在出售日於全面收益表內確認。

2.6 無形資產

無形資產包括購入的電腦軟件牌照及已資本化的電腦軟件程式開發成本值。若電腦軟件程式在技術上可行，而基金有足夠資源及有意完成開發工作，有關的開發費用會被資本化。無形資產按成本值扣除累計攤銷及任何減值虧損列帳（附註2.7）。

無形資產的攤銷按估計可使用年期（4至20年）以直線法列入全面收益表。

SIGNIFICANT ACCOUNTING POLICIES (continued)**Property, plant and equipment**

Property, plant and equipment appropriated to the Fund on 1 August 1996 were measured initially at deemed cost equal to the value contained in the Legislative Council Resolution for the setting up of the Fund. Property, plant and equipment acquired since 1 August 1996 are capitalised at their costs of acquisition.

The following property, plant and equipment are stated at cost less accumulated depreciation and any impairment losses (note 2.7):

- Buildings; and
- Plant and equipment, including computer equipment, motor vehicles, furniture and fixtures and other equipment.

Depreciation is calculated to write off the cost of property, plant and equipment, less their estimated residual value, on a straight-line basis over their estimated useful lives as follows:

- Buildings	10 - 35 years
- Computer equipment	4 - 20 years
- Motor vehicles	5 - 9 years
- Furniture and fixtures	5 - 7 years
- Other equipment	5 - 20 years

The land on which the Fund's buildings are situated is regarded as a non-depreciating asset.

Gains or losses arising from the disposal of property, plant and equipment are determined as the difference between the net disposal proceeds and the carrying amount of the asset, and are recognised in the statement of comprehensive income on the date of disposal.

Intangible assets

Intangible assets include acquired computer software licences and capitalised development costs of computer software programmes. Expenditure on development of computer software programmes is capitalised if the programmes are technically feasible and the Fund has sufficient resources and the intention to complete development. Intangible assets are stated at cost less accumulated amortisation and any impairment losses (note 2.7).

Amortisation of intangible assets is charged to the statement of comprehensive income on a straight-line basis over the assets' estimated useful lives of 4 to 20 years.

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2 主要會計政策(續)

2.7 固定資產的減值

固定資產，包括物業、設備及器材，以及無形資產的帳面值在每個報告日評估，以確定有否出現減值跡象。若有減值跡象而資產的帳面值高於其可收回數額，則有關減值虧損在全面收益表內確認。資產的可收回數額為其公平值減出售成本與使用值兩者中的較高者。

2.8 存貨

存貨是提供服務所需的物料。它們是以成本值或可實現淨值之中較低者列出，成本值是以加權平均成本法計算。所有存貨虧損及撇帳至可實現淨值的虧損會在虧損發生時確認為當期的一項開支。

提供服務時被支用的存貨，其帳面值會於確認其相關收入的同一期間確認為一項開支。

2.9 等同現金

等同現金指短期及流通性高的投資，該等項目在購入時距期滿日不超過3個月，並隨時可轉換為已知數額的現金，而其價值變動的風險不大。

2.10 遞延收入

在基金移轉服務予客戶前，若客戶支付代價，或基金具有無條件限制的代價收款權，基金會將其合約負債確認為遞延收入。基金在移轉服務以履行其履約責任時，會註銷確認遞延收入，並就收入加以確認。

2.11 僱員福利

基金的僱員包括公務員及合約員工。薪金、約滿酬金及年假開支均在僱員提供有關服務所在年度以應計基準確認入帳。就公務員而言，僱員附帶福利開支包括政府給予僱員的退休金及房屋福利，均在僱員提供有關服務所在年度支銷。

就按可享退休金條款受聘的公務員的長俸負債已包括於支付予政府有關附帶福利開支中。就其他員工向強制性中央公積金計劃的供款於全面收益表中支銷。

SIGNIFICANT ACCOUNTING POLICIES (continued)

Impairment of fixed assets

The carrying amounts of fixed assets, including property, plant and equipment and intangible assets, are reviewed at each reporting date to identify any indication of impairment. If there is an indication of impairment, an impairment loss is recognised in the statement of comprehensive income whenever the carrying amount of an asset exceeds its recoverable amount. The recoverable amount of an asset is the greater of its fair value less costs to sell and value in use.

Inventories

Inventories are materials to be consumed in the rendering of services. They are stated at the lower of cost and net realisable value, cost being determined using the weighted average cost method. The amount of any write-down of inventories to net realisable value and all losses of inventories are recognised as an expense in the period in which the write-down or loss occurs.

When inventories are consumed in the rendering of services, the carrying amount of those inventories is recognised as an expense in the period in which the related revenue is recognised.

Cash equivalents

Cash equivalents are short-term highly liquid investments that are readily convertible to known amounts of cash and subject to an insignificant risk of changes in value, having been within three months of maturity at the date of acquisition.

Deferred revenue

If a customer pays consideration, or the Fund has an unconditional right to consideration, before the Fund transfers a service to the customer, the Fund recognises its contract liability as deferred revenue. The Fund derecognises the deferred revenue and recognises revenue when the Fund transfers the service and, therefore, satisfies its performance obligation.

Employee benefits

The employees of the Fund comprise civil servants and contract staff. Salaries, staff gratuities and annual leave entitlements are accrued and recognised as expenditure in the year in which the associated services are rendered by the staff. For civil servants, staff on-costs, including pensions and housing benefits provided to the staff by the Government, are charged as expenditure in the year in which the associated services are rendered.

