

機電 E&M 服務新里程 A New Journey

機電工程營運基金第二個五年策略計劃
Electrical and Mechanical Services Trading Fund
The 2nd 5-year Strategic Plan



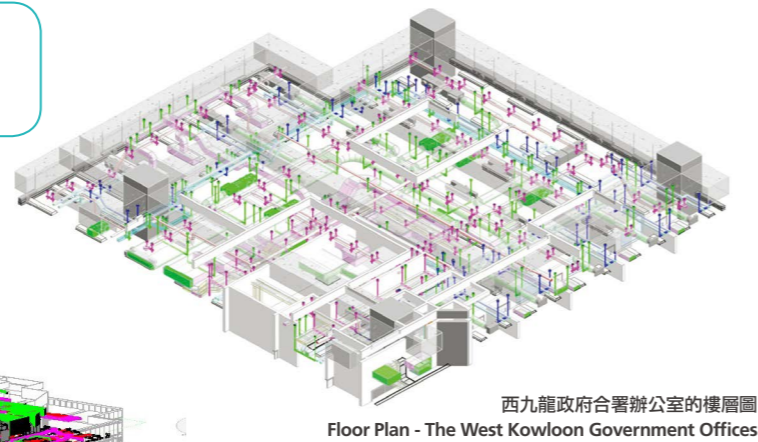
最新進展
Latest Progress
2019 年 4 月
April 2019



策略 1
STRATEGY

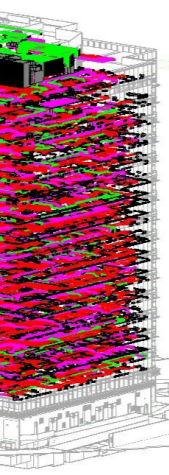
機電數碼化
E&M Digitisation

制訂數碼化工程方案
Developing Digitised E&M
Engineering Solutions

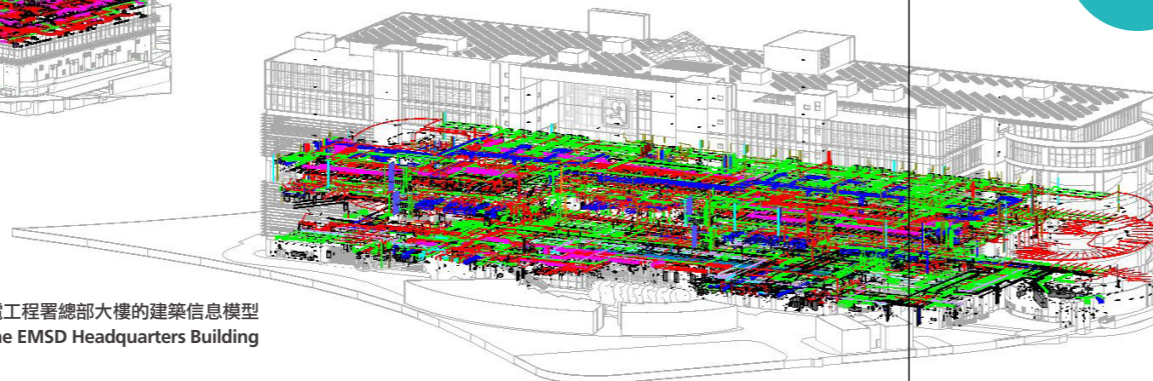


西九龍政府合署辦公室的樓層圖
Floor Plan - The West Kowloon Government Offices

深化協作 實踐數碼化
Deepen Collaboration,
Implementing Digitisation



西九龍政府合署的建築信息模型
BIM model - The West Kowloon Government Offices



機電工程署總部大樓的建築信息模型
BIM model - The EMSD Headquarters Building

事例 1
CASE

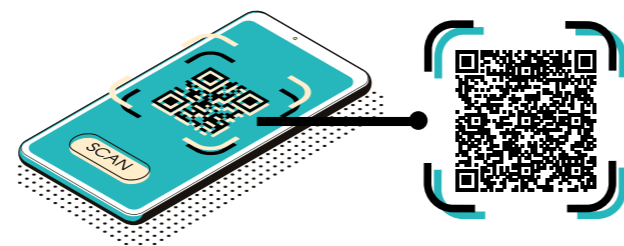
全力推動「建築信息模擬—資產管理」先導計劃
Fully Committed to Promoting the
"Building Information Modelling - Asset Management" Pilot Projects

