GOLD

Electrical and Mechanical Services Department, the Government of the Hong Kong Special Administrative Region of the People's Republic of China

機電工程署 EMSD

INTRODUCTION OF ORGANISATION

The Electrical and Mechanical Services Department (EMSD), with two function arms - Regulatory Services (RS) and Trading Services (TS), plays a dual role of regulating E&M safe operations by law enforcement and public education, while providing professional, comprehensive and cost-effective E&M engineering services for government departments and public bodies to continuously enhance our citizens' quality of life. The RS team ensures E&M safety for the public and promotes energy saving by enforcing ordinances related to electricity, gas, lifts and escalators, railway and energy efficiency. The TS team provides one-stop professional and quality E&M services for government departments and public organisations.

THREE WINNING FACTS

In response to the Hong Kong Smart City Blueprint and EMSD's 2nd 5-year Strategic Plan, EMSD established the very first RDCC (Regional Digital Control Centre) for E&M digitalisation. The RDCC is responsible for remote real-time equipment monitoring, indicative alarm for fault responses and energy management, etc. with the ultimate goal to enhance E&M assets' operational efficiency and environmental performance by artificial intelligence (AI) and big data analytics. Frontline staff and engineers can monitor assets at multiple sites remotely via centralised dashboards with the E&M equipment status and alarms at various dispersed sites.

EMSD has investigated the integration of BIM and various operation and maintenance (O&M) systems/tools to streamline O&M workflow for smart facility management/asset management (AM) system. EMSD has developed an integrated BIM-AM System featuring multiple O&M systems/ tools in single platform since 2014 and the system was granted a patent. BIM-AM System is a highly visual, real-time O&M and asset management tool that can enhance the maintainability and availability of E&M facilities. The platform has proven to be very effective in streamlining the workflow and facilitating responsive incident handling, and can bring about long-term cost savings in operation stage of building lifecycle.

EMSD started to build the Government-Wide Internet-of-Things Network ("GWIN") in 2019 to support digitalisation and real-time monitoring of engineering assets at government buildings and facilities. GWIN is a government network consisting various types of sensors which connected to gateways through LoRa (Long Range) technology. The LoRa-based sensors are battery-operated with low power consumption and easy to install. GWIN is a private network and it ensures the security of the system and data. EMSD makes use of GWIN and various types of LoRa sensors to conduct remote monitoring and control of E&M equipment as well as to support smart city management.

Enhance E&M assets' operational efficiency and environmental performance by artificial intelligence and big data analytics

GWIN provided a quick IoT network solution to cover wide area construction sites to support site safety applications

Adoption of the Building Information Modelling - Asset Management System to enhance the efficiency of electrical and mechanical facility management