

智慧發展 利民為本  
BUILDING A SMART CITY  
FOR THE BENEFIT OF ALL



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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.



## 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、具成本效益及利惠環保的全面優質服務。  
We provide comprehensive quality services that are safe, reliable, efficient, cost-effective and environment-friendly.

### 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.

## 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

擁抱創新及科技提供更佳服務。  
Embracing innovation and technology for service enhancement.

### 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.

### 靈活創新 AGILITY AND INNOVATION

我們重視靈活及創新的企業文化。  
We treasure our agile and innovative corporate culture.

### 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



劉俊傑太平紳士  
Mr Lau Chun-kit, Ricky, JP

發展局常任秘書長(工務)  
Permanent Secretary for Development (Works)

### 成員 MEMBERS



何英傑太平紳士  
Mr Ho Ying-kit, Tony, JP

發展局副秘書長(工務) 3  
Deputy Secretary for Development (Works) 3



潘國英太平紳士  
Mr Poon Kwok-ying, Raymond, 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)



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

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

### 秘書 SECRETARY



韋美珠女士  
Ms Wai Mei-chu, Jenny

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

\* 周紹喜太平紳士出任發展局副秘書長(工務) 3至2023年6月2日  
Mr Chau Siu-hei, Francis, JP was Deputy Secretary for Development (Works) 3 up to 2 June 2023

\* 彭耀雄太平紳士出任機電工程營運基金總經理(機電工程署署長)至2024年3月30日  
Mr Pang Yiu-hung, JP was General Manager, EMSTF (Director of Electrical and Mechanical Services) up to 30 March 2024



# 管理委員會 MANAGEMENT BOARD

## 01 主席 CHAIRMAN

潘國英太平紳士  
Mr Poon Kwok-ying,  
Raymond, 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

02 陳志偉太平紳士  
Mr Chan Chi-wai, Richard, JP  
機電工程署副署長 / 營運服務  
Deputy Director/Trading Services, EMSD

03 李志良先生  
Mr Lee Chi-leung, Eric  
機電工程署助理署長 /1  
Assistant Director/1, EMSD

04 楊秀權先生  
Mr Yeung Sau-kuen, Sammy  
機電工程署助理署長 /2  
Assistant Director/2, EMSD

05 李學賢先生  
Mr Lee Hok-yin, Arthur  
機電工程署助理署長 /3  
Assistant Director/3, EMSD

06 黃妍旻女士  
Ms Wong Yin-man, Yammy  
署理機電工程署總庫務會計師 / 財政管理  
Chief Treasury Accountant/  
Financial Management (Acting), EMSD

07 劉志偉先生  
Mr Lau Chi-wai, Wilfred  
機電工程署員工關係主任  
Staff Relations Officer, EMSD

08 韋美珠女士  
Ms Wai Mei-chu, Jenny  
機電工程署主任秘書  
Departmental Secretary, EMSD

## 秘書 SECRETARY

09 王瑩瑩女士  
Ms Wong Ying-ying, Regina  
機電工程署高級機電工程師 / 技術服務  
Senior Engineer/Technical Services, EMSD

\* 彭耀雄太平紳士出任機電工程營運基金總經理 (機電工程署署長) 至2024年3月30日  
Mr Pang Yiu-hung, JP was General Manager, EMSTF (Director of Electrical and Mechanical Services) up to 30 March 2024

\* 陳嘉聰先生出任機電工程署助理署長/1至2023年9月30日  
Mr Chan Ka-chung was Assistant Director/1, EMSD up to 30 September 2023

\* 李慧儀女士出任機電工程署總庫務會計師/財政管理至2023年12月12日  
Ms Lee Wai-ye was Chief Treasury Accountant/Financial Management, EMSD up to 12 December 2023





# 總經理報告

## GENERAL MANAGER'S REPORT



潘國英太平紳士  
Mr Poon Kwok-ying,  
Raymond, JP

機電工程營運基金總經理  
General Manager, Electrical  
and Mechanical Services  
Trading Fund

機電工程營運基金（營運基金）在2023/24年度表現出色，團隊秉持以客為本的優質服務文化，繼續為客戶和社會創造價值。年內營運基金總收入達到92.81億港元，有4.2%的穩健增長；收入回報率則稍降至1.5%，部分原因是我們為客戶提供多種增值服務，而回報率也符合我們收回成本的營運原則。此外，2023年員工滿意度調查顯示，員工滿意度和回覆率皆創歷史新高。我相信今年稍後進行的新一輪客戶意見調查會再創佳績。

營運基金會持續運用創新科技（創科），為客戶提供更優質的服務，推動業界進步，促進智慧城市發展和邁向碳中和，令香港成為更高效、更環保的活力城市，讓市民倍感幸福。

### 年內亮點：為經濟與民生獻力

營運基金年內不少工作，都呼應《行政長官2023年施政報告》「拼經濟謀發展，惠民生添幸福」的主題。

新能源產業可為香港創造就業機會，推動綠色經濟及多元發展。我們很高興能參與以下推動使用氫能源的工作。

營運基金一直參與特區政府氫能源跨部門工作小組（工作小組）的會議，運用團隊豐富的車輛工程知識，推動本港使用氫燃料重型車輛，實施「綠色運輸」策略，協助香港在2050年前實現碳中和的目標。

工作小組已審視並原則上同意14個氫能源試驗項目申請，當中包括食物環境衛生署（食環署）試驗的三輛氫燃料電池洗街車。營運基金根據食環署的需要，並參考規管服務人員對氫能的技術意見，經公開招標成功租賃了三輛氫燃料電池洗街車進行試驗；項目對本港未來使用氫燃料電池重型車輛進行各種市政工作，例如垃圾收集和物流運輸，起先驅作用。

The Electrical and Mechanical Services Trading Fund (EMSTF) staged an outstanding performance in 2023/24. Committed to a customer-oriented culture of service excellence, the team continued to create value for clients and society. The total revenue of the EMSTF reached HK\$9,281 million, representing a steady growth of 4.2%, while the return on revenue dropped slightly to 1.5%. The decreased return, partly due to our offering of value-added services to clients, was consistent with our operating principle of cost recovery. Furthermore, our 2023 Staff Satisfaction Survey reports record highs in both staff satisfaction rating and response rate. I am confident that our next Customer Opinion Survey, scheduled for later this year, will also achieve high ratings.

The EMSTF will continue to leverage innovation and technology (I&T) to provide enhanced quality services to clients, help the trade move forward, and foster Hong Kong's smart city development and carbon neutrality efforts, thus making Hong Kong a more efficient, eco-friendly and dynamic city for a caring community.

### HIGHLIGHTS: SUPPORTING THE ECONOMY AND PEOPLE'S LIVELIHOODS

Much of the EMSTF's work during the year echoed the Chief Executive's 2023 Policy Address entitled "A Vibrant Economy for a Caring Community".

The new energy industry can create jobs for Hong Kong, foster green economy and diversify development. We are happy to participate in the following initiatives for promoting the use of hydrogen energy.

Participating in meetings of the Government's Inter-departmental Working Group on Using Hydrogen as Fuel (Working Group), the EMSTF has applied its wealth of knowledge about vehicle engineering to promote the use of hydrogen fuel cell heavy vehicles in Hong Kong, implementing the strategy of "green transport" to help Hong Kong achieve the goal of carbon neutrality before 2050.

The Working Group has reviewed and given agreement-in-principle to 14 applications of trial projects on hydrogen energy technology, one of which is a trial project of the Food and Environmental Hygiene Department (FEHD) on three hydrogen fuel cell street washing vehicles. Based on the FEHD's needs and technical advice on hydrogen energy from our Regulatory Services colleagues, the EMSTF has successfully leased via open tendering three hydrogen fuel cell street washing vehicles for trials. The project pioneers Hong Kong's use of hydrogen fuel cell heavy vehicles for various municipal tasks in the future, including refuse collection, as well as transport and logistics.



總經理報告

GENERAL MANAGER’S REPORT

2023/24年度也是營運基金第三個五年策略計劃的首年，計劃目標是實現「機電3.0 – 智能機電」。營運基金近年積極為客戶進行資產數碼轉型，並運用創科技術如人工智能，為客戶提升機電系統的效率和能源表現，一路以來屢獲獎項。年內亮點之一是營運基金團隊自行開發的ChillStream®方案，該方案運用人工智能分析我們的區域數碼監控中心收集所得的實時數據，以優化客戶製冷機組的能效表現。ChillStream®已分別於衛生署和醫院管理局(醫管局)轄下場地成功試用，節省大量能源；長遠更可完全自動監察和控制製冷機組的操作，釋放人力資源從事其他工種，以提高生產力。

利民惠民、以人為本是我們的宗旨。年內，營運基金應對多宗突發事故，例如2023年4月港島發生停電事故，我們迅速搶修百多組交通燈，以及主要公立醫院和政府建築物的各種機電系統，令公共服務盡快回復正常。

我們的全天候服務即使在極端天氣情況下亦從不間斷。2023年9月初，在超強颱風「蘇拉」和隨後的大暴雨接連襲港後，團隊迅速復修百多組受損的交通燈，並協助嚴重水浸的社區善後。我們更為疫後提振經濟和改善民生的活動提供支援，例如在2023年9月底為於灣仔海濱舉行的「海濱藝遊坊」，以及其他地區「香港夜繽紛」的類似活動提供機電支援。在2024年2月，我們又為全港多個農曆年宵市場安排臨時供電及人流監察和人羣管控系統，以便市民盡情享受活動。

此外，2023年5月起各政府收費隧道陸續實施「易通行」不停車繳費系統，營運基金也積極參與有關工作，確保新系統運作準確和可靠。「易通行」既提升隧道營運效率，也為駕駛者帶來全新的便捷體驗。

創科的機遇與挑戰

營運基金多年前已率先把創科方案應用於內部運作、客戶機電資產管理，以及操作和維修保養，並鼓勵機電業界利用創科提升效率及能源效益。儘管這些工作已略見成效，而且我們自行研發及與其他機構合作的創科項目亦贏得不少獎項，但許多客戶仍未充分應用創科方案。因此，加快創科「落地」，會是我們未來工作的重點之一。

2023/24 was the first year of the EMSTF's third Five-year Strategic Plan, which is aimed at achieving “E&M 3.0 – Intelligent E&M”. In recent years, the EMSTF has proactively implemented digital transformation of assets for clients and applied I&T, such as artificial intelligence (AI), to optimise the efficiency and energy performance of clients’ electrical and mechanical (E&M) systems, winning awards along the way. One of the highlights of the year was our in-house-developed ChillStream® solution, which uses AI to analyse real-time data collected at our Regional Digital Control Centre (RDCC) to optimise the energy performance of clients’ chillers. Successful trials of ChillStream® were carried out at venues of the Department of Health and the Hospital Authority (HA) respectively, saving considerable energy. In the long run, the solution will also enable fully automated remote monitoring and control of chiller operation, freeing up manpower for other types of work to raise productivity.

Building people-oriented society with citizens’ wellbeing in mind remains our goal. During the year, the EMSTF responded to many emergencies, including a power outage on Hong Kong Island in April 2023. Our staff promptly carried out emergency repairs to over 100 affected traffic lights and various E&M facilities in major public hospitals and government buildings, so that public services could resume normal as soon as possible.

Our round-the-clock services are not interrupted by extreme weather conditions. Our team promptly repaired over 100 damaged traffic lights and assisted in the recovery of seriously flooded areas after the passage of Super Typhoon Saola and the subsequent severe rainstorm in early September 2023. Likewise, we supported various activities to boost the post-epidemic economy and improve people's livelihoods, which included providing E&M support for the Waterfront Carnival held at Wan Chai harbourfront in late September 2023, as well as similar events under the Night Vibes Hong Kong campaign in other districts. We also provided temporary electricity supply, and footfall monitoring and crowd control systems for the Lunar New Year fairs across the city in February 2024, so that the public could enjoy the events to the fullest.

The EMSTF also actively participated in the HKeToll project. The HKeToll System, a free-flow tolling system, was progressively launched at various government-tolled tunnels from May 2023 onwards. Our role was to ensure the accurate and reliable operation of the new system, which not only improved tunnel efficiency but also brought users a new experience of convenience.

I&T OPPORTUNITIES AND CHALLENGES

The EMSTF has taken the lead many years ago in applying I&T solutions to our internal operations, clients’ E&M asset management, as well as operation and maintenance (O&M) work. We have also encouraged the E&M trade to use I&T to optimise operational and energy efficiencies. Though the efforts have yielded some results, and our in-house-developed solutions and joint projects with other organisations have won numerous awards, many clients have yet to fully deploy I&T solutions in their operations. Therefore, accelerating I&T implementation will be one of the key focuses in our future work.

目前人工智能發展迅速，運算力愈發強勁，配合日益普及的物聯網技術和傳感器，可完全自動監察和控制機電系統，優化系統的效率。然而，這亦可能會帶來新挑戰：各行各業由人類進行的初級人手工作，會否被人工智能取代？營運基金的運作會受到什麼衝擊？我們的客戶面對此等挑戰，應如何及早綢繆？就此，我已要求員工成立「科技雷達」，並委託兩位分別來自規管服務和營運服務的助理署長，領導「科技雷達」的工作，持續監察人工智能的發展，以及對部門包括營運基金的影響；重點之一是網絡安全，確保人工智能的開發和使用，符合安全和道德原則，包括按照相關法規保障個人資料安全和私隱。此外，地緣政治或會窒礙有關創科工作的採購安排，我已要求團隊把地緣政治影響與人工智能發展一併考慮，以制訂相應的計劃。

年內營運基金的創科工作取得重要進展，如為港珠澳大橋香港口岸推出多個創科項目，運用人工智能和影像分析等技術，支援智能過境、智能資產管理、碳中和及「港車北上、粵車南下」等措施。2023年下半年，我們推出部門的《人工智能行動綱領》和《機電裝備合成法行動綱領》，為部門在人工智能和「機電裝備合成法」的推廣和廣泛應用方面提出策略和行動路線圖，奠下重要的里程碑。此外，為促進粵港澳大灣區（大灣區）的人工智能發展，團隊已着手與廣東省建築科學研究院集團股份有限公司合作，為大灣區機電業界制訂一套《機電設備人工智能數據標準化指南》。

營運基金也積極推動創科產業化。我們除了透過深受歡迎的「機電創科網上平台」為用戶配對創科方案，還在2024年2月初步推出「機電創科彙集」。這全新互動平台目前展示逾50個成功項目，方便客戶根據其特定需要迅速找到實證有效的創科方案。

機電工程署(機電署)年內就2035-2050年願景展開全面研究，探討部門的中長期願景展望，並制訂相應的策略和行動綱領。這項研究源自特區政府力爭在2050年前實現碳中和的承諾，本署作為政府部門，有責任為達成減碳目標作前瞻性規劃，因此我們擬進行研究以履行這項責任。後來，考慮到香港以至全球各地都受眾多宏觀環境變化影響，例如科技發展和地緣政治，我們把研究範圍擴大，涵蓋更多議題。現時，這項研究旨在探討和分析未來五年、十年、甚至三十年可能出現的宏觀環境變化、

As AI develops rapidly and computing power becomes ever stronger, they can be readily combined with the increasingly popular Internet of Things technology and sensors to monitor and fully automate E&M systems for optimising their efficiency. However, these developments may give rise to new challenges. Will AI replace the preliminary manual tasks conducted by human beings across different trades and professions? How will the EMSTF's operations be affected? How should our clients plan early to meet those challenges? In this respect, I have asked our staff to set up a Technology Radar and commissioned two Assistant Directors, one from Regulatory Services and one from Trading Services, to lead the initiative of continuously monitoring AI development and its impact on the Department, including the EMSTF. A key aspect will be cybersecurity, ensuring that the development and use of AI comply with safety and ethical principles, including the protection of personal data and privacy of individuals under the relevant laws and regulations. In addition, as geopolitics is likely to hamper the sourcing aspects of our I&T work, I have asked the team to consider the geopolitical impacts in conjunction with AI development in order to formulate plans accordingly.

The EMSTF's I&T work made significant progress during the year. Using AI and image analytics technologies, we introduced multiple I&T initiatives for the Hong Kong-Zhuhai-Macao Bridge Hong Kong Port to support smart crossing, intelligent asset management, carbon neutrality, and Northbound/Southbound Travel for Hong Kong, Mainland and Macao vehicles. We also launched our departmental AI Master Action Plan and Multi-trade integrated Mechanical, Electrical and Plumbing (MiMEP) Master Action Plan in the second half of 2023. Both are milestone documents setting out the departmental strategies and action roadmap to promote and facilitate the wider use of AI and MiMEP technologies. Furthermore, to facilitate AI development in the Guangdong-Hong Kong-Macao Greater Bay Area (GBA), our team has started working with the Guangdong Provincial Academy of Building Research Group Co., Ltd. to draft an E&M AI Data Standardisation Guideline for the E&M trade in the GBA.

The EMSTF also actively fosters the development of I&T as an industry. In addition to the E&M InnoPortal, our highly popular online I&T solution matching platform, we also soft launched the E&M InnoCatalogue in February 2024. It is a new interactive platform which currently showcases over 50 successful projects to help our clients quickly find the proven solutions according to their specific needs.

The Electrical and Mechanical Services Department (EMSD) commenced a comprehensive study on the Vision for 2035-2050 during the year, to explore the medium and long-term vision and prospects of the Department and formulate corresponding strategies and actions. Originally an initiative related to the Government's commitment to achieving carbon neutrality before 2050, the study was conceived as part of our responsibilities as a government department to make forward-looking plans to help achieve the decarbonisation goals. Later on, in view of myriad macro changes impacting Hong Kong and the world, such as technology development and geopolitics, the scope of the study was broadened to cover many more topics. As it stands, the study is aimed at exploring and analysing changes in the macro environment as well



總經理報告  
GENERAL MANAGER'S REPORT

機遇與挑戰，以及制訂相應的短、中、長期策略和行動措施。本文稍後部分會闡述詳情。

建立預防事故的文化

為進一步培育預防事故的文化，我們近年逐漸建立所需的機制，並提高員工的相關意識。然而，這是一項長期工作，必須持之以恆，才能透過「治未病」實現零事故的目標。

營運基金團隊相當重視以創科方案和「治未病」的精神預防事故，而人工智能、影像和大數據分析等技術，對於識別和杜絕安全隱患愈見重要。年內，我們的團隊為訂於2024/25年度啟用的中央數碼監控中心作最後準備。當中心投入服務，我們便能運用來自300多幢主要政府建築物的大數據，以進行預測性維修保養。與此同時，我們積極向客戶和業界推廣「機電裝備合成法」。採用「機電裝備合成法」可先在工廠預製組件，再把模組運送至工地進行組裝，藉此大幅減少現場施工的時間和人手，提高生產力和工地安全水平。

值得一提的是，營運基金應醫管局邀請，協助調查2023年年初發生的數宗事故，即使營運基金並非為涉事醫院提供操作和維修保養服務。我們也獲邀向醫管局因應事故而成立的「檢視醫療儀器及設施保養維修事宜委員會」分享醫療儀器維修保養方面的經驗和專業知識。我們的衛生工程團隊透過分享在公立醫院的機電操作和維修範疇累積的豐富經驗，加強了客戶「治未病」的意識，以及在資產管理和維修保養方面預防事故的能力。

以新思維善用人才

面對人力問題，可從兩方面着手：一是吸引年輕新血加入機電行業，二是設法利用有限的人力資源處理更多工作。

近年我們與機電業界合作，吸引年輕人入行，包括每年參與各個職業博覽會、與本港主要機電組織合辦見習技術員的迎新活動，以及舉辦多項學校和青年活動，提高新一代對機電業的認識和興趣。為吸引年輕人，我們必須傳達兩個信息：機電工作與科技息息相關，並對社會與民生有重要貢獻。

as opportunities and challenges likely to arise in the next five, ten and even thirty years; and devising corresponding short, medium and long-term strategies and actions. More details will follow in this message.

BUILDING AN INCIDENT PREVENTION CULTURE

To further cultivate our incident prevention culture, we have begun to establish the necessary mechanisms and raise staff awareness in recent years. Nevertheless, this is a long-term effort. It will take time and perseverance to attain our goal of zero incident via “preventive treatment of disease”.

The EMSTF attaches great importance to incident prevention through I&T solutions and the spirit of “preventive treatment of disease”. In this regard, technologies such as AI and image and big data analytics will be increasingly important in identifying and eliminating safety hazards. During the year, our colleagues have been making final preparations for the launch of the Departmental Digital Control Centre scheduled for 2024/25. Once this centre comes into operation, we can utilise big data collected from over 300 major government buildings for predictive maintenance. At the same time, we have been actively promoting MiMEP technology to our clients and the trade. As the MiMEP method enables off-site prefabrication of modules before delivery for on-site assembly, on-site construction time and manpower can be significantly reduced, thus productivity and site safety will be enhanced.

It must be mentioned that the EMSTF was invited by the HA to assist in investigating several incidents occurred in early 2023, in which the involved hospitals are outside the scope of our O&M portfolio. We were also invited to share our experience and professional knowledge of medical equipment maintenance with the Review Committee on Medical Equipment and Facility Maintenance set up by the HA in response to the incidents. Our health sector team's sharing of rich experience accumulated in E&M O&M at public hospitals has enhanced the client's awareness of “preventive treatment of disease” and capabilities in incident prevention in its asset management and maintenance work.

ADOPTING A NEW MINDSET IN TALENT DEPLOYMENT

There are two aspects to the manpower issue; firstly, attracting young talent to join the E&M industry; and secondly, finding ways to do more with limited human resources.

In recent years, the EMSTF has been working with the E&M trade to attract young people to join the industry, including participating every year in career expos, holding joint orientation events for Technician Trainees (TTs) with major E&M organisations in Hong Kong, and conducting various school and youth activities to raise the youth's awareness of and interest in the E&M industry. To attract young people, we must convey two messages: the E&M work is about technology, and it makes a meaningful contribution to society and people's livelihoods.

至於利用有限的人力資源處理更多工作，我們必須摒棄以往「要有額外資源才接手新工作」的心態，並改以新思維尋找解決方法，善用科技提高生產力，務求運用有限的人力資源取得更多成果。其中一個好例子是我們於2022年為醫管局試用醫療儀器維修表格電子平台，以簡化維修保養工作流程，真正實現無紙化工作流程，節省人手和提升效率。截至2023年9月，所有33類醫療儀器的維修保養表格已遷移至該電子表格平台。事實上，我們可善用現今的科技，透過網上平台和流動裝置輕鬆進行工作流程管理，甚至把有關工作全面自動化，從而騰出人手處理其他工作。我們必須繼續鼓勵客戶和業界更廣泛運用科技，讓寶貴的人力資源發揮最大效用。

營運基金在年內為員工舉辦多個機電技術培訓課程，並與廣東省多間培訓機構進行技術交流活動，包括接待廣州市機電技師學院和廣州市工貿技師學院的代表團參觀機電署總部，與代表團就創科發展交流經驗。我們還與廣州市技師學院、廣州市機電技師學院、廣州市工貿技師學院和廣州市交通技師學院合辦培訓課程，內容涵蓋空調製冷、電氣、電動車，以及屋宇裝備等範疇。

另外，我們很高興再次派出兩位見習技術員參與世界級賽事。機電署兩名選手分別於「空調製冷」和「電氣安裝」項目獲選為香港代表，並會參加於今年9月在法國里昂舉行的第47屆世界技能大賽，以精湛技術說好香港故事。

多元合作見成果

機電署近年與本港、內地和海外機構簽訂多份合作備忘錄和協議，並取得實質成果。以內地為例，我們目前與內地的主要合作範疇包括技術培訓、創科研發，以及交流活動。我們更在年內推出管理層培訓課程，成效卓著。

近年來，廣州市工貿技師學院等內地機構，一直為本署參加世界技能大賽的見習技術員提供高水平培訓，並與我們合作進行創科研發項目，推動技術突破。其中一個獲獎項目，是我們與廣東省科學院和香港機場管理局合作研發的機場跑道助航燈自動維護機械人。該機械人可自動偵測和清除飛機降落時輪胎留下的膠漬。項目

As for doing more with limited human resources, we must abandon the past mentality of “asking for additional resources before taking on new work”, and instead adopt the new mindset of finding ways to make the best use of technology for productivity improvement, so that more can be achieved with limited human resources. A good example is the trial of the Biomedical Engineering Services e-form platform that we initiated for the HA in 2022 with the aim of streamlining the maintenance workflow, thus making the process truly paperless and more efficient while saving manpower. As at September 2023, all 33 types of biomedical equipment maintenance forms had been migrated to the e-form platform. Indeed, with the technology today, workflow management can be smoothly carried out or even fully automated via online platforms and mobile devices, freeing up manpower for other tasks. We must continue to encourage our clients and the trade to make wider use of technology to unleash the full potential of our precious human resources.

During the year, the EMSTF organised a variety of E&M technical training courses for staff and held technical exchange activities with training institutions in Guangdong Province. These included experience exchange on I&T development with delegations from the Guangzhou Electromechanical Technician College and the Guangzhou Industry and Trade Technician College during their visit to the EMSD Headquarters. We also collaborated with the Guangzhou Technician College, the Guangzhou Electromechanical Technician College, the Guangzhou Industry and Trade Technician College, and the Guangzhou Communications Technician Institute to organise training courses in air-conditioning and refrigeration, electrical work, electric vehicles, and building services.

Moreover, we are delighted to send two TTs to compete in world-class events once again. Two candidates from the EMSD have already qualified to represent Hong Kong in the Refrigeration and Air-conditioning as well as Electrical Installations trades, and will enter the 47th WorldSkills Competition taking place in Lyon, France this September. They will tell the good stories of Hong Kong with their outstanding technical skills.

WIDE-RANGING CO-OPERATION YIELDS RESULTS

The EMSD has signed in recent years a number of memoranda of co-operation (MoC) and agreements with organisations in Hong Kong, the Mainland and overseas, which have yielded concrete results. Take the Mainland as an example. Our current focus of co-operation includes technical training, I&T research and development, and exchange activities. We also introduced a management training programme during the year, and achieved excellent results.

Mainland institutions, such as the Guangzhou Industry and Trade Technician College, have been providing high-standard training for our TTs competing in the WorldSkills Competition in recent years. These institutions have also been working with us on joint I&T development projects to drive technological breakthroughs. One of the award-winning projects is the Autonomous Airfield Ground Lighting Cleaning and Inspection Robot, a joint project with the Guangdong Academy of Sciences and the Airport Authority Hong Kong. The



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現正在廣州廠房進行試驗，日後有機會發展為無人駕駛的全自動機械人。

我們的另一新猷是與清華大學經濟管理學院合作，於2024年6月在深圳舉辦為期三天的首長級人員管理培訓課程。課程內容豐富，涵蓋最新的技術發展和管理策略等課題，讓參加者更深入了解內地和大灣區的發展。我們的人員亦分享了香港在邁向碳中和與推動創科的經驗。除了機電署外，發展局和其他工務部門的首長級人員也應邀參加課程，最終共有45人參與是次培訓。課程將於本年12月在深圳再次舉行。

此外，我們於2023年與內地機構簽訂了兩份新的合作備忘錄，包括與深圳市科學技術協會簽訂合作備忘錄，建立新的策略伙伴關係；以及與廣東省建築科學研究院集團股份有限公司和廣東省建設科技與標準化協會簽訂合作備忘錄，共同推動綠色建築機電系統技術和人工智能標準的發展。至於我們一直推廣的「機電裝備合成法」，本港業界可善用大灣區作為預製機電模組的生產基地，以便進一步採用有關技術。

2035-2050年願景研究

最後，我想談談早前提到的機電署2035-2050年願景研究。我們會先邀請部門人員以小組形式研究個別題目，例如氣候變化、創科發展、融入國家發展、地緣政治、部門服務(包括營運基金的服務)的未來演變、本港新發展區所帶來的機遇，以及機電設備的生命周期管理。我們會就這些議題的宏觀環境進行客觀分析，檢視和分析機電署的優勢，制訂短、中、長期的情境假設，並就不同階段訂定願景和目標。接着，我們會以逆向工作方法，探討由現在起與2035年至2050年間應採用什麼策略和具體行動，以實現這些願景和目標。如有需要，我們會聘請顧問公司提供協助。

雖然現階段的研究尚未得出結論，但挑戰是顯而易見的。人工智能和科技迅速發展，加上機電設備日趨模組化，一方面可提高我們的工作效率，另一方面迫使我們重新定位操作和維修保養服務，或轉向更高增值的工作。這些變化會對營運基金未來的工作環境和培訓產生根本影響，因此必須及早作詳細研究和策略規劃。

robot can automatically detect and remove rubber deposits left by aircraft wheels during landing, with trials being held at a Guangzhou workshop. The robot also has the exciting potential to become driverless and fully automated in the future.

In another new initiative, we collaborated with the Tsinghua University's School of Economics and Management to organise a three-day management training programme for directorate officers, which was held in Shenzhen in June 2024. Rich in content, the programme covered topics such as the latest developments in technology and management strategies, and provided participants with a deeper understanding of developments in the Mainland and the GBA. Our staff members also shared Hong Kong's experience in working towards carbon neutrality and promoting I&T. Apart from the EMSD, directorate officers from the Development Bureau and other works departments were also invited to join the programme, resulting in a total of 45 participants. The programme will be held again in Shenzhen this December.

In 2023, we signed two new MoC with the Mainland institutions, one with the Shenzhen Association for Science and Technology to establish a new strategic partnership, and another with the Guangdong Provincial Academy of Building Research Group Co., Ltd. and the Guangdong Province Construction Technology and Standardisation Association to jointly foster the development of green building E&M systems technology and AI standards. Regarding MiMEP technology, which we have been promoting, the trade in Hong Kong can make better use of the GBA as a manufacturing base for prefabricated MEP modules to facilitate further adoption of the technology.

STUDY OF THE 2035-2050 VISION

Lastly, I would like to elaborate on our study of the EMSD 2035-2050 Vision mentioned earlier. We will initially ask our staff members to work in small teams to study individual topics, such as climate change, I&T development, integration into national development, geopolitics, future evolution of the Department's services including those of the EMSTF, opportunities arising from Hong Kong's new development areas, and the life cycle management of E&M equipment. We will conduct an objective analysis of the macro environment in relation to these topics, review and analyse the EMSD's strengths, develop short, medium and long-term scenarios, and formulate our vision and goals for these time horizons. Next, we will work backwards to identify the strategies and actions to be taken between now and 2035-2050 to attain the vision and goals. Consultants will be engaged for assistance if necessary.

Though the study at this stage is far from being conclusive, the challenges are obvious. The rapid development of AI and technology, along with the increasing modularisation of E&M equipment, will on the one hand improve our work efficiency, and might on the other hand require us to reposition our O&M services or migrate to higher value-added work. These changes will have a fundamental impact on the organisation's future work settings and training, and require thorough deliberation and strategic planning well in

此外，地緣政治亦會影響本港機電系統以至整個社會的暢順運作，因此也必須制訂應變計劃。這項2035-2050年願景研究對營運基金的未來發展至關重要，我們會適時報告進展。

誠摯感謝

過去一年，承蒙客戶、機電業界、專業團體、學術界、培訓和研究機構鼎力支持，以及內地和海外合作伙伴的協作和襄助，營運基金才能取得佳績，我們深表謝意。我們也衷心感謝各決策局的指導和其他部門的支持，以及全體員工的巧思創意與不懈努力。此外，有賴立法會議員、傳媒、意見領袖和市民等持份者辛勤監察我們的表現，並提出寶貴建議，部門才能不斷反思和改進，謹致以衷謝忱。

我們希望來年續創佳績，為香港經濟和民生作出貢獻。

潘國英

潘國英  
機電工程營運基金總經理

advance. Another challenge is geopolitics, which will have an impact on the smooth operation of our E&M systems and even that of our society. Hence, contingency plans are essential. The study of the 2035-2050 Vision is crucial to the EMSTF's future development, and we will report on the progress in due course.