機電工程署（機電署）一直投放大量資源發展和推動創新科技，並致力與業界攜手引進尖端技術。舉例來說，新落成的西九龍政府合署和現有的機電署總部大樓正採用「建築信息模擬—資產管理」（BIM-AM）系統，進行數碼化先導計劃。此外，天水圍醫院及香港兒童醫院的整套 BIM 模型之建設工程亦將於 2019/20 年度完成。

同時，機電署會根據發展局在其工務技術通告中提出的最新建議，主動在涉款港幣 3 000 萬元以上的工程項目應用 BIM-AM 系統。再者，機電署已於 2019 年 1 月 18 日正式發出最新版本的 BIM-AM 標準及指引供業界伙伴參考，相關詳情可瀏覽機電署網站或掃描以下二維碼。

The Electrical and Mechanical Services Department (EMSD) has been devoting substantial resources to the development and promotion of innovative technologies, and is committed to working with the trade for the introduction of state-of-the-art technologies. For example, pilot projects for digitalisation are being carried out at both the newly constructed West Kowloon Government Offices and the existing EMSD Headquarters Building with the adoption of "Building Information Modelling - Asset Management" (BIM-AM) system. In addition, the construction of full BIM models for the Tin Shui Wai Hospital and Hong Kong Children's Hospital will also be completed in 2019/20.

Meanwhile, the EMSD will, under the latest recommendation proposed in the works technical circular of the Development Bureau, proactively apply the BIM-AM system in projects with estimates of more than HK\$30 million. Furthermore, the EMSD officially launched an updated version of the BIM-AM Standards and Guidelines on 18 January 2019 for reference by trade partners. For details, please visit the EMSD website or scan the QR code below.



最新的 BIM-AM 標準及指引（發佈於本署網站）
Updated version of BIM-AM Standard and Guidelines (published in EMSD's website)

DATABASE



Power Consumption	Cooling Load
17960 kWh (度)	1922 RT (冷噸)
EUI 765 kWh/m ²	Average Daily Usage 907 RT
Average Daily Usage 58415 kWh	上月每日平均冷量
上月同月平均用電量	
Water Consumption	Carbon Emission
5 m ³ (立方米)	CO ₂ 8980 kg (公斤)
1m ³ = 1000L	1KWh = 0.5 kg CO ₂
Average Daily Usage 176 m ³	Average Daily Usage 29207 kg
全年每日平均用水量	上月同月平均碳排放量

事例 2
CASE

執行綜合樓宇管理系統工程指引 邁向數碼化新時代
Implementation of Engineering Guidelines on iBMS towards a New Digital Era

機電署已制訂綜合樓宇管理系統 (iBMS) 工程指引，並以此作為機電系統數碼化的標準。我們根據有關指引，於機電署總部大樓（一般辦公室）及公共衛生檢測中心（特殊用途的建築物）等地點完成相關數碼化設備的安裝工作，使我們能取得這些建築物的重要資訊，例如即時耗電量、耗水量、碳排放量等。

此外，為引領機電數碼新時代，機電署將為客戶的主要建築物訂立數碼化計劃，涵蓋各主要機電系統，包括冷氣、電氣、消防、照明、升降機和自動梯、無間斷供電及緊急發電機。

The EMSD has developed engineering guidelines on the integrated Building Management System (iBMS), which serve as a standard for the digitisation of electrical and mechanical (E&M) systems. We have, in accordance with the guidelines, completed the installation of relevant digitised equipment in the EMSD Headquarters Building (general office) and Public Health Laboratory Centre (specialised building), etc., so that we can have access to the essential information of these buildings, such as instantaneous power consumption, water consumption, carbon emission and so on.

Besides, to take the lead in a new era of E&M digitisation, the EMSD is going to establish digitisation plans for major buildings of clients, covering major E&M systems such as air-conditioning, electrical installations, fire services, lighting, lifts and escalators, uninterruptible power supply and emergency generators.

事例 3
CASE

共同編製「機電資產最佳操作和維修作業守則」
Co-create "Best Practices for Operation and Maintenance of E&M Assets"

為編製機電資產最佳操作和維修作業守則，機電署與業界伙伴已成立工作小組，並邀請工作小組內的業界持份者成員參與 2019 年 1 月 24 日舉行的首次工作小組會議，討論有關作業守則的編製工作。

To compile the Best Practices for Operation and Maintenance of E&M Assets, the EMSD has formed a working group with trade partners, and invited members of the working group who are industry stakeholders to attend the first working group meeting on 24 January 2019 to discuss the preparation works in compiling the Best Practices.