For civil servants employed on pensionable terms, their pension liabilities are discharged by reimbursement of the staff on-costs charged by the Government. For other staff, contributions to the Mandatory Provident Fund Scheme are charged to the statement of comprehensive income as incurred.

2 主要會計政策 (續)

2.12 收入的確認

經採納香港財務報告準則第15號「來自客戶合約之收入」後(附註3.2)，基金由2018年4月1日起，會在向客戶移轉所承諾的服務以履行其履約責任時，按基金預期就交換該項服務所應得代價的金額，確認客戶合約的收入。

在2018年4月1日前，於指定年期提供議定服務水平的合約收入按有關年期以直線法確認。至於其他服務合約收入按報告期內已提供的服務佔整體合約服務之百分比確認。

利息收入按實際利率法以應計方式確認。

2.13 外幣換算

本年度外幣交易，按交易當日的匯率換算為港元。以非港幣計算的貨幣資產及負債，均按報告日的匯率換算為港元。外匯換算產生的匯兌收益及虧損，會在全面收益表中確認。

2.14 撥備及或有負債

如基金須就已發生的事件承擔法律或推定責任，而又可能需要付出經濟代價以履行該項責任，基金會在能夠可靠地估計涉及的金額時，為該項在時間上或金額上尚未確定的責任撥備。如金錢的時間價值重大，則會按預計履行該項責任所需開支的現值作出撥備。

若承擔有關責任可能無須付出經濟代價或是無法可靠地估計涉及的金額，該責任便會以或有負債的形式披露，除非須付出經濟代價的可能性極低。至於只能由日後是否發生某宗或多宗事件才確定會否出現的或然責任，亦會以或有負債的形式披露，除非須付出經濟代價的可能性極低。

2.15 關連人士

基金是根據《營運基金條例》成立，並屬政府轄下的獨立會計單位。年內，基金在日常業務中與各關連人士進行交易。這些人士包括政府各局及部門、其他營運基金，以及受政府所管制或主要影響的財政自主機構。

SIGNIFICANT ACCOUNTING POLICIES (continued)

Revenue recognition

From 1 April 2018, after the adoption of HKFRS 15 "Revenue from Contracts with Customers" (note 3.2), the Fund recognises revenue from contracts with customers when it satisfies a performance obligation by transferring a promised service to a customer, at the amount of consideration to which the Fund expects to be entitled in exchange for the service.

Prior to 1 April 2018, revenue from contracts for provision of services at agreed service level covering a specified period of time was recognised on a straight-line basis over the period concerned. For other service contracts, revenue was recognised based on services performed during the reporting period as a percentage of the total services covered by the contract.

Interest income is recognised as it accrues using the effective interest method.

Foreign currency translation

Foreign currency transactions during the year are translated into Hong Kong dollars using the spot exchange rates at the transaction dates. Monetary assets and liabilities denominated in currencies other than Hong Kong dollars are translated into Hong Kong dollars using the closing exchange rate at the reporting date. Exchange gains and losses are recognised in the statement of comprehensive income.

Provisions and contingent liabilities

Provisions are recognised for liabilities of uncertain timing or amount when the Fund has a legal or constructive obligation arising as a result of a past event, it is probable that an outflow of economic benefits will be required to settle the obligation and a reliable estimate can be made. Where the time value of money is material, provisions are stated at the present value of the expenditure expected to settle the obligation.

Where it is not probable that an outflow of economic benefits will be required, or the amount cannot be estimated reliably, the obligation is disclosed as a contingent liability, unless the probability of outflow of economic benefits is remote. Possible obligations, whose existence will only be confirmed by the occurrence or non-occurrence of one or more future events, are also disclosed as contingent liabilities unless the probability of outflow of economic benefits is remote.

Related parties

The Fund is a separate accounting entity within the Government established under the Trading Funds Ordinance. During the year, the Fund has entered into transactions with various related parties, including government bureaux and departments, other trading funds and financially autonomous bodies controlled or significantly influenced by the Government, in the ordinary course of its business.

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3 會計政策改變

香港會計師公會頒布了若干新增或經修訂的香港財務報告準則並於本會計期生效。除以下列載因採納香港財務報告準則第9號及第15號而產生的影響外，該等新準則或修訂對基金的會計政策並沒有影響。

基金並沒有採納在本會計期尚未生效的任何新準則或詮釋(附註22)。

3.1 香港財務報告準則第9號「金融工具」

香港財務報告準則第9號取代了香港會計準則第39號。香港財務報告準則第9號就金融資產、金融負債及一些買賣非金融項目的合約的確認及計量方法，載列相關規定。

基金已根據香港財務報告準則第9號的過渡規定，就2018年4月1日的既有項目追溯採納香港財務報告準則第9號而沒有重列比較資料。首次採納香港財務報告準則第9號，對2018年4月1日的項目的帳面值並無影響。對先前會計政策所帶來的改變，其性質及影響載列如下。

金融資產的分類

香港財務報告準則第9號將金融資產分為三個主要類別：(i) 按攤銷成本值計量；(ii) 按公平值計入其他全面收益計量；及(iii) 按公平值計入損益帳計量。香港會計準則第39號的類別，包括持至期滿的投資、貸款及應收帳款、可供出售金融資產及按公平值計入損益帳的金融資產，已由這些類別取代。根據香港財務報告準則第9號，金融資產的分類是基於管理金融資產的業務模式及其合約現金流量特質。

基金先前分類為貸款及應收帳款(按攤銷成本值計量)的金融資產，已被重新分類為按攤銷成本值計量的金融資產(附註2.3.2)。2018年3月31日的帳面值與2018年4月1日的帳面值相同。

CHANGES IN ACCOUNTING POLICIES

The HKICPA has issued certain new or revised HKFRSs that are effective for the current accounting period. None of them impact on the accounting policies of the Fund except for the adoption of HKFRS 9 and HKFRS 15 as set out below.