GRATITUDE AND APPRECIATION

The EMSTF would not have achieved so much in the past year without the strong support from our clients, the E&M trade, professional bodies, academics, and training and research institutions, as well as the collaboration and assistance of our Mainland and overseas co-operation partners, for which we are deeply grateful. Our heartfelt gratitude also goes to the policy bureaux for their guidance and to other government departments for their support, and we sincerely thank all our colleagues for their ingenuity and hard work. Furthermore, our continuous reflection and improvement would not have been possible without the vigilance and feedback from stakeholders, such as Legislative Council members, the media, opinion leaders and the public. We owe them all a big thank you.

The EMSTF looks forward to achieving excellence again next year in support of our economy and our people.

Poon Kwok-ying

Poon Kwok-ying, Raymond  
General Manager, Electrical and Mechanical Services Trading Fund



## 業務回顧與前瞻 OPERATIONS REVIEW AND OUTLOOK

陳志偉太平紳士  
Mr Chan Chi-wai, Richard, JP  
機電工程署副署長 / 營運服務  
Deputy Director/Trading Services, EMSD



機電工程營運基金在2023/24年度再錄得穩健增長，總收入由2022/23年度的89.11億港元增加至2023/24年度的92.81億港元，增幅為4.2%。收入回報率輕微下降至1.5%，符合我們收回成本的營運原則，讓客戶能把更多資源投放於公共服務。回報率下降的另一原因，是我們為客戶提供各項增值服務，包括免費的創新科技（創科）方案，以支援客戶在優化服務、數碼化和減碳方面的工作。

### 又一碩果纍纍之年

營運基金在2023/24年度取得豐碩成果，其中有幾項發展尤為突出。首先，我們與康樂及文化事務署簽訂全新的服務水平協議，為原先由私營承辦商進行維修保養的150部車輛提供維修保養服務，反映我們的服務優質，具競爭力。

另一項重要發展，是我們與醫院管理局（醫管局）就訂立服務水平協議展開討論。有關協議不僅涵蓋醫管局轄下所有新的附表1醫院，還適用於新的附表2醫院，讓我們可早在醫院項目的設計階段便開始提供服務，包括就智慧醫院功能提出建議、進行技術審核，以及支援醫院的測試和校驗工作，從而為日後的機電設施操作和維修服務作更佳準備。我們正進行有關討論，期待在2024年與醫管局達成新的服務伙伴關係。

作為政府的「創新促成者」，機電署最初以增值服務形式為客戶提供各項創科方案，如今已發展成商機。舉例而言，我們在荔枝角收押所重建計劃中，引進智慧監獄方案的元素，把老舊的收押所改造成現代化的懲教設施。現在很多客戶都視創科項目為部門未來發展的必要投資，證明我們的努力卓有成效。

The Electrical and Mechanical Services Trading Fund reported another year of steady growth in 2023/24. The total revenue increased from HK\$8,911 million in 2022/23 to HK\$9,281 million in 2023/24, representing an increase of 4.2%. The return on revenue decreased slightly to 1.5%, aligning with our cost recovery principle to enable clients to devote more resources to public services. The decreased return was further attributable to our value-added service offerings, including free innovation and technology (I&T) solutions to support clients' service enhancement, digitalisation and decarbonisation work.

### ANOTHER YEAR OF OUTSTANDING ACHIEVEMENTS

Amidst a bumper harvest of achievements in 2023/24, several developments stood out. First, we have concluded a new Service Level Agreement (SLA) with the Leisure and Cultural Services Department for the maintenance and repair of 150 vehicles, which were formerly maintained by private contractors, reflecting our quality service and competitiveness.

Also significant was the initiation of dialogue with the Hospital Authority (HA) on drawing up an SLA, covering not only all of its new Schedule 1 hospitals, but new Schedule 2 hospitals as well. This will enable us to offer our services as early as the design stage of the hospital projects, including making recommendations on smart hospital features, carrying out technical audits, and supporting the testing and commissioning of the hospitals, with a view to better preparing for the future operation and maintenance (O&M) services of electrical and mechanical (E&M) facilities. Discussions are in the pipeline, and we are looking forward to foster a new service partnership with the HA in 2024.

Another development was that our I&T solutions, initially provided to clients as value-added services taking on our role as the Government's Innovation Facilitator, have become business opportunities in their own right. An example is the Smart Prison solution incorporated in the redevelopment of the Lai Chi Kok Reception Centre to transform the aged centre into a modern correctional facility. The fact that many clients now regard I&T projects as essential investments for future development proves our efforts fruitful.



業務回顧與前瞻

OPERATIONS REVIEW AND OUTLOOK

年內我們再次贏得多個本地和國際獎項，涵蓋科技、工程、可持續發展和公共服務等範疇。值得一提的是，機電署的創科項目在2024年舉行的第49屆日內瓦國際發明展榮獲七項金獎、十項銀獎和四項銅獎。我們也獲得2023年香港最具創新力知識型機構大獎和2023年全球最具創新力知識型機構大獎，這是對機電署在推行知識管理和建立創新文化方面所作努力的肯定。

此外，2023年員工滿意度調查結果顯示，以10分為滿分，員工滿意度評分為7.7分，回覆率為55%，兩者同創新高。有句話說：「有滿意的員工，才有滿意的客戶。」我們會繼續努力，力求在2024年年底進行的下一次客戶意見調查，取得更高評分。

構建經濟蓬勃的智慧城市

營運基金致力協助實現《行政長官2023年施政報告》所提出「拼經濟謀發展 惠民生添幸福」的目標。我們的智慧城市項目和機電工程支援服務，既可提高客戶的運作效率，也可滿足社會需要。

政府近年的首要工作是加快疫後經濟復蘇，其中一項舉措是舉辦吸引遊客和本地市民的活動。我們在年內為多項活動，包括於2024年2月在15個場地舉行的農曆年宵市場，提供臨時電力供應及照明設施、智能人流監察及管制系統，以及現場機電支援，確保活動得以順利舉行。2023年9月，我們為灣仔「海濱藝遊坊」活動提供緊急支援，解決攤檔的供電問題。我們亦為在其他地區舉行的「香港夜繽紛」活動提供技術支援，協力締造熱鬧氣氛，振興本港夜間旅遊經濟。

對駕駛者而言，2023年5月起實施的「易通行」系統是政府在各條收費隧道落實不停車繳費的一大突破。我們協助確保系統準確穩定，把本港行車隧道的運作效率和使用者的體驗提升至新水平。

其他智慧城市項目亦為市民和基建設施帶來更佳保障。其中，「政府物聯網」已成為各物聯網系統的骨幹，有關物聯網系統包括監察行人隧道水浸情況及向行人發出警報的智慧渠務方案；監測海面水位變化和洪水狀況以保護重要基礎設施免受極端天氣影響的智慧防洪監察系統；以及保障工人安全的安全智慧工地系統。此外，為拯救生命，我們建立遠足人士安全系統，利用「政府物聯網」基建設施傳送身處偏遠地區的行山人士所發出的緊急信號和位置數據。我們也運用無人

During the year, we won, once again, multiple local and international awards spanning technology, engineering, sustainability and public service. Of note, we clinched seven gold, ten silver and four bronze medals for our I&T projects at the 49th International Exhibition of Inventions of Geneva held in 2024. We also received top accolades in the Hong Kong Most Innovative Knowledge Enterprise (MIKE) Award 2023 and the Global MIKE Award 2023, which recognised our efforts in implementing knowledge management and fostering an innovation culture.

Furthermore, our 2023 Staff Satisfaction Survey reported a staff satisfaction rating of 7.7 on a scale of 10 and a response rate of 55%, both reaching record highs. It is said that satisfied employees lead to satisfied customers. We will endeavour to achieve higher ratings in our next Customer Opinion Survey scheduled for late 2024.

BUILDING A SMART CITY WITH A VIBRANT ECONOMY

The EMSTF has strived to assist in realising the goal of building “a vibrant economy for a caring community” put forward in the Chief Executive’s 2023 Policy Address. Our smart city projects and E&M support services have enhanced the operational efficiency of our clients while meeting community needs.

Expediting post-epidemic economic recovery has been the Government’s priority in recent years, and one of the initiatives was organising activities to attract tourists and local visitors. During the year, we provided for various events, including the Lunar New Year fairs held at 15 venues in February 2024, temporary electricity and lighting supply, intelligent footfall monitoring and crowd control systems, and on-site E&M support to ensure smooth implementation of the events. We also provided emergency support to the Waterfront Carnival in Wan Chai in September 2023 by resolving a power supply issue for stalls. Technical support was provided to other Night Vibes Hong Kong events in several districts to help create a dynamic atmosphere and boost Hong Kong’s night-time tourist economy.

For motorists, the HKeToll system launched since May 2023 was a breakthrough in implementing free-flow tolling at various government-tolled tunnels. We assisted in ensuring the accuracy and stability of the system, taking the city’s vehicle tunnel operational efficiency and user experience to a new level.

Other smart city projects have brought better safeguards for people and infrastructure. The Government-Wide Internet of Things (IoT) Network (GWIN) has become the backbone for deploying various IoT systems. These IoT systems include a Smart Drainage solution that monitors flooding in subways and alerts pedestrians; the Smart Flood Monitoring System that monitors sea-level changes and flood conditions to protect critical infrastructure facilities from extreme weather; and worker safety solutions for the Smart Site Safety System. In addition, the Hiker Safety System that we developed with the aim of saving lives uses the GWIN infrastructure to transmit emergency signals and location data from hikers in remote areas. Unmanned aerial vehicles, or drones, are also now

機巡視偏遠地區及檢查設於高處的基建設施和設備，以提高工作效率及降低前線人員的風險。

我們已在「機電創科網上平台」增設名為「機電創科彙集」的新平台，介紹上述多個項目，協助客戶和業界迅速找到他們所需的實證有效方案。「機電創科彙集」目前展示逾50個成功項目，有助扶植初創企業、完善香港的創科生態圈，以及擴展創科市場。

人工智能在策略計劃中舉足輕重

營運基金第三個五年策略計劃的目標是實現「機電3.0 — 智能機電」，2023/24年度是第三個計劃的首年。我們欣然報告計劃進展良好，提前實現部分里程碑。

事實上，我們於2022年已觀察到人工智能崛起，並把其納入第三個五年策略計劃作為必要部分。人工智能會在大量機電系統中發揮重要角色，以優化能源效益、實現預測性維修保養和加強眾多其他客戶服務。年內，我們的人工智能督導小組推出《人工智能行動綱領》，以「知、行、合、一」為四大支柱：即提升員工能力、落實試點項目、促進各種協作，以及制訂標準與指引。我們也成立了新的人工智能小組，協助各策略業務單位在維修保養服務中融入人工智能。此外，我們順利舉行首屆「節能AI大比拼」員工比賽，並促成28個試點項目，成績令人鼓舞。隨着人工智能在全球迅速發展，我們相信人工智能方案和其他新技術的應用必定會不斷增加，為邁向智能機電創造良好條件。

深化合作

我們歷來與本港及內地多所大學和研究機構簽訂多份合作備忘錄，在2023年更再接再厲，簽訂兩份新的合作備忘錄，一是與深圳市科學技術協會建立新的策略伙伴關係，二是與廣東省建築科學研究院集團股份有限公司和廣東省建設科技與標準化協會共同推動綠色建築機電系統技術和人工智能標準的發展。

目前，我們與內地的合作集中在技術培訓和創科方面，但我們亦會就內地擁有優勢的其他範疇尋求合作，包括電動車、氫燃料汽車、電池、太陽能板和其他可再生能源。此外，內地有不少設備完善的「機電裝備合成法」工廠，亦是我們的合作對象。

being deployed to patrol remote areas and inspect infrastructure and equipment at height to boost efficiency and reduce the risk of frontline personnel.

Many of these projects have already been featured on a new platform called E&M InnoCatalogue, which has been added onto our E&M InnoPortal to help clients and the trade quickly find the proven solutions they need. The E&M InnoCatalogue, which currently showcases over 50 successful projects, can help expedite the growth of start-ups, enhance Hong Kong’s I&T ecosystem and expand the I&T market.

AI ASSUMING KEY ROLE IN STRATEGIC PLAN

2023/24 was the first year of the EMSTF’s third Five-year Strategic Plan, which aims to achieve “E&M 3.0 – Intelligent E&M”. We are delighted to report on the good progress, with some milestones reached ahead of schedule.

In fact, having seen the emergence of artificial intelligence (AI) in 2022, we included it in our third Five-year Strategic Plan as an integral part. AI will take on a key role in myriad E&M systems for energy optimisation, realisation of predictive maintenance and a wide range of other client service enhancements. During the year, our AI Steering Group launched the AI Master Action Plan with a four-pillar framework, namely enhancing staff competence, implementing trial projects, fostering collaboration of all kinds, as well as formulating standards and guidelines. We have also set up a new AI team to help all Strategic Business Units incorporate AI into their O&M services. Besides, the first staff AI Competition for Energy Efficiency and Conservation was successfully completed, bringing about 28 trial projects with highly encouraging results. With the rapid development of AI around the globe, we believe that applications of AI-enabled solutions and other new technologies will only keep increasing, paving the way for intelligent E&M.

DEEPENING COLLABORATION

Following our memoranda of co-operation (MoC) with various local and Mainland universities and research institutes, we signed two new MoC in 2023, one with the Shenzhen Association for Science and Technology to establish a new strategic partnership, and another with the Guangdong Provincial Academy of Building Research Group Co., Ltd. and the Guangdong Province Construction Technology and Standardisation Association to jointly promote the development of green building E&M systems technology and AI standards.

While most of our current collaboration with the Mainland focuses on technical training and I&T, we will also seek co-operation in other areas where the Mainland has the edge. These include electric vehicles (EVs), hydrogen fuel cell vehicles, batteries, photovoltaic panels and other renewable energy. There are also many well-established Multi-trade integrated Mechanical, Electrical and Plumbing (MiMEP) plants in the Mainland, which are our target for co-operation.



業務回顧與前瞻

OPERATIONS REVIEW AND OUTLOOK

人工智能是內地另一擁有優勢的範疇，我們希望與大灣區的機構在人工智能和數據分析發展方面深化合作。我們的人員亦於年內到訪巴塞羅那、日內瓦和墨爾本等城市，參與當地的尖端科技會議和比賽，分享香港的成功故事，並學習世界各地的經驗。

愛護環境 以人為本

節能減碳繼續是我們的另一重點工作範疇，目標是協助香港於2050年前實現碳中和；具體工作包括為政府建築物內的機電設施落實更多節能項目，以及為政府車隊添置更多電動車。我們更於2023年成為政府氫燃料重型汽車試驗計劃的技術顧問，協助把新能源汽車引入香港。

運用人工智能優化能源效益的方案在年內取得良好進展。例如我們自行開發了ChillStream®系統，應用於公共衛生檢測中心及醫管局轄下醫院的製冷機組，為客戶節省大量能源。此外，為保護環境，我們逐漸把使用高全球變暖潛能值雪種的冷凍設備，更換成使用低全球變暖潛能值雪種的設備。我們也嘗試使用再生雪種，以減少浪費。在可再生能源方面，機電署總部大樓會參與財政司司長在最新一份財政預算案提出的太陽能發電建築先導計劃，該計劃探討在政府建築物幕牆應用太陽能發電技術和物料，以助香港實現碳中和。

要建立「惠民生添幸福」的社會，必須以市民所需為先；這一直是我們研發上述各種智慧城市項目的優先考慮，其中一個立竿見影的例子就是中央援港應急醫院。醫院於2023年成功推出放射診斷、內視鏡檢查、睡眠測試和微生物化驗服務，大幅縮短醫管局病人的輪候時間。我們協助進行相關機電工程，讓醫院能按時推出新服務，造福市民。

2024/25年度展望

營運基金計劃在2024/25年度，透過應用創科等措施把生產力提高百分之一，從而減低客戶收費。在業務增長方面，我們感到樂觀。營運基金期待與醫管局達成服務水平協議，為醫管局新建和重建的醫院提供技術諮詢服務，並延長服務水平協議，涵蓋隨後的操作和維修保養，

AI is another area of strength of the Mainland, and we look forward to deepening our collaboration with Greater Bay Area entities on AI and data analytics development. Meanwhile, our officers have visited and participated in conferences and competitions on cutting-edge technologies in cities such as Barcelona, Geneva and Melbourne during the year to share Hong Kong's success stories and learn from global experience.

CARING FOR THE ENVIRONMENT AND PUTTING PEOPLE FIRST

Energy saving and decarbonisation continued to be our another focus work area, with the objective of assisting Hong Kong in achieving carbon neutrality before 2050. Examples of our work include implementing more energy-saving projects for E&M facilities in government buildings and procuring more EVs for the government fleet. We even became the Government's technical advisor in 2023 for a trial project on the use of hydrogen fuel cell heavy vehicles, assisting in introducing new-energy vehicles to Hong Kong.

AI-enabled energy optimisation solutions gained momentum in the year: for instance, our in-house-developed ChillStream® was applied to chillers at the Public Health Laboratory Centre and HA hospitals, generating significant energy savings for our clients. Furthermore, to protect the environment, we have been gradually replacing refrigeration equipment that uses refrigerants with high global warming potential (GWP) with those using low GWP refrigerants. We have been also trialling the use of reclaimed refrigerants to reduce waste. On the part of renewable energy, the EMSD Headquarters Building will participate in a pilot scheme on Building-integrated Photovoltaics outlined in the Financial Secretary's latest Budget Speech, while the scheme will explore the applications of photovoltaic technology and materials on the facades of government buildings to help Hong Kong realise carbon neutrality.

To build a caring community, we have to put people's needs first. This has always been a priority during our planning of various smart city projects mentioned above. A good example offering immediate benefits took place at the Central Government-aided Emergency Hospital, which successfully launched radiology, endoscopy, sleep test and microbiology services in 2023, and significantly shortened the wait time of HA patients. We assisted in the E&M works that enabled the hospital to launch the new services on time and serve the public good.

OUTLOOK FOR 2024/25

The EMSTF aims to raise productivity, through initiatives such as application of I&T, in 2024/25 by one per cent, to reduce the fees paid by our clients. On the business growth, we are optimistic. The EMSTF looks forward to concluding an SLA with the HA on providing technical advisory services for its new and redeveloped hospitals and extending the SLA to cover O&M and advisory services later on. Moreover, the Three-runway System at the

以及諮詢服務。此外，香港國際機場的三跑道系統及其相關的基建設施將於2024/25年度開始逐步投入服務，並帶來新的商機。我們的團隊也會為2025年11月舉行的第十五屆全國運動會提供技術支援，屆時香港會承辦八項賽事。我們會協助為全港的運動場地及設施進行優化工程，為這項盛事作好準備。

一如以往，我們的見習技術員會繼續參與世界級賽事。機電署兩名見習技術員分別於「空調製冷」和「電氣安裝」項目獲選為香港代表，並會於今年九月赴里昂參加第47屆世界技能大賽。此外，因應人工智能和「機電裝備合成法」等新技術的應用日益增加，我們正計劃更新機電署八份《優良操作和維修作業手冊及指引》。

感恩與謝忱

我於1995年加入機電署，多年來有幸見證營運基金轉型成為一個既成功又以客為本的機電服務提供者，並肩負政府的「創新促成者」角色。營運基金的成功蛻變和持續穩定表現，實在有賴常務委員會和各個決策局的指導、員工的出色工作，以及各商會、業界伙伴、學術界、專業團體、培訓及研究機構等的鼎力支持，我們對各位深表謝意。我們亦衷心感謝客戶的信任，以及本港、內地及海外合作伙伴的支持。

我很感恩及榮幸有機會為營運基金服務，謹祝營運基金在第三個五年策略計劃下再創高峯，不負公眾期望。

陳志偉

陳志偉  
機電工程署副署長 / 營運服務

Hong Kong International Airport and its associated infrastructures will progressively commence operation from 2024/25, opening up new business opportunities. Our team will also give technical support to the 15th National Games to be held in November 2025, with Hong Kong co-hosting eight competition events. We shall help upgrade the city's sports venues and facilities in preparation for this grand event.

As in the past years, our Technical Trainees (TTs) will continue to compete in world-class competitions. Two TTs of the EMSD have qualified for representing Hong Kong in the Refrigeration and Air-conditioning and Electrical Installations trades, and will enter the 47th WorldSkills Competition in Lyon this September. Meanwhile, we are planning to upgrade our eight Operation and Maintenance Best Practices Booklets and Handbooks in view of the increasing application of AI, MiMEP and other new technologies.

GRATITUDE AND APPRECIATION

Since joining the EMSD in 1995, I have been privileged to have witnessed the EMSTF's transformation into a successful, customer-oriented E&M service provider and the Government's Innovation Facilitator over the years. Vital to our turnaround and our ongoing steady performance has been the guidance of the Executive Board and policy bureaux, the excellent work of our staff, and the full support of trade associations, industry partners, academia, professional bodies, training and research institutions, and many others. We owe them our heartfelt gratitude. We also sincerely thank our clients for their trust and our partners in Hong Kong, the Mainland and overseas countries for their support.

I am grateful and honoured for the opportunity to have served the EMSTF, and I wish the EMSTF scaling new heights under the third Five-year Strategic Plan and living up to public expectations.

陳志偉

Chan Chi-wai, Richard  
Deputy Director/Trading Services, EMSD



## 營運服務 TRADING SERVICES

### 智慧城市加速發展

機電工程營運基金於2023年4月推出第三個五年策略計劃，以提升服務水平及實現「機電3.0 – 智能機電」的目標，並把智慧城市發展列為工作重點之一。營運基金大力支持《香港智慧城市藍圖2.0》，不僅完成了該《藍圖》內的八個智慧城市項目，還在2023/24年度推出新措施，務求令本港城市生活質素更上層樓。



機電署為港珠澳大橋香港口岸的車輛自動清關支援系統進行升級，優化車輛通關流程。我們更為口岸的區域供冷系統開發人工智能技術，根據客流數據調節製冷水流、送風量和溫度，節省能源。

The EMSD upgraded the Automatic Vehicle Clearance Support System for the Hong Kong-Zhuhai-Macao Bridge Hong Kong Port, optimising the vehicle clearance process. Additionally, we developed an AI technology for the district cooling system at the Port to adjust the chilled water flow rate, supply air volume and temperature according to passenger traffic data for energy saving.

香港是國際樞紐和進入內地的大門，加強智慧基建對鞏固此等地位至為重要。我們在2023年5月為港珠澳大橋香港口岸(口岸)實施多項創新科技(創科)措施，以支援智能過境、智能資產管理、碳中和及「港車北上、粵車南下」。有關措施包括為各個車輛通關系統進行升級，便利大灣區駕駛人士通關；以及在旅檢大樓運用人工智能和影像分析技術實時監察客流量，協助客戶部門利用實時數據加強保安和人流管制。我們又在口岸多棟建築物和多個地點應用智能方案，加強監察照明、升降機及自動梯等機電資產的運作；以及進一步運用人工智能提升口岸區域供冷系統的能效表現。

營運基金運用創科簡化海關查驗工作，包括深受香港海關歡迎的智能違禁品偵測方案。多個邊境管制站已引進最新的電腦掃描檢查系統，並具有自動偵測違禁品的功能，全方位偵測違禁品，可提升海關檢查效率，並有助香港海關落實「智慧海關藍圖」。

### SMART CITY GATHERS MOMENTUM

The Electrical and Mechanical Services Trading Fund launched the third Five-year Strategic Plan in April 2023 to enhance our services and attain the goal of “E&M 3.0 – Intelligent E&M”, with smart city development as one of the priorities. Being a staunch supporter of the Hong Kong Smart City Blueprint 2.0, the EMSTF has completed eight smart city projects under the Blueprint and introduced new initiatives in 2023/24, with a view to taking urban life in Hong Kong to a new level.



Enhancing our smart infrastructure is vital to reinforcing Hong Kong's position as an international hub and gateway to the Mainland. We launched a number of innovation and technology (I&T) initiatives for the Hong Kong-Zhuhai-Macao Bridge Hong Kong Port (the Port) in May 2023 to support smart crossing, intelligent asset management, carbon neutrality and Northbound/Southbound Travel for Hong Kong, Mainland and Macao Vehicles. These initiatives entail upgrading of various systems for vehicle clearance to enable smooth passage for drivers in the Greater Bay Area (GBA), and deploying artificial intelligence (AI) and image analytics for real-time passenger flow monitoring at the Passenger Clearance Building to assist client departments to strengthen security and crowd control with real-time data. Intelligent solutions have also been applied at various buildings and locations at the Port to enhance the monitoring of the operation of E&M assets including lightings, lifts and escalators. AI has been further used to optimise the energy performance of the Port's district cooling system.

Innovative technologies are deployed to streamline customs inspection work, including smart solutions for detecting contraband, which are well received by the Customs and Excise Department (C&ED). Latest model of computed tomography scanners had been implemented at several boundary control points with automated contraband detection function, which can provide comprehensive contraband detection, improve inspection efficiency and facilitate the accomplishment of the C&ED's Smart Customs Blueprint.

本地運輸系統亦在2023年邁進新里程。多條政府收費隧道在5月至12月相繼實施「易通行」，包括海底隧道(紅隧)、東區海底隧道(東隧)、西區海底隧道(西隧)、城門隧道、獅子山隧道、大老山隧道、香港仔隧道，以及青沙管制區內的三條隧道，即尖山隧道、沙田嶺隧道及大圍隧道，讓駕駛者無須在收費亭停車付費。這個不停車繳費系統由營運基金與多個客戶部門及承辦商共同開發、實施及維修保養。我們也為紅隧、東隧和西隧實施「分時段收費」提供技術支援。此外，機電署憑藉「易通行」系統於2023年4月在第48屆日內瓦國際發明展贏得銀獎。

On local transport system, a milestone development took place in 2023 when the HKeToll was successively launched at various government-tolled tunnels between May and December. Covering Cross-Harbour Tunnel (CHT), Eastern Harbour Crossing (EHC), Western Harbour Crossing (WHC), Shing Mun Tunnel, Lion Rock Tunnel, Tate's Cairn Tunnel, Aberdeen Tunnel and the three tunnels within the Tsing Sha Control Area (i.e. Eagle's Nest Tunnel, Sha Tin Heights Tunnel and Tai Wai Tunnel), the new system eliminates the need for motorists to stop and pay at toll booths. The EMSTF collaborated with multiple client departments and contractors to develop, implement and maintain the free-flow tolling system together. We also provided technical support for the implementation of the Time-varying Tolls at the CHT, EHC and WHC. Moreover, the EMSD won a silver medal for the HKeToll system at the 48th International Exhibition of Inventions of Geneva in April 2023.



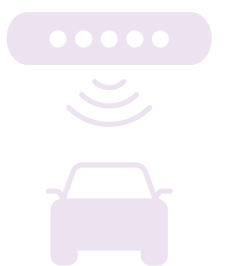
年內，我們協助運輸署為多條政府收費隧道設計和安裝「易通行」系統，並進行不停車繳費服務的試行運作測試。此外，我們就2023年12月實施的三條過海隧道「分時段收費」系統提供技術意見。

We designed and installed the HKeToll system, and carried out commissioning tests for the free-flow tolling service at various government-tolled tunnels for the Transport Department during the year. Also, we provided technical advice on the system of the Time-varying Tolls at three Road Harbour Crossings implemented in December 2023.



東區海底隧道的新交通管制及監察系統能讓客戶實時監察隧道的交通情況。每當有惡劣天氣或緊急事故，系統會提出應變方案，協助客戶更有效地管理交通。

The new Traffic Control and Surveillance System at Eastern Harbour Crossing allows the client to monitor tunnel traffic in real time. If severe weather or an emergency occurs, contingency plans will be proposed to enable the client to manage the traffic more effectively.



營運基金持續為全港各行車隧道和管制區更換交通管制及監察系統，並在有關工作中應用創科方案，使系統更智能化。例子之一是我們把全球定位系統的覆蓋範圍擴展至中環灣仔繞道的隧道段。另外，我們在獅子山隧道、香港仔隧道、大老山隧道及青馬管制區的交通管制及監察系統更換工程中，採用建築信息模擬技術，令隧道行政大樓控制室的設施設計視像化，以優化系統遷移的流程。

As part of our ongoing replacement work for the Traffic Control and Surveillance Systems (TCSSs) at various road tunnels and control areas in Hong Kong, we have applied I&T solutions to make them smarter. One example was the project to extend the coverage of Global Positioning System to the tunnel section of the Central-Wan Chai Bypass. Building Information Modelling (BIM) technology was also deployed in the TCSS replacement works at Lion Rock Tunnel, Aberdeen Tunnel, Tate's Cairn Tunnel and Tsing Ma Control Area for design visualisation of the facilities in control rooms of tunnel administration buildings to optimise the system migration process.



營運服務

TRADING SERVICES

善用數碼化、物聯網和建築信息模擬等技術提供醫療服務，是智慧城市特點之一。在這方面，我們在瑪麗醫院、威爾斯親王醫院、東區尤德夫人那打素醫院和醫院管理局大樓，安裝了節能照明系統和智能無線照明控制系統。我們亦協助為北區社區健康中心等新場地建立和使用建築信息模擬模型。

機電署採用「機電裝備合成法」為醫院管理局更換瑪嘉烈醫院的空氣處理機組。與傳統方法相比，採用「機電裝備合成法」不但可簡化安裝過程，還可提高更換工程的效率，從而減低對醫院日常運作的影響。

The EMSD took the MiMEP approach to replace an air-handling unit at the Princess Margaret Hospital for the Hospital Authority. When compared to the traditional approach, using the MiMEP method can not only simplify the installation process, but also enhance the efficiency of replacement works, thereby reducing the impact on daily operation of the hospital.



我們繼續為政府首個十年醫院發展計劃提供技術支援，從機電系統操作和維修的角度為新公立醫院的設計提供意見。除了方便日後為工程系統進行操作和維修工作，以助確保系統具應變能力、可供使用、易於維修和質素良好之外，我們亦着重廣泛利用數碼化與人工智能，支援智慧醫院運作和實現高效資產管理。

We continued to provide technical support to the Government's First Ten-year Hospital Development Plan by offering input to the design of new public hospitals from the perspective of operation and maintenance (O&M) of E&M systems. In addition to facilitating easy access to engineering systems for future O&M work, which will help ensure their resilience, serviceability, maintainability and quality, our focus is to support the wider use of digitalisation and AI for smart hospital operation and effective asset management.



我們為東區尤德夫人那打素醫院的智能無線照明控制系統進行改善工程。該系統可以透過平板電腦和無線控制台操作，隨時調節照明亮度和區域分布，並收集能源消耗數據作分析。

We carried out improvement works on the Smart Wireless Lighting Control System at the Pamela Youde Nethersole Eastern Hospital. The system can be operated through tablet computers and wireless consoles to adjust brightness and zoning of lighting anytime, and collect energy consumption data for analysis.