「最佳操作和維修作業守則」工作小組首次會議
First meeting of the working group on "Best Practices for Operation and Maintenance of E&M Assets"

策略 2 STRATEGY 2

培育團隊 Excellent Work Team



建立專門技術及數碼化團隊 Establish Work Teams with Specialised Technology and Digitisation Practices

事例 4 CASE 4

加強與大灣區伙伴合作 簽訂《機電人才發展合作備忘錄》 Strengthen Collaboration with Partners in Greater Bay Area through Signing of MoC on E&M Talent Development

機電署於 2018 年 11 月 6 日與廣州市人力資源和社會保障局簽訂《機電人才發展合作備忘錄》，確立雙方在未來三年的合作框架，包括為兩地機電業界提供經驗交流平台和實習機會，以及舉辦有關先進科技發展和應用的培訓課程等。

The EMSD signed a Memorandum of Co-operation (MoC) on E&M Talent Development with the Guangzhou Municipal Human Resources and Social Security Bureau on 6 November 2018, establishing a collaboration framework between the two parties in the next three years, which includes experience-sharing platforms, internship opportunities and training courses on advanced technology development and applications for the E&M sectors in Guangzhou and Hong Kong.



完成《機電人才發展合作備忘錄》簽署儀式後合照留念
Group photo taken after the signing ceremony of MoC on E&M Talent Development

事例 5 CASE 5

粵港合作 備戰「世界技能大賽」 Co-operation between Guangzhou and Hong Kong in Nurturing Talents for WorldSkills Competition

繼 2018 年 7 月 20 日與廣州市工貿技師學院（學院）進行世界技能大賽（世賽）第一期聯合集訓後，機電署再於 2019 年 3 月 24 至 30 日與學院進行世賽第二期聯合集訓，以助兩地選手為 2019 年於俄羅斯喀山舉行的世賽積極備戰。

機電署亦於 2018 年 12 月 17 至 21 日與學院舉辦了第一期製冷與空調技術員培訓班。再者，在機電署安排下，香港空調及冷凍商會於 2019 年 1 月 24 日組織了考察團到訪學院，探討兩地籌辦有關空調技術聯合培訓課程的合作機會。

After the first joint training with the Guangzhou Industry and Trade Technician College (GITTC) on 20 July 2018 in preparation for the WorldSkills Competition, the EMSD conducted the second joint training with GITTC from 24-30 March 2019 to help contestants from both places prepare for the upcoming WorldSkills Competition to be held in Kazan, Russia, in 2019.

The EMSD also collaborated with GITTC in organising the first Refrigeration and Air-conditioning Technician Training Course from 17-21 December 2018. In addition, under the arrangement of the EMSD, the Hong Kong Air Conditioning and Refrigeration Association formed a delegation to visit GITTC on 24 January 2019 in a bid to explore collaboration opportunities of co-organising joint training courses on air-conditioning technology.

粵港兩地世賽選手交流經驗和技術
Contestants of the WorldSkills Competition
from Guangzhou and Hong Kong share and
exchange their experiences and skills

事例 6 CASE 6

提升見習技術員的技術至國際水平 Enhance Skills of Technician Trainees to International Level

機電署已委聘來自紐西蘭的教育顧問公司 Skills International Limited，協助優化技術員訓練計劃（電氣行業）的訓練大綱，以期與國際水平接軌。該公司於 2018 年 11 月 19 至 23 日期間派員到港，為機電署的電氣行業特別工作小組提供培訓。機電署代表人員亦於 2018 年 12 月上旬前往紐西蘭，與當地電氣行業職訓專家商討適合部門採用的「在職-職場能力評核」的實施方向及方法。

The EMSD has engaged Skills International Limited, an educational consultancy from New Zealand, to optimise the training programme of the Technician Training Scheme (Electrical Trade) to meet international standards. From 19-23 November 2018, officers from Skills International Limited came to Hong Kong to provide training for the Trade Specific Working Group (Electrical) of EMSD. On the other hand, representatives from the EMSD also visited New Zealand in early December 2018 to discuss with local vocational training experts specialised in the electrical trade on the direction and method of implementing the "on-the-job workplace assessment" which is suitable to be adopted by the EMSD.