The Fund has not applied any new standard or interpretation that is not yet effective for the current accounting period (note 22).

HKFRS 9 “Financial Instruments”

HKFRS 9 replaces HKAS 39. It sets out the requirements for recognising and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items.

The Fund has applied HKFRS 9 retrospectively to items that existed as at 1 April 2018 in accordance with the transition requirements without restating comparative information. The carrying amounts of the items as at 1 April 2018 have not been impacted by the initial application of HKFRS 9. The nature and effect of the changes to previous accounting policies are set out below.

Classification of financial assets

HKFRS 9 classifies financial assets into three principal categories: measured at (i) amortised cost; (ii) at fair value through other comprehensive income; and (iii) at fair value through profit or loss. These supersede HKAS 39's categories of held-to-maturity investments, loans and receivables, available-for-sale financial assets and financial assets at fair value through profit or loss. The classification of financial assets under HKFRS 9 is based on the business model under which the financial asset is managed and its contractual cash flow characteristics.

The Fund's financial assets previously classified as loans and receivables (carried at amortised cost) were reclassified to financial assets measured at amortised cost (note 2.3.2). The carrying amounts as at 31 March 2018 were the same as those as at 1 April 2018.

3 會計政策改變 (續)

3.1 香港財務報告準則第9號「金融工具」(續)

金融資產的減值

香港財務報告準則第9號的「預期信用虧損」模式取代了香港會計準則第39號的「已產生虧損」模型。由於在預期信用虧損模型下，金融資產的信用風險須持續計量，因此預期信用虧損的確認時間，會較採用香港會計準則第39號的「已產生虧損」模型為早。基金就按攤銷成本值計量的金融資產採用了新的預期信用虧損模型(附註2.3.5)。首次採用新的減值規定，對金融資產於2018年4月1日的帳面值並無影響。

3.2 香港財務報告準則第15號「來自客戶合約之收入」

香港財務報告準則第15號取代香港會計準則第18號「收入」和香港會計準則第11號「建築合約」，就源於客戶合約的收入和一些成本的確認事宜，確立全面的架構。香港財務報告準則第15號並引入額外的披露規定，旨在讓財務報表的使用者了解源於客戶合約的收入及現金流量的性質、金額、時間和不確性。

基金已根據過渡規定，選擇只就2018年4月1日前未完成的合約追溯採納香港財務報告準則第15號，而且不會重列比較資料。首次採納香港財務報告準則第15號並沒有對任何項目於2018年4月1日的帳面值造成影響。

相較於先前的會計政策，截至2019年3月31日止年度的任何項目，其金額均沒有受根據香港財務報告準則第15號而採納的收入會計政策(附註2.12)所影響。

CHANGES IN ACCOUNTING POLICIES (continued)

HKFRS 9 “Financial Instruments” (continued)

Impairment of financial assets

HKFRS 9 replaces the “incurred loss” model in HKAS 39 with the “expected credit loss” model. The expected credit loss model requires an ongoing measurement of credit risk associated with a financial asset and therefore recognises expected credit losses earlier than under the “incurred loss” accounting model in HKAS 39. The Fund applies the new expected credit loss model to the financial assets measured at amortised cost (note 2.3.5). The initial application of the new impairment requirements had no impact on the carrying amounts of the financial assets as at 1 April 2018.

HKFRS 15 “Revenue from Contracts with Customers”

HKFRS 15 establishes a comprehensive framework for recognising revenue and some costs from contracts with customers, replacing HKAS 18 “Revenue” and HKAS 11 “Construction contracts”. HKFRS 15 also introduces additional disclosure requirements which aim to enable users of the financial statements to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers.

In accordance with the transition requirements, the Fund has elected to apply HKFRS 15 retrospectively only to contracts that were not completed before 1 April 2018 without restating comparative information. The initial application of HKFRS 15 has not impacted the carrying amounts of any items as at 1 April 2018.

The accounting policies for revenue adopted under HKFRS 15 (note 2.12) have not affected the amounts of any items in the year ended 31 March 2019 compared to the previous accounting policies.

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4 來自客戶合約之收入

REVENUE FROM CONTRACTS WITH CUSTOMERS

		2019	2018
機電及電子工程服務	Electrical, mechanical and electronic services	6,709,021	5,793,886
車輛工程服務	Vehicle services	372,012	320,410
工程及顧問服務	Project and consultancy services	413,153	373,218
其他	Others	28,966	23,800
總額	Total	7,523,152	6,511,314

基金在客戶合約方面的履約責任，主要涉及向客戶提供全面的機電及電子工程服務、車輛工程服務以及工程及顧問服務。就按服務水平協議提供的服務而言，客戶須就每項服務按季預繳固定金額的服務費。基金是在提供服務的同時履行履約責任，並隨時間移轉按直線法確認收費。至於按其他合約提供的服務，基金是在提供服務的同時履行履約責任，並按成本比例法確認服務費。

The Fund's performance obligations in contracts with customers mainly involve providing comprehensive electrical, mechanical and electronic services, vehicle services, and project and consultancy services to the customers. For provision of services under service level agreements, a customer is required to pay a fixed amount of service fee quarterly for each service in advance. The Fund satisfies its performance obligation as the service is rendered and recognises the fee over time on a straight-line basis. For provision of services under other contracts, the Fund satisfies its performance obligation as the service is rendered and recognises a service fee based on a cost-to-cost method.