與此同時，我們深知與大灣區機構合作，會為智慧醫療服務帶來長遠利益。因此，我們善用大灣區作為生產基地的優勢，加快在醫院資產更換工程中應用「機電裝備合成法」，例如更換空氣處理機組和製冷機組，以大幅縮短施工期。另一個最新項目，是結合區域數碼監控中心技術和人工智能，增強遙距監察及優化醫院內機電系統的運作效能，為香港未來的智慧醫院提供寶貴參考。

在智慧城市的發展過程中，政府建築物和場地必須更智能化。年內，我們在秀茂坪警署成功試用智慧緊急照明測試系統，另外兩個場地的測試則預計於2024/25年度完成。該系統利用物聯網技術，偵測緊急照明燈電池發生故障前的先兆。根據消防處的要求，緊急照明燈須定期進行測試，包括電池放電及續航力測試。這自動化測試系統既能取代傳統人手測試，使電池測試和更換工作更有效率，亦有助推廣消防服務優良操作和維修作業模式，以提升工作安全。



我們在警局內試行智慧緊急照明測試系統，以偵測獨立電池燈有否發生故障。該系統採用物聯網技術，實時收集和分析緊急照明系統的運作數據，一旦偵測到潛在問題便會作出警示。

We are trialling a Smart Emergency Lighting Testing System in police stations to detect self-contained battery lighting failure. The system uses IoT technology to collect and analyse real-time operational data of the emergency lighting system, and issues warning signals once potential problems are identified.



機電署的中央數碼監控中心將於2024/25年度投入服務，屆時我們能為全港300多幢主要政府建築物進行數據分析，加強維修保養服務。

此外，我們繼續與懲教署合作推展智慧監獄項目，其中智慧維生及健康感測系統於2024年4月在第49屆日內瓦國際發明展上獲得銀獎。智慧監獄系統最新引進智能床墊，以監測在囚人士的主要生命體徵，保障其安全。我們亦正在測試機械巡邏犬，務求把監獄圍牆和偏遠地區的巡查工作自動化，以及巡邏記錄數碼化，從而減輕懲教人員的工作量。

Meanwhile, we are fully aware of the long-term benefits of co-operation with entities in the GBA for smart health services. Therefore, we take advantage of the GBA as a manufacturing base to expedite the adoption of Multi-trade integrated Mechanical, Electrical and Plumbing (MiMEP) technology in hospital asset replacement projects, such as replacement of air-handling units and chillers, to significantly reduce works duration. Another cutting-edge project which integrates the Regional Digital Control Centre technology with AI to enhance the remote monitoring of E&M systems in hospitals and optimise their operational efficiencies is being developed. This will provide a valuable reference for future smart hospitals in Hong Kong.

Smart city development also entails making government buildings and venues more intelligent. We successfully completed a trial project for adoption of Smart Emergency Lighting Testing System at Sau Mau Ping Police Station during the year, and expected that the trials at other two venues will be completed in 2024/25. The system uses IoT technique to detect portents of battery failure of emergency lights before any failure occurs. As required by the Fire Services Department, it is necessary to conduct routine testing of emergency lights, including battery discharge and life tests. This automatic testing system can not only replace traditional manual tests, making both the tests and replacement of battery more efficient, but also help promote O&M best practices of fire services to enhance safety at work.

With the commissioning of the EMSD Departmental Digital Control Centre in 2024/25, we will be able to analyse data collected from over 300 major government buildings across Hong Kong for enhancing maintenance services.

Besides, we continue to collaborate with the Correctional Services Department on the promoting of the Smart Prison initiative, among which the Smart Health Sensing System won a silver award at the 49th International Exhibition of Inventions of Geneva in April 2024. An intelligent mattress has been recently introduced to this system. It can detect the main vital signs of inmates and helps safeguard their lives. Also, the trial of a robot patrol dog is underway, with a view to automating inspections of prison walls and remote areas, as well as digitalising patrol records, and thereby reducing the workload of correctional officers.



## 營運服務 TRADING SERVICES

從市民角度而言，智慧城市必須令日常生活更方便、更愉快，而這也是我們提升康樂及文化事務署（康文署）轄下各類場館的一貫原則。以元朗劇院為例，我們年內完成的舞台系統翻新工程涉及升級多項設施，包括電動吊杆系統、綜合旋轉及活動舞台和舞蹈彈性地板系統、電動升降樂池驅動系統和一體化操作系統等，為元朗及周邊社區帶來最頂尖的戲劇體驗。



From the public's perspective, a smart city must enable more convenient and enjoyable daily life. This has been our guiding principle in upgrading the diverse venues of the Leisure and Cultural Services Department (LCSD). For instance, the stage system refurbishment project of the Yuen Long Theatre, completed during the year, involved the upgrading of a number of facilities, such as an electric fly system, an integrated revolve, wagon and sprung floor system, an electrically-operated orchestra pit drive system and an all-in-one operating system, all to bring state-of-the-art theatrical experiences to communities in and around Yuen Long.



機電署與康文署合力為元朗劇院升級多項設施，包括綜合旋轉及活動舞台和舞蹈彈性地板系統、電動吊杆系統，以及全套燈光效果控制器，大大提升了表演的視覺效果和觀眾的觀賞體驗。

The EMSD collaborated with the LCSD to upgrade a number of facilities at the Yuen Long Theatre, including an integrated revolve, wagon and sprung floor system, an electric fly system, and a comprehensive set of lighting controllers, which have dramatically enhanced the visual impact of performance and the experience of audience.

市民到訪康文署高爾夫球中心時，或許會發現新的高爾夫球撿球機械人正在運作。我們在年內引進這台機械人，運用實時動態定位技術進行路線規劃，並使用三維光學雷達偵測障礙物。如有需要，機械人可改以人手操作，並用於修剪草坪。此外，我們為康文署在多個體育館及表演場地的無障礙洗手間試用跌倒偵測系統，運用物聯網傳感器和紅外線熱影像技術來偵測洗手間使用者的身體活動，在有人跌倒時就會發出警報。

Visitors to LCSD's golf centres may find a new golf ball picking robot in operation. Introduced during the year, the robot uses real-time kinematic positioning for route planning and three-dimensional Light Detection and Ranging (LiDAR) for obstacle detection. It can be driven manually when necessary and used for lawn mowing too. We also conducted for the LCSD a pilot test of a Fall Detection System at the accessible toilets in various sports centre and performing venues, using IoT sensors and infrared thermography to detect the body movement of toilet users and trigger an alarm when somebody falls down.



我們為康文署設計、採購和改裝的高爾夫球撿球機械人，能按照預設路線自動駕駛，並收集練習場地的高爾夫球，提高工作效率。另外，機械人更配備剪草功能，大大減輕職員的工作量。

The golf ball picking robot we designed, procured and modified for the LCSD, can navigate autonomously along its preset route and collect balls on golf driving ranges, thus enhancing work efficiency. It is also equipped with a lawn mowing function, which greatly reduces the workload of staff.

我們亦為食物環境衛生署（食環署）提供各種創科方案，例如豬隻屠體追蹤系統，利用物聯網技術實時監控豬隻屠體，提高屠房效率。我們又為食環署小販事務隊提供隨身攝錄機，用以協助執法、蒐證和調查工作。這項目的挑戰是要在短時間內完成安裝25套區域性攝錄資料存取管理系統，購置900多部前線人員佩戴的隨身攝錄機並連接到該管理系統。隨身攝錄機大幅減少執法過程中的潛在衝突，保障各方安全，深受食環署人員歡迎。



我們因應小販事務隊的運作需要，為他們提供隨身攝錄機。在採購過程中，我們仔細考慮到器材的影像穩定度、電池重量與持久度、待機模式時的預錄功能等因素。使用隨身攝錄機令衝突事件顯著減少，成效有目共睹。

In response to the operational needs of the Hawker Control Teams, we supplied body worn video cameras to the teams, taking into account factors such as image stability, weight and durability of battery, and pre-recording function in standby mode during the procurement process. The use of body worn video cameras has significantly reduced conflicts, proving its effectiveness.

高效率的火葬服務能為離世者家屬解憂消愁。年內，我們為鑽石山火葬場引進棺木調遣自主移動機械人和火化流程智能管理系統。該管理系統利用特製的數碼應用程式來追蹤和管理整個火葬過程，從棺木登記、火化，至把骨灰交給先人家屬。我們又探索利用無人機，配合人工智能影像辨識的技術，協助食環署人員巡邏和合石墳場和偵測未經授權的掘墳工程。

Highly-efficient cremation services can relieve worries of and bring peace of mind to families of the deceased. During the year, we introduced for the Diamond Hill Crematorium an Autonomous Mobile Robot for Coffin Manoeuvring and a Cremation Queue and Smart Management System. The latter uses a tailor-made digital application to track and manage the entire cremation process, from coffin registration at the crematorium through cremation to handing over the ashes to the families of the deceased. We also helped FEHD explore the adoption of unmanned aerial vehicles, or drones, and AI-based image recognition technology, to assist FEHD staff patrol the Wo Hop Shek Cemetery for detection of unauthorised exhumation works.

我們在鑽石山火葬場引進智能管理系統，配合無線射頻識別標籤，確保棺木上的資料準確無誤，並實時追蹤棺木在火化流程中的狀況。此外，我們利用棺木調遣自主移動機械人，讓流程進一步自動化，有效提升運作效率。

We introduced a Smart Management System with Radio Frequency Identification tags at the Diamond Hill Crematorium to ensure the accuracy of the information on the coffins and provide real-time tracking of the condition of the coffins throughout the cremation process. Additionally, the use of Autonomous Mobile Robots for Coffin Manoeuvring automates the process further, thus enhancing operational efficiency.



與內地交流方面，在2023年11月，我們獲食環署誠邀加入食環署管理層率領的跨部門代表團一同訪問上海，了解當地管理綠色火葬及殯葬設施和服務的經驗。這對本港正進行的火葬場重建工程和未來的火葬場項目極具參考價值。

As part of our exchange activities with the Mainland, the EMSD was invited to join an inter-departmental delegation led by the FEHD management and visited Shanghai in November 2023 to learn from the city's experience in the management of green crematoria and funeral facilities and services. The visit was of great reference value for the ongoing crematorium reprovisioning projects and future crematorium projects in Hong Kong.

在國際層面，機電署人員於2024年2月出席在巴塞羅那舉行的世界移動通訊大會，並參與由加泰羅尼亞貿易投資局舉辦的創新公開大挑戰，分享應用最新科技的經驗。

On the international level, the EMSD officers attended the Mobile World Congress in Barcelona in February 2024 and participated in the Open Innovation Challenge organised by the Catalonia Trade and Investment to share experience in the application of the latest technology.



## 營運服務 TRADING SERVICES

就市民的餘暇活動，我們測試了偏遠地區遠足人士的定位追蹤系統（又稱戶外活動遠足人士安全系統）以及系統的追蹤手帶，測試結果良好。我們計劃把該系統應用於水上活動和滑翔傘事故的救援服務，同時會探索新的向上傳輸技術，包括運用無人機建立流動遠程網絡系統，以增強系統的定位追蹤能力。

偏遠地區定位追蹤裝置利用「政府物聯通」傳送資料，並配備求救按鈕。佩戴裝置的人員於海上遇險時，追蹤系統可確定人員位置，以便救援隊伍迅速展開搜救行動。

The remote area location tracking device utilises Government-Wide IoT Network for transmission of information and is equipped with an SOS button. In case personnel wearing the devices encounter danger at sea, the tracking system can locate them, thus enabling rescue teams to quickly initiate search and rescue operations.



On the leisure life of the public, we have tested the Location Tracking System for Hikers at Remote Areas, also known as the Hiker Safety System for Outdoor Activities, and the tracking wristbands of the system, and obtained pleasing results. There is also a plan to use the system in rescue services for incidents relating to water sports and paragliding activities. Meanwhile, we are exploring new uplink technology, including the use of drones to provide a mobile long-range network system, to enhance the tracking ability of the system.



我們在賽馬會黃石水上活動中心安裝人工智能遠程視頻分析系統，該系統可透過拍攝所得的影像，準確識別船隻翻倒和人體求救姿勢，讓救生員可即時應對並開展救援行動，從而提升水上活動安全。

The AI-powered Long-range Video Analytics System installed at the Jockey Club Wong Shek Water Sports Centre can accurately identify capsized boats and human distress signals through the images captured, so that lifeguards can respond and initiate rescue operations immediately, and thereby enhancing the safety of aquatic activities.

為支持數碼政府服務和「智方便」應用程式的發展，我們推出了150多種電子表格，讓業界和市民可透過機電署網上系統遞交各類申請（例如續期申請），無需親身前往機電署辦理。我們亦推出「數碼機電牌照」，供八類工程人員使用，讓他們可以在網上檢視其註冊資料及向公眾出示其「數碼機電牌照」。我們會繼續優化部門的電子服務，例如新增「轉數快」電子支付服務，方便市民繳費。

To support the development of digital government services (e-government services) and the iAM Smart application, we have launched more than 150 e-forms to enable the trade and the public to submit various applications (e.g. renewal applications) through the EMSD's online system without having to visit our offices in person. We also have launched "Digital E&M Licences" for eight types of practitioners, allowing them to view their registration information online and show their "Digital E&M Licences" to the public. We will continue to improve our electronic services, such as introducing the Faster Payment System e-payment service to enable the public to make payments more conveniently.

另外，我們已展開全國運動會（全運會）的籌備工作，全運會將於2025年11月至12月舉行，屆時香港會籌備多項賽事和大型活動。我們持續參與全國運動會統籌辦公室轄下的策導委員會及各個統籌委員會，其中一項職責是在15個運動場館進行設施升級工程及提供機電服務。能夠為全運會這項體育盛事獻力，我們深感高興。

In addition, we have begun the preparation work for the National Games to be held between November and December 2025 when Hong Kong will arrange a number of competition events and mass participation events. We have been participating in the steering committee and a number of co-ordination committees as organised by the National Games Co-ordination Office. One of our roles is to carry out facility upgrade works and provide E&M services for a total of 15 sports venues. We are delighted to have the opportunity to contribute to this mega sports event.



機電署已就將於2025年舉行的第十五屆全運會展開籌備工作，並為香港單車館的設備，包括音響、閉路電視和計時系統，以及電子計分牌等，進行升級工程。專業計時系統在瑞士生產，具備高規格並經反覆測試，確保可為單車賽事精準計時。

The EMSD has started the preparation work for the 15th National Games to be held in 2025, and carried out upgrade works for a range of equipment at the Hong Kong Velodrome, including audio, closed-circuit television and timing systems, and electronic scoreboards. Manufactured in Switzerland, the professional timing system is built to high specifications and has undergone repeated testing to ensure accurate timing for cycling races.

## 交通里程碑：實施香港首個不停車繳費服務

### MILESTONE IN TRANSPORTATION: IMPLEMENTATION OF HONG KONG'S FIRST FREE-FLOW TOLLING SERVICE

機電署團隊多年來努力耕耘、詳細籌劃，作好全面的技術準備，成就本港首個不停車繳費系統投入服務。且聽邊境及運輸工程處葉偉良先生娓娓道來該系統背後的故事。

After years of hard work and meticulous planning, the EMSD team made comprehensive technical preparation and enabled the launch of Hong Kong's first free-flow tolling system. Mr Yip Wai-leung of the Boundary Crossing Facilities and Transport Services Division unveiled the story behind the system.



由2023年5月7日上午五時起，香港首個不停車繳費系統「易通行」在青沙管制區的三條隧道正式實施。高級工程師葉偉良先生在2018年加入邊境及運輸工程處，過去數年一直協助運輸署開發「易通行」系統；項目由設計至實施，他都全力參與，重點工作包括評估標書、測試系統和進行演練。

葉先生詳細說明「易通行」的運作原理。該系統有三種偵測通過車輛的方法：一是透過現場設備，配合無線射頻識別技術，讀取張貼於車輛擋風玻璃上的繳費貼；二是採用自動車牌識別技術擷取車輛的車牌影像，以辨識車輛登記號碼；三是採用光學雷達技術，識別車輛類別和尺寸。「易通行」系統善用這些技術偵測車輛，實現遙距收取隧道費，讓駕駛人士無須再在收費亭排隊及停車繳費。

2023年5月6日晚上十一時，葉先生與團隊成員抵達青沙管制區行政大樓。現場設備的伺服器設於行政大樓內，用於偵測車輛、產生交易記錄，以及把相關資料上載至「易通行」後端系統。為確保新系統運作順暢，200多名政府人員，包括葉先生及其團隊，以及顧問和承辦商，在青沙管制區、緊急事故交通協調中心和「易通行」後端系統的辦公室密切監察系統的運作情況。他補充說：「青沙管制區於2023年5月7日凌晨二時至五時臨時封閉，好讓我們進行最後階段的準備工作，以及最後的設備和系統測試。」清晨五時正，青沙管制區重新開放通車，「易通行」亦投入運作。

2023年12月，所有政府收費隧道已採用「易通行」。由於大欖隧道的「建造、營運及移交」專營權將於2025年5月屆滿，營運基金團隊正為大欖隧道引入「易通行」作準備。葉先生說：「我們非常重視推出系統前的演練，因此在每條隧道啟用系統前的幾個星期內，會進行至少兩次演練。」除了「易通行」外，運輸署亦於2023年12月17日在海底隧道、東區海底隧道和西區海底隧道實施「分時段收費」，按不同時段收取不同隧道費，藉此把交通分流，舒緩繁忙時段的過海交通擠塞情況。葉先生與團隊就此項目向運輸署提供鼎力支援，確保系統運作穩定。

葉先生總結道：「衷心感謝同事盡心竭力工作，使『易通行』得以順利推行。這個不停車繳費系統改變市民的駕駛習慣，並提高行車隧道的運作效率。我們很高興能參與這個重要的項目。」

Starting from 5 a.m. on 7 May 2023, HKeToll, Hong Kong's first free-flow tolling system, was implemented at the three tunnels within the Tsing Sha Control Area (TSCA). Mr Yip Wai-leung, a senior engineer who joined the Boundary Crossing Facilities and Transport Services Division in 2018, has assisted the Transport Department (TD) over the past few years in developing the system and participated in the project, from design to implementation, focusing on tender assessment, systems tests and drills.

Mr Yip explained in detail how HKeToll works. A passing vehicle is detected in three ways. First, the field equipment using the Radio Frequency Identification technology, reads a toll tag affixed to the windscreen of a vehicle. Second, the automatic number plate recognition technology is employed to capture the images of a vehicle's number plate for automatic recognition of the vehicle registration mark. Third, the Light Detection and Ranging technology is used for identifying the class and dimension of a vehicle. The system makes good use of these technologies to detect vehicles and collect tolls remotely, so that motorists do not have to queue up and stop at toll booths for payment.

Mr Yip and his team arrived at 11 p.m. on 6 May 2023 at the TSCA Administration Building, where the servers of the field equipment were housed for detecting vehicles, generating transaction records and uploading data to the HKeToll Back-end System (BES). To ensure the smooth operation of the new system, more than 200 government officers, including Mr Yip and his team, as well as consultants and contractors closely monitored the operation of the system at the TSCA, the Emergency Transport Co-ordination Centre and the BES Back Office. "The TSCA was temporarily closed from 2 a.m. to 5 a.m. on 7 May 2023 to allow us to carry out the final stage of preparation work, and final tests on equipment and systems," he added. At 5 a.m. sharp, the TSCA was re-opened to traffic and HKeToll was put into operation.

In December 2023, HKeToll had been rolled out at all government-tolled tunnels. With the Build-Operate-Transfer franchise of the Tai Lam Tunnel due to expire in May 2025, the EMSTF team is currently preparing for the introduction of HKeToll at the tunnel. "We attach great importance to the drills before launching the system, so at least two drills will be carried out for each tunnel in the weeks before the respective commissioning dates," stated Mr Yip. In addition to HKeToll, the TD implemented Time-varying Tolls at the Cross-Harbour Tunnel, Eastern Harbour Crossing and Western Harbour Crossing on 17 December 2023. Different toll levels are charged at different time slots, in order to divert traffic and alleviate cross-harbour traffic congestion during peak hours. Mr Yip and his team offered staunch support to the TD on this project to ensure the stability of the system.

Mr Yip concluded, "I would like to thank my colleagues for their dedicated work in making the implementation of HKeToll possible. This free-flow tolling system has changed the driving habits of the public, and improved the operational efficiency of the road tunnels. We are glad to be part of this important project."



善用創科 力臻卓越

創新科技(創科)近年成為營運基金追求卓越的動力，並鞏固了我們作為政府「創新促成者」的角色。事實上，提供以客為本的創新服務，是我們於2023年4月推出的第三個五年策略計劃中的重要支柱策略。各個策略業務單位運用人工智能、「機電裝備合成法」和建築信息模擬技術，以及綜合樓宇管理系統等，積極開發各種創科方案，實踐這項策略。

2023年下半年，機電署的人工智能督導小組和「機電裝備合成法」督導小組，分別推出《人工智能行動綱領》和《機電裝備合成法行動綱領》，成為部門發展的里程碑。兩個行動綱領以「知、行、合、一」，即「培訓、行動、協作和標準化」作為框架，推動兩項技術的廣泛應用。我們在人工智能方面的工作有三大重點，包括提高機電運作的能源效益、研究可提升機電安全的人工智能方案和促進客戶機電資產的預測性維修。2023年2月，我們成立了新的人工智能分部和人工智能工作小組，由具備資訊科技和人工智能建模知識的資深工程師組成，協助所有策略業務單位把人工智能融入客戶的新項目和操作與維修工作。

為促進大灣區的人工智能發展，我們會與廣東省建築科學研究院集團股份有限公司合作制訂一套《機電設備人工智能數據標準化指南》，以供在大灣區使用。

與此同時，發展局正推廣使用「開放式建築信息模擬」技術，提倡透過採用開放標準增加靈活度和方便協作。為配合此倡議，我們現正研究在機電署的資產管理和交接工作流程中應用「開放式建築信息模擬」技術。

「機電創科網上平台」為客戶、初創企業、大學及研究機構配對創科方案，一直深受歡迎，在2024年2月，其下的全新互動平台「機電創科彙集」初步推出。「機電創科彙集」目前展示逾50個成功項目供客戶和業界參考，方便他們根據其特定需要迅速找到實證有效的創科方案。

LEVERAGING INNOVATION AND TECHNOLOGY TO  
ACHIEVE EXCELLENCE

Innovation and technology (I&T) have been the driving force of the EMSTF's quest for excellence in recent years, and have strengthened our role as the Innovation Facilitator of the Government. Indeed, providing customer-oriented innovative services is a key pillar strategy of our third Five-year Strategic Plan launched in April 2023, manifested as our Strategic Business Units (SBUs) actively engaged in the development of I&T solutions using artificial intelligence (AI), Multi-trade integrated Mechanical, Electrical and Plumbing (MiMEP) as well as Building Information Modelling (BIM) technologies, and the integrated Building Management System (iBMS), just to name a few.

A milestone in our development was the launch of the AI Master Action Plan and MiMEP Master Action Plan respectively by our AI Steering Group and MiMEP Steering Group in the second half of 2023. Based on the "training, action, collaboration and standardisation" framework, both plans support wider use of the technologies. Regarding our work on AI, our triple focuses are to raise energy efficiency in E&M operation, explore AI solutions for enhancing E&M safety, and facilitate predictive maintenance of clients' E&M assets. In February 2023, we set up the new AI Sub-division and AI Working Group comprising experienced engineers with information technology and AI-based modelling expertise to assist all SBUs in incorporating AI in new projects and operation and maintenance (O&M) work for clients.

To facilitate AI development in the Greater Bay Area (GBA), we will be working with the Guangdong Provincial Academy of Building Research Group Co., Ltd. to draft an E&M AI Data Standardisation Guideline for use in the GBA.

Meanwhile, to dovetail with the Development Bureau's initiative to promote the use of openBIM technology, which adopts open standards for improved flexibility and collaboration, studies on our application of openBIM technology in asset management and handover workflows are underway.

The E&M InnoPortal, our highly popular I&T solution matching platform for clients, start-ups, universities and research institutes, soft launched a new interactive platform called E&M InnoCatalogue in February 2024. The E&M InnoCatalogue currently showcases over 50 successful projects for reference by clients and the trade, enabling them to quickly find the proven I&T solutions according to their specific needs.



機電署團隊在第49屆日內瓦國際發明展再創佳績，勇奪七項金獎、十項銀獎及四項銅獎，合共二十一個獎項。The EMSD team once again achieved spectacular results at the 49th International Exhibition of Inventions of Geneva, winning a total of twenty-one awards including seven gold, ten silver and four bronze medals.

我們採取以客為本的創新方法，以此作為訂立各項創科策略和尋求技術發展的基礎，也藉此為客戶開發了無數獲獎的創科方案。一如往年，機電署於2024年4月舉行的第49屆日內瓦國際發明展(日內瓦發明展)中取得佳績，憑藉多個支援政府服務、推進智慧城市發展和促進碳中和的創科方案，奪得二十一個獎項，包括七項金獎、十項銀獎及四項銅獎。

在第49屆日內瓦發明展榮獲金獎的其中一個項目，是把全球定位系統的覆蓋範圍擴展至中環灣仔繞道隧道道段的方案。此外，我們與廣東省科學院和香港機場管理局合作研發的機場跑道助航燈自動維護機械人，在第49屆日內瓦發明展獲得銀獎，該機械人現正於廣州廠房進行試驗。

至於智能防污海水濾網，是營運基金另一項得獎創科方案，先於2023年第三屆亞洲創新發明展覽會—香港榮獲金獎，再獲頒2024年香港工程師學會大獎優異獎。這項發明大大減少取出濾網進行檢查和清洗的需要，可節省八成人力成本，同時減低工人的安全和健康風險。



由機電署研發的智能防污海水濾網，利用超聲波技術及設有智能污垢指數分析功能，可清潔海水濾網和防止生物膜在濾網上形成。該項目在第三屆亞洲創新發明展覽會—香港上獲得金獎。圖為時任機電工程署署長彭耀雄先生(左五)與獲獎團隊。Developed by the EMSD, the Smart Antifouling Seawater Screen adopts the ultrasound technology and has a smart fouling index analysis function for cleaning seawater screens and averting the formation of biofilm on them. The project won a gold medal at the 3rd Asia Exhibition of Innovations and Inventions Hong Kong. Pictured are Mr Pang Yiu-hung, the then Director of Electrical and Mechanical Services (5th left), and the winning team.



(左)生物污垢積聚在濾網上；(右)應用該方案後的清潔效果。(Left) Accumulation of biofouling on a seawater screen, and (right) the cleaning effect after application of the solution.



營運服務  
TRADING SERVICES



機電署與消防處共同研發的資產管理系統，運用5G和無線射頻識別技術，實時監察消防車上救火工具和救援設備的可用情況、狀態和存放位置，有助有效管理大量不同類型的資產，以及提高消防員的職業安全 and 健康水平。

With the adoption of 5G and RFID technologies, the asset management system co-developed by the EMSD and FSD monitors the real-time availability, status and storage location of the fire-fighting tools and rescue equipment on fire appliances. It enables effective management of a wide variety of assets, and enhances the occupational safety and health of firefighters.



在協助保安客戶部門提升運作效率和推動數碼化轉型方面，科技擔當關鍵角色。以消防處為例，消防員每天都要檢查和盤點每輛消防車上過百件救火工具及救援設備。為了簡化這個耗時耗力的工序，我們與消防處合作開發消防車救火工具及救援設備資產管理系統，運用5G和無線射頻識別技術，實時偵測、監察和記錄各消防車上相關工具與設備的可用情況和狀態，並向消防員發出提示。在2024年日內瓦發明展，這項創新方案亦獲得金獎殊榮。

Technology plays a vital role in enhancing operational efficiency and driving digital transformation for our security client departments. Take the Fire Services Department (FSD) as an example. Firefighters undertake daily checking and stocktaking of more than 100 fire-fighting tools and pieces of rescue equipment on each fire appliance. To streamline this time-consuming and labour-intensive process, we collaborated with the FSD to develop a solution for Management of Fire-fighting Tools and Rescue Equipment on Fire Appliances. Using 5G and Radio Frequency Identification (RFID) technologies, the system can detect, monitor and record the real-time availability and status of tools and equipment on each fire appliance, for which firefighters will be alerted. This innovative solution was also recognised with a gold medal at the Geneva Exhibition in 2024.

年內，我們與康樂及文化事務署合作，在荃灣大會堂和屯門大會堂安裝地下水冷卻水管網絡的智能漏水監察系統。該一體化解決方案齊集遙距監控、數據收集和分析功能於一身，協助有關人員把地下冷卻水管保持在最佳狀態，以及確保兩個場館的空調服務穩定。我們也在香港鐵路博物館安裝了製冷機組水管漏水遙距監察系統，以監測製冷系統的水壓波動，找出可能發生的漏水問題。

During the year, we collaborated with the Leisure and Cultural Services Department to install a Smart Water Leakage Detection System for Underground Seawater Cooling Main at Tsuen Wan Town Hall and Tuen Mun Town Hall. This all-in-one solution enables remote monitoring, data collection and analysis, assisting personnel concerned to keep underground cooling mains in optimal condition and ensure stable air-conditioning service at the two venues. We also installed a Chiller Pipe Leakage Remote Monitoring System at the Hong Kong Railway Museum to monitor the fluctuation of water pressure in the chiller system to detect potential leaks.

我們自行研發的ChillStream®作為「分析即服務」方案，是以人工智能進行醫療基建資產管理的一大重點成就。該解決方案能遙距監察和最佳化控制製冷機組系統，以實現最佳的運作和能源效益。ChillStream®系統位於機電工程署總部大樓內的部別級區域數碼監控中心，運用實時天氣及樓宇運作數據，透過混合遺傳算法與粒子羣算法預測冷量需求，並優化目標製冷機組的調控工作。ChillStream®已在公共衛生檢測中心進行試驗，結果顯示該系統有助騰出部分製冷機組操作人員，以調配至其他工作；該系統每年更可為製冷機組節省約5%的耗電量。我們計劃未來數年，會在醫院管理局其他聯網醫院及不同的政府處所，更廣泛使用該系統。

衛生工程服務的維修保養工作流程也受惠於創科技術。我們於2022年開始試用醫療儀器維修表格電子平台。截至2023年9月，已有33類醫療儀器的維修保養表格遷移至該電子表格平台，真正實現無紙化工作流程，大大提升效率。我們計劃擴展電子表格平台以涵蓋手術室設備，長遠更會囊括所有電氣、機械和空調設備，全面簡化維修保養工作流程。

在政府大樓的機電操作及維修保養方面，人工智能等創新技術亦發揮重要作用。我們在60部升降機的主要部件上安裝了物聯網傳感器，收集運作數據以進行預測性維修保養，涵蓋的建築物包括金鐘道政府合署、長沙灣政府合署和海港政府大樓。此外，我們的人工智能實時升降機門巡查系統，在第三屆亞洲創新發明展覽會－香港上榮獲銀獎。另一個名為「使用建築信息模擬、建築信息模擬－資產管理和綜合樓宇管理系統大規模構建語義建模」的人工智能項目，則於2024年3月在政府資訊科技總監辦公室舉辦的「人工智能創新應用」創科比賽獲得三獎。



為符合公共衛生檢測中心對室內溫度和濕度的嚴格要求，我們在中心試用自行研發的ChillStream®人工智能製冷機組優化系統，自動調節製冷機組的運作模式，從而節省能源。  
To meet the stringent indoor temperature and humidity requirements of the Public Health Laboratory Centre, we trialled our self-developed ChillStream®, an AI-based chiller plant optimisation system, at the centre to automatically adjust the operational mode of its chillers for saving energy.

