

促進創科發展

Promoting Innovation and Technology Development

為促進智慧城市發展，我們一直致力善用創新科技，並訂立機電數碼化的策略，以配合客戶需要。

創科數碼方案獲頒國際獎項

我們持續推行先導計劃，為客戶的機電設施提供數碼化工程方案，而這些創科方案更獲得國際殊榮。機電署於去年為屯門學童牙科診所加裝自行研發的數碼化空調、配電及能源管理系統設備，不但提升機電設施的運作效率，亦有助加強預防性維修保養。機電署憑藉這個創科方案，於今年5月獲英國屋宇裝備工程師學會頒發「最佳小型項目 / 協作數碼獎」，以表揚我們在應用數碼科技及數據分析以提升屋宇裝備效益的傑出成績。另外，我們與懲教署在智慧監獄創科方案下開發的「維生指標監察系統」和「移動及位置監察系統」，在第47屆日內瓦國際發明展榮獲金獎，證明我們的創科方案能有效提升懲教院所的管理效率。

創科項目切合客戶需要

為提高土地的使用效率，以及配合運輸署發展智能停車場的需要，我們以總部大樓作為試驗場地，於6月完成安裝「拼圖式升降橫移立體泊車系統」。這個嶄新的智能泊車系統，共有三層高，配合每層五格的設計，合共能提供13個泊車位，較原來泊車位數量增加一倍。這個系統不但採用全自動電腦系統控制機械式裝置，協助移動車輛到空置泊位，方便存取車輛，更配合智慧城市的發展，納入多個創新方案。舉例來說，我們可以透過內聯網預約訪客車位；車路入口亦裝設了車牌閱讀器，在核實車牌後，電子屏幕會顯示獲編配的泊車位置；使用者亦可在電腦及智能電話程式即時查看泊位空置情況，更可預約取車，要求系統預先把車輛移到地面。



機電署署長薛永恒先生(左二)遠赴英國倫敦出席英國屋宇裝備工程師學會舉行的頒獎典禮，領取「最佳小型項目 / 協作數碼獎」。

The Director of Electrical and Mechanical Services, Mr. Alfred Sit (2nd left), attended the award presentation ceremony of the CIBSE in London, the United Kingdom, to receive the Digital Award for the Best Small Project / Collaboration.

機電署與懲教署開發的智慧監獄系統在第47屆日內瓦國際發明展獲得金獎。圖為開發這套系統的機電署人員與懲教署代表(中)於頒獎禮後合照。

The smart prison system that we developed with the CSD won the Gold Medal in the 47th International Exhibition of Inventions of Geneva. Pictured are the EMSD officers who developed the system and the CSD representative (middle) after the award presentation ceremony.



藉着該先導計劃，我們就發展智能停車場向運輸署提供技術支援，以及與業界分享興建同類型泊車系統的經驗。

數碼轉型里程碑

我們自行研發的「建築信息模擬—資產管理」系統，是另一個數碼轉型的先導項目。該系統已應用於新建的西九龍政府合署，是數碼轉型發展的里程碑，意義重大，原因是該項目為首個根據機電署所制訂的「建築信息模擬—資產管理」系統

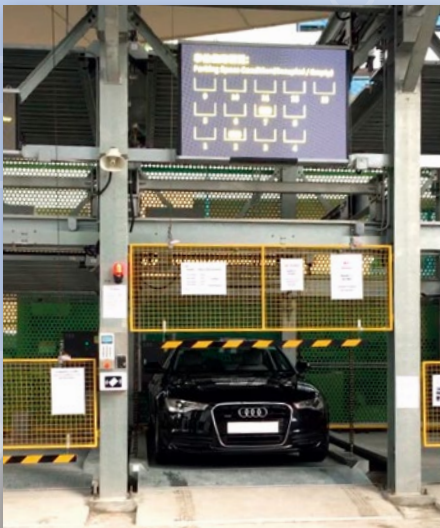
交付標準及指引，提供完整建築信息模擬模型和資產信息的項目。經採納客戶部門及業界意見，機電署《建築信息模擬—資產管理標準及指引》第二版已於2019年1月正式發布，並上載至機電署網站，歡迎大家掃描以下二維碼或點擊<https://bit.ly/2XrcNB0> 瀏覽。



發展物聯網數碼化工程

要把機電世界數碼化亦是一項十分龐大的工程。我們與渠務署防洪組率先推行物聯網技術應用的先導計劃，提供創新技術和具成本效益的方案，打造智慧渠務系統。我們在雨季和風季期間經常氾濫的沙田城門河、大埔林村河及大埔河河道附近的雨水泵房和橋樑，分別安裝了物聯網網站和感測器，把在感測器取得的河水水位高度資料，經物聯網網站傳送至位於機電署總部的政府物聯網，以評估物聯網技術的應用情況。無線物聯網通訊技術能快速監測已部署的工作，不但具成本效益，而且提供豐富數據，應用範圍廣泛，可作為大數據分析的基礎。我們會把收集得來的數據進行分析，再與渠務署共同商討進一步安排，以應用新的物聯網技術，在雨季和風季為市民的安全提供更佳保障。

客戶如對創科項目有興趣，請與我們的高級工程師林鑫駿先生聯絡(電話：2808 3879)。



To facilitate smart city development, we have been committed to leveraging I&T and have formulated a strategy of E&M digitisation to meet the needs of our clients.

I&T Digital Solutions Win International Awards

We continuously implement pilot projects to provide digitised engineering solutions for clients' E&M facilities. These I&T solutions have received international awards. Last year, the EMSD installed its self-developed digitised air-conditioning, electricity distribution and energy management system at the Tuen Mun School Dental Clinic. Not only does it enhance the operational efficiency of E&M facilities, but it also helps strengthen preventive maintenance. The EMSD received the Digital Award for the Best Small Project / Collaboration from the Chartered Institution of Building Services Engineers (CIBSE) with this I&T solution in May this year, in recognition of our outstanding achievements in applying digital technology and data analysis to improve the efficiency of building services. Besides, the Health Signs Monitoring System and Passage Surveillance System that we developed with the Correctional Services

Department (CSD) under the smart prison I&T solution won the Gold Medal at the 47th International Exhibition of Inventions of Geneva, demonstrating that our I&T solutions can effectively enhance the management efficiency of correctional institutions.

I&T Project that Meets Clients