5 運作成本

OPERATING COSTS

		2019	2018
員工費用	Staff costs	2,643,203	2,498,813
材料	Materials	492,947	449,511
承辦商費用	Contractors cost	3,318,016	2,617,142
租金及管理費用	Rental and management charges	41,644	37,732
一般運作及行政開支	General operating and administration expenses	270,583	238,008
折舊及攤銷	Depreciation and amortisation	63,740	41,225
審計費用	Audit fees	1,159	1,253
總額	Total	6,831,292	5,883,684

6 其他收入

OTHER INCOME

		2019	2018
銀行存款利息	Interest income from bank deposits	69,375	28,810
外匯基金存款利息	Interest income from placement with the Exchange Fund	156,835	118,598
註銷確認應付名義利得稅及遞延稅項負債	Derecognition of notional profits tax payable and deferred tax liabilities	–	51,781
總額	Total	226,210	199,189

於2017年12月27日前，政府要求所有營運基金向政府支付名義利得稅及股息。於2017年12月27日，終審法院就一宗關於通訊事務管理局辦公室營運基金的司法覆核案作出判決。根據該判決，將《營運基金條例》理解為准許在該營運基金的預算中包括名義稅或股息的預計款項是法律上的錯誤。

政府於判決後更改了財務安排。自2017年12月27日起，所有營運基金無須再向政府支付名義利得稅及股息。於2017年12月27日，為數3,250萬港元的應付名義利得稅結餘及為數1,930萬港元遞延稅項負債已被註銷確認，而相關收入則在截至2018年3月31日止年度內的全面收益表中確認。

Prior to 27 December 2017, the Government had required all trading funds to pay notional profits tax and dividends to the Government. On 27 December 2017, the Court of Final Appeal handed down its judgement in a judicial review case concerning the Office of the Communications Authority Trading Fund. According to the judgement, it was an error of law to construe the Trading Funds Ordinance as permitting the inclusion in budgets of the trading fund of projections for notional tax or dividends.

Subsequent to the judgement, the Government made a change in financial arrangement whereby all trading funds are no longer required to pay notional profits tax and dividends to the Government with effect from 27 December 2017. The balances of notional profits tax payable of HK\$32.5 million and deferred tax liabilities of HK\$19.3 million as at 27 December 2017 were derecognised, with corresponding income recognised in the statement of comprehensive income for the year ended 31 March 2018.

7 固定資產回報率

RATE OF RETURN ON FIXED ASSETS

固定資產回報率是以總全面收益（不包括利息收入及利息支出）除以固定資產平均淨值計算，並以百分比的方式表達。固定資產包括物業、設備及器材和無形資產。預期基金可以達致由財政司司長定下每年固定資產回報率6.4%（2018：6.4%）的目標。

The rate of return on fixed assets is calculated as total comprehensive income (excluding interest income and interest expenses) divided by average net fixed assets, and expressed as a percentage. Fixed assets include property, plant and equipment and intangible assets. The Fund is expected to meet a target rate of return on fixed assets of 6.4% (2018: 6.4%) per year as determined by the Financial Secretary.

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8 物業、設備及器材

PROPERTY, PLANT AND EQUIPMENT

		土地及 建築物	電腦器材	車輛	傢具及 固定裝置	其他器材	總值
		Land and Buildings	Computer equipment	Motor vehicles	Furniture and fixtures	Other equipment	Total
成本	Cost						
在2017年4月1日	At 1 April 2017	950,100	95,050	54,025	93,642	61,395	1,254,212
添置	Additions	–	25,465	4,775	41,346	8,691	80,277
出售	Disposals	–	(248)	(3,332)	(451)	(373)	(4,404)
在2018年3月31日	At 31 March 2018	950,100	120,267	55,468	134,537	69,713	1,330,085
在2018年4月1日	At 1 April 2018	950,100	120,267	55,468	134,537	69,713	1,330,085
添置	Additions	–	42,105	6,595	74,110	59,184	181,994
出售	Disposals	–	–	(4,093)	(1,710)	–	(5,803)
在2019年3月31日	At 31 March 2019	950,100	162,372	57,970	206,937	128,897	1,506,276
累計折舊	Accumulated depreciation						
在2017年4月1日	At 1 April 2017	215,921	67,141	33,104	65,784	29,387	411,337
年度費用	Charge for the year	7,778	9,267	6,444	10,100	5,021	38,610
出售	Disposals	–	(248)	(3,304)	(451)	(373)	(4,376)
在2018年3月31日	At 31 March 2018	223,699	76,160	36,244	75,433	34,035	445,571
在2018年4月1日	At 1 April 2018	223,699	76,160	36,244	75,433	34,035	445,571
年度費用	Charge for the year	7,778	16,188	7,604	18,454	6,633	56,657
出售	Disposals	–	–	(4,093)	(1,710)	–	(5,803)
在2019年3月31日	At 31 March 2019	231,477	92,348	39,755	92,177	40,668	496,425
帳面淨值	Net book value						
在2019年3月31日	At 31 March 2019	718,623	70,024	18,215	114,760	88,229	1,009,851
在2018年3月31日	At 31 March 2018	726,401	44,107	19,224	59,104	35,678	884,514