A highlight of our AI achievements in healthcare infrastructure asset management is ChillStream®, an in-house-developed scalable Analytics-as-a-Service solution that enables remote monitoring and optimised control of chiller systems for optimal operational and energy performance. Hosted at the divisional Regional Digital Control Centre at the EMSD Headquarters, ChillStream® predicts the cooling demand to optimise control of the target chiller plant through a hybrid Genetic Algorithm-Particle Swarm Optimisation algorithm based on real-time weather and building operation data. A trial project at the Public Health Laboratory Centre indicated that it could release some chiller operation manpower for deployment to other duties, and achieve annual energy savings of about 5% of chiller electricity consumption. We plan to widely use the system in other cluster hospitals of the Hospital Authority as well as other government premises in the coming years.

Maintenance workflow in the health sector services also benefits from I&T. We initiated a trial of the Biomedical Engineering Services e-form platform in 2022. As at September 2023, 33 types of biomedical equipment maintenance forms had been migrated to the e-form platform, making our workflow truly paperless and greatly improving efficiency. We plan to extend the e-form platform to cover operating theatre equipment and, in the long run, all electrical, mechanical and air-conditioning equipment, so as to streamline the maintenance workflow holistically.

Innovative technologies, such as AI, have also played a key role in our E&M O&M work in government buildings. We installed Internet of Things sensors on the major components of 60 lifts to collect operational data for predictive maintenance, covering buildings such as Queensway Government Offices, Cheung Sha Wan Government Offices and Harbour Building. Moreover, our AI Real-time Lift Door Inspection System won a silver medal at the 3rd Asia Exhibition of Innovations and Inventions Hong Kong. Another AI project, titled Mass Deployment of Semantic Modelling using BIM, BIM-AM and iBMS, was the second runner-up in the “Innovative Application with AI” Innovation Competition organised by the Office of the Government Chief Information Officer in March 2024.





## 營運服務 TRADING SERVICES

為支持公共工程實行「建造業2.0」，以及更廣泛地使用「機電裝備合成法」，我們在機電工程署總部的空氣處理機組更換工程項目中採用了「機電裝備合成法」，把九天的工期大幅縮短至三天。這項目展示了「機電裝備合成法」在空氣處理機組和製冷機組等更換工程的巨大潛力，對醫院及其他不能長時間中斷服務的場地尤其重要。



我們首次在機電署總部大樓應用「機電裝備合成法」更換地下大堂的空氣處理機組，以減少現場安裝工序，大幅節省施工時間，為職員及訪客帶來空氣流通的環境。

For the first time, we adopted the MiMEP approach to replace the air-handling unit for the lobby on the ground floor of the EMSD Headquarters Building, enhancing indoor ventilation at the venue for staff and visitors. The MiMEP method streamlined the on-site installation process and shortened the works period substantially.

To support the implementation of Construction 2.0 in public projects and the wider adoption of MiMEP technology, we adopted the MiMEP approach in an air-handling unit (AHU) replacement project at the EMSD Headquarters, significantly reducing work duration from nine to three days. The project demonstrates the great potential of MiMEP technology in AHU and chiller replacement works, which is particularly important to hospitals and other venues where services cannot be interrupted for a long time.



在黃大仙獅子山公園辦事處，我們也利用「機電裝備合成法」安裝靈活的模組化太陽能發電系統。這種模組化的太陽能板可靠自身重量穩固在指定位置，在惡劣天氣下也能抵禦強風，無論安裝或重用都更容易，因而大大減少屋頂安裝工程的需要。



A modular flexible photovoltaic (PV) system using the MiMEP approach has been installed at the office building in Lion Rock Park, Wong Tai Sin. This kind of modular PV panels can rely on their own weights to stay in a fixed position and resist strong winds during adverse weather. This makes their deployment and reuse much easier, thus minimising the need for installation works on the rooftop.

我們在獅子山公園辦事處的太陽能發電系統安裝工程中，採用「機電裝備合成法」預先在場外組裝模件，大大減省施工時間。該模組化太陽能板能以自身重量穩固地設置在建築物屋頂上，同時可抵禦強風。

During the installation works of PV system at the office building in Lion Rock Park, we adopted the MiMEP technology to pre-assemble the modules off-site, which greatly reduced the duration of works. The modular PV panels can be stably installed on the rooftop of the building with their own weights, as well as resisting strong winds at the same time.



隨着香港在2023年年初解除防疫措施，我們與內地的交流活動全面復常。我們除了與多間本地及內地大學和科研機構再度簽訂合作備忘錄外，還在今年簽訂了兩份新的合作備忘錄，包括在2023年7月與深圳市科學技術協會簽訂合作備忘錄，建立新的策略伙伴關係；以及在2023年9月與廣東省建築科學研究院集團股份有限公司和廣東省建設科技與標準化協會簽訂合作備忘錄，推動建築機電系統的綠色智慧技術和人工智能標準的發展。

此外，我們正與內地及海外的研究和學術機構商討加強合作伙伴關係，以協助創科方案「落地」，利惠市民。

我們的人員亦積極參與地區和國際活動，以推進交流協作，包括與香港生產力促進局和美國供暖製冷及空調工程師學會香港分會於2024年4月合辦建築資料獲取、資料本體及建模領域國際會議。我們相信交流合作對推動創科發展十分重要，未來亦會繼續參與這類活動。

Our exchange activities with the Mainland have fully resumed after the lifting of Coronavirus Disease 2019 restrictions in early 2023. In addition to renewing the existing memoranda of co-operation (MoC) with various local and Mainland universities and research institutes, the EMSD also signed two more MoC during the year: one with the Shenzhen Association for Science and Technology in July 2023 to establish a new strategic partnership; and another with the Guangdong Provincial Academy of Building Research Group Co., Ltd. and the Guangdong Province Construction Technology and Standardisation Association in September 2023, to promote the development of green intelligent technology and AI standards for E&M systems of buildings.

In addition, discussions are underway with research and academic institutions on the Mainland and overseas for strengthening partnerships to facilitate the implementation of I&T solutions in real life and bring benefits to the general public.

To foster exchange and collaboration, our officers have been engaged in regional and international events, including the International Conference on Building Data Acquisition, Ontology and Modelling jointly organised with the Hong Kong Productivity Council and the American Society of Heating, Refrigerating and Air-Conditioning Engineers Hong Kong Chapter in April 2024. We believe in the importance of exchange and co-operation in advancing I&T development and shall continue to take part in similar activities in the future.



為推動創科發展，我們舉辦多項活動，包括「機電創科日2023」和「綠色創科日2023」。我們在活動中更與不同內地機構分別簽署《創新及科技交流合作備忘錄》和《建築機電系統綠色智慧技術及人工智能標準合作備忘錄》，促進兩地交流合作。

To drive I&T development, we organised various events, including the E&M I&T Day 2023 and the Green I&T Day 2023. During the events, we also signed the Memorandum of Co-operation on Innovation and Technology Exchange and the Memorandum of Co-operation on Green Intelligent Technology and Artificial Intelligence Standards for Electrical and Mechanical Systems of Buildings respectively with different Mainland institutions, to promote mutual exchanges and co-operation.







機電署人工智能督導小組於2023年8月推出部門的《人工智能行動綱領》。數碼科技部高級工程師黃偉達先生表示，機電工程營運基金的第一個和第二個五年策略計劃已奠定良好基礎，因此在現時第三個五年策略計劃下進一步推動人工智能發展更得心應手。

黃先生於2002年加入機電署，多年來累積豐富的資訊科技項目經驗，並於2018年加入當時新成立的數碼科技部，與該部人員攜手開展人工智能研發工作。2023年2月，他協助組建部門層面的人工智能團隊，支援機電署在優化能源效益、操作和維修保養，以及機電安全等方面的多個人工智能項目。

《人工智能行動綱領》建基於「知、行、合、一」四大支柱框架，即「培訓、行動、協作和標準化」。「培訓」包含四個級別的課程，目標是提高員工在人工智能方面的能力。第一級是人工智能入門課程；之後是人工智能編程，繼而為有關人工智能嵌入式系統的培訓，第四級則是建構人工智能模型。截至2024年3月底，約900人已報讀相關課程。與此同時，部門亦舉辦人工智能工作坊和研討會，以及有關人工智能的職務考察和會議。

「行動」指落實項目累積經驗，現時員工激勵計劃下有28個人工智能項目，黃先生甚感欣慰。部門已發出《人工智能項目開發指引》，引導員工以安全和合乎道德的方式進行專案開發。在「協作」方面，部門的「機電人工智能實驗室」網站為機電署50多個本地、區域和內地合作伙伴提供分享經驗的平台；而與業界和大灣區人工智能專家的其他合作，也取得良好進展。

至於「標準化」方面，黃先生指出機電署與廣東省兩個合作伙伴共同制訂的《機電設備人工智能數據標準化指南》文獻綜述版已經完成。這套通用標準徹底改變現狀，使在不同系統和平台轉移和應用人工智能變得更容易。標準化也讓我們避免過份依賴單一供應商及/或品牌，從而減少在供應鏈、安全和其他方面的風險。機電署還推出「人工智能混合雲平台」先導版，把部門的人工智能項目上載至該平台，為客戶和業界示範提高風險意識和減低風險的最佳做法。

黃先生總結道：「相較以往數十年，現今的硬件性能更佳，運算力更強，使用案例也更多。現在是時候大展拳腳，利用人工智能實現智能機電，為人們帶來更美好的生活。」

## 人工智能開啟智能機電新時代 AI: OPENING THE DOOR TO THE NEW ERA OF INTELLIGENT E&M

機電工程營運基金在2023年推出《人工智能行動綱領》，為邁向智能機電創下新的里程碑。高級工程師黃偉達先生(左二)與團隊全力以赴推展綱領的工作，且聽黃先生闡釋綱領下的策略和行動，以及該綱領如何引領我們進入機遇處處的新時代。

The launch of the EMSTF's AI Master Action Plan in 2023 marked a new milestone towards Intelligent E&M. Mr Wong Wai-tat, Timothy, a senior engineer (2nd left) and his team, have been dedicated to the implementation of the plan. Mr Wong now explains the strategies and actions of the plan, and how the plan ushers us into a new age of plentiful opportunities.

The EMSD's Artificial Intelligence (AI) Steering Group launched the departmental AI Master Action Plan in August 2023. Mr Wong Wai-tat, Timothy, a senior engineer of the Digitalisation and Technology Division (DTD), stated that the EMSTF's first and second Five-year Strategic Plans had laid a good foundation, which made it easier to further AI development under the current third Five-year Strategic Plan.

Since joining the EMSD in 2002, Mr Wong has gathered rich experience in information technology projects over the years. In 2018, he joined the then newly established DTD and worked together with his team to take on AI development work. In February 2023, he helped set up a departmental-level AI team to support the EMSD in various AI projects on optimisation of energy efficiency, operation and maintenance, and E&M safety.

The AI Master Action Plan is based on the four-pillar framework of "training, action, collaboration and standardisation". "Training" encompasses four levels of courses to enhance staff competence in AI. Level one is an introductory course in AI. Next is AI programming, followed by training in AI-embedded systems, while Level four is about AI modelling. As at the end of March 2024, about 900 persons have enrolled in the courses. Meanwhile, the EMSD also held AI workshops and seminars, as well as organising AI duty visits and conferences.

"Action" means implementing AI projects to gain experience. Mr Wong is particularly pleased about the current 28 AI projects under the Staff Motivation Scheme. AI Project Development Guidelines have been issued to guide our staff to conduct the development of projects in a secure and ethical manner. On "collaboration", the E&M AI Lab website provides a platform for over 50 local, regional and Mainland partners of the EMSD to share experience. Other collaborations with AI experts in the trade and the Greater Bay Area have also made good progress.

As for "standardisation", Mr Wong pointed out that the literature review version of the E&M AI Data Standardisation Guideline, jointly developed with two partners in Guangdong, has been completed. The common standards will be a game-changer in facilitating the portability and applicability of AI across systems and platforms. Standardisation also allows us to avoid over-reliance on a single vendor and/or brand, thus reducing risks in supply chain, security and other aspects. Moreover, the EMSD has rolled out a pilot AI Hybrid Cloud Platform and uploaded our AI projects to the platform, showcasing the best practices for enhancing risk awareness and mitigating risks for clients and the trade.

"Hardware today has better performance, stronger computing power and more user cases than in previous decades, so now is the time to flex our muscles, using AI to achieve Intelligent E&M and a better life for all," he concluded.

## CHILLSTREAM® — 自行研發人工智能 重塑機電資產運行模式

### CHILLSTREAM® - SELF-DEVELOPED AI RESHAPING OPERATION MODE OF E&M ASSETS

近年人工智能發展突飛猛進，啟迪了衛生工程人員自行研發ChillStream®人工智能製冷機組優化系統。研發團隊再次聚首一堂，分享他們的研發心得。

The rapid developments of AI in recent years have inspired officers of our Health Sector Division to develop ChillStream®, an AI-based Chiller Plant Optimisation System, in-house. The team reunited to share their research and development experiences.



ChillStream®是部署於機電工程署總部區域數碼監控中心的人工智能系統，能遙距優化客戶場地的製冷機組運作。系統收集並分析天氣狀況、建築物冷負荷和製冷機組運行等實時數據，從所有可行參數中挑選最佳的製冷機組運作設定，以提升其能源效益。

「這是機電署首次嘗試在區域數碼監控中心的現有基礎上，結合人工智能力量來優化機電資產。」衛生工程處時任高級工程師林鑫駿先生說。團隊於2023年5月開展ChillStream®項目，一開始已決定自行研發演算法，以期掌握人工神經網絡和進化演算法等核心技術，為未來擴展項目鋪路。開發人工智能需要跨學科協作，涵蓋的專業範疇包括生物醫學、資訊科技、電子、機電和屋宇裝備等工程領域，而過程中前線人員的支援和配合也不可或缺。

2023年9月，團隊在衛生署轄下的公共衛生檢測中心進行首次試驗，成功以ChillStream®遙距優化七台製冷機組的運作。團隊認為公共衛生檢測中心的要求極高，如果ChillStream®能夠在該場地表現良好，在任何場地都能遊刃有餘。ChillStream®預計可節省3%至5%的空調耗電量。衛生工程處高級工程師趙偉略先生和時任工程師余穎君女士表示：「我們正向醫院管理局推廣這方案，未來也會推介紹給所有政府場地，以減少碳排放，最終實現碳中和。」

「我們還向前線人員說明ChillStream®穩健可靠，包括當系統違反任何安全規則，製冷機組會自動切換到傳統樓宇管理系統的控制模式。」趙先生說。ChillStream®的另一優點，是釋放了寶貴的人力來處理其他工作，例如承辦商管理和監督等。

ChillStream®已取得專利和註冊商標，並在第49屆日內瓦國際發明展上榮獲銅獎。今年7月，團隊也獲邀出席全球最大的計算智能技術盛會——在日本舉行的電機暨電子工程師學會2024年世界計算智能大會，並發表有關人工智能演算法的技術論文。衛生工程處高級工程師藍永鴻先生總結道：「ChillStream®由一個人工智能實驗發展為成功『落地』的項目，並於一年多時間內備受國際認可，令我們喜出望外，而這也是團隊成員羣策羣力的成果。」

Deployed at the Regional Digital Control Centre (RDCC) in the EMSD Headquarters, ChillStream® is an AI system capable of remotely optimising the operation of chiller plants at clients' sites. The system collects and analyses real-time data such as weather conditions, building cooling loads, and chiller plant operations, and then selects the best operational settings for chiller plants from all feasible parameters to improve their energy efficiency.

"This is the EMSD's first attempt to integrate the power of AI with the existing foundation of the RDCC to optimise E&M assets," said Mr Lam Kam-chun, Tommy, the then senior engineer of the Health Sector Division (HSD). From the outset of the ChillStream® project that started in May 2023, the team had decided to develop the algorithms in-house in order to grasp core technologies like artificial neural networks and evolutionary algorithms, and pave the way for future expansions. AI development requires cross-disciplinary collaboration, encompassing expertise in domains such as biomedical engineering, IT, electronics, E&M engineering, and building services engineering. The support and co-ordination of frontline staff are also integral to the process.

In September 2023, the team conducted its first trial at the Public Health Laboratory Centre (PHLC) under the Department of Health, and successfully optimised the operation of seven chillers remotely with ChillStream®. The team believes that if ChillStream® can perform well in the PHLC given its highly demanding requirements, it can perform well anywhere. It is estimated that ChillStream® can save 3-5% of air-conditioning electricity consumption. "We are promoting this solution to the Hospital Authority and will recommend it to all government venues in the future to reduce carbon emissions and ultimately achieve carbon neutrality," stated Mr Chiu Wai-leuk, Vincent, senior engineer, and Ms Yu Wing-kwan, Safiya, then engineer, of the HSD.

"We also explained ChillStream®'s robustness and reliability to frontline staff, including its automatic switch to the control mode of traditional building management system should the new system violate any safety rules," said Mr Chiu. Another advantage of ChillStream® is that it frees up precious manpower to handle other tasks like contractor management and supervision.

Not only was ChillStream® patented and registered as a trademark, but it also won a bronze medal at the 49th International Exhibition of Inventions of Geneva. Moreover, the project team was invited to attend the 2024 Institute of Electrical and Electronics Engineers World Congress on Computational Intelligence, the world's largest technical event on computational intelligence, held in Japan this July, and present a technical paper on the AI algorithm. "We are overjoyed that ChillStream® had leaped from an AI experiment into a successfully implemented project, gaining international recognition within just over a year. It is the fruit grew out of the concerted efforts of our team members," concluded Mr Lam Wing-hung, Ray, senior engineer of the HSD.



#### 全天候服務社羣

多年來，機電署都在超強颱風、疫情等緊急和重大事故中，提供堅實的人力和技術支援。我們的全天候服務對客戶至關重要，每當遇到緊急情況，我們都會為客戶搶修受損的機電設施，讓公共服務盡快恢復，減輕對基礎設施和市民日常生活的影響。

2023年，香港接連出現極端天氣事件，包括9月初的超強颱風「蘇拉」，以及一周後的世紀大暴雨，當時黑色暴雨警告生效超過16小時。颱風和暴雨導致多區出現嚴重水浸，並為公共服務帶來嚴峻挑戰。在「蘇拉」襲港之前，我們已啟動機電署的緊急事故控制中心，在颱風期間全程監察全港主要公共機電設施的運作。其後發生特大暴雨時，我們再次迅速啟動控制中心密切監測情況。



#### SERVING THE COMMUNITY WITH ROUND-THE-CLOCK SUPPORT SERVICES

Over the years, the EMSD has provided staunch manpower and technical support during emergencies and major incidents such as super typhoons and epidemics. Our round-the-clock services are crucial to our clients. In case of emergency, we quickly repair damaged E&M facilities for prompt resumption of public services, to minimise the impacts on infrastructures and the daily lives of the public.

A series of extreme weather events occurred in Hong Kong in 2023, including Super Typhoon Saola in early September and the once-in-a-century severe rainstorm just a week later when the black rainstorm signal was hoisted for more than 16 hours. Both events caused severe flooding in many districts and posed serious challenges to public services. We had activated the EMSD's Emergency Control Centre (EMCC) even before the arrival of Saola and monitored the operation of major public E&M facilities across Hong Kong throughout the typhoon. During the subsequent extremely heavy rainstorm, the EMCC was swiftly activated again.

2023年9月，超強颱風「蘇拉」和世紀暴雨接連襲港，機電署兩度啟動緊急事故控制中心，在惡劣天氣期間無間斷地支援公共機電設施（例如損毀的交通燈控制器的搶修工作。

In September 2023, Hong Kong was hit by Super Typhoon Saola and the subsequent once-in-a-century rainstorm. The EMSD activated its Emergency Control Centre twice, providing non-stop support for the emergency repairs of public E&M facilities, such as damaged traffic light controllers, under adverse weather conditions.

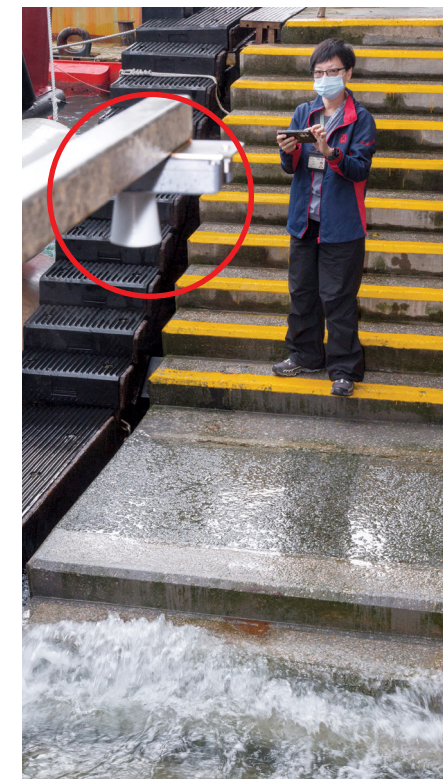


公務員事務局優化政府的動員機制，增設「全政府動員」級別，預先制訂各部門指定人員名單，確保需要大量人手處理的重大事故發生時，能立即動員公務員應急隊伍。2023年2月，政府進行首次「全政府動員」級別演練。同年9月，在超強颱風「蘇拉」和世紀暴雨襲港後，我們已準備就緒，運用部門預先制訂的員工輪值表和12小時「候命」輪值編排，展開動員行動，到多區支援善後工作。

To enhance the mobilisation protocol, the Civil Service Bureau introduced a “government-wide mobilisation” level, under which a list of designated personnel from various departments was drawn up in advance to ensure that a quick response unit formed by civil servants could be mobilised promptly during major incidents requiring considerable manpower support. The Government conducted the first drill under the “government-wide mobilisation” level in February 2023. In September 2023, we were well-prepared for the real-life mobilisation operations for the recovery work at various districts after the passage of Super Typhoon Saola and the torrential rain, using our staff roster and a 12-hour “stand-by” shift schedule prepared in advance.

極端天氣期間，營運基金亦迅速派員為客戶進行搶修工作。超強颱風「蘇拉」襲港期間，我們的人員努力不懈，維修了過百組受損的交通燈設施。暴雨導致位於紅磡溫思勞街的行車隧道，以及政府飛行服務隊啟德分部辦公室和飛機庫出現嚴重水浸，我們的團隊盡心竭力，迅速完成復修工作。我們亦為其他受影響的政府建築物和場地提供緊急支援服務。

極端天氣不僅影響城市生活，也影響偏遠地區的重要設施。2023年6月，海事處爛角咀雷達站的設備因持續惡劣天氣及雷暴影響，造成損毀，可能導致雷達服務中斷，影響香港西部水域、珠海和澳門的船隻航行安全和海上交通。我們的團隊在政府飛行服務隊總部候命，待天氣好轉後，隨即乘坐直升機趕往現場進行緊急搶修工作，在短時間內恢復設備正常運作。



我們為重要基礎設施安裝智慧防洪監察系統，實時偵測場地的水位變化，所得的數據會傳輸到後端系統進行分析。當發現水位出現異常，系統會以電郵和短訊通知相關場地負責人員，以便及早應變。

We installed the Smart Flood Monitoring System at critical infrastructures for real-time monitoring of water level changes. The data will be transmitted to the back-end system for analysis. Once an abnormal water level is detected, emails and messages will be sent to notify corresponding site staff for early responses.



日趨頻繁的極端天氣對建築物和基礎設施的影響引起公眾關注。為了增強香港應對氣候變化的能力，我們開發了智慧防洪監察系統，保護重要基礎設施，如位處沿海或低窪地區的機房。系統透過「政府物聯網」和超聲波傳感器，協助客戶部門實時監測重要基礎設施的水位情況，以便及早應變。

Public concern has been aroused over the impacts of more frequent extreme weather events on buildings and infrastructures. To enhance Hong Kong's resilience to climate change, we have developed the Smart Flood Monitoring System for the protection of critical infrastructures, such as plant rooms located in coastal or low-lying areas. With the Government-Wide Internet of Things Network and ultrasonic sensors, the system facilitates client departments' real-time monitoring of the water levels in critical infrastructures and early responses.



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即使面對極端天氣情況，機電署的服務從不間斷。2023年4月19日凌晨，香港島發生停電事故，多區居民飽受斷電困擾。機電署人員馬上為百多組受影響的交通燈進行搶修，為港島各主要醫院維修機電設施，使其恢復運作，並確保政府總部及其他政府建築物的照明、升降機和其他機電系統盡快恢復服務。

我們的全天候服務也涵蓋盛事活動。2024年2月，我們支援2019冠狀病毒病疫情後首次舉辦的15個農曆年宵市場及其他兩個市集，即車公誕市場和大埔林村放馬莆新春市場，提供臨時電力供應和照明予場地及攤檔、設置人流監察和人羣管控系統，以及安排機電人員在現場候命。

2023年9月至11月在灣仔海濱舉行的「海濱藝遊坊」是「香港夜繽紛」活動之一，我們同樣為該活動提供支援。在藝遊坊開幕當日，營運基金應發展局要求，緊急處理停電問題。團隊憑藉多年來處理農曆年宵市場臨時供電的經驗，迅速找出停電原因，向承辦商提供建議，並派員到現場候命。場地很快恢復供電，藝遊坊得以順利進行。



在2023年9月舉行的「海濱藝遊坊」活動中，機電署迅速調配資源，處理緊急供電問題，最終活動得以順利進行。在基本電力供應恢復後，我們繼續跟進分配電源的電力裝置加裝事宜，讓各熟食攤檔營運順暢，市民可以好好享受活動的歡樂氣氛。

At the Waterfront Carnival held in September 2023, the EMSD promptly mobilised resources to resolve the emergency power supply issue, ultimately enabling the smooth running of the event. After restoring basic electricity supply, we continued to follow up on the installation of additional power distribution equipment, so that food stalls could operate smoothly and citizens could fully enjoy the event.



The EMSD's services remained nonstop in the face of extreme weather conditions. A power outage occurred on Hong Kong Island in the small hours of 19 April 2023, and residents in many areas were troubled with a blackout. Our officers promptly carried out emergency repairs to over 100 affected traffic lights, repaired the E&M facilities of major hospitals on Hong Kong Island to resume their operation, and made sure that the lighting, lifts and other E&M systems of the Central Government Offices and other government buildings resumed service as soon as possible.

Our round-the-clock service covers mega events too. In February 2024, we supported 15 Lunar New Year (LNY) fairs and two other fairs, namely the Che Kung Festival Fair and Fong Ma Po New Year Fair at Lam Tsuen in Tai Po, held for the first time after the Coronavirus Disease 2019 (COVID-19) epidemic, by providing temporary electricity supply and lighting for the venues and individual stalls, setting up footfall monitoring and crowd control systems, as well as deploying E&M personnel to stand by at the scenes.

Likewise, we provided support for the Waterfront Carnival held at Wan Chai harbourfront from September to November 2023 as part of the Night Vibes Hong Kong campaign. The EMSTF received a request from the Development Bureau to urgently address a power outage on the opening day of the Carnival. With extensive experience in managing temporary power supply for LNY fairs over the years, our team promptly identified the cause of the outage, advised the contractor and deployed standby staff on site. Power supply was soon restored and allowed the Carnival to proceed smoothly.

2023年11月，我們參加代號「舞鳳」的跨部門重大事故演習，內容包括模擬灣仔發生大停電的桌上演練，以及隨後在跑馬地東華東院進行的實體演習。該次演習的目的是增強各方在協作、預防事故和緊急應變方面的能力。

2023年11月，機電署參與跨部門重大事故演習「舞鳳」，模擬發生大規模停電。我們與醫院管理局、消防處、香港警務處等協調，並為機電設施及系統提供緊急支援和維修服務，以盡量減低可能造成的影響。

In November 2023, the EMSD participated in "PHOENIXSPIN", an inter-departmental major incident exercise, which simulated a large-scale power outage. We co-ordinated with the Hospital Authority, Fire Services Department, Hong Kong Police Force, etc., and provided emergency support and maintenance services for E&M facilities and systems to minimise possible impacts.



我們於2024年1月與中華電力有限公司（中電）進行另一次演習，模擬屯門醫院發生停電事故，以測試團隊的緊急應變能力。在該次演習中，我們更出動特定機電團隊（電力）。

In another drill exercise with the CLP Power Hong Kong Limited (CLP) in January 2024, we simulated a power outage incident at Tuen Mun Hospital to test our team's emergency response capabilities. We also deployed our Special Duty Unit (Electrical) in this drill.



2024年1月，機電署聯同醫管局和中電在屯門醫院手術室擴建大樓進行緊急復電演練，模擬區內發生大規模停電，以加強各方協調和應急處理的能力。

In January 2024, the EMSD, HA and CLP jointly conducted an emergency supply restoration drill at the Tuen Mun Hospital Operating Theatre Extension Block. Stimulating a large-scale power outage in the area, the drill was aimed at enhancing the co-ordination and emergency response capabilities of the parties involved.

我們在過去幾年竭力協助醫院管理局（醫管局）、衛生署及其他部門對抗2019冠狀病毒病疫情，及後亦繼續在公共衛生事務上為醫管局和政府提供緊急支援。

Further to our relentless efforts to help the Hospital Authority (HA), the Department of Health and other departments fight the COVID-19 epidemic in the past few years, we have continued providing urgent support for the HA and the Government in public health issues.



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其中一個好例子，是我們為位於落馬洲河套區的中央援港應急醫院（應急醫院）提供全面支援。應急醫院原為應付2019冠狀病毒疫情而建，之後轉型提供其他服務，首先推出的是「日間放射診斷服務先導計劃」。機電署在計劃開展前進行各種緊急檢查和改善工程，確保所有機電設施準備妥當，可支援提供醫療放射診斷服務。這項先導計劃非常成功，大幅縮短病人輪候時間，紓緩公立醫院的壓力。我們又進行多項機電工程，讓應急醫院得以在2023年10月成功推出新服務，包括微生物化驗、內視鏡檢查和睡眠測試服務。



在落馬洲河套區應急醫院啟用的新服務中，我們為睡眠測試部的機電設施，例如空氣淨化機和抽風系統，提供維修保養服務，並為微生物化驗室完成各項必要的調校和測試工作。

Among the new services launched at the Emergency Hospital in Lok Ma Chau Loop, we have provided maintenance services for the E&M facilities such as air purifiers and the ventilation system of the Sleep Study Unit, and completed various essential adjustments and testing work for the Microbiology Laboratory.

2023年10月，《行政長官2023年施政報告》又提出在應急醫院二座設立「大灣區國際臨床試驗所」，為醫藥研發機構提供一站式臨床試驗支援平台。我們正與醫務衛生局合作落實此專案項目。

營運基金在衛生服務範疇累積了豐富的機電操作和維修經驗，使我們在預防公立醫院事故方面極具優勢。醫管局就2023年年初發生的數宗事故，於2023年3月成立「檢視醫療儀器及設施保養維修事宜委員會」（檢視委員會），檢視公立醫院醫療儀器和設施的維修及保養情況，並邀請機電署協助調查事故。

2023年4月，機電署代表獲邀出席檢視委員會的會議，分享營運基金在醫療儀器維修保養方面的經驗和專業知識，特別是醫療儀器的生命周期管理，包括採購、驗收、安全管理、維修保養、承辦商管理，以至更換規劃等各個環節。

A good example is the comprehensive support we have given to the Central Government-aided Emergency Hospital (Emergency Hospital) in Lok Ma Chau Loop, originally a hospital dedicated to cope with the COVID-19 epidemic. The Emergency Hospital underwent transformation later to provide other services, among which the first was the Ambulatory Diagnostic Radiology Service Pilot Programme. Before the programme commenced, the EMSD carried out various urgent checking and improvement works to ensure that all E&M facilities were in place for the provision of medical radiology diagnosis services. The programme has been highly successful, significantly shortening patients' waiting time while relieving the pressure on public hospitals. We also conducted a number of E&M works, leading to the successful launch of new services at the Emergency Hospital in October 2023, including microbiology testing, endoscopy and sleep test services.