廣泛應用創新科技於學員培訓
Wide adoption of innovative technology in trainings

來自紐西蘭的教育顧問正與機電署代表熱切交流
Education consultants from New Zealand are having a fruitful discussion with the EMSD representatives

事例 7 CASE 7

機電業博覽 2019 — 吸納機電生力軍 E&M Expo 2019 – Attracting New Blood to the E&M Trade

機電業博覽 2019 於今年 3 月 8 日在職業訓練局葵涌大樓舉行。機電署署長薛永恒先生在出席活動時表示，機電工程機遇處處，行業前景非常樂觀。他鼓勵年青人加入機電業，一起為建設香港未來出一分力。是次博覽以「機電新動力」為題，展示機電業在建設智慧香港方面所作出的貢獻，吸引逾 2 000 人參觀。

The E&M Expo 2019 was held on 8 March this year at the Vocational Training Council Kwai Chung Complex. Addressing the Expo, the Director of Electrical and Mechanical Services, Mr. Alfred Sit, said that the development potential of the E&M industry is enormous. He encouraged young people to join the industry and contribute to Hong Kong's future. With the theme of "E&M New Momentum", the Expo, which showcased the efforts of E&M trades in developing a smart Hong Kong, attracted more than 2 000 visitors.



機電業博覽 2019 的剪影
Highlights of the E&M Expo 2019

新文化 新環境
New Cultures New Environments



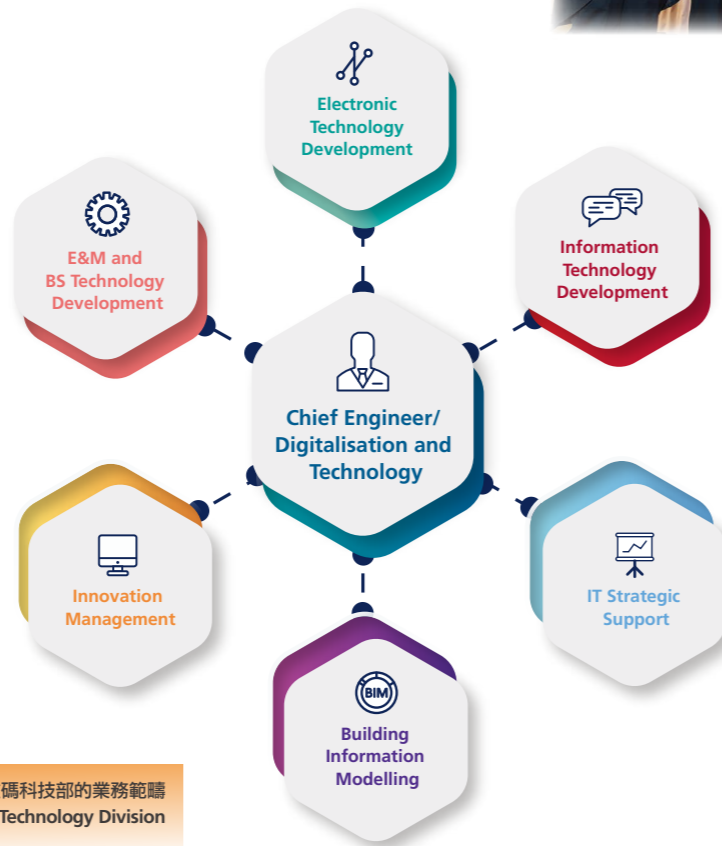
新架構 新工作模式
New Organisational Structures
New Working Modes

事例 8
CASE

成立數碼科技部 加強機電數碼化
Set up the Digitalisation and Technology Division to Enhance E&M Digitisation

為配合機電工程營運基金邁向機電 2.0 的服務新里程，我們重新檢視了營運基金各部別的服務範圍，並重組架構，務求為客戶提供一站式、綜合和全面的機電操作、維修保養和項目管理服務。與此同時，因應發展創科的需要，我們成立了數碼科技部，以加強推動創新和數碼化轉型。新架構已於 2018 年 10 月 1 日實施。

To move towards a new journey of E&M 2.0, the Electrical and Mechanical Services Trading Fund has re-examined the service scopes of various divisions and has re-organised its structure to provide one-stop, integrated and comprehensive E&M operation, maintenance and project management services for client departments. Meanwhile, in response to the needs for the development of innovation and technology (I&T), we set up the Digitalisation and Technology Division to strengthen the promotion of innovation and digital transformation. The new organisational structure took effect on 1 October 2018.



數碼科技部的業務範疇
Scope of the Digitalisation and Technology Division

事例 9
CASE

組成創新小隊 實踐優秀創科概念
Form InnoTeams to Put Outstanding I&T Concepts into Practice

去年，我們舉辦了「Inno@E&M 創新科技挑戰賽」，以培養部門的創新文化。大會在 2018 年 12 月進行評審後，已選出優勝隊伍。這些隊伍成立了 24 支創新小隊，準備落實有關構思，致力為各政府部門及公營機構改善服務，提升生產力和效率。

Last year, we organised the Inno@E&M Challenge to cultivate an innovation culture in the Department. Upon assessment by the panel in December 2018, winning teams were selected. They have formed 24 InnoTeams which are prepared to implement the proposed ideas, with a view to improving the services and enhancing the productivity and efficiency of government departments and public bodies.