9 無形資產

INTANGIBLE ASSETS

		電腦軟件牌照 及系統開發成本 Computer software licences and system development costs	
		2019	2018
成本	Cost		
在年初	At beginning of year	82,935	63,393
添置	Additions	37,104	19,542
在年終	At end of year	120,039	82,935
累計攤銷	Accumulated amortisation		
在年初	At beginning of year	51,660	49,045
年度費用	Charge for the year	7,083	2,615
在年終	At end of year	58,743	51,660
帳面淨值	Net book value		
在年終	At end of year	61,296	31,275

10 外匯基金存款

PLACEMENT WITH THE EXCHANGE FUND

外匯基金存款結餘包括本金30億港元(2018: 30億港元)及為報告日已入帳但尚未提取的利息8.932億港元(2018: 7.220億港元)。存款期為期六年(由存款日起計)，期內不能提取本金。

The balance of the placement with the Exchange Fund comprised principal sums of HK\$3,000 million (2018: HK\$3,000 million) and interest paid but not yet withdrawn at the reporting date of HK\$893.2 million (2018: HK\$722.0 million). The term of the placement is six years from the date of placement, during which the principal sums cannot be withdrawn.

外匯基金存款利息按每年1月釐定的固定息率計算。該息率是外匯基金投資組合過去6年的平均年度投資回報，或3年期政府債券在上一個年度的平均年度收益率，以0%為下限，兩者取其較高者。2019年固定息率為每年2.9%，2018年為每年4.6%。

Interest on the placement is payable at a fixed rate determined every January. The rate is the average annual investment return of the Exchange Fund's Investment Portfolio for the past six years or the average annual yield of three-year Government Bonds for the previous year subject to a minimum of zero percent, whichever is the higher. The interest rate has been fixed at 2.9% per annum for the year 2019 and at 4.6% per annum for the year 2018.

財務報表附註

Notes to the Financial Statements

11 應收帳款及其他應收款項

TRADE AND OTHER RECEIVABLES

		2019	2018
應收帳款	Trade receivables	34	23
預付款項	Prepayments	712	426
外匯基金存款應計利息	Accrued interest from placement with the Exchange Fund	27,839	42,217
銀行存款應計利息	Accrued interest from bank deposits	13,427	5,523
總額	Total	42,012	48,189

12 與客戶的合約結餘

CONTRACT BALANCES WITH CUSTOMERS

(a) 應收款項和合約資產

就提供予公眾的服務而言，在報告日的應收款項結餘即載於附註11的應收帳款。至於提供予關連人士的服務，在報告日的應收款項結餘為3.384億港元（2018：2.572億港元）並載於財務狀況表中的應收關連人士帳款。而基金並沒有任何源於這些服務的合約資產。

Receivables and contract assets

For services provided to the general public, the balance of receivables at the reporting date is presented as trade receivables in note 11. For services provided to related parties, the balance of receivables at the reporting date of HK\$338.4 million (2018: HK\$257.2 million) is included in the amounts due from related parties in the statement of financial position. The Fund does not have any contract assets arising from these services.

(b) 合約負債

基金在收取客戶預繳的費用後向客戶提供服務的責任，會於財務狀況表中以遞延收入的形式列出，分析如下：

Contract liabilities

The Fund's obligations to provide services to customers for which the Fund has received advance payments from the customers are presented as deferred revenue in the statement of financial position, as analysed below:

遞延收入	Deferred revenue	2019	2018
機電及電子工程服務	Electrical, mechanical and electronic services	1,311,127	1,369,047
車輛工程服務	Vehicle services	109,807	119,615
工程及顧問服務	Project and consultancy services	98,015	144,378
總額	Total	1,518,949	1,633,040
代表：	Representing:		
向關連人士提供之服務	Services to related parties	1,509,335	1,619,980
向公眾提供之服務	Services to the general public	9,614	13,060
總額	Total	1,518,949	1,633,040

上述遞延收入的結餘乃在報告日分攤至未有履行（或部分未有履行）的履約責任的交易價格總額。基金預料，遞延收入會於五年內獲確認為收入。沒有任何客戶合約的代價未納入交易價格。

The balances of deferred revenue above represent the aggregate amount of the transaction price allocated to the performance obligations that are unsatisfied (or partially unsatisfied) at the reporting date. The Fund expects to recognise deferred revenue as revenue within five years. No consideration from contracts with customers is not included in the transaction price.

12 與客戶的合約結餘 (續)

(b) 合約負債 (續)

年內遞延收入結餘的重大變動開列如下：

		2019	2018
因年初結餘中的遞延收入 於年內獲確認為收入而減少	Decrease due to recognition as revenue during the year that was included in the balances of deferred revenue at beginning of year	(1,054,710)	(873,681)
因年內收取預繳費用而增加	Increase due to advance payments received during the year	940,619	1,322,759

CONTRACT BALANCES WITH CUSTOMERS (continued)

Contract liabilities (continued)

Significant changes in the balances of deferred revenue during the year are shown below:

13 客戶按金

指向客戶提供工程服務前收取的按金。有關按金用以支付應由客戶付予承包商的採購費用。

CUSTOMERS' DEPOSITS

This represents deposits received from customers in the provision of project services. The deposits are used to settle procurement costs payable by the customers to contractors.