In October 2023, the Chief Executive's Policy Address 2023 also put forward the setting up of a Greater Bay Area International Clinical Trial Institute in Block 2 of the Emergency Hospital for providing a one-stop clinical trial support platform for medical research institutions. We have been working with the Health Bureau to implement this specific project.

The rich experience accumulated in E&M operation and maintenance (O&M) in the health sector has given the EMSTF an edge in incident prevention at public hospitals. In answer to several incidents occurred in early 2023, the HA set up a Review Committee on Medical Equipment and Facility Maintenance (Review Committee) in March 2023 to review the repair and maintenance of medical equipment and facilities in public hospitals, and invited the EMSD to assist in incident investigation.

In April 2023, EMSD representatives were invited to a meeting of the Review Committee, in which they shared the EMSTF's experience and professional knowledge of medical equipment maintenance, in particular the life cycle management of medical equipment from procurement, acceptance, safety management, maintenance and contractor management to replacement planning.

2023年9月，東區尤德夫人那打素醫院（東區醫院）一名病人感染退伍軍人病，調查發現病人曾入住的病房有水龍頭和花灑噴頭受到污染。同年10月，該院另一名病人據報也感染了退伍軍人病，原因可能是曾在病房使用未經過濾的水。我們隨即向醫管局提供實地技術支援，並與東區醫院醫護人員合作，為熱水系統進行緊急消毒，減低院內感染的風險。



農曆新年假期期間，深圳灣管制站實施特別通關安排，以疏導跨境人流和車流，機電署提供支援，協助客戶部門保持口岸運作暢順。

During the Lunar New Year holidays, special boundary-crossing arrangements were implemented at the Shenzhen Bay Control Point to facilitate cross-boundary passenger and vehicular movements. The EMSD rendered its support to help the client department to maintain the smooth operation of the control point.

在其他方面，營運基金與選舉事務處合作，為2023年12月舉行的區議會一般選舉提供機電支援。我們動員約1 500名機電署員工和承辦商人員，在極短時間內為全港681個投票站和618個點票站安裝和測試所有必需的機電設施，包括供電設施、照明和閉路電視系統。我們更設立緊急應變中心，使用自行開發的數碼化管理系統，監控各票站的機電設備安裝進度，以便及時調派人手和提供緊急支援。

節日期間跨境交通往往激增，邊境口岸必須延長服務時間以確保客流暢通。在2024年農曆新年期間，我們支援深圳灣管制站實行24小時通關，以及羅湖管制站延長通關時間，確保口岸運作暢順，有關安排深受市民歡迎。

隨着香港不斷發展，機電署會繼續堅定不移，全力以赴應付新挑戰，以確保本港基建和公共設施順利運作。

In September 2023, an investigation into how a patient at Pamela Youde Nethersole Eastern Hospital (PYNEH) had contracted Legionnaires' Disease (LD) found a tap and a shower head in the ward where the patient had stayed were contaminated. In October of the same year, another PYNEH patient was reported to have contracted LD too, probably because of using unfiltered water in the ward. We immediately provided on-site technical support to the HA and worked with PYNEH clinical staff to carry out urgent disinfection of the hot water system, to mitigate the risk of infection in the hospital.



我們向東區尤德夫人那打素醫院的醫護人員簡介消毒措施，並為熱水系統進行消毒，以減低退伍軍人病在醫院內傳播的風險。

We briefed the clinical staff of Pamela Youde Nethersole Eastern Hospital on disinfection measures and disinfected the hot water system to reduce the transmission risk of Legionnaires' Disease in the hospital.

In other aspects, the EMSTF worked with the Registration and Electoral Office (REO) to provide E&M support for the District Council Ordinary Election held in December 2023. We mobilised about 1 500 EMSD officers and contractor staff to install and test all necessary E&M facilities, including power supply, lighting and closed-circuit television systems, at all the 681 polling stations and 618 counting stations across Hong Kong within a very short timeframe. We also set up an Emergency Response Centre with an in-house-developed digital management system to monitor the installation progress of E&M facilities at each station for the timely deployment of manpower and provision of emergency support.

Cross-boundary traffic often surges during festive seasons, requiring extended services of border control points to ensure smooth passenger flow. During Lunar New Year 2024, we supported the implementation of 24-hour clearance at the Shenzhen Bay Control Point and the extension of clearance hours at Lo Wu Control Point for their smooth operation. The arrangements were much welcomed by the public.

As Hong Kong continues to evolve, the EMSD will remain steadfast and go all out to meet emerging challenges, in order to ensure the smooth operation of the city's infrastructures and public facilities.



## 營運服務 TRADING SERVICES



### 無懼世紀風雨 保護客戶資產服務社羣 PROTECTING CLIENTS' ASSETS AND SERVING THE COMMUNITY UNDER SEVERE RAINSTORM

2023年9月初，香港經歷了百年一遇的大暴雨，多區出現嚴重水浸，大量公共設施受損。市政工程部高級工程師劉繼忠先生(右三)帶領團隊，主動為客戶和市民提供緊急支援服務。服務該部別18年的一級監工鄭亞興先生(右一)，是其中一位在暴雨中奮戰的團隊成員。

Hong Kong was struck by a once-in-a-century rainstorm in early September 2023, which caused severe flooding in various districts and damages of numerous public facilities. Mr Lau Kai-chung, a senior engineer of the Municipal Sector Division (3rd right), led his team to proactively provide emergency supporting services for our clients and the public. Mr Chang Ah-hing, a Work Supervisor I (1st right), who has been working in the division for 18 years, was one of the team members who braved the rainstorm.

超強颱風「蘇拉」襲港，一星期後，又遭受特大暴雨襲擊，黑色暴雨警告信號生效超過16小時。在2023年9月8日早上，鄭亞興先生(興哥)接到故障報告，他迎難而上，主動冒着暴風雨返回工作崗位，提供緊急服務。

當時，鰂魚涌市政大廈因為附近的香港電燈有限公司(港燈)電掣房水浸而停電。興哥負責維修保養港島東區和南區市政場地的機電設施。他趕往現場，與港燈協調，並安排進行緊急檢查和維修。興哥說：「當天最大的挑戰是要在極短時間內組成維修隊伍，而隊員能夠安全前往現場。」幾經努力，他覓得兩位機電署人員和五位承辦商人員到現場工作。

停電期間，首先要確保市政大廈內有足夠的照明，因此要在每一層放置十多盞便攜式發光二極管應急燈，但是由於當時大樓內所有升降機已停止運作，興哥的團隊只好拾級而上逐層放置燈具。接着，團隊全面檢查系統後，確認系統並無異常，證明日常維修保養工作的質量十分高，讓大家感到很欣慰。

不過，約中午時分，興哥又接到通知，柴灣市政大廈地庫停車場出現嚴重水浸。團隊隨即兵分兩路，一隊留在鰂魚涌繼續監察復電情況，另一隊則趕往柴灣。興哥一行人到達柴灣市政大廈的停車場後，發現洪水沖來的碎石、沙粒和垃圾完全堵塞地台排水口。由於當時停車場水深及腰，所以他們決定穿上涉水褲，走到水中徒手清除堵塞排水口的雜物。經過多番努力，排水系統在晚上終於恢復暢通。兩支隊伍一直工作至翌日凌晨，成功使兩幢大廈的所有機電設施恢復正常運作。

總結經驗，興哥指出團隊精神非常重要，並感謝同事的鼎力支持。他又強調：「遇到緊急情況，最重要是保持冷靜，還要了解同事的能力，才能有效部署人手。」其後，他還提出了改善建議，例如利用擋水板保護升降機免受水浸威脅。「作為機電署的一員，能夠盡心服務社會，我們對此深感自豪。」他義不容辭道。

Just a week after Super Typhoon Saola hit Hong Kong, an extremely heavy rainstorm occurred when the black rainstorm warning signal was hoisted for more than 16 hours. On the morning of 8 September 2023, Mr Chang Ah-hing, also called Hing Gor, received a fault report. He rose to the challenges and proactively returned to work to provide urgent services under the extreme weather conditions.

At that time, a power outage occurred in the Quarry Bay Municipal Services Building due to a flooded switch room of the Hongkong Electric Company, Limited (HK Electric) nearby. Hing Gor, who is responsible for the E&M maintenance work of various municipal venues at the Eastern District and Southern District of Hong Kong Island, rushed over to the scene to co-ordinate with the HK Electric and arrange to carry out urgent checking and repairs. "The biggest challenge then was assembling a repair team, who could travel to the site safely, within an extremely short period," Hing Gor said. Upon some attempts, he confirmed that two EMSD colleagues and five contractor's staff members could work in the site.

During the power cut, they had to primarily ensure sufficient illumination in the municipal services building by placing more than ten portable light emitting diode emergency lights on each floor. However, as all lifts in the building had stopped operating, Hing Gor and his team could only climb the stairs to place the lights. After conducting thorough checks on the systems, the team was relieved to find no anomalies in them, which exemplified our high-quality routine maintenance works.

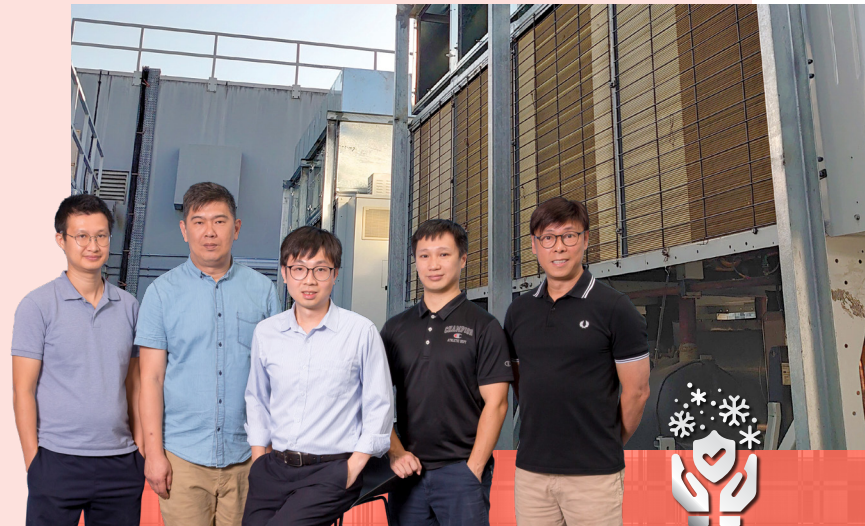
Nevertheless, around noon, Hing Gor was notified of a serious flooding incident in the basement carpark at the Chai Wan Municipal Services Building. The team was immediately split into two, one stayed in Quarry Bay to monitor the resumption of electricity, while another rushed to Chai Wan. Upon arrival at the carpark at the Chai Wan Municipal Services Building, Hing Gor's team found that the floor drains were blocked by gravel, sand and rubbish carried by flood water. As the water in the carpark then was already waist deep, the team decided to put on waders and manually remove all debris blocking the floor drains. Upon some hard work, the drainage system was cleared in the evening. The two teams worked non-stop until the early morning of the next day, enabling all E&M facilities in both buildings to resume normal operation.

Learning from the experience, Hing Gor said that team spirit was vital and expressed his gratitude for the full support of his colleagues. "Staying calm is the most important thing to cope with emergencies, and knowing the abilities of our colleagues can help deploy manpower effectively," he also emphasised. After the mission, he also made improvement suggestions, such as using flood barriers to better protect lifts against flooding. "Being a member of the EMSD, we are proud to serve the community with heart and soul," he said enthusiastically.

### 非一般聖誕：日以繼夜保護客戶資產 AN EXTRAORDINARY CHRISTMAS: SAFEGUARDING CLIENT'S ASSETS ROUND-THE-CLOCK

仇永安先生(中)和團隊從未想過會在新界消防通訊中心的機房內度過冬至和聖誕，監控和確保空調系統維持無間斷運作；但他們憑藉拼搏精神，堅守崗位，不負所託。仇先生分享從事件所得的經驗和體會。

Mr Chio Yung-an (centre) and his team had never imagined that they would spend the Winter Solstice Festival and Christmas in the plant room of the New Territories Fire Services Communications Centre to monitor and control to ensure the uninterrupted operation of its air-conditioning system. Yet with their can-do spirit, they dedicated fully to their work and accomplished the unusual mission. He shares the experience and insights gained from the incident.



2023年的聖誕節對保安及車輛工程部工程師仇永安先生來說十分難忘，因為他和團隊要為新界消防通訊中心的空調系統提供緊急維修服務。該中心位於馬鞍山消防局內一棟新裝修的大樓，大樓雖然尚未投入服務，但其數據中心的伺服器已在試行，因此空調系統必須持續運作，以冷卻伺服器。

12月22日的早上格外寒冷，仇先生負責馬鞍山消防局的機電維修，大清早就收到故障報告電話，指新界消防通訊中心空調系統的製冷機組已停止運作，而數據中心也發出高溫警報。維修團隊很快發現，空調系統製冷機組的中央控制和監控系統(系統)有故障警示，原因是早一晚氣溫驟降，觸發了空調系統製冷機組的自我保護模式而自動關閉。不幸的是，系統的主製冷機組和後備製冷機組，全都無法按其設計自動重新啟動，這是由於系統軟件程式出現問題所致。仇先生表示：「我們立即要求供應商調整和完善系統的軟件，同時我們也須以人手全天候監控製冷機組。」

由於事發當天是冬至，緊接是聖誕假期，因此最大挑戰在於系統進行微調時，需要安排足夠人手全天候監控和操作空調系統；這表示部分同事不能在冬至晚上與家人聚餐，甚至要犧牲聖誕假期活動。「全賴團隊同事和承辦商的拼搏精神，我們成功訂了一個24小時兩班制的輪更表，以在現場管理空調系統。」仇先生解釋說。當時空調系統只能以半自動模式運作，即每次自動關閉後，必須以人手重新啟動，因此需要作出這樣的人手安排。儘管通宵班飽受寒冬的煎熬，但團隊還是克盡厥職，保護好客戶場地的設備。

兩班制安排由12月22日持續至26日，隨後空調系統已回復至正常的全自動模式。不過，為策萬全，機電署自此在馬鞍山消防局派駐一隊維修人員，以便隨時應對突發事件。此外，團隊也從事件中汲取教訓，檢視了其他場地的同類型中央控制和監控系統，並按需要對其軟件進行微調。仇先生重申說：「我們的首要任務，是以客戶的利益為先，讓他們安枕無憂。」

The Christmas in 2023 was truly unforgettable for Mr Chio Yung-an, an engineer of the Security and Vehicle Services Division, as he and his team had to provide emergency repair services for the air-conditioning system of the New Territories Fire Services Communications Centre (FSCC), located in a newly refurbished building within the Ma On Shan Fire Station. While the building was not yet put into service, its data centre servers were already in trial use and the air-conditioning system had to operate constantly to cool the servers.

The morning of 22 December was exceptionally cold. Mr Chio, who was responsible for E&M maintenance of the Ma On Shan Fire Station, received a fault call early in the morning, which reported that the chiller of the FSCC air-conditioning system had shut down, setting off a high temperature alarm in the data centre. The maintenance team soon found that the Central Control and Monitoring System (CCMS) of the chiller of the air-conditioning system had a fault alert, because the sudden plunge in temperature overnight had triggered the chiller's self-protection mode to shut down automatically. Unfortunately, neither the duty chiller nor the standby chiller was able to restart automatically as designed. The failure was due to programming problems with the CCMS software. "We immediately asked the vendor to adjust and refine the CCMS software, and in the meantime, we also had to monitor the chiller manually round-the-clock," Mr Chio said.

As the incident occurred on the Winter Solstice Festival, followed by the Christmas holidays, the biggest challenge was to arrange enough manpower to monitor and operate the air-conditioning system round-the-clock while the CCMS was being fine-tuned. This meant that some colleagues were unable to have dinner with their families on the Winter Solstice evening, and even had to sacrifice their Christmas holiday activities. "Thanks to the can-do spirit of our colleagues and contractors, we successfully set up a 24x7, two-shift roster for managing the air-conditioning system on site," he explained. At that time, the system required manual reactivation after each automatic shutdown, as it could only operate in the semi-automatic mode. That's why such manpower arrangement was necessary. Although the overnight shifts went through the ordeal of the cold winter, the team still fully discharged its duties to safeguard the equipment at the client's venue.

The two-shift arrangement lasted from 22 to 26 December, after which the air-conditioning system was restored to its normal fully-automatic mode. However, taking no risk, the EMSD has since then stationed a maintenance team at the Ma On Shan Fire Station to respond to emergencies at any time. In addition, the team has also reviewed similar CCMSs at other venues and fine-tuned their software as necessary. "We give top priority to the clients' interests, and they can rest assured of their assets," Mr Chio reiterated.

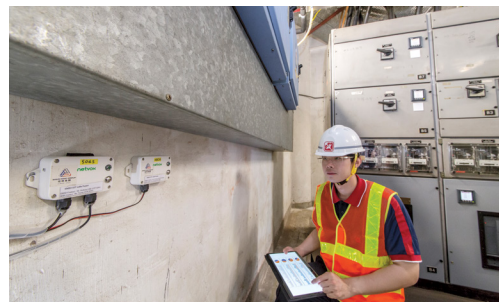


#### 關心社會 以人為本

營運基金致力透過為客戶提供以客為本、創新及可持續發展的服務，造福社會。隨着全球日益重視把環境、社會與管治因素融入公營與私營機構的營運中，我們也加強了這方面的工作，秉持同心惠民的精神，竭力為市民提供更優質的服務。

我們其中一項首要工作，是運用科技減少環境損害、節約能源和加強工作安全。舉例而言，我們由2019年起持續興建「政府物聯通」的基礎設施，用以實時監察機電設備。截至2023年年底，我們在全港安裝的「政府物聯通」基站已超過500個。為協助消防處更清楚掌握其建築物的能源使用模式，我們把「政府物聯通」的覆蓋範圍擴展至90多間消防局，並安裝物聯網傳感器，收集各消防局內個別機電系統及樓層的能源消耗數據，為改善能源效益提供詳盡分析。

優化能源效益不但可為客戶帶來財務收益和提高生產力，還可保護環境，惠及大眾。因此，優化能源效益是我們在環境、社會與管治方面的工作重點。年內，我們繼續為多個客戶場地及設施推行能源優化及節能措施，包括為民航處總部的製冷機組安裝人工智能能源優化系統，該系統節省了3%的耗電量，並獲亞洲智能建築學會和英國屋宇裝備工程師學會(香港分會)頒發獎項。我們亦為路政署在全港行人天橋、行人隧道、有蓋行人道及公共運輸交匯處更換約1 900個照明裝置，把熒光燈更換為高效的發光二極管燈，以節省能源。此外，我們為香港警務處超過50間警署把熒光燈更換為具有較高能源效益的發光二極管燈。



機電署為消防處擴展「政府物聯通」的網絡覆蓋範圍，並在多間消防局安裝低功耗的遠程傳感器，以量度用電量、收集數據和尋找節能機會，提升能源效益，以及促進智慧城市的发展。

We have expanded the network coverage of GWIN for the FSD and installed low-power and long-range sensors at various fire stations to measure electricity consumption, collect data and identify energy-saving opportunities, thus promoting energy efficiency and smart city development.

#### ESG IN ACTION AND PEOPLE-ORIENTED SERVICES

The EMSTF aims to benefit the community through the provision of customer-oriented, innovative and sustainable services to clients. As the world attaches increasing importance to integrating Environmental, Social and Governance (ESG) factors into public and private sector operations, we have also stepped up our ESG efforts to better serve our citizens with heart and diligence.

A priority is using technology to reduce environmental hazards, save energy and enhance safety at work. For example, we have been building the Government-Wide Internet of Things (IoT) Network (GWIN) infrastructure since 2019 for real-time monitoring of E&M equipment. More than 500 GWIN gateways have been installed in a territory-wide network as at the end of 2023. To help the Fire Services Department (FSD) gain insight into the energy usage patterns in its buildings, we have extended GWIN coverage to over 90 fire stations and installed IoT sensors to collect energy consumption data of specific E&M systems and floors in the stations, providing detailed analysis for energy efficiency improvement.

Optimisation of energy efficiency is a focus of our ESG work as it yields not only financial and productivity gains for clients but also environmental benefits for all. During the year, we continued to implement energy optimisation and energy-saving measures at myriad client venues and facilities, including an artificial intelligence (AI) Energy Optimisation System for the chiller plant at the Civil Aviation Department Headquarters, which has saved 3% of energy consumption and won awards from the Asian Institute of Intelligent Buildings and the Chartered Institution of Building Services Engineers (CIBSE) (Hong Kong Region). For the Highways Department, we replaced about 1 900 lighting fittings at footbridges, subways, covered walkways and public transport interchanges across Hong Kong, switching from fluorescent luminaires to high-efficacy light emitting diode (LED) lights to reduce energy use. Besides, we have been replacing fluorescent luminaires with more energy-efficient LED lights at more than 50 police stations for the Hong Kong Police Force (HKPF).



我們為民航處總部製冷機組引入的人工智能能源優化系統，獲英國屋宇裝備工程師學會(香港分會)頒發「最佳數碼創新獎—優異獎」，團隊的努力獲得肯定。

Our efforts to introduce an AI Energy Optimisation System for the chiller plant at the Civil Aviation Department Headquarters was recognised, as evidenced by our receipt of the Best Digital Innovation Award - Merit from the CIBSE (Hong Kong Region).

邊境管制站、政府建築物及基礎設施蘊藏着許多優化能源效益的機會，我們正為港珠澳大橋香港口岸旅檢大樓開發的人工智能客流監測及影像分析系統就是一個好例子。該系統會向操作人員及人工智能整合系統提供實時客流統計數據，而人工智能會指示空氣處理機組就實時旅客分布情況應對，根據即時客流數據調節製冷水流量、送風量和溫度，從而改善空氣處理機組的能源消耗表現。

此外，我們已為深圳灣管制站的中央空調系統更換製冷機組，這有助提高能源效益。香園圍邊境管制站亦安裝了智能電掣櫃及電掣房監察系統，以監察電力設備的效能，便利操作和維修工作，以及找出優化能源效益的機會。此外，我們在各新舊政府處所，包括長沙灣庫務大樓及金鐘道政府合署，引進人工智能製冷機組優化方案，改善能源效益。

在醫療設施實現節能是我們另一重點工作。我們除了試行ChillStream®製冷機組優化方案，還在公立醫院完成了多個能源管理項目，包括更換老化的製冷機組和空氣處理機組。為配合政府逐步削減在香港生產及使用氫氟碳化物的措施，以落實《關於消耗臭氧層物質的蒙特利爾議定書》下的《基加利修正案》，我們逐漸以使用低全球變暖潛能值雪種的製冷設備，取代使用高全球變暖潛能值雪種的設備。以屯門醫院更換製冷機組的項目為例，新的製冷機組每年可節省約26%的耗電量。



機電署正為庫務大樓的製冷機安排人工智能優化系統安裝工程，透過數據分析提升能源效益；同時，我們致力在大樓內採用更環保的消防滅火劑。

Aiming to enhance energy efficiency through data analysis, the EMSD is currently arranging installation of AI optimisation system for the chiller at the Treasury Building. Meanwhile, efforts are underway to adopt greener fire suppressants throughout the facility.

Boundary control points, government buildings and infrastructures offer many opportunities for optimisation of energy efficiency. A good example is the AI Passenger Flow Monitoring and Image Analytics System being developed for the Passenger Clearance Building of the Hong Kong-Zhuhai-Macao Bridge Hong Kong Port. The system will provide real-time passenger counting data to the operators and the AI integration system, and the AI will prompt air-handling units to respond to the real-time passenger distribution situation, by making adjustments to the chilled water flow rate, supply air volume and temperature subject to real-time passenger flow data to improve energy consumption performance of the air-handling units.

Meanwhile, replacement of the chiller at the central air-conditioning plant of Shenzhen Bay Control Point helps enhance energy efficiency. At the Heung Yuen Wai Boundary Control Point, a Smart Switchboard and Switch Room Monitoring System is now in place to monitor the performance of electrical equipment, facilitate operation and maintenance (O&M) work and identify energy-optimisation opportunities. Moreover, we have introduced for various new and old government premises, including the Treasury Building in Cheung Sha Wan and the Queensway Government Offices, AI chiller optimisation solutions to improve energy performance.

Achieving energy saving in healthcare facilities is another key focus for us. In addition to trialling our ChillStream® chiller-optimisation solution, we completed a wide range of energy management projects at public hospitals, including the replacement of aged chillers and air-handling units. To support the Government's initiative to phase down the production and consumption of hydrofluorocarbons (HFCs) in Hong Kong for implementation of the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, we are replacing refrigeration equipment that uses high global warming potential (GWP) refrigerants with those using low GWP refrigerants. A chiller plant replacement project at Tuen Mun Hospital has shown that the new chillers can save about 26% of annual electricity consumption.



我們把柴灣警署現有的照明燈具更換為節能的發光二極管燈。

We replaced the lighting at the Chai Wan Police Station with energy-efficient LED lights.



## 營運服務 TRADING SERVICES



屯門醫院的製冷機組設備使用低全球變暖潛能值的雪種，相比傳統雪種，新型雪種大大減低了對全球暖化的影響。

Low global warming potential refrigerants are used for the chiller equipment at the Tuen Mun Hospital. The new refrigerants significantly reduce the impact on global warming when compared to the traditional refrigerants.



為推廣使用可再生能源，我們為路政署在紅磡海底隧道東面入口的有蓋行人道安裝太陽能發電系統，以供應電力給接駁行人天橋的自動梯。

To promote the use of renewable energy, a photovoltaic system was installed at the covered walkway of the eastern portal area of the Cross-Harbour Tunnel in Hung Hom for the Highways Department, providing electricity for the escalators connected to the footbridge.

我們亦正嘗試在政府車隊和處所的空調系統，重用具有高全球變暖潛能值的再生雪種，以及尋找更環保的替代方案，取代使用高全球變暖潛能值滅火劑的滅火系統。這些措施會進一步減少政府車隊和處所的暖氣、通風和空調系統以及滅火系統使用氫氟碳化物。

此外，我們近年在多個市政場地完成52個節能工程項目，每年可節省952萬度電。我們也增加使用可再生能源，例如正在紅磡海底隧道東面入口的有蓋行人道安裝太陽能發電系統。

氫能冒起，被視為具發展潛力的潔淨能源，有助減少交通的污染物排放和推展政府的減碳工作。作為政府在氫燃料重型車試驗項目的技術顧問，機電署於2023年開展相關的市場研究、招標和合約管理工作。我們亦正與食物環境衛生署（食環署）、環境保護署、消防處和運輸署磋商，敲定試驗項目的推行細節。我們初步會引進三輛在內地特別訂製的氫燃料電池洗街車，供食環署使用。這批車輛預計於2024年第三季在香港試用，長遠可為社會帶來環境效益。

除此以外，我們為政府引入的首輛特別用途電動車已於2023年第四季交付衛生署，用以推廣口腔健康。這部零排放車輛由機電署設計，並由電動巴士改裝而成，有效減少對其所到學校和社區造成的噪音和排放。

Furthermore, we are trialling the reuse of reclaimed high GWP refrigerants in the air-conditioning systems of government fleets and premises, as well as replacing fire suppression systems that use high GWP fire suppressants with more environmentally-friendly alternatives. These initiatives will further reduce the use of HFCs in heating, ventilation, and air-conditioning systems, as well as fire suppression systems, in government fleets and premises.

Moreover, we have completed 52 energy-saving works projects at various municipal venues in recent years, saving 9.52 million kWh electricity annually. Renewable energy (RE) deployment has increased too. For example, we are installing a photovoltaic system at the covered walkway of the eastern portal area of Cross-Harbour Tunnel in Hung Hom.

Hydrogen has emerged as a promising source of clean energy that can help reduce transport emissions and contribute to the Government's decarbonisation work. Being the Government's technical advisor in a trial project on hydrogen fuel cell heavy vehicles, the EMSD began work in 2023 on market research, tendering and contract management. We are also liaising with the Food and Environmental Hygiene Department (FEHD), Environmental Protection Department, FSD and Transport Department to finalise details of the trial implementation. We will initially introduce three hydrogen fuel cell street washing vehicles, which are custom-designed and manufactured on the Mainland, to be deployed by the FEHD. The trial of the vehicles in Hong Kong is expected to commence in the third quarter of 2024 and bring environmental benefits to the community in the long run.

A related development was the Government's first specialised electric vehicle, which was handed over to the Department of Health in the fourth quarter of 2023 to promote oral health. Designed by the EMSD and retrofitted from an electric bus, the zero-emission vehicle reduces noise and emission impacts on the schools and communities it visits.

機電署的工作讓客戶的建築物獲得多個獎項殊榮和認證，成績斐然，由此可見我們在可持續發展方面實力非凡。例如，我們與建築署合作，為香港警務處重置樓高16層的東九龍總區總部及行動基地暨牛頭角分區警署；有關項目榮獲英國屋宇裝備工程師學會頒發2023年CIBSE香港大獎：公共建築物年度大獎，表彰項目善用可再生能源，並在建築物能源效益與可持續發展方面表現卓越。

我們除了促使客戶建築物贏得獎項外，機電署總部大樓亦於2023年年底榮獲綠建環評既有建築2.0版最終鉑金級認證。這個最高評級是對可持續建築的重要肯定，足為社區樹立楷模。



為配合啟德發展區的可持續發展概念，機電署於東九龍總區總部及行動基地暨牛頭角分區警署融入可持續發展的元素，包括採用區域供冷系統和應用可再生能源技術，例如太陽能板和太陽能熱水系統。

In line with the concept of sustainable development of the Kai Tak Development Area, the EMSD has incorporated elements of sustainable development in the Kowloon East Regional Headquarters and Operational Base cum Ngau Tau Kok Divisional Police Station, including the adoption of a district cooling system and application of renewable energy technologies, such as photovoltaic panels and a solar water heating system.

The EMSD's capabilities in sustainability are demonstrated by our track record in helping clients obtain prestigious awards and certifications for their buildings. For example, the reprovisioning of the HKPF's 16-storey Kowloon East Regional Headquarters and Operational Base cum Ngau Tau Kok Divisional Police Station, a joint project by the Architectural Services Department and the EMSD, won the Project of the Year Award – Public Use Building in the CIBSE Hong Kong Awards 2023 presented by the CIBSE for its RE application and overall excellence in building energy efficiency and sustainability.

In addition to assisting client buildings in earning awards, our own EMSD Headquarters was awarded the highest possible Final Platinum rating under BEAM Plus Existing Buildings V2.0 in late 2023, a major recognition for sustainable buildings, setting an example for the community.



由機電署和建築署合作發展的西九龍政府合署建築項目，憑藉其節省能源的空調系統，榮獲2023年美國供暖製冷及空調工程師學會第十三分區科技大獎的優異獎。

The building project of West Kowloon Government Offices, jointly developed by the EMSD and Architectural Services Department, was awarded a Certificate of Merit under the 2023 American Society of Heating, Refrigerating and Air-Conditioning Engineers Region XIII Technology Award for its energy-saving air-conditioning system.



## 營運服務 TRADING SERVICES



我們為康樂及文化事務署轄下的荔枝角公園游泳池引入再生介質過濾系統，以提升游泳池的過濾能力，優化池水水質。系統不但佔用的空間較小，而且可減少用水和用電量。

We introduced the Regenerative Media Filter System at the Lai Chi Kok Park Swimming Pool managed by the Leisure and Cultural Services Department to enhance the filtration capacity of the swimming pool and optimise the quality of pool water. The system not only takes up less space, but also reduces water and electricity consumption.