財政司司長頒發獎項予「Inno@E&M 創新科技挑戰賽」的冠軍隊伍
Financial Secretary presents awards to the champion of the Inno@E&M Challenge

「智能發燒偵測系統」
— 模擬使用情況
Simulated usage of the Smart Fever Screening System



事例 10
CASE

網上創新科技協作平台已成功配對逾 50 個試驗項目
Over 50 Trial Projects Successfully Matched via E&M InnoPortal

網上創新科技協作平台 (E&M InnoPortal) 已收到超過 140 個來自政府部門、公營機構及機電業界的科技需求，以及 90 多個由初創企業及大學提供的解決方案，而成功配對的試驗項目則有 50 多個。舉例來說，由機電署聯同香港科技大學研發的「智能發燒偵測系統」榮獲「香港工程師學會青年會員創意獎 2019 (組別 I – 專業發明) 大獎」，更獲創新及科技局的科技統籌 (整體撥款) 計劃資助。該系統結合人工智能與紅外線熱成像技術，有助提升衛生署在邊境口岸進行健康檢查的效率。系統的設計專利申請已予遞交，而系統亦將於選定的出入境管制站進行測試。

The E&M InnoPortal has received more than 140 technology needs (I&T Wish List) from government departments, public bodies and the E&M trade as well as over 90 solutions from start-ups and universities, of which more than 50 trial projects have been successfully matched. For example, the Smart Fever Screening System jointly developed by the EMSD and the HKUST was awarded the grand prize of the HKIE Innovation Awards for Young Members 2019 (Category I – An Invention) and has received funding support from the Innovation and Technology Bureau's TechConnect (Block Vote). Integrating artificial intelligence with infrared thermal imaging, the system could enhance the health clearance efficiency of the Department of Health at boundary control points. A patent for the design of the system has been filed and trials on the system are going to be conducted in selected immigration control points.



機電署同事獲頒「香港工程師學會青年會員創意獎 2019」
The EMSD staff are awarded the prestigious HKIE Innovation Awards for Young Members 2019

事例 11
CASE

打造創新辦公室環境
Create an Innovative Office Environment

位於機電署總部大樓 4 樓的保安及車輛工程部新辦公室已於 2019 年 1 月中正式啟用。新辦公室的設計融入科技及鼓勵創新文化的元素，從而促進員工與持份者之間的交流。舉例來說，新辦公室設有開放式空間，以加強員工之間的知識共享和推動團隊合作，更利用不同顏色的地毯營造充滿活力的效果，並盡量把自然光引入室內，為員工打造出令人耳目一新的工作環境。

The new office of the Security and Vehicle Services Division, which is located on the 4/F of the EMSD Headquarters Building, was officially opened in mid-January 2019. The design of the new office integrates the elements of technology and an innovation-encouraging culture so as to facilitate communication between staff and stakeholders. For example, the new office is designed with an open space to enhance knowledge sharing among staff and promote teamwork. It features carpets of different colours to create a sense of vibrancy and brings as much natural light as possible into the office, thus creating a refreshing working environment for our staff.



保安及車輛工程部 — 煥然一新的辦公室設計
Security and Vehicle Services Division - Refreshing office design



辦公室設有開放式空間，促進同事間溝通合作
The office is designed with an open space to facilitate communication and cooperation among colleagues



如您對機電工程營運基金第二個五年策略計劃有任何建議，
歡迎以電郵方式向我們提出：

We welcome your suggestions on the second five-year strategic plan for the EMSTF.
And for enquiries, please email us at

2nd5yearplan@emsd.gov.hk

如欲瀏覽機電工程署創新科技協作平台，請到以下網址：

For the E&M InnoPortal, please visit:

<https://www.emsd.gov.hk/inno>

如欲瀏覽機電工程署主網頁，請到以下網址：


To view the main website of EMSD, please go to the following website:

<https://www.emsd.gov.hk>

如有其他查詢，請與我們聯絡：

For all enquiries please contact us:

 : (852) 2808 3168

 : (852) 2882 1574



機電2.0
服務新里程
機電工程營運基金
第二個五年策略計劃

機電工程署
EMSD