14 僱員福利撥備

此為在計至報告日就所提供的服務給予僱員年假及合約僱員約滿酬金的估計負債(另見附註2.11)。

PROVISION FOR EMPLOYEE BENEFITS

This represents the estimated liability for employees' annual leave and obligations on contract end gratuities payable to contract staff for services rendered up to the reporting date (also see note 2.11).

15 營運基金資本

此為政府對基金的投資。

TRADING FUND CAPITAL

This represents the Government's investment in the Fund.

16 保留盈利

RETAINED EARNINGS

		2019	2018
在年初的結餘	Balance at beginning of year	3,981,849	2,915,858
年度總全面收益	Total comprehensive income for the year	918,070	826,819
轉入自擬發股息	Transfer from proposed dividend	–	239,172
在年終的結餘	Balance at end of year	4,899,919	3,981,849

自2017年12月27日起，基金無須再向政府支付股息(附註6)。因此，於2017年12月27日，為數2.392億港元的擬發股息結餘已在截至2018年3月31日止年度內轉回至保留盈利。

With effect from 27 December 2017, the Fund is no longer required to pay dividends to the Government (note 6). Accordingly, the balance of proposed dividend as at 27 December 2017 of HK\$239.2 million was transferred back to the retained earnings during the year ended 31 March 2018.

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17 現金及等同現金

CASH AND CASH EQUIVALENTS

		2019	2018
現金及銀行結餘	Cash and bank balances	14,568	17,749
銀行存款	Bank deposits	5,080,000	4,220,000
小計	Subtotal	5,094,568	4,237,749
減：原有限為3個月以上的銀行存款	Less: Bank deposits with original maturities over three months	(4,715,000)	(3,370,000)
現金及等同現金	Cash and cash equivalents	379,568	867,749

18 承擔

COMMITMENTS

(a) 資本承擔

在2019年3月31日，基金有下列尚未列入財務報表的資本承擔：

Capital commitments

As at 31 March 2019, the Fund had capital commitments, so far as not provided for in the financial statements, as follows:

		2019	2018
已批准及簽約	Authorised and contracted for	39,348	25,605
已批准惟未簽約	Authorised but not yet contracted for	121,074	166,164
總額	Total	160,422	191,769

(b) 經營租賃承擔

在2019年3月31日，根據不可撤銷的土地及建築物經營租賃在未來的最低應付租賃款項總額如下：

Operating lease commitments

As at 31 March 2019, the total future minimum lease payments under non-cancellable operating leases for land and buildings were payable as follows:

		2019	2018
不超過1年	Not later than one year	6,613	6,217
超過1年但不超過5年	Later than one year but not later than five years	10,521	192
總額	Total	17,134	6,409

19 或有負債

CONTINGENT LIABILITIES

於2019年3月31日，基金就一銀行向若干受益客戶發出的1,750萬港元(2018：2,830萬港元)履約保證書向該銀行提供相應的損害賠償保證，有關客戶為基金的關連人士。

As at 31 March 2019, the Fund had provided a bank with counter-indemnity in respect of performance bonds for HK\$17.5 million (2018: HK\$28.3 million) issued by the bank in favour of certain customers who are related parties of the Fund.

20 關連人士的交易

除了在本財務報表的其他部分披露的與關連人士交易外，年內與關連人士進行的其他重大交易摘述如下：

- (a) 向關連人士提供的服務包括機電及電子工程服務、車輛工程服務和工程及顧問服務。這些服務帶來收入總額為75.22億港元(2018：65.10億港元)；
- (b) 由關連人士提供的服務包括維修、辦公地方、中央行政及審計。這些服務總額為1.153億港元(2018：1.054億港元)；以及
- (c) 向關連人士購入的固定資產包括裝置工程及車輛。這些資產的總成本為680萬港元(2018：240萬港元)。

向關連人士提供的服務，是以成本加成法定價。而由關連人士提供的服務，若有關服務亦有提供予公眾，則以公眾所須付的價格收費，否則按收回全部成本方式計算。

RELATED PARTY TRANSACTIONS

Apart from those separately disclosed in the financial statements, the other material related party transactions for the year are summarised as follows:

- (a) services provided to related parties included electrical, mechanical and electronic services, vehicle services, and project and consultancy services. The total revenue derived from these services amounted to HK\$7,522 million (2018: HK\$6,510 million);
- (b) services received from related parties included maintenance, accommodation, central administration and auditing. The total cost incurred on these services amounted to HK\$115.3 million (2018: HK\$105.4 million); and
- (c) acquisition of fixed assets from related parties included fitting out projects and motor vehicles. The total cost of these assets amounted to HK\$6.8 million (2018: HK\$2.4 million).

Services provided to related parties were priced on a cost-plus basis. Services received from related parties were charged at the rates payable by the general public for services which were also available to the public or on a full cost recovery basis for services which were available only to related parties.

21 金融風險管理

21.1 投資政策

基金將現金盈餘投放於金融工具，包括定期存款及外匯基金存款。根據基金的政策，所有投放於金融工具的投資均應保本。

21.2 信用風險

信用風險指金融工具的一方將不能履行責任而且會引致另一方蒙受財務損失的風險。

基金的信用風險，主要取決於外匯基金存款、應收帳款及其他應收款項、應收關連人士帳款、銀行存款及銀行結餘。基金訂有風險政策，並持續監察須承擔的信用風險。

為盡量減低信用風險，所有定期存款均存放於香港的持牌銀行。這些金融資產被視為屬低信用風險。虧損準備按相等於12個月預期信用虧損的數額計量，基金評定所涉及的虧損並不重大。

FINANCIAL RISK MANAGEMENT

Investment policy

Surplus cash is invested in financial instruments including fixed deposits and placement with the Exchange Fund. It is the Fund's policy that all investments in financial instruments should be principal-protected.