營運基金不斷探索新方法，以提升公共服務的質素。舉例而言，我們為康樂及文化事務署轄下的荔枝角公園游泳池引入再生介質過濾系統，提升游泳設施管理。新系統省卻了傳統沙缸過濾器採用的反沖洗流程，不單減少用水和用電量，而且體積細小，能節省高達八成空間。工作人員也無需在密閉空間工作，有關風險大大降低。

The EMSTF is constantly exploring new ways to enhance the quality of public services. Take an example, we introduced the Regenerative Media Filter System at the Lai Chi Kok Park Swimming Pool managed by the Leisure and Cultural Services Department to enhance the management of swimming facilities. As the new system eliminates the process for backwashing as adopted in the conventional sand filters, thus water and electricity consumption is reduced. The system is also highly compact, which could save up to 80% of space. In addition, workers no longer need to work in confined spaces, minimising the risk they faced.

過去一年，我們很高興能讓客戶部門拯救生命的工作精益求精，例如為消防處開發嶄新的無線電通訊方案。現時通訊系統的訊號往往受高樓大廈和地底結構阻擋，新系統突破現有限制，擴大無線電覆蓋範圍，提高通訊質素，有助保障消防員和公眾的安全。

Over the past year, we were pleased to help our clients enhance life-saving work. An example is a new radio communication solution we developed for the FSD. While the signals of the existing communication system is blocked by high-rise buildings and underground structures, the new system overcomes such limitations and expands radio coverage, providing better communication quality and hence can help safeguard the safety of firefighters and the public.



機電署為消防處引入嶄新的無線電通訊方案，協助消防人員有效處理火災現場複雜多變的情況。新系統配備無線手提轉發器，可在現場靈活配置，擴大覆蓋範圍和提高通訊質素。

The EMSD introduced a new radio communication solution for the FSD to enable firefighters to handle complex and ever-changing situations at fire scenes effectively. The new system is equipped with wireless portable repeaters, which can be flexibly deployed at the scene and enhance the coverage and quality of communication.



機電署會為新落成的哥連臣角新廈靈灰安置所內的先進機電設施，包括空調系統、水泵和化寶爐等，進行定期維修保養工作。在該等設施中，化寶爐採用空氣洗滌器和靜電除塵器，有效過濾微粒。

The EMSD will carry out regular maintenance of the sophisticated E&M facilities, including the air-conditioning system, water pumps and joss paper burners, etc., in the newly completed Cape Collinson-San Ha Columbarium. Among these facilities, the joss paper burner makes use of water scrubbers and electrostatic precipitators to effectively filter out particulates.

十二條連接新廈街至哥連臣角新廈靈灰安置所的自動梯於2023年重陽節期間開放予市民使用，方便他們登山拜祭先人。機電署專業團隊在重陽節當日到場當值，提供實地支援。

Twelve escalators, which connect San Ha Street with the Cape Collinson-San Ha Columbarium, were open for public use during the Chung Yeung Festival in 2023 to facilitate public access for paying respects to ancestors. Our professional team was on duty on the day of the festival to provide on-site support.



我們亦與消防處合作，在消防及救護學院安裝自動火警偵測及警報系統，以培訓新入職的消防處人員以及獲消防處認證的消防裝置技術員。相關培訓可提高相關從業員的專業水平，以及提升消防安全。

We also worked with the FSD to install the Automatic Fire Detection and Alarm System at the Fire and Ambulance Services Academy for training new FSD recruits and recognised fire service installation technicians. The training will enhance the professional standards of relevant practitioners and fire safety.

為方便市民，十二條連接新廈街與哥連臣角新廈靈灰安置所的新自動梯於2023年10月重陽節期間開放予市民使用。在這個登高掃墓的傳統時節，我們調派人員在現場提供支援，確保自動梯運作安全暢順，深受市民讚賞。

For the convenience of the public, twelve new escalators connecting San Ha Street and Cape Collinson-San Ha Columbarium were open for public use during Chung Yeung Festival in October 2023. Our staff members were deployed to provide on-site support to ensure the safe and smooth operation of the escalators during the traditional festival when people went hiking and visiting ancestral graves, winning appreciation from the public.



## 營運服務 TRADING SERVICES



機電署連續七年參與樂齡科技博覽暨高峰會，在2023年的展覽攤位展示多項樂齡科技創新方案，例如「認知能力訓練及評估混合實境眼鏡」。

Having participated in the Geronteck and Innovation Expo cum Summit for seven consecutive years, the EMSD showcased various geronteck and innovative solutions at its exhibition booth, such as the Mixed Reality Glasses for Cognitive Evaluation and Training, in 2023.

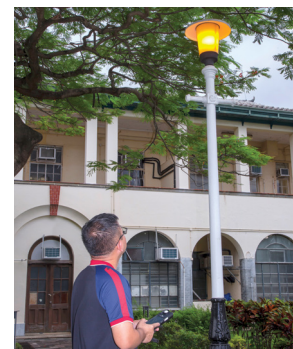
為提高長者的生活質素，我們在樂齡科技博覽暨高峰會2023展示多項創科方案，包括與東華東院合作開發的「智能床邊預防跌倒系統」和「認知能力訓練及評估混合實境眼鏡」。我們亦展示了「高精度快速長者定位及監察系統」，並進一步把系統引入伊利沙伯醫院，用以監察中風和創傷患者。

提升醫院工程從業員的專業標準是我們其中一項衛生工程服務。目前，香港大學專業進修學院為業界提供生物醫學工程課程，機電署計劃與該學院合作，開辦涵蓋電氣、機械及空調範疇的醫院工程課程。

我們的團隊也很高興能參與九龍醫院A座外兩盞近百年歷史煤氣燈的活化工程。該兩盞燈於1925年醫院啟用時安裝。我們在2023年12月完成活化工程，把該兩盞已失靈的煤氣燈改裝為可使用電力和太陽能的混能燈，同時保留煤氣燈原有的歷史特色，以供市民觀賞。

機電署協助九龍醫院活化兩盞近百年歷史的煤氣燈，把其改裝成可使用電力和太陽能的混能燈，同時保留煤氣燈的歷史特色。

The EMSD helped the Kowloon Hospital to revitalise two nearly century-old gas lamps by converting them to hybrid lights that can use both electricity and solar energy, while preserving the historical features of the lamps.



我們也為另一盞歷史悠久的電燈重新接駁電源。

We also re-connected electricity supply to another historical lamp.

To enhance the quality of life of the elderly, we showcased a number of innovative solutions at the Geronteck and Innovation Expo cum Summit 2023, including the Intelligent Bed-side Fall Prevention System and Mixed Reality Glasses for Cognitive Evaluation and Training developed in partnership with Tung Wah Eastern Hospital, as well as the High Precision Fast Location and Monitoring System for Elderly. The use of the monitoring system was further extended to the monitoring of stroke and trauma patients in Queen Elizabeth Hospital.

Upgrading the professional standards of hospital engineering practitioners is part of our health sector services. Currently, the University of Hong Kong School of Professional and Continuing Education (HKU SPACE) already offers a biomedical engineering course for the industry. The EMSD is planning to collaborate with the HKU SPACE and launch a hospital engineering course that covers the areas of electricity, mechanics and air-conditioning.

Our team was also delighted to take part in the revitalisation works of two almost century-old gas lamps outside Block A, Kowloon Hospital. The lamps were installed in 1925 when the hospital opened. Completed in December 2023, the revitalisation works turned the defunct gas lamps into hybrid lights, which can use both grid electricity and solar energy, while preserving their historical features for public enjoyment.

## 惠民為先 確保供水無間斷

### PUTTING PEOPLE'S NEEDS FIRST BY MAINTAINING UNINTERRUPTED WATER SUPPLY

荔景紀律部隊宿舍共有三座，其中一座的居民可能還記得在2024年1月19日曾暫停供水數小時，傍晚卻隨即恢復供水。然而，他們不知道一支由綜合工程部朱豪賢先生(中)帶領的團隊，在隨後兩周馬不停蹄地默默耕耘，確保供水系統正常運作。

Residents in one of the three blocks of Lai King Disciplined Services Quarters might still remember that the water supply was suspended for several hours on 19 January 2024, but was resumed immediately that evening. Little did they know that a team led by Mr Chu Ho-yin of the General Engineering Services Division (centre) worked non-stop behind the scenes to ensure normal operation of the water supply system in the next two weeks.



綜合工程部工程師朱豪賢先生的職責之一，是監督政府產業署轄下宿舍的機電維修保養工作。1月19日上午，他接獲上述宿舍大樓的淡水上水泵組故障報告。負責團隊趕赴現場，很快便發現主泵組和備用泵組的自耦式變壓器起動器都已燒壞，並觸發火警警報。

與其等候數天甚至數周時間來採購新的水泵起動器作更換，團隊決定馬上徵用鄰座宿舍備用泵組一個類似的自耦式變壓器起動器，作為臨時替代品。

「我們知道此舉會增加兩幢宿舍大樓的風險，因為每幢大樓只能依賴一套正常運作的水泵組。但是在權衡利弊後，我們認為只要採取適當的控制措施，仍然值得冒險。」朱先生憶述。他指出借用鄰座宿舍的水泵組，可以使這座宿舍的供水快速恢復，讓居民盡早回復正常生活。在一月的寒夜，對於常要輪班和通宵工作的紀律部隊住客，熱水淋浴尤其重要。

在裝上從鄰座借來的自耦式變壓器起動器後，上水泵組很快就恢復運作。可是，該泵組的自動控制功能卻不得不暫停，因為首先要找出故障的根本原因。經進一步調查後，團隊發現大廈天台水缸內的水位傳感器機件失靈，導致泵組在短時間內不斷異常開關。為了維持淡水無間斷供應，團隊別無選擇，只能手動控制上水泵組，以確保天台水缸內的水位適中。

故此，團隊必須輪班監察警報信號，並24小時人手操作水泵系統。通宵工作的人員要忍受一月的嚴寒天氣，午夜氣溫有時更降至攝氏四至五度；再者，由於泵房空間狹小，他們只能瑟縮門外，在寒風刺骨和無遮無擋的環境下工作。

系統最終在2月1日恢復正常自動運作。經徹底檢查後，臨時自耦式變壓器起動器也妥為交還鄰座宿舍。談及是次事件帶來的體會，朱先生表示在制訂關乎公共服務的決策時，必須把客戶需求和市民感受放在首位。「我們衷心感謝團隊每位成員，他們摩頂放踵，在嚴寒天氣下長時間工作，不辱使命。」他說。

One of the duties of Mr Chu Ho-yin, an engineer of the General Engineering Services Division, is to oversee E&M maintenance of quarters under the Government Property Agency. On the morning of 19 January, he received a fault call about the freshwater up-feed pump set in the building mentioned above. Upon rushing to the scene, his team soon found that the auto-transformer starters of both the duty and standby pump sets had been burnt out and triggered the fire alarm.

Rather than waiting for days or weeks to source a new pump starter replacement, the team decided to promptly commandeer a similar auto-transformer starter from the standby pump set of a neighbouring block in the quarters as an interim replacement.

"We knew this would increase the risk to both blocks of the quarters, as each could rely on only one functioning pump set. However, after weighing up the pros and cons, we believed that it was worth taking the risk if proper control measures were in place," Mr Chu recalled. He pointed out that commandeering the pump set from the other block could help resume the water supply to this block quickly, so that its residents could return to normal life as soon as possible. In the cold nights of January, hot showers were particularly important for disciplined force residents who often had to work shifts and overnight.

After the auto-transformer starter borrowed from the neighbouring block was installed, the up-feed pump set soon resumed operation. Nevertheless, the automatic control function of the up-feed pump set had to be suspended for finding out the root cause of the fault first. Further investigation revealed that the water level sensors inside the roof water tank were malfunctioning, causing the pump set to abnormally switching on and off continuously within short periods of time. In order to maintain uninterrupted supply of fresh water, the team had no choice but to manually control the up-feed pump set to ensure an appropriate water level in the roof water tank.

Accordingly, the team had to work shifts to monitor the alarm signals and manually operate the pump system round-the-clock. Staff working overnight had to endure the extremely cold weather in January, with the temperature sometimes dropping to 4-5 degree Celsius at midnight. Also, as the pump room was cramped, they could only huddle outdoors, working in the bone-chilling wind and without any shelters.

The system finally resumed normal automatic operation on 1 February. The interim auto-transformer starter was duly returned to the neighbouring block after thorough checking. Talking about insights gained from this incident, Mr Chu said that customers' needs and people's feelings had to be accorded the first priority when public services related decisions were made. "We are truly grateful to everyone in the team for their dedication to public service, as they worked long hours in chilly weather to fulfil the mission," he said.



## 企業管理 CORPORATE STEWARDSHIP

在2023/24年度，機電署承先啟後，革故鼎新。我們迎來成立75周年的重要里程碑，並舉辦一系列活動與市民分享喜悅。同時，我們順利展開機電工程營運基金第三個五年策略計劃，為長遠發展奠下堅實基礎。

在這一年，香港亦逐步走出新冠疫情的陰霾，營運基金全力支援客戶和業界，推動本港社會經濟全面復蘇。不論處理營運基金的日常工作，還是面對大型事故或突發情況，各策略業務單位和企業單位都悉力以赴，隨時候命，協助客戶應對挑戰，展現創新思維和執行力，更鞏固我們在機電業界的領導地位。

### 第三個五年計劃

為求與時並進，營運基金於十年前推出第一個五年策略計劃，支援客戶及業界，並推動新科技應用；在第二個五年策略計劃，我們朝「機電2.0」時代進發，加強數碼轉型。秉承過去兩個計劃的豐厚成果，我們於2023年4月展開第三個五年策略計劃（第三個計劃），提出四大創新策略，包括「提供以客為本創新服務」、「建構創新卓越團隊」、「創新業務流程」和「加強多方創新協作」，以及12個策略行動，引領營運基金邁向「機電3.0 – 智能機電」，提供智能化機電服務。

要成功落實第三個計劃的各項目標，員工的積極參與和團隊協作至關重要。我們於2023年11月舉行策略工作坊，讓同事深入了解第三個計劃的詳情、討論潛在的機遇和挑戰，以及加強多方協作。超過80名來自不同部別和職級的同事參加有關工作坊。



2023/24 was a transformative year for the EMSD, as we carried on our past achievements while embracing the opportunities that await us. This year marked our 75th anniversary, an important milestone that we commemorated by organising a series of activities to share the joy with the public. Meanwhile, we successfully launched the EMSTF's third Five-year Strategic Plan, laying a firm foundation for our long-term development.

This year, as Hong Kong gradually emerged from the shadow of the COVID-19 epidemic, the EMSTF provided comprehensive support for clients and the industry, promoting the full recovery of Hong Kong society and economy. Be it handling routine work of the EMSTF or facing major incidents or emergencies, our Strategic Business Units (SBUs) and corporate units always went all out and stood by to help our clients meet the challenges, demonstrating innovative thinking and execution capabilities, and further consolidating our leading position in the electrical and mechanical (E&M) industry.

### THIRD FIVE-YEAR STRATEGIC PLAN

To keep pace with the times, the EMSTF launched its first Five-year Strategic Plan a decade ago, to support our clients and the industry while promoting the application of new technologies. In the second Five-year Strategic Plan, we embarked on the era of "E&M 2.0" towards digital transformation. Building upon the fruitful results of the previous two Plans, we initiated the third Five-year Strategic Plan (3rd Plan) in April 2023 and introduced four innovative strategies, including "providing customer-oriented innovative services", "building an innovative and excellent work team", "innovating business processes" and "strengthening innovative collaboration between stakeholders", as well as 12 strategic tasks. All these serve to drive the EMSTF's journey towards "E&M 3.0 – Intelligent E&M" in delivering intelligent E&M services.

To achieve the goals of the 3rd Plan, active staff participation and teamwork are crucial. In November 2023, we held a Strategic Workshop for colleagues to learn about details of the 3rd Plan, discuss potential opportunities and challenges, and strengthen multilateral collaboration. Over 80 colleagues from different divisions and ranks participated in the workshop.



第三個五年策略計劃的策略工作坊於2023年11月舉行。同事先聽取策略行動負責人介紹各自的策略行動，再進行分組討論，探討各項策略行動之間的協作空間。

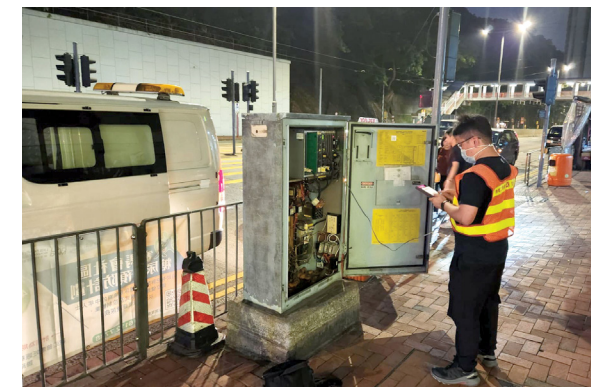
The Strategic Workshop of the third Five-year Strategic Plan was held in November 2023. After listening to the introductions to the strategic tasks presented by the respective persons-in-charge, colleagues participated in group discussions to explore the collaborative opportunities among different strategic tasks.

### 卓越客戶服務

#### 支援大型活動 應付突發事件

機電署一直是各個政府部門的堅強後盾。去年本港經歷不少突發事件和極端天氣情況，其間我們全力支持客戶部門應對挑戰。2023年4月，港島區發生大停電，因此逾百組交通燈失靈，多間醫院和政府大樓的機電系統亦受影響。機電署團隊兵分多路通宵進行搶修，讓公共服務在短時間內大致回復正常。去年夏末，超強颱風和世紀暴雨在一星期內接連襲港，機電署兩度啟動緊急事故控制中心，全力配合特區政府抗災和善後。

除了處理天災和意外事故外，我們亦在大型公眾活動期間提供支援。2023年9月底，我們應發展局要求處理灣仔「海濱藝遊坊」活動的緊急供電問題。我們的團隊憑藉多年來處理年宵花市供電的經驗，指導承辦商為攤檔分配額外電力，夜市活動最終順利進行。其後在堅尼地城和觀塘舉行的「香港夜繽紛」活動，我們亦到場提供技術支援。

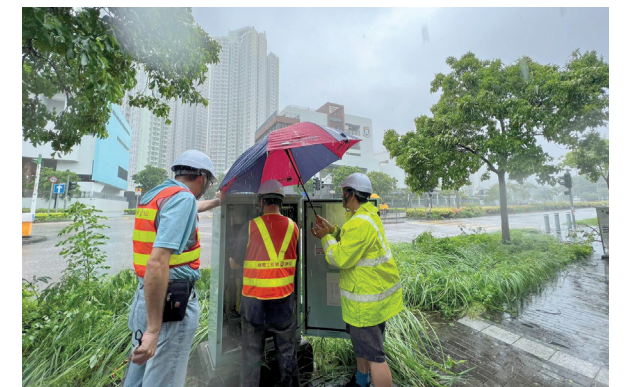


### EXCELLENT CUSTOMER SERVICE

#### Supporting Large-scale Events and Handling Emergencies

The EMSD has always been strong backup for government departments. Last year, Hong Kong experienced various unforeseen incidents and extreme weather conditions, during which we fully supported client departments in rising to these challenges. In April 2023, a major power outage occurred on Hong Kong Island, resulting in the malfunctioning of over a hundred traffic lights and the disruption of E&M systems in a number of hospitals and government buildings. The EMSD teams worked tirelessly at multiple locations throughout the night to carry out emergency repairs, enabling the resumption of normal operations of public services within a short period. During the late summer last year, Hong Kong was hit by a super typhoon and once-in-a-century rainstorm within a week. The EMSD activated the Emergency Control Centre twice to support the Government in disaster response and post-disaster recovery efforts.

Apart from responding to natural disasters and accidents, we also provide support in large-scale public events. In late September 2023, at the request of the Development Bureau (DEVB), we resolved an emergency power supply issue at the Waterfront Carnival in Wan Chai. Leveraging our years of experience in handling power supply for Lunar New Year fairs, our teams instructed the contractors to allocate additional power supply to the stalls, enabling the smooth running of the event eventually. We also provided on-site technical support for the Night Vibes Hong Kong events in Kennedy Town and Kwun Tong later on.



(上) 去年本港經歷不少突發事件和極端天氣情況，機電署迅速調配人手和資源，為客戶部門修復受損的機電設施，把對市民的影響減至最低。(下) 我們亦為「香港夜繽紛」活動提供技術支援，協助處理供電問題。

(Top) Last year, Hong Kong encountered numerous unforeseen incidents and extreme weather conditions. The EMSD swiftly deployed manpower and resources to repair damaged E&M facilities for client departments, minimising the impact of the problems on the public. (Bottom) We also provided technical support for the Night Vibes Hong Kong activities, assisting in resolving power supply issues.





## 企業管理

### CORPORATE STEWARDSHIP

為提升應對大型事故的能力，我們不時與其他機構進行聯合演練。2023年11月，我們與警務處、消防處、醫院管理局和香港電燈有限公司等進行代號「舞鳳」的跨部門重大事故演習，模擬灣仔區電力分站發生火警導致停電。同年12月，我們參與「全政府動員」級別的場地設置演練，模擬把中山紀念公園體育館設置為隔離中心。2024年年初，我們又參與屯門醫院手術室大樓新翼的緊急復電演練。



2023年12月，我們參與「全政府動員」級別演練，模擬把一所體育館改裝為隔離中心。  
In December 2023, we took part in a drill at the “government-wide mobilisation” level, simulating the conversion of a sports centre into a quarantine centre.

#### 創新服務流程

我們持續利用科技改善服務流程。第三個計劃的其中一項策略行動，是運用數碼科技及人工智能輔助技術，使客戶服務智能化，提升服務質素。年內，我們開始建立雲端客戶服務系統的「顧客為本電子平台客戶網站」，把客戶服務中心進一步數碼化；未來會加入語音機械人系統，並運用人工智能提升服務質素。

另外，為配合上年度推出的「部門運作支援系統」，我們正研究推出新的採購和倉存平台管理和存取貨物，以及全面採用電子採購訂單和電子收貨平台採購常用的消耗品。我們於2024年3月發表該兩個計劃的研究報告並舉行簡介會，超過250名人員參加。

#### 屢獲殊榮 實至名歸

機電署的優質客戶服務備受各界肯定。在去年的第21屆國際傑出顧客關係服務獎頒獎禮上，我們獲得第一屆國際大灣區CRE創新領袖獎的三個獎項，包括2023年最佳人工智能科技服務(政府部門)、2023年最佳區塊鏈解決方案(政府部門)和2023年最佳物聯網項目(政府部門)；另外，兩名高級工程師和兩名工程師亦奪得個人獎項。

To enhance our ability to respond to large-scale incidents, we conduct joint exercises with other organisations from time to time. In November 2023, we collaborated with the Hong Kong Police Force, Fire Services Department, Hospital Authority, and Hongkong Electric Company, Limited to conduct an inter-departmental major incident exercise codenamed “PHOENIXSPIN”. The exercise simulated a fire incident at a power substation in Wan Chai, which resulted in a power outage. In December 2023, we participated in a venue set-up drill at the “government-wide mobilisation” level, simulating the conversion of the Sun Yat Sen Memorial Park Sports Centre into a quarantine centre. In early 2024, we also took part in an emergency supply restoration drill at the Tuen Mun Hospital Operating Theatre Extension Block.

#### Innovating Service Processes

We continuously improve our service processes with technology. One of the strategic tasks outlined in the 3rd Plan is to leverage digital technology and artificial intelligence-assisted technology to provide smart customer services and enhance service quality. During the year, a Customer Centric e-Platform Client Portal of the cloud-based customer service system was being developed to further digitalise our Customer Service Centre. We are also planning to incorporate a voicebot system and utilise artificial intelligence (AI) to enhance the quality of our customer service in the future.

Besides, to align with the Departmental Operation Supporting System introduced last year, we are studying the implementation of a new procurement and stock management platform for managing, storing and delivering supplies, and full adoption of the E-Purchase Order and Goods Receipt platforms for the procurement of commonly used consumables. In March 2024, study reports for both projects were released and a briefing session was conducted, with an attendance of over 250 officers.

#### Winning Multiple Accolades

The EMSD receives widespread recognition for its excellent customer service. At the 21st International Customer Relationship Excellence (CRE) Awards Ceremony last year, we garnered three awards, namely the Best AI Technology Service of the Year 2023 (Government), the Best Blockchain Solutions of the Year 2023 (Government) and the Best Internet of Things Project of the Year 2023 (Government), of the 1st International Greater Bay Area CRE Innovation Leadership Awards. Additionally, two senior engineers and two engineers from our Department earned individual accolades.

2023年11月，本署兩名工程師獲頒2023年申訴專員嘉許獎公職人員獎；另外兩名人員則獲頒公務員事務局局長嘉許狀，表揚他們多年來盡忠職守，表現多次獲政府及客戶部門高度肯定。此外，本署一名退休人員獲頒授銅紫荊星章；另一名退休人員和現職人員則獲頒授2023年行政長官公共服務獎狀。

時任管理值班工程師鍾惠堅先生(左二)和一級監工業冠偉先生(右二)獲頒公務員事務局局長嘉許狀，表揚他們多年來盡忠職守，以專業精神服務市民。  
Mr Chung Wai-kin, the then Shift Charge Engineer (2nd left) and Mr Ip Koon-wai, a Works Supervisor I (2nd right), were presented with the Secretary for the Civil Service's Commendation Awards, in recognition of their years of dedicated service and professionalism in serving the public.



#### 連繫業界 推動創科

要持續推動本港創新科技(創科)的發展，必須集合政府、業界和學界的力量。2023年7月，我們聯同香港科技園公司和深圳市科學技術協會舉辦「機電創科日」，為業界提供平台展示最新的智慧建築創科方案。2023年9月，我們與廣東省科學技術協會在廣州舉辦「綠色創科日2023」，邀得兩地專家就「綠色轉型」和「邁向碳中和」分享創科經驗。

為進一步促進創新科技產業化，我們在現有的「機電創科網上平台」上新增「機電創科彙集」，重點介紹機電署在不同範疇的優秀創科試驗項目，例如「政府物聯網」、「智能貨倉」和「戶外活動遠足人士安全系統」。新平台讓用戶按需要把多個創科項目編製成一份彙集，令產品資訊一目了然，方便向客戶推介方案。



In November 2023, two engineers from our Department were presented with the Ombudsman's Awards 2023 for Officers of Public Organisations, while two other officers were honoured with the Secretary for the Civil Service's Commendation Awards. The awards commended them for their years of dedicated service, and that their performance won high recognition from the Government and client departments. Furthermore, a retired officer was awarded the Bronze Bauhinia Star, while another retired officer and a serving officer received the Chief Executive's Commendation for Government/Public Service 2023.



機電署工程師鄭文意女士(右二)和工程師梁嘉俊先生(左二)獲頒2023年申訴專員嘉許獎公職人員獎，以表揚其傑出表現。  
Ms Cheng Man-yee (2nd right) and Mr Leung Ka-chun (2nd left), both engineers of the EMSD, were honoured with the Ombudsman's Awards 2023 for Officers of Public Organisations in recognition of their outstanding performance.

#### Collaborating with the Industry to Promote I&T

To continuously drive innovation and technology (I&T) development in Hong Kong, it is essential to bring together the strength of the Government, industry, and academia. In July 2023, we collaborated with the Hong Kong Science and Technology Parks Corporation (HKSTPC) and the Shenzhen Association for Science and Technology to organise the E&M I&T Day, providing a platform for the industry to showcase the latest I&T solutions in smart construction. In September 2023, we partnered with the Guangdong Provincial Association for Science and Technology to hold Green I&T Day 2023 in Guangzhou, inviting experts from both places to share their I&T experience under the themes of “green transformation” and “journey to carbon neutrality”.

To further promote the commercialisation of innovations, we have enhanced the existing E&M InnoPortal by introducing a new platform called E&M InnoCatalogue, which highlights the remarkable I&T trials conducted by the EMSD across diverse fields, such as the Government-Wide Internet of Things Network (GWIN), Smart Warehouse and Hiker Safety System for Outdoor Activities. The new platform allows users to compile multiple I&T projects into a catalogue, so that product information leaps to the eye, facilitating recommendation of solutions to clients.

為加快創科成果「落地」，我們建立了「機電創科彙集」。這個互動平台重點介紹機電署在不同範疇的優秀創科試驗項目。

To expedite the realisation of I&T outcomes, we established the E&M InnoCatalogue, a dynamic platform that highlights the remarkable I&T trials conducted by the EMSD in various fields.



## 企業管理

### CORPORATE STEWARDSHIP

#### 培育創新文化

我們在部門內部亦鼓勵人員持續創新。2023年第二季，我們舉辦第四屆「Inno@E&M創新科技挑戰賽」，以人工智能、無人機和機械人為主題，共收到162個參賽方案。此外，我們透過員工激勵計劃，舉辦「節能AI大比拼」比賽，鼓勵人員與本地或大灣區初創企業和大學合作提交方案，利用人工智能技術分析現有機電設備數據，找出節能方法。



「節能AI大比拼」比賽共收到28個節能方案，涵蓋空調製冷、太陽能、污水處理等範疇。參賽人員積極學習人工智能知識，提出具創意的方案，並聯同初創公司推行項目，展現無限發展潛力。

The AI Competition for Energy Efficiency and Conservation received a total of 28 energy-saving submissions, covering areas such as air-conditioning and refrigeration, solar energy, and sewage treatment. Participating officers actively acquired AI knowledge, proposed creative solutions, and partnered with start-ups to implement their projects, demonstrating boundless possibilities for development in this field.

#### Cultivating an Innovation Culture

Internally, we also encourage our officers to keep innovating. In the second quarter of 2023, we organised the fourth Inno@E&M Challenge under the themes of AI, drones and robotics, and received 162 proposals. Another example was the AI Competition for Energy Efficiency and Conservation under the Staff Motivation Scheme. Our officers were encouraged to partner with local or Greater Bay Area (GBA) start-ups and universities to submit proposals that utilise AI technology to analyse data of existing E&M equipment and identify energy-saving solutions.

#### 推廣工作安全和良好作業

除了推動創科外，提高業界的安全意識以減少工業意外也是我們的重要工作。年內我們舉辦和參與多項活動，包括在2023年9月聯同職業安全健康局和香港科技园公司合辦安全研討會2023。研討會以「安全智慧工地系統」為主題，邀得業界講者分析機電業意外個案，並分享使用職安健科技和「組裝合成」建築法等方面的心得。

2023年11月，我們舉辦年度「品質及安全日」，邀得嘉賓就「智慧機電」分享經驗。在活動中，我們向「品質、環境及生產力推廣計劃2022/23」的優勝隊伍頒發獎項，表揚他們在改善職安健和推動綠色文化方面的出色表現。

我們亦經常與承辦商交流，以增強他們的安全意識。年內我們舉辦了四場承辦商研討會，分享風險管理和安全智慧工地系統等方面的經驗，共約970人參與。

此外，我們參加了發展局和建造業議會合辦的建造業安全周2023，透過參與研討會、工地參觀和嘉年華，推廣工地安全。

#### Promoting Work Safety and Good Practices

In addition to promoting I&T, we are also charged with the important role of enhancing safety awareness of the trade to reduce industrial accidents. In the year, we organised and participated in various activities, including the Safety Conference 2023 jointly hosted with the Occupational Safety and Health Council and the HKSTPC in September 2023. With the theme of "Smart Site Safety System", the conference invited industry speakers to analyse E&M industrial accident cases and share insights into using occupational safety and health technologies and Modular Integrated Construction (MiC) method.

In November 2023, we held the annual Quality and Safety Day and invited guests to share their experience in "Smart E&M". At the event, awards were presented to the winning teams of the Quality, Environment and Productivity Promotion Programme 2022/23, in recognition of their outstanding performance in improving occupational safety and health and promoting a green culture.

We also regularly engage with contractors to enhance their safety awareness. During the year, four sessions of Contractors Forum were held to share experience in risk management and Smart Site Safety System, with approximately 970 participants in total.

Furthermore, we participated in the Construction Safety Week 2023, co-organised by the DEVB and the Construction Industry Council, to promote safety at construction sites through conferences, site visits and a carnival.

為提升工程項目的管理效率和成本效益，我們全力配合發展局推動採用「新工程合約」模式，透過使用標準合約讓締約雙方建立互助互信的伙伴關係，共同管理風險。我們已在2024年4月推出一站式網上「新工程合約」資源中心，並已就承辦商採用「新工程合約」的準備情況完成意見調查。

To elevate management efficiency and cost effectiveness of works projects, we fully support the DEVB in promoting the adoption of the New Engineering Contract (NEC) form, a suite of standard contracts that fosters the building of a partnering relationship of mutual assistance and trust between the contracting parties, as well as enabling joint risk management. We launched a one-stop online NEC Resources Centre in April 2024 and completed a survey on our contractors' readiness to adopt the NEC.



在安全研討會2023上，有十間科技公司設置攤位，展示最新的職業安全健康設備，以及安全智慧工地系統，吸引逾530人參與。

At the Safety Conference 2023, ten technology companies set up exhibition booths to showcase the latest occupational safety and health equipment, as well as Smart Site Safety Systems. The event attracted over 530 participants.

#### 全方位尋覓人才

機電業的長遠穩定發展，繫於足夠的人才供應。有鑑於此，機電署一直通過不同渠道宣傳機電業，吸引年輕新血入行。年內其中一個亮點，是機電署與五間中學合作推行為期八個月的「啱啱校園之旅－生活小智識」STEM教育先導計劃，透過一系列教學活動和設計思維工作坊，增加學生對機電工程和智能生活的認識，引起他們對機電行業的興趣。我們在2023年7月舉行了畢業禮暨作品展，讓參與計劃的學生展示創作成果。同年9月，我們更邀請已完成計劃的學生到機電署總部參觀，讓他們多認識機電署的工作。

#### Comprehensive Talent Hunting

The long-term and steady development of the E&M industry relies on an adequate supply of talent. Having regard to that, the EMSD has been promoting the E&M industry through various channels to attract new blood to join the industry. One of the highlights of the year was "Witty Bear Campus Tour – EMbrace Smart Living in Daily Life", an eight-month pilot STEM education programme we launched in collaboration with five secondary schools. Through a series of educational activities and design thinking workshops, we aimed to enhance students' understanding of engineering and smart living, and arouse their interest in the E&M industry. In July 2023, we held a graduation ceremony-cum-exhibition for the participating students to showcase their creative inventions. Upon completion of the programme, students were invited to visit the EMSD Headquarters in September 2023 to learn more about the Department's work.



在2023年7月舉行的「啱啱校園之旅－生活小智識」STEM教育先導計劃畢業典禮暨作品展中，參與計劃的學生向嘉賓展示創作成果。

At the graduation ceremony-cum-exhibition of the pilot STEM education programme "Witty Bear Campus Tour – EMbrace Smart Living in Daily Life" held in July 2023, participating students of the programme demonstrated their inventions to the guests.



企業管理

CORPORATE STEWARDSHIP

為歡迎行業的生力軍，我們一如以往，聯同香港機電業推廣工作小組（工作小組），在2023年9月舉行「機電·啟航2023」迎新典禮，逾千名新入行的年青人和業界代表出席，人數為歷年之冠。2024年1月，我們又與工作小組合辦機電業博覽2024，透過攤位展覽和職業講座，闡述行業前景和培訓資訊。2024年3月，我們參加香港工程師學會主辦的香港工程師週嘉年華，設置攤位展示本署在可再生能源方面的研發成果，介紹如何利用工程技術達致可持續發展，並加深大眾對工程行業的認識。

在招募見習工程師方面，我們在2024年加快招聘流程，並向應屆畢業生給予有條件取錄，務求盡早覓得合適人才。



機電署聯同香港機電業推廣工作小組合辦機電業博覽2024，向年青人展示機電業與日常生活息息相關，以及業界廣泛應用創科的情況，引起他們對投身機電業的興趣。

Co-organised by the EMSD and the Hong Kong Electrical and Mechanical Trade Promotion Working Group, the E&M Expo 2024 showcased to young people the close connection between the E&M industry and their daily lives, as well as the wide application of I&T in the industry, to stimulate their interest to join the E&M industry.

員工培訓和發展

機電青年發展委員會

我們非常重視員工訓練，致力培育青年新生代，這也是第三個計劃的重要策略行動。本署在年內的一大舉措是成立機電青年發展委員會，以促進年輕人員的全面發展，並加強對外推廣機電行業。

委員會舉辦了多項活動，包括為期三天的機電青年大灣區創科考察團，讓團員參觀當地科企、科研單位和初創企業等；以及與香港機電工程師聯合會的「青年交流平台」活動，邀得機電署與業內的青年代表，就人工智能、區域供冷系統

To welcome new blood to the industry, as our regular practice, the Department, in collaboration with the Hong Kong Electrical and Mechanical Trade Promotion Working Group (the Working Group), hosted the “E&M GO! 2023” Orientation Ceremony in September 2023. Over a thousand young newcomers to the industry and industry representatives attended the event, which saw the highest attendance ever. In January 2024, we co-organised with the Working Group the E&M Expo 2024, where we introduced industry prospects and training information through exhibition booths and career seminars. In March 2024, we participated in the Hong Kong Engineers Week Carnival organised by the Hong Kong Institution of Engineers, and set up a booth to showcase our research accomplishments in renewable energy, with the aim of demonstrating how engineering technologies could contribute to sustainable development and deepening public understanding of the engineering industry.

Regarding recruitment of engineering graduates, the Department expedited the hiring process and extended conditional offers to fresh graduates in 2024, in order to secure suitable talent as early as possible.



新成立的機電青年發展委員會舉辦多項活動，包括「青年交流平台」，協助機電署年青員工工作多元發展。

The newly established E&M Youth Development Committee organised various activities, including the Youth Exchange Platform, to facilitate the diversified development of our young staff members.

STAFF TRAINING AND DEVELOPMENT

E&M Youth Development Committee

We place great importance on staff training and are committed to nurturing the young generation, which are also the major strategic tasks under the 3rd Plan. A significant initiative this year was the establishment of the E&M Youth Development Committee, aiming at facilitating the all-round development of young members of our staff and enhancing external promotion of the E&M industry.

The committee organised various activities, including a three-day I&T tour to the GBA by the E&M youth delegation who visited local tech firms, scientific research institutes and start-ups; and the Youth Exchange Platform event, hosted in collaboration with the Hong Kong Federation of Electrical and Mechanical Contractors, in which young representatives from the Department

和「機電裝備合成法」分享經驗。此外，委員會應香港兒童醫院邀請，為200個受助家庭在聖誕前夕舉辦聖誕派對，以及安排香港迪士尼樂園之旅，讓他們度過一個溫馨難忘的聖誕節。

知識傳承

第三個計劃的另一策略行動，是善用「知識羣體」架構，承傳知識和經驗，提升團隊能力及效率。我們成立了多個智囊羣組，範疇包括建築信息模擬及資產管理、智能建築、人工智能、無人機和機器人，以及「機電裝備合成法」等，讓成員分享所屬範疇的專業知識。此外，特定機電團隊（電力）在年內舉辦多項活動和分享會，內容涵蓋機場供電系統、低壓電力掣櫃出廠驗收測試和地底電纜維修等，促進知識共享。

繼2022年取得佳績後，機電署在2023年9月獲得2023年香港最具創新力知識型機構大獎的「最高榮譽獎」和「最佳知識文化獎」。同年12月，我們更榮獲2023年全球最具創新力知識型機構大獎，可見機電署在推行知識管理和建立創新文化方面的努力備受肯定。

機電署在2023年先後獲頒2023年香港最具創新力知識型機構大獎的「最高榮譽獎」和「最佳知識文化獎」，以及2023年全球最具創新力知識型機構大獎。這些殊榮印證了我們致力推動知識管理，將知識轉化為卓越服務，為持份者創造最大價值。

In 2023, the EMSD received the Top Winner and the Best in Knowledge Culture Award of Hong Kong MIKE Award 2023, followed by the Global MIKE Award 2023. These prestigious awards are testament to our dedication in promoting knowledge management and transforming knowledge into excellent services, which created maximum value for our stakeholders.

內地和海外考察團

我們非常鼓勵員工到內地和海外交流，掌握最新的行業趨勢和技術發展。舉例來說，本署的暖通空調智囊羣組和專才小組在2023年9月到澳洲墨爾本考察，了解當地使用環保雪種的安全設計和牌照要求，以及在空調系統應用人工智能的情況。

and the industry were invited to share their experience in AI, district cooling systems, and Multi-trade integrated Mechanical, Electrical, and Plumbing (MiMEP) technology. Prior to Christmas, at the invitation of the Hong Kong Children's Hospital, the committee organised for 200 families in need a Christmas party and a trip to the Hong Kong Disneyland, bringing to them a warm and memorable Christmas.

Knowledge Inheritance

Another strategic task under the 3rd Plan is to make good use of the knowledge management platform to pass on knowledge and experience, as well as enhancing team capabilities and efficiency. Several Working Groups have been established, covering areas such as Building Information Modelling – Asset Management, smart construction, AI, drones and robotics, and MiMEP technology. These groups allow members to share expertise in their respective fields. Additionally, over the past year, the Special Duty Unit (Electrical) organised various activities and sharing sessions, covering topics such as airport power supply systems, factory acceptance test for low-voltage switchboards, and underground cable maintenance, facilitating knowledge sharing.

Further to our remarkable results in 2022, the EMSD became the Top Winner and received the Best in Knowledge Culture Award at Hong Kong Most Innovative Knowledge Enterprise (MIKE) Award 2023 in September 2023. In December 2023, we were also honoured with the Global MIKE Award 2023, in recognition of our efforts in implementing knowledge management and fostering an innovation culture.



Mainland and Overseas Study Tours

We strongly encourage our staff to visit the Mainland and overseas for exchanges, so as to stay updated on the latest industry trends and technological developments. For instance, our Heat, Ventilation and Air-Conditioning Installations Working Group and Expert Group visited Melbourne, Australia in September 2023 to gain insights into the local safety design and licensing requirements for using eco-friendly refrigerants, as well as the application of AI in air-conditioning systems.



企業管理  
CORPORATE STEWARDSHIP

此外，「機電裝備合成法」智囊羣組在2023年10月舉辦為期三天的大灣區考察團，團員參觀當地工廠，了解「機電裝備合成法」和「組裝合成」建築法的組件設計和生產流程。2024年3月，我們舉辦為期五天的大灣區人工智能及創科考察團，推動大灣區的技術交流。

Moreover, in October 2023, the MiMEP Working Group organised a three-day study tour to the GBA, where the tour members visited local factories to learn about the design and production processes of MiMEP and MiC modules. We also organised a five-day AI and I&T tour to the GBA in March 2024, promoting technical exchanges in the GBA.



我們不時舉辦大灣區考察團，讓員工了解當地在「組裝合成法」、「機電裝備合成法」和人工智能等方面的發展。  
We organised study tours to the GBA from time to time, enabling our staff to gain insights into the advancements in areas such as MiC, MiMEP and AI technologies.



跨境培訓

隨着疫情過去，我們全面恢復與內地合作伙伴的協作，包括實體訪問和培訓。在2023年6月和10月，廣州市機電技師學院和廣州市工貿技師學院的代表團先後到訪機電署總部，了解本署近年的創科應用和發展，並與本署參加世界技能大賽的技術人員及其導師互動交流。

Cross-boundary Training

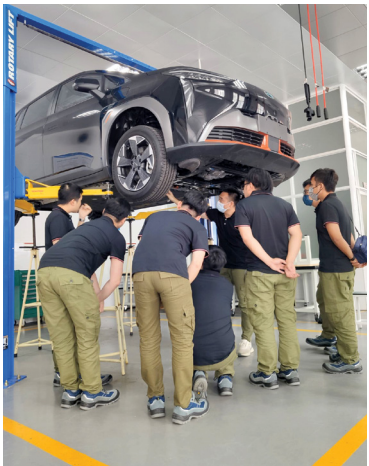
As the epidemic subsided, we fully resumed collaboration with our Mainland partners, including in-person visits and training. In June and October 2023, delegations from the Guangzhou Electromechanical Technician College and the Guangzhou Industry and Trade Technician College respectively visited the EMSD Headquarters to gain insights into our recent I&T applications and developments. They also had exchanges with our technicians who participated in the WorldSkills Competition, as well as their trainers.

年內我們亦與廣州市技師學院、廣州市機電技師學院、廣州市工貿技師學院和廣州市交通技師學院合辦培訓課程，內容涵蓋製冷與空調、電氣、電動車，以及屋宇裝備。在課程中，學員從實務訓練中學習新技能，並更深入認識內地技術規範，受益匪淺。

Furthermore, we collaborated with the Guangzhou Technician College, the Guangzhou Electromechanical Technician College, the Guangzhou Industry and Trade Technician College, and the Guangzhou Communications Technician Institute to organise training courses, covering topics including air-conditioning and refrigeration, electrical work, electric vehicles and building services. Students benefited significantly from the courses as they acquired not only new skills through practical training but also a better understanding of the technical standards in the Mainland.



廣州市機電技師學院(左)和廣州市工貿技師學院(右)的代表團先後到訪機電署總部，了解本署的創科應用和人才培訓工作。  
Delegations from the Guangzhou Electromechanical Technician College (left) and the Guangzhou Industry and Trade Technician College (right) visited the EMSD Headquarters to gain insights into our I&T applications and staff training.



2023年7月至8月，本署訓練組聯同四間廣州技師學院，合辦製冷與空調、電氣、電動車和屋宇裝備四大範疇的實務培訓課程，讓學員提升技術，以及更深入認識內地的技術規範。

From July to August 2023, our Training Unit, in collaboration with four technician colleges in Guangzhou, organised practical training courses in four major areas, including air-conditioning and refrigeration, electrical work, electric vehicles and building services installations. These courses enhanced our trainees' skills while familiarising them with the technical standards in the Mainland.

國情教育

我們相信，除了提升員工的知識和技術外，加深他們對國家政策和發展的認識，對員工本身和部門的發展都有莫大幫助。我們在2023年6月及7月舉辦兩個大灣區國情考察團，團員參觀了國家科研機構、創科企業、文創產業基地和大學等，深入了解國家的改革開放歷程，以及社會和經濟發展。同年11月，我們在北京復辦疫後首個實體國情研習班。研習班由國家行政學院承辦，有44位來自不同職級的人員參與。

National Education

We believe that, in addition to enhancing the staff's knowledge and technical skills, deepening their understanding of our country's policies and development greatly benefits their personal growth and departmental advancement. In June and July 2023, we organised two study tours to the GBA, where members of the tours visited national scientific research institutions, I&T enterprises, bases of the cultural and creative industries, and universities, through which they gained an in-depth understanding of our country's reform and opening up as well as her social and economic development. In November 2023, we resumed organising the first post-epidemic physical National Studies Programme in Beijing. The programme was arranged by the Chinese Academy of Governance and 44 staff members of different ranks participated.



年內，我們舉辦國情研習班，以加深員工對國家政策和發展的認識。

During the year, we organised the National Studies Programme, aiming to deepen employees' understanding of our country's policies and development.



## 企業管理

### CORPORATE STEWARDSHIP

#### 員工福利及支援

##### 員工滿意度

我們每兩年進行一次員工滿意度調查，了解員工對於在本署工作的意見。2023年的調查結果顯示，員工滿意度持續上升，以10分為滿分計，員工滿意度為7.7分，較2021年上升0.1分，創歷史新高；回應率亦由2021年的50%，上升至2023年的55%。我們細心聆聽員工意見，訂立改善目標，包括優化工作環境和設施、推動關懷文化、加強管理層與員工的溝通，積極回應員工的需求。

此外，我們在2023年首次為借調員工進行員工滿意度調查。以10分為滿分計，員工滿意度為6.9分；回應率為60%。

##### 優化工作環境

我們持續優化部門設施，包括在總部大樓新增一間授乳室，照顧需要哺乳的員工的需要。年內，我們又全面翻新了位於消防處總部大廈的電子設備維修工場，包括配置可靈活組合的辦公室家具、改善排煙系統、新增多用途活動室和遙距區域數碼監控中心等。此外，有近四十年歷史的屯門車輛維修站，翻新工程亦已完成。



隨着新的授乳室於2023年10月投入使用，機電署總部大樓現設有兩間授乳室。員工經網上系統預約後，使用員工證便可進入房間，簡單便捷。這些改善措施體現了部門對需要授乳的同事關懷和支持。

With the commissioning of an additional lactation room in October 2023, the EMSD Headquarters is now equipped with two lactation rooms. Both rooms can be conveniently reserved through an online booking system and accessed with a staff identity card. These enhancement measures reflect the Department's care and support for breastfeeding staff.

##### 促進員工健康

我們非常關注員工的健康，定期舉辦各式各樣的康樂和體育活動，包括水耕種植、球類運動、射箭、遠足和盆菜宴，並不時組隊參與體育比賽，

#### WELFARE AND ASSISTANCE FOR STAFF

##### Staff Satisfaction

A staff satisfaction survey is conducted every two years to gauge the opinions of our staff on working in the Department. The results of the 2023 survey showed a continuous increase in staff satisfaction. We achieved a staff satisfaction rating of 7.7 on a scale of 10, representing a 0.1-point increase from 2021 and reaching a record high. The response rate also increased from 50% in 2021 to 55% in 2023. We listened carefully to our staff's feedback and set targets for improvement, including enhancing our working environment and facilities, promoting a caring culture, and strengthening communication between the management and staff, to proactively address the needs of our staff.

In addition, a staff satisfaction survey was first introduced for seconded staff in 2023. A staff satisfaction rating of 6.9 on a scale of 10 and a response rate of 60% were achieved.

##### Improving Working Environment

We continuously upgraded our departmental facilities, including adding a lactation room at the headquarters to cater to the needs of breastfeeding staff members. During the year, the comprehensive renovation of the Electronics Workshop at the Fire Services Headquarters Building, which included the provision of office furniture that can be freely combined, enhancement of the smoke exhaust system, addition of a multi-purpose room, and establishment of a remote Regional Digital Control Centre, was completed too. We also finished the renovation works of the Tuen Mun Vehicle Servicing Depot, which had a history of nearly 40 years.

我們參與香港綠色建築週2023的「『輕·型』」四色穿搭挑戰」活動，鼓勵員工穿着輕便衣物，這不單令他們感到舒適，更減少空調用量和節省能源。機電署在活動中獲頒「最積極參與大獎」銀獎。

We participated in the "4-Colour Biz-Green Outfits Social Challenge", an event of the Hong Kong Green Building Week 2023, and encouraged our staff to dress lightly, which not only made them feel comfortable, but also reduced air-conditioning usage and saved energy. The EMSD was presented with the Most Engaged Award – Silver prize.



##### Promoting the Wellbeing of Staff

Attaching great importance to the health of our employees, we organised various recreational and sports activities regularly, including hydroponic planting, ball games, archery, hiking, and a "poon choi" feast, as well as

例如龍舟和長跑比賽。這些活動能豐富員工的業餘生活，紓緩他們的工作壓力，增強歸屬感。

為了促進員工的精神健康，我們繼續為員工提供輔導熱線，也在年內舉辦了五場線上講座和一個實體工作坊，分享保持身心健康的實用資訊，有超過1 100名員工參與。

機電署員工康樂會舉辦各類康樂體育活動，讓員工保持強健體魄，亦提升團隊凝聚力。  
The EMSD Staff Club organised various recreational and sports activities to help our staff stay healthy and enhance cohesion of teams.



#### 社區服務和參與

##### 義工活動

我們鼓勵員工積極參與義工活動，善用工餘時間服務社會。為了保護海洋生態，員工康樂會組織義工隊，在2023年5月參與建造業運動及義工計劃的「建造業海岸清潔日」，清理元朗海岸的垃圾。同年8月，我們的義工隊參與「耆青連心樂融融計劃」，與香港大學護理學院學生上門探訪長者，為他們進行健康評估。

此外，我們編織過百條頸巾送贈仁愛堂轄下日間護理中心的長者，在寒冬中為他們帶來溫暖。由於舉辦這個「編編送暖行動」，另外又為長者提供家居維修服務，以及在疫情期間為安老及殘疾人士院舍進行通風系統評估，我們在賽馬會齡活城市「全城·長者友善」計劃2022中獲頒「齡活協作大獎」。



forming staff teams to participate from time to time in sports competitions, such as dragon boat racing and distance running events. Such activities could enrich their lives beyond working hours, alleviate work stress and enhance a sense of belonging.

We have continued to provide counselling hotline service to support employees' mental health. In addition, five online seminars and a physical workshop were held to share practical information on physical and mental health during the year, with over 1 100 employees participated.

#### COMMUNITY SERVICE AND ENGAGEMENT

##### Volunteer Activities

We encourage our staff to actively participate in volunteer activities and serve the community during their spare time. To protect the marine ecosystem, our Staff Club set up a volunteer team to participate in the Construction Industry Shoreline Clean-up Day under the Construction Industry Sports & Volunteering Programme and removed rubbish from the coastlines in Yuen Long in May 2023. In August 2023, our volunteer team took part in the "Generations Connect" project and conducted home visits and health assessments for the elderly in collaboration with the nursing students of the University of Hong Kong.

Furthermore, we knitted over a hundred scarves for the elderly of the day care centres under Yan Oi Tong, bringing warmth to them in winter. This "Knit for Warmth" campaign, along with our home repair services provided to the elderly and the ventilation assessments conducted at residential care homes for the elderly and persons with disabilities during the epidemic, earned us the Age-friendly Collaborator Award in the Jockey Club Age-friendly City Partnership Scheme 2022.



我們在疫情期間不忘關懷長者，與非政府機構合辦「編編送暖行動」，編織頸巾送贈長者。在賽馬會齡活城市「全城·長者友善」計劃2022嘉許禮上，機電署獲頒「齡活協作大獎」，以示對我們致力服務長者社羣的肯定。

During the epidemic, we remained committed to caring for the elderly. In collaboration with a non-governmental organisation, we organised the "Knit for Warmth" campaign and knitted scarves for the elderly. In recognition of our dedication to serving the elderly community, the EMSD was honoured with the Age-friendly Collaborator Award at the Jockey Club Age-friendly City Partnership Scheme 2022 Award Presentation Ceremony.



區議會選舉

在2023年12月舉行的區議會一般選舉，是政府重塑區議會後的首場大型選舉，意義重大。我們除了為是次選舉提供機電技術支援服務外，亦聯同發展局同事組成義工隊，派發宣傳單張，鼓勵市民參與投票。在投票日，我們的員工亦出任選舉工作人員，協助讓選舉順利進行。



發展局及機電署人員與「機智啤啤」一起派發2023年區議會一般選舉的宣傳單張，呼籲市民踴躍投票。  
The DEVB and EMSD staff, together with Witty Bear, distributed promotion leaflets on the 2023 District Council Ordinary Election, encouraging members of the public to actively cast their votes.

鑽禧誌慶

今年適逢機電署成立75周年，我們以「傳承創新 同心惠民」為主題，舉辦一連串的慶祝活動，包括製作短片和紀念冊，回顧機電署不平凡的發展旅程。機電署七十五周年典禮在2023年11月底於總部舉行，超過200位嘉賓出席，包括政府部門和公營機構的首長和代表、機電業界代表、本港和內地的策略伙伴，共同慶祝這個重要時刻；該典禮亦為一連三日的機電75周年同樂日揭開序幕。75周年慶祝活動吸引約15 000人參與，反應熱烈。

在過去的四分之三個世紀，機電署一直盡心盡力服務香港，與市民並肩同行。展望將來，我們會繼續秉承優良傳統，傳承經驗和技術，推動創新文化，為市民提供高效優質的機電服務。

District Council Election

Being the first large-scale election after the reform of the District Councils, the District Council Ordinary Election held in December 2023 was of utmost significance. Besides providing E&M technical support for the election, the EMSD also collaborated with colleagues from the DEVB to form a volunteer team to distribute promotional leaflets, so as to encourage the public to vote. On the election day, our employees also served as electoral staff and supported the smooth conduct of the election.

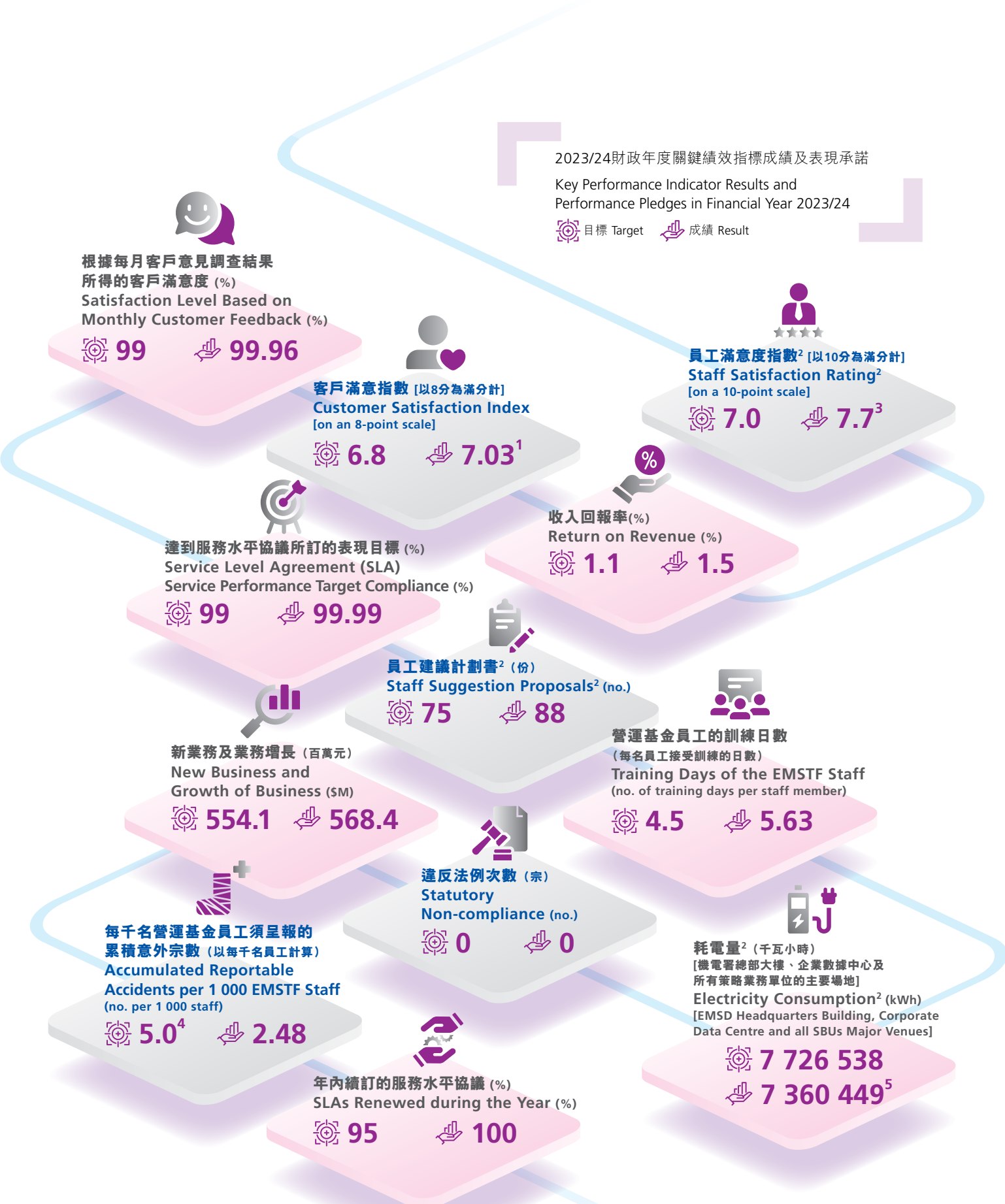
為慶祝部門75周年鑽禧誌慶，我們在2023年11月舉辦機電工程署七十五周年典禮，由財政司司長陳茂波先生擔任主禮嘉賓，紀念部門這個重要的里程碑，並為一連三天的機電75周年同樂日揭開序幕。  
In celebration of the 75th anniversary Diamond Jubilee of the Department, we held the EMSD 75th Anniversary Ceremony in November 2023, with Mr Paul Chan, Financial Secretary, as our officiating guest, to commemorate this momentous milestone of the Department and to kick off the three-day event of E&M 75th Anniversary Fun Day.



DIAMOND JUBILEE CELEBRATION

In celebration of the EMSD's 75th anniversary of establishment, we conducted a series of celebratory activities under the theme of "Serving the Community with Heart and Innovation". The activities included the production of a short video and a commemorative booklet featuring EMSD's remarkable journey of development. The EMSD 75th Anniversary Ceremony was held at the headquarters at the end of November 2023. Over 200 guests, including heads and representatives of government departments and public organisations, representatives of the E&M industry, and local and Mainland strategic partners, attended the event to celebrate this defining moment with us. The ceremony also kicked off the three-day E&M 75th Anniversary Fun Day. These celebratory events received enthusiastic responses and attracted approximately 15 000 participants.

Over the past three-quarters of a century, the EMSD has been dedicated to serving Hong Kong and walking hand in hand with the community. Looking ahead, we will continue our fine traditions, pass on our experience and expertise, and foster a culture of innovation, to provide highly efficient and quality E&M services to the public.



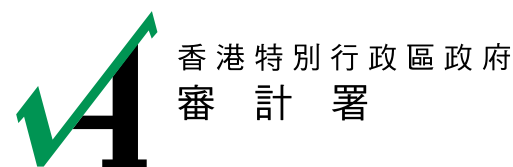
1 數字為2022年的調查結果。下一次調查將於2024年進行。  
2 此項目適用於機電工程署整個部門，其他項目只適用於機電工程營運基金。  
3 數字為2023年的調查結果。  
4 此為警戒水平，並非目標。  
5 赤鱗角空郵中心的帳戶已於2023年7月31日終止。因此，該中心自2023年8月起沒有用電數據。

1 Results are derived from the survey conducted in 2022. The next survey will be conducted in 2024.  
2 This item applies to the EMSD as a whole. Other items apply to the EMSTF only.  
3 Results are derived from the survey conducted in 2023.  
4 This is an alert level, not a target.  
5 The account of Air Mail Centre (AMC) in Chek Lap Kok was terminated on 31 July 2023. Hence there has been no electricity consumption of AMC starting from August 2023.



# 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 69 至 95 頁機電工程營運基金的財務報表，該等財務報表包括於 2024 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，包括重大會計政策資料。

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 2024 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。

## 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 69 to 95, which comprise the statement of financial position as at 31 March 2024, 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 material accounting policy information.

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 2024, 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.

# 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

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。

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有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；

### *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.

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;



審計師就財務報表審計而須承擔的責任 (續)

- 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；
- 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。

我與機電工程營運基金總經理溝通計劃的審計範圍和時間以及重大審計發現等事項，包括我在審計期間識別出內部控制的任何重大缺陷。

審計署署長  
(審計署助理署長莫澤文  
代行)

審計署  
香港  
金鐘道66號  
金鐘道政府合署  
高座6樓

2024年9月25日

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

- 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;
- 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.