Credit risk

Credit risk is the risk that one party to a financial instrument will fail to discharge an obligation and cause the other party to incur a financial loss.

The Fund's credit risk is primarily attributable to placement with the Exchange Fund, trade and other receivables, amounts due from related parties, bank deposits and bank balances. The Fund has a credit policy in place and the exposure to these credit risks is monitored on an ongoing basis.

To minimise credit risks, all fixed deposits are placed with licensed banks in Hong Kong. These financial assets are considered to have a low credit risk. The loss allowances are measured at amounts equal to 12-month expected credit losses, which are assessed to be immaterial by the Fund.

財務報表附註

Notes to the Financial Statements

21 金融風險管理 (續)

21.2 信用風險 (續)

銀行存款及銀行結餘的信用質素，以穆迪或其等同指定的評級，分析如下：

		2019	2018
信用評級：	Credit rating:		
Aa1 至 Aa3	Aa1 to Aa3	614,552	567,624
A1 至 A3	A1 to A3	3,880,000	3,170,000
Baa1 至 Baa3	Baa1 to Baa3	600,000	500,000
總額	Total	5,094,552	4,237,624

雖然其他金融資產須符合減值規定，但其預期信用虧損輕微。

在報告日基金的金融資產所須承擔的最高信用風險數額相當於其帳面值。

21.3 流動資金風險

流動資金風險指某一實體將難以履行與金融負債相關的責任的風險。

基金採用預計現金流量分析來管理流動資金風險，透過預測所需的現金款額及監察基金的營運資金，確保可以支付所有到期負債及已知的資金需要。

21.4 利率風險

利率風險指因市場利率變動而引致虧損的風險。利率風險可進一步分為公平值利率風險及現金流量利率風險。

公平值利率風險指金融工具的公平值會因市場利率變動而波動的風險。由於基金的所有銀行存款均按固定利率計息，當市場利率上升，這些存款的公平值便會下跌。然而，由於這些存款均按攤銷成本值列示，市場利率的變動不會影響相關帳面值及基金的盈利和儲備。

現金流量利率風險指金融工具的未來現金流量會因市場利率變動而波動的風險。基金無須面對重大的現金流量利率風險，因為其持有的主要金融工具都不是浮息金融工具。

FINANCIAL RISK MANAGEMENT (continued)

Credit risk (continued)

The credit quality of bank deposits and bank balances, analysed by the ratings designated by Moody's or their equivalents, is shown below:

While other financial assets are subject to the impairment requirements, their expected credit losses were minimal.

The maximum exposure to credit risk of the financial assets of the Fund at the reporting date is equal to their carrying amounts.

Liquidity risk

Liquidity risk is the risk that an entity will encounter difficulty in meeting obligations associated with financial liabilities.

The Fund employs projected cash flow analysis to manage liquidity risk by forecasting the amount of cash required and monitoring the working capital of the Fund to ensure that all liabilities due and known funding requirements could be met.

Interest rate risk

Interest rate risk refers to the risk of loss arising from changes in market interest rates. This can be further classified into fair value interest rate risk and cash flow interest rate risk.

Fair value interest rate risk is the risk that the fair value of a financial instrument will fluctuate because of changes in market interest rates. Since all of the Fund's bank deposits bear interest at fixed rates, their fair values will fall when market interest rates increase. However, as they are all stated at amortised cost, changes in market interest rates will not affect their carrying amounts and the Fund's profit and reserves.

Cash flow interest rate risk is the risk that future cash flows of a financial instrument will fluctuate because of changes in market interest rates. The Fund is not exposed to material cash flow interest rate risk because it has no major financial instruments bearing interest at a floating rate.

財務報表附註

Notes to the Financial Statements

21 金融風險管理 (續)

21.5 貨幣風險

貨幣風險指金融工具的公平值或未來現金流量會因匯率變動而波動的風險。

基金沒有重大的貨幣風險，因為其金融工具絕大部分是以港元為本位。

21.6 其他金融風險

基金因於每年一月釐定的外匯基金存款息率(附註10)的變動而須面對金融風險。於2019年3月31日，假設2018年及2019年的息率增加/減少50個基點(2018：50個基點)而其他因素不變，估計年度盈利及儲備將增加/減少1,950萬港元(2018：1,820萬港元)。

21.7 公平值

在活躍市場買賣的金融工具的公平值是根據報告日的市場報價釐定。如沒有該等市場報價，則以現值或其他估值方法以報告日的市況數據評估其公平值。

所有金融工具均以與其公平值相同或相差不大的金額在財務狀況表內列帳。

22 已頒布但於截至2019年3月31日止年度尚未生效的修訂、新準則及詮釋的可能影響

直至本財務報表發出之日，香港會計師公會已頒布多項修訂、新準則及詮釋。該等修訂、新準則及詮釋在截至2019年3月31日止年度尚未生效，亦沒有在本財務報表中提前採納。其中包括以下可能與基金有關。

FINANCIAL RISK MANAGEMENT (continued)

Currency risk

Currency risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates.