I communicate with the General Manager, Electrical and Mechanical Services Trading Fund regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

Terry Mok  
Assistant Director of Audit  
for Director of Audit

Audit Commission  
6th Floor, High Block  
Queensway Government Offices  
66 Queensway  
Hong Kong

25 September 2024

全面收益表  
STATEMENT OF COMPREHENSIVE INCOME

截至2024年3月31日止年度  
(以港幣千元位列示)

for the year ended 31 March 2024  
(Expressed in thousands of Hong Kong dollars)

	附註 Note	2024	2023
來自客戶合約之收入	(4)	9,280,677	8,910,569
運作成本	(5)	(9,140,719)	(8,674,507)
運作盈利		139,958	236,062
其他收入	(6)	323,827	395,149
年度盈利		463,785	631,211
其他全面收益		—	—
年度總全面收益		463,785	631,211
固定資產回報率	(7)	8.8%	15.8%

第74至95頁的附註為本財務報表的一部分。

The notes on pages 74 to 95 form part of these financial statements.



財務狀況表

STATEMENT OF FINANCIAL POSITION

於2024年3月31日  
(以港幣千元位列示)

as at 31 March 2024  
(Expressed in thousands of Hong Kong dollars)

		附註 Note	2024	2023
非流動資產	Non-current assets			
物業、設備及器材	Property, plant and equipment	(8)	1,442,993	1,349,513
使用權資產	Right-of-use assets	(9(a))	62,494	64,871
無形資產	Intangible assets	(10)	196,493	201,474
外匯基金存款	Placement with the Exchange Fund	(11)	4,030,000	4,030,000
			5,731,980	5,645,858
流動資產	Current assets			
存貨	Inventories		61,883	61,443
外匯基金存款	Placement with the Exchange Fund	(11)	2,037,276	2,776,478
應收帳款及其他應收款項	Trade and other receivables	(12), (13(a))	85,716	83,291
應收關連人士帳款	Amounts due from related parties	(13(a)), (21)	391,476	385,289
銀行存款	Bank deposits		2,490,000	2,745,000
現金及銀行結餘	Cash and bank balances		18,875	13,579
			5,085,226	6,065,080
流動負債	Current liabilities			
客戶按金	Customers' deposits	(14)	(2,226,854)	(2,148,082)
應付帳款及其他應付款項	Trade and other payables		(1,051,008)	(1,006,141)
應付關連人士帳款	Amounts due to related parties	(21)	(243,245)	(212,444)
租賃負債	Lease liabilities	(9(b))	(14,783)	(16,797)
僱員福利撥備	Provision for employee benefits	(15)	(72,845)	(77,561)
遞延收入	Deferred revenue	(13(b))	(781,183)	(1,022,628)
			(4,389,918)	(4,483,653)
流動資產淨額	Net current assets		695,308	1,581,427
總資產減去流動負債	Total assets less current liabilities		6,427,288	7,227,285
非流動負債	Non-current liabilities			
租賃負債	Lease liabilities	(9(b))	(48,839)	(49,006)
僱員福利撥備	Provision for employee benefits	(15)	(471,606)	(469,079)
			(520,445)	(518,085)
資產淨額	NET ASSETS		5,906,843	6,709,200

財務狀況表

Statement of Financial Position

於2024年3月31日  
(以港幣千元位列示)

as at 31 March 2024  
(Expressed in thousands of Hong Kong dollars)

		附註 Note	2024	2023
資本及儲備	CAPITAL AND RESERVES			
營運基金資本	Trading fund capital	(16)	706,600	706,600
保留盈利	Retained earnings	(17)	5,200,243	6,002,600
			5,906,843	6,709,200

第74至95頁的附註為本財務報表的一部分。

The notes on pages 74 to 95 form part of these financial statements.

潘國英  
署理總經理  
機電工程營運基金

POON KWOK YING  
General Manager (Acting)  
Electrical and Mechanical Services Trading Fund

2024年9月25日

25 September 2024



權益變動表

STATEMENT OF CHANGES IN EQUITY

截至2024年3月31日止年度 for the year ended 31 March 2024  
(以港幣千元位列示) (Expressed in thousands of Hong Kong dollars)

	附註 Note	2024	2023
在年初的結餘	Balance at beginning of year	6,709,200	6,967,589
年度總全面收益	Total comprehensive income for the year	463,785	631,211
政府法定回報	Statutory return to the Government (17)	(1,266,142)	(889,600)
在年終的結餘	Balance at end of year	5,906,843	6,709,200

第 74 至 95 頁的附註為  
本財務報表的一部分。

The notes on pages 74 to 95 form part of these financial statements.

現金流量表

STATEMENT OF CASH FLOWS

截至2024年3月31日止年度 for the year ended 31 March 2024  
(以港幣千元位列示) (Expressed in thousands of Hong Kong dollars)

	附註 Note	2024	2023
營運活動的現金流量	Cash flows from operating activities		
運作盈利	Profit from operations	139,958	236,062
調整：	Adjustments for:		
折舊及攤銷	Depreciation and amortisation	180,990	145,936
租賃負債的利息支出	Interest expense on lease liabilities	1,452	794
出售物業、設備及器材的 收益	Gain on disposals of property, plant and equipment	(458)	–
重新計量租賃負債的收益	Gain on remeasurement of lease liabilities	(100)	–
存貨的(增加)/減少	(Increase) / Decrease in inventories	(440)	6,976
應收帳款及其他應收款項 的增加	Increase in trade and other receivables	(9,229)	(9,100)
應收關連人士帳款的 (增加)/減少	(Increase) / Decrease in amounts due from related parties	(6,187)	7,494
客戶按金的增加	Increase in customers' deposits	78,772	377,813
應付帳款及其他應付款項 的增加/(減少)	Increase / (Decrease) in trade and other payables	44,867	(273,369)
應付關連人士帳款的增加	Increase in amounts due to related parties	30,801	11,376
僱員福利撥備的減少	Decrease in provision for employee benefits	(2,189)	(15,942)
遞延收入的減少	Decrease in deferred revenue	(241,445)	(115,426)
來自營運活動的現金淨額	Net cash from operating activities	216,792	372,614
投資活動的現金流量	Cash flows from investing activities		
原有效期為3個月以上的 銀行存款的減少	Decrease in bank deposits with original maturities over three months	240,000	440,000
購買物業、設備及器材和 無形資產	Purchase of property, plant and equipment, and intangible assets	(252,319)	(244,557)
出售物業、設備及器材 所得	Proceeds from disposals of property, plant and equipment	458	–
外匯基金存款的 減少/(增加)	Decrease / (Increase) in placement with the Exchange Fund	739,202	(360,949)
已收利息	Interest received	330,631	415,820
來自投資活動的現金淨額	Net cash from investing activities	1,057,972	250,314
融資活動的現金流量	Cash flows from financing activities		
已付政府法定回報	Statutory return paid to the Government	(1,266,142)	(889,600)
支付租賃負債	Payments of lease liabilities (9(b))	(18,326)	(16,095)
用於融資活動的現金淨額	Net cash used in financing activities	(1,284,468)	(905,695)
現金及等同現金的減少淨額	Net decrease in cash and cash equivalents	(9,704)	(282,767)
在年初的現金及等同現金	Cash and cash equivalents at beginning of year	2,518,579	2,801,346
在年終的現金及等同現金	Cash and cash equivalents at end of year (18)	2,508,875	2,518,579

第 74 至 95 頁的附註為  
本財務報表的一部分。

The notes on pages 74 to 95 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)

### 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。

### 2 重大會計政策

#### 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。基金採納的重大會計政策列載如下。

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基金的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本會計期及前會計期的會計政策改變(如有)已反映在本財務報表，有關資料載於附註3。

#### 2.2 編製財務報表的基準

本財務報表的編製基準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、負債、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準。估計結果或會與實際價值有所不同。

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

### 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.

### MATERIAL ACCOUNTING POLICIES

#### Statement of compliance

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

The HKICPA has issued certain new or 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 the 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, 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.

# 財務報表附註

## Notes to the Financial Statements

### 2 重大會計政策 (續)

#### 2.2 編製財務報表的基準 (續)

該等估計及其所依據的假設會作持續檢討。如修訂會計估計只影響修訂期，有關修訂會在該修訂期內確認；如修訂影響本會計期及未來的會計期，則會在修訂期及未來的會計期內確認。

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，以及現金及銀行結餘。

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，以及租賃負債。

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。

### MATERIAL 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 lease liabilities.

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.



2 重大會計政策 (續)

2.3 金融資產及金融負債 (續)

2.3.2 分類及其後計量

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 2.3.4 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該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，惟租賃負債按附註 2.5 所述計量。

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。

2.3.3 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。

MATERIAL ACCOUNTING POLICIES (continued)

Financial assets and financial liabilities (continued)

Classification and subsequent measurement

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 2.3.4.

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 receipts or payments 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 received or paid 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, except for lease liabilities as stated in note 2.5.

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.

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.

2 重大會計政策 (續)

2.3 金融資產及金融負債 (續)

2.3.4 金融資產減值

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，全期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。

第 2 階段：全期預期信用虧損 — 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，全期預期信用虧損（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：全期預期信用虧損 — 信用減值

若金融工具已視作信用減值，會確認全期預期信用虧損，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全期預期信用虧損的金額計量。

MATERIAL ACCOUNTING POLICIES (continued)

Financial assets and financial liabilities (continued)

Impairment of financial assets

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.

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 instruments 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.



2 重大會計政策 (續)

2.3 金融資產及金融負債 (續)

2.3.4 金融資產減值 (續)

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準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。

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，且交易對手或借款人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。

MATERIAL ACCOUNTING POLICIES (continued)

Financial assets and financial liabilities (continued)

Impairment of financial assets (continued)

*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.

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.

2 重大會計政策 (續)

2.3 金融資產及金融負債 (續)

2.3.4 金融資產減值 (續)

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)。短缺現金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。

2.4 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，最初的成本值是按前立法局所通過成立基金的決議中所列的估值入帳。自1996年8月1日起購置的物業、設備及器材均按實際成本入帳。

以下物業、設備及器材項目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價值後的項目成本值。有關的估計可使用年期如下：

- |           |         |
|-----------|---------|
| — 建築物     | 35年     |
| — 電腦器材    | 5 - 10年 |
| — 車輛      | 4 - 9年  |
| — 傢具及固定裝置 | 7 - 15年 |
| — 其他器材    | 7 - 20年 |

MATERIAL ACCOUNTING POLICIES (continued)

Financial assets and financial liabilities (continued)

Impairment of financial assets (continued)

*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.

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 the actual costs incurred.

The following items of 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 items of property, plant and equipment, less their estimated residual value, on a straight-line basis over their estimated useful lives as follows:

- |                          |              |
|--------------------------|--------------|
| — Buildings              | 35 years     |
| — Computer equipment     | 5 - 10 years |
| — Motor vehicles         | 4 - 9 years  |
| — Furniture and fixtures | 7 - 15 years |
| — Other equipment        | 7 - 20 years |



2 重大會計政策 (續)

2.4 物業、設備及器材 (續)

基金的建築物所在的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。

2.5 租賃

租賃會於其生效日在財務狀況表內確認為使用權資產及相應的租賃負債，惟涉及租賃期為12個月或以下的短期租賃及低價值資產租賃的相關款項會在租賃期內以直線法計入全面收益表。

使用權資產會按成本值扣除累計折舊及減值虧損計量 (附註2.7)。該使用權資產按租賃期及資產的估計可使用年期兩者中的較短者以直線法折舊。

租賃負債按在租賃期應支付的租賃款項的現值計量，並以租賃隱含利率折現，或如該利率未能確定，則以基金的遞增借款利率折現。租賃負債其後按租賃負債計提的利息與所支付的租賃款項，及任何源於租賃負債重估或租賃修改的重新計量作調整。

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 (5至10年) 以直線法列入全面收益表。

MATERIAL ACCOUNTING POLICIES (continued)

Property, plant and equipment (continued)

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.

Leases

A lease is recognised in the statement of financial position as a right-of-use asset with a corresponding lease liability at the lease commencement date, except that payments associated with short-term leases having a lease term of 12 months or less and leases of low-value assets are charged to the statement of comprehensive income on a straight-line basis over the lease term.

A right-of-use asset is measured at cost less accumulated depreciation and impairment losses (note 2.7). The right-of-use asset is depreciated on a straight-line basis over the shorter of the lease term and the asset's estimated useful life.

The lease liability is measured at the present value of the lease payments payable over the lease term, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Fund's incremental borrowing rate. The lease liability is subsequently adjusted by the effect of the interest on and the settlement of the lease liability, and the remeasurement arising from any reassessment of the lease liability or lease modification.

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 5 to 10 years.

2 重大會計政策 (續)

2.7 非金融資產的減值

非金融資產 (包括物業、設備及器材、使用權資產和無形資產) 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時，則有關減值虧損會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材料。它們是以成本值與可實現淨值之中較低者列帳，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。

MATERIAL ACCOUNTING POLICIES (continued)

Impairment of non-financial assets

The carrying amounts of non-financial assets, including property, plant and equipment, right-of-use assets 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 higher of its fair value less costs of disposal 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 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.



2 重大會計政策 (續)

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香港特別行政區政府(「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公積金計劃的供款於全面收益表內支銷。

2.12 收入的確認

基金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。

利息收入按實際利率法以應計方式確認。

2.13 外幣換算

本年度的外幣交易按交易日的現貨匯率換算為港元。以非港元為單位的貨幣資產及負債按報告日的收市匯率換算為港元。外幣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。

MATERIAL ACCOUNTING POLICIES (continued)

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 of the Hong Kong Special Administrative Region (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.

Revenue recognition

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.

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.

2 重大會計政策 (續)

2.15 關連人士

基金是根據《營運基金條例》成立，並屬政府轄下的一個獨立會計單位。年內，基金在日常業務中曾與各關連人士進行交易。這些關連人士包括政府各決策局及部門、其他營運基金，以及受政府所管制或政府對其有重大影響力的財政自主機構。

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基金的本會計期首次生效。適用於本財務報表所呈報年度的會計政策，並未因這些發展而有任何改變。

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23)。

4 來自客戶合約之收入

		2024	2023
機電及電子工程服務	Electrical, mechanical and electronic services	8,314,216	7,973,625
工程及顧問服務	Project and consultancy services	450,969	445,557
車輛工程服務	Vehicle services	487,501	454,162
其他	Others	27,991	37,225
總額	Total	9,280,677	8,910,569

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，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。客戶一般須就每項服務預繳固定金額的服務費。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。

MATERIAL ACCOUNTING POLICIES (continued)

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.

CHANGES IN ACCOUNTING POLICIES

The HKICPA has issued certain new or revised HKFRSs that are first effective for the current accounting period of the Fund. There have been no changes to the accounting policies applied in these financial statements for the years presented as a result of these developments.

The Fund has not applied any new standard or interpretation that is not yet effective for the current accounting period (note 23).

REVENUE FROM CONTRACTS WITH CUSTOMERS

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, the Fund satisfies its performance obligation as the service is rendered and recognises the fee over time on a straight-line basis. A customer is normally required to pay a fixed amount of service fee for each service in advance. 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

		2024	2023
員工費用	Staff costs	3,271,699	3,059,532
材料	Materials	549,456	536,035
承辦商費用	Contractors cost	4,634,414	4,462,404
租金及管理費用	Rental and management charges	44,424	38,155
一般運作及行政開支	General operating and administration expenses	458,522	431,157
折舊及攤銷	Depreciation and amortisation	180,990	145,936
審計費用	Audit fees	1,214	1,288
總額	Total	9,140,719	8,674,507

6 其他收入 OTHER INCOME

		2024	2023
銀行存款利息	Interest income from bank deposits	99,312	61,103
外匯基金存款利息	Interest income from placement with the Exchange Fund	224,515	334,046
總額	Total	323,827	395,149

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）除以固定資產平均淨值計算，並以百分比的方式表達。固定資產只包括物業、設備及器材和無形資產。預期基金可以達到由財政司司長根據《營運基金條例》釐定的每年固定資產目標回報率為6.4%（2023: 6.4%）。

The rate of return on fixed assets is calculated as total comprehensive income (excluding interest income) divided by average net fixed assets, and expressed as a percentage. Fixed assets include property, plant and equipment, and intangible assets only. The Fund is expected to meet a target rate of return on fixed assets of 6.4% (2023: 6.4%) per year as determined by the Financial Secretary under the Trading Funds Ordinance.

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	總額
		Land and buildings	Computer equipment	Motor vehicles	Furniture and fixtures	Other equipment	Total
成本	Cost						
在2022年4月1日	At 1 April 2022	950,100	326,582	67,027	478,948	296,830	2,119,487
添置	Additions	–	67,658	1,723	54,096	28,217	151,694
在2023年3月31日	At 31 March 2023	950,100	394,240	68,750	533,044	325,047	2,271,181
在2023年4月1日	At 1 April 2023	950,100	394,240	68,750	533,044	325,047	2,271,181
添置	Additions	–	71,520	9,373	100,023	20,025	200,941
出售	Disposals	–	–	(4,265)	–	–	(4,265)
在2024年3月31日	At 31 March 2024	950,100	465,760	73,858	633,067	345,072	2,467,857
累計折舊	Accumulated depreciation						
在2022年4月1日	At 1 April 2022	254,810	192,012	51,325	232,324	107,250	837,721
年內費用	Charge for the year	7,778	28,590	3,278	24,725	19,576	83,947
在2023年3月31日	At 31 March 2023	262,588	220,602	54,603	257,049	126,826	921,668
在2023年4月1日	At 1 April 2023	262,588	220,602	54,603	257,049	126,826	921,668
年內費用	Charge for the year	7,778	42,117	4,192	30,466	22,908	107,461
出售/註銷回撥	Written back on disposals	–	–	(4,265)	–	–	(4,265)
在2024年3月31日	At 31 March 2024	270,366	262,719	54,530	287,515	149,734	1,024,864
帳面淨值	Net book value						
在2024年3月31日	At 31 March 2024	679,734	203,041	19,328	345,552	195,338	1,442,993
在2023年3月31日	At 31 March 2023	687,512	173,638	14,147	275,995	198,221	1,349,513



9 租賃

LEASES

(a) 使用權資產

Right-of-use assets

建築物  
Buildings

		2024	2023
成本	Cost		
在年初	At beginning of year	107,536	91,579
添置	Additions	19,024	15,957
重新計量租賃負債	Remeasurement of lease liabilities	(4,231)	–
在年終	At end of year	122,329	107,536
累計折舊	Accumulated depreciation		
在年初	At beginning of year	42,665	26,735
年內費用	Charge for the year	17,170	15,930
在年終	At end of year	59,835	42,665
帳面淨值	Net book value		
在年終	At end of year	62,494	64,871

(b) 租賃負債

Lease liabilities

		2024	2023
流動	Current	14,783	16,797
非流動	Non-current	48,839	49,006
總額	Total	63,622	65,803

下表顯示租賃負債的變動，包括現金和非現金變動。

The table below shows changes in lease liabilities, including both cash and non-cash changes.

		2024	2023
在年初	At beginning of year	65,803	65,147
來自融資現金流量的變動：	Changes from financing cash flows:		
支付租賃負債	Payments of lease liabilities	(18,326)	(16,095)
非現金變動：	Non-cash changes:		
重新計量租賃負債	Remeasurement of lease liabilities	(4,331)	–
租賃負債的利息支出	Interest expense on lease liabilities	1,452	794
與新租賃相關的租賃負債增加	Increase in lease liabilities relating to new leases	19,024	15,957
在年終	At end of year	63,622	65,803

9 租賃 (續)

LEASES (continued)

(b) 租賃負債 (續)

Lease liabilities (continued)

租賃負債的剩餘合約期限列載如下，有關資料是根據合約未貼現的現金流量列出：

The remaining contractual maturities of lease liabilities, which are based on contractual undiscounted cash flows, are shown below:

		2024	2023
1年內	Within one year	16,270	17,703
1年後至2年內	After one year but within two years	15,063	17,923
2年後至5年內	After two years but within five years	33,459	31,961
5年後	After five years	3,355	542
總額	Total	68,147	68,129

(c) 於全面收益表內確認與租賃有關的支出項目

Expense items in relation to lease recognised in the statement of comprehensive income

		2024	2023
租賃負債的利息支出	Interest expense on lease liabilities	1,452	794

(d) 租賃之現金流出總額

Total cash outflow for leases

		2024	2023
租賃負債	Lease liabilities	18,326	16,095



10 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	
		2024	2023
成本	Cost		
在年初	At beginning of year	392,661	299,798
添置	Additions	51,378	92,863
在年終	At end of year	444,039	392,661
累計攤銷	Accumulated amortisation		
在年初	At beginning of year	191,187	145,128
年內費用	Charge for the year	56,359	46,059
在年終	At end of year	247,546	191,187
帳面淨值	Net book value		
在年終	At end of year	196,493	201,474

11 外匯基金存款

PLACEMENT WITH THE EXCHANGE FUND

外匯基金存款結餘包括本金40.3億港元（2023：50億港元）及為報告日已入帳但尚未提取的利息20.373億港元（2023：18.065億港元）。存款期為期6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\$4,030 million (2023: HK\$5,000 million) and interest paid but not yet withdrawn at the reporting date of HK\$2,037.3 million (2023: HK\$1,806.5 million). The term of the placement is six years from the date of placement, during which the amount of principal sums cannot be withdrawn.

當一筆本金為22億港元的存款於2023年5月到期時，基金續存12.3億港元的本金，為期6年，並提取餘下9.7億港元的本金。

Upon maturity of the placement with a principal sum of HK\$2,200.0 million in May 2023, the Fund renewed the placement with a principal sum of HK\$1,230.0 million for another six years and withdrew the remaining principal sum of HK\$970.0 million.

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。2024曆年及2023曆年的固定息率均為每年3.7%。

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 Bond for the previous year subject to a minimum of zero percent, whichever is the higher. The interest rate has been fixed at 3.7% per annum for the calendar years 2024 and 2023.

12 應收帳款及其他應收款項

TRADE AND OTHER RECEIVABLES

		2024	2023
應收帳款	Trade receivables	204	15
預付款項	Prepayments	22,996	13,956
銀行存款應計利息	Accrued interest from bank deposits	6,700	7,222
外匯基金存款應計利息	Accrued interest from placement with the Exchange Fund	55,816	62,098
總額	Total	85,716	83,291

13 與客戶的合約結餘

CONTRACT BALANCES WITH CUSTOMERS

(a) 應收款項和合約資產

Receivables and contract assets

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12的應收帳款。至於提供予關連人士的服務，於2024年3月31日的應收款項結餘為3.910億港元（2023：3.849億港元），該結餘已包括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。

For services provided to the general public, the balance of receivables at the reporting date is presented as trade receivables in note 12. For services provided to related parties, the balance of receivables as at 31 March 2024 of HK\$391.0 million (2023: HK\$384.9 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

Contract liabilities

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：

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	2024	2023
機電及電子工程服務	Electrical, mechanical and electronic services	529,967	770,435
工程及顧問服務	Project and consultancy services	153,849	137,049
車輛工程服務	Vehicle services	97,367	115,144
總額	Total	781,183	1,022,628
代表：	Representing:		
向關連人士提供之服務	Services to related parties	772,792	1,014,155
向公眾提供之服務	Services to the general public	8,391	8,473
總額	Total	781,183	1,022,628



13 與客戶的合約結餘 (續)

CONTRACT BALANCES WITH CUSTOMERS (continued)

(b) 合約負債 (續)

Contract liabilities (continued)

年內遞延收入結餘的重大變動開列如下：

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

		2024	2023
因年初遞延收入結餘中的款項 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	(879,199)	(981,600)
因年內收取預繳費用而增加	Increase due to advance payments received during the year	637,754	866,174

於2024年3月31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估計為54.171億港元（2023：66.442億港元），基金預期該金額於未來5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 aggregate amount of the transaction price allocated to the performance obligations that are unsatisfied (or partially unsatisfied) as at 31 March 2024 is estimated at HK\$5,417.1 million (2023: HK\$6,644.2 million), which is expected to be recognised as revenue over the next five years. No consideration from contracts with customers is not included in the transaction price.

14 客戶按金

CUSTOMERS' DEPOSITS

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辦商的採購費用。

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.

15 僱員福利撥備

PROVISION FOR EMPLOYEE BENEFITS

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

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 (see note 2.11).

16 營運基金資本

TRADING FUND CAPITAL

此為政府對基金的投資。

This represents the Government's investment in the Fund.

17 保留盈利

RETAINED EARNINGS

		2024	2023
在年初的結餘	Balance at beginning of year	6,002,600	6,260,989
年度總全面收益	Total comprehensive income for the year	463,785	631,211
政府法定回報	Statutory return to the Government	(1,266,142)	(889,600)
在年終的結餘	Balance at end of year	5,200,243	6,002,600

年內，政府根據《營運基金條例》指示將截至2023年3月31日止年度的目標回報（見附註7）及其他盈餘轉撥至政府一般收入，而該轉撥於2023年6月及2024年3月完成（2023：截至2022年3月31日止年度的目標回報及其他盈餘的轉撥於2023年3月完成）。

During the year, the Government directed the transfer of the target return (see note 7) for the year ended 31 March 2023 and other surpluses into general revenue pursuant to the Trading Funds Ordinance, and the transfers were made in June 2023 and March 2024 (2023: the transfer of the target return for the year ended 31 March 2022 and other surpluses was made in March 2023).

18 現金及等同現金

CASH AND CASH EQUIVALENTS

		2024	2023
現金及銀行結餘	Cash and bank balances	18,875	13,579
銀行存款	Bank deposits	2,490,000	2,745,000
小計	Subtotal	2,508,875	2,758,579
減：原有期限為3個月以上的銀行存款	Less: Bank deposits with original maturities over three months	—	(240,000)
現金及等同現金	Cash and cash equivalents	2,508,875	2,518,579

19 資本承擔

CAPITAL COMMITMENTS

於2024年3月31日，基金尚未在財務報表內撥備的資本承擔如下：

As at 31 March 2024, the Fund had capital commitments, so far as not provided for in the financial statements, as follows:

		2024	2023
已批准及簽約	Authorised and contracted for	9,714	21,885
已批准惟未簽約	Authorised but not yet contracted for	117,322	78,375
總額	Total	127,036	100,260



20 或有負債

於2024年3月31日，基金就一銀行向若干受益客戶發出的3,820萬港元（2023：4,370萬港元）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。

21 關連人士的交易

除已在本財務報表內另作披露的交易外，年內與關連人士進行的其他重大交易摘述如下：

- (a) 基金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，以及工程及顧問服務。這些服務的收入總額為92.798億港元（2023：89.101億港元）；
- (b) 關連人士向基金提供的服務包括維修、辦公地方、中央行政，以及審計。這些服務的支出總額為1.434億港元（2023：1.220億港元）；以及
- (c) 向關連人士購入的固定資產包括裝置工程、電腦軟件及車輛。這些資產的成本總額為1,260萬港元（2023：280萬港元）。

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。

CONTINGENT LIABILITIES

As at 31 March 2024, the Fund had provided a bank with counter-indemnity in respect of performance bonds for HK\$38.2 million (2023: HK\$43.7 million) issued by the bank in favour of certain customers who are related parties of the Fund.

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\$9,279.8 million (2023: HK\$8,910.1 million);
- (b) services received from related parties included maintenance, accommodation, central administration and auditing. The total cost incurred on these services amounted to HK\$143.4 million (2023: HK\$122.0 million); and
- (c) acquisition of fixed assets from related parties included fitting out projects, computer software and motor vehicles. The total cost of these assets amounted to HK\$12.6 million (2023: HK\$2.8 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.

22 金融風險管理

22.1 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。

22.2 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。基金的信用風險被視為有限。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。

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：

		2024	2023
信用評級：	Credit rating:		
Aa1 至 Aa3	Aa1 to Aa3	518,845	673,579
A1 至 A3	A1 to A3	1,800,000	2,085,000
Baa1 至 Baa3	Baa1 to Baa3	190,000	—
總額	Total	2,508,845	2,758,579

雖然其他金融資產須符合減值規定，但基金估計其預期信用虧損輕微，因此無須作出虧損準備。

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。

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. The Fund's exposure to credit risk is considered to be limited. The loss allowances are measured at amounts equal to 12-month expected credit losses, which are assessed to be immaterial by the Fund.

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, the Fund has estimated that their expected credit losses are minimal and considers that no loss allowance is required.

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



22 金融風險管理 (續)

22.3 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。

基金採用預期現金流量分析來管理流動資金風險，即透過預測所需的現金款額及監察基金的營運資金，確保可以償付所有到期負債及應付所有已知的資金需求。

22.4 利率風險

利率風險指金融工具的公平值或未來現金流量會因市場利率變動而波動的風險。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帳，市場利率的變動不會影響其帳面值及基金的年度盈利。

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。

22.5 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。

FINANCIAL RISK MANAGEMENT (continued)

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 is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of 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 for the year.

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.

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.

22 金融風險管理 (續)

22.6 其他金融風險

基金因於每年1月釐定的外匯基金存款息率（附註11）的變動而須面對金融風險。於2024年3月31日，假設息率增加/減少50個基點而其他因素不變，估計年度盈利將增加/減少3,030萬港元（2023：3,400萬港元）。

22.7 公平值

所有金融工具均以與其公平值相等或相差不大的金額在財務狀況表內列帳。

23 已頒布但於截至2024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2024年3月31日止年度尚未生效，亦沒有在本財務報表中採納。其中包括以下可能與基金有關。

在以下日期或之後 開始的會計期生效	
香港財務報告準則 第18號「財務報 表列報和披露」	2027年1月1日

基金正就該等修訂、新準則及詮釋在首次採納期間預計會對其財務報表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。

FINANCIAL RISK MANAGEMENT (continued)

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 11). As at 31 March 2024, it is estimated that an increase/decrease of 50 basis points in the interest rate, with all other variables held constant, would have increased/decreased the profit for the year by HK\$30.3 million (2023: HK\$34.0 million).

Fair value

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 2024

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 2024 and which have not been adopted in these financial statements. These include the following which may be relevant to the Fund:

Effective for accounting periods beginning on or after	
HKFRS 18 “Presentation and Disclosure in Financial Statements”	1 January 2027

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



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漁農自然護理署	Agriculture, Fisheries and Conservation Department
土木工程拓展署	Civil Engineering and Development Department
鄉郊保育辦公室	Countryside Conservation Office
香港海關	Customs and Excise Department
衛生署	Department of Health
消防處	Fire Services Department
食物環境衛生署	Food and Environmental Hygiene Department
政府產業署	Government Property Agency
路政署	Highways Department
香港警務處	Hong Kong Police Force
醫院管理局	Hospital Authority
入境事務處	Immigration Department
九龍醫院	Kowloon Hospital
康樂及文化事務署	Leisure and Cultural Services Department
東區尤德夫人那打素醫院	Pamela Youde Nethersole Eastern Hospital
瑪嘉烈醫院	Princess Margaret Hospital
運輸署	Transport Department
屯門醫院	Tuen Mun Hospital





機電工程署  
香港九龍啟成街3號

**Electrical and Mechanical Services Department**  
3 Kai Shing Street, Kowloon, Hong Kong

電話 Tel: (852) 2333 3762 傳真 Fax: (852) 2890 7493  
網址 Website: [www.emsd.gov.hk](http://www.emsd.gov.hk)  
電郵 Email: [info@emsd.gov.hk](mailto:info@emsd.gov.hk)