The Fund does not have significant exposure to currency risk as substantially all of its financial instruments are denominated in Hong Kong dollars.

Other financial risk

The Fund is exposed to financial risk arising from changes in the interest rate on the placement with the Exchange Fund which is determined every January (note 10). It was estimated that, as at 31 March 2019, a 50 basis point (2018: 50 basis point) increase/decrease in the interest rates for 2018 and 2019, with all other variables held constant, would increase/decrease the profit for the year and reserves by HK\$19.5 million (2018: HK\$18.2 million).

Fair values

The fair value of financial instruments traded in active markets is based on quoted market prices at the reporting date. In the absence of such quoted market prices, fair values are estimated using present value or other valuation techniques, using inputs based on market conditions existing at the reporting date.

All financial instruments are stated in the statement of financial position at amounts equal to or not materially different from their fair values.

POSSIBLE IMPACT OF AMENDMENTS, NEW STANDARDS AND INTERPRETATIONS ISSUED BUT NOT YET EFFECTIVE FOR THE YEAR ENDED 31 MARCH 2019

Up to the date of issue of these financial statements, the HKICPA has issued a number of amendments, new standards and interpretations which are not yet effective for the year ended 31 March 2019 and which have not been early adopted in these financial statements. These include the following which may be relevant to the Fund:

在以下日期或之後
開始的會計期生效
**Effective for
accounting periods
beginning on or after**

香港財務報告準則第16號「租賃」

HKFRS 16 "Leases"

2019年1月1日

1 January 2019

22 已頒布但於截至2019年3月31日止年度尚未生效的修訂、新準則及詮釋的可能影響(續)

基金正就該等修訂、新準則及詮釋在首次採納期間預計會產生的影響進行評估。迄今的結論是採納該等修訂、新準則及詮釋不大可能會對財務報表有重大影響。

香港財務報告準則第16號「租賃」

香港財務報告準則第16號取代香港會計準則第17號「租賃」，列載確認、計量、呈報及披露租賃的原則，引入單一的承租人會計模式，要求承租人確認期限超過12個月的所有租賃的資產及負債，惟低價值資產的租賃除外。根據香港財務報告準則第16號，承租人須確認反映其使用租賃資產的權利的使用權資產及反映其支付租金的義務的租賃負債。因此承租人應確認使用權資產折舊及租賃負債利息。使用權資產及租賃負債最初按現值計量。計量包括不可撤銷租賃的租金，以及如承租人可合理地確定會行使延長租賃選擇權，於延長租賃期間支付的租金。就出租人會計法而言，香港財務報告準則第16號主要延續香港會計準則第17號的出租人會計法。

香港財務報告準則第16號主要影響基金目前分類為物業經營租賃的承租人會計法。預期應用新會計模式會引致資產及負債增加，以及影響在租賃期內於全面收益表內確認支出的時間。正如附註18(b)所披露，於2019年3月31日，基金擁有不可撤銷的物業經營租賃承擔為1,710萬港元。考慮到涉及的款額，基金預期採納該新準則不會對其財務報表有重大影響。

POSSIBLE IMPACT OF AMENDMENTS, NEW STANDARDS AND INTERPRETATIONS ISSUED BUT NOT YET EFFECTIVE FOR THE YEAR ENDED 31 MARCH 2019 (continued)

The Fund is in the process of making an assessment of what the impact of these amendments, new standards and interpretations is expected to be in the period of initial adoption. So far it has concluded that the adoption of them is unlikely to have a significant impact on the financial statements.

HKFRS 16 “Leases”

HKFRS 16 replaces HKAS 17 “Leases” and sets out the principles for the recognition, measurement, presentation and disclosure of leases. It introduces a single lessee accounting model and requires a lessee to recognise assets and liabilities for all leases with a term of more than 12 months, unless the underlying asset is of low value. Under HKFRS 16, a lessee is required to recognise a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments. Accordingly, a lessee should recognise depreciation of the right-of-use asset and interest on the lease liability. The right-of-use asset and the lease liability are initially measured on a present value basis. The measurement includes non-cancellable lease payments and payments to be made in optional periods if the lessee is reasonably certain to exercise an option to extend the lease. In respect of the lessor accounting, HKFRS 16 substantially carries forward the lessor accounting requirements in HKAS 17.

HKFRS 16 will primarily affect the Fund’s accounting as a lessee of leases for premises which are currently classified as operating leases. The application of the new accounting model is expected to lead to an increase in both assets and liabilities and to impact on the timing of the expense recognition in the statement of comprehensive income over the period of the leases. As disclosed in note 18(b), the Fund had non-cancellable operating lease commitments of HK\$17.1 million as at 31 March 2019. In view of the amount involved, the Fund expects that the adoption of this new standard is unlikely to have a significant effect on its financial statements.

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懲教署	Correctional Services Department
香港海關	Customs and Excise Department
食物環境衛生署	Food and Environmental Hygiene Department
政府物流服務署	Government Logistics Department
政府產業署	Government Property Agency
路政署	Highways Department
香港兒童醫院	Hong Kong Children's Hospital
香港消防處	Hong Kong Fire Services Department
醫院管理局	Hospital Authority
入境事務處	Immigration Department
康樂及文化事務署	Leisure and Cultural Services Department
海事處	Marine Department
東區尤德夫人那打素醫院	Pamela Youde Nethersole Eastern Hospital
伊利沙伯醫院	Queen Elizabeth Hospital
運輸署	Transport Department
水務署	Water Supplies Department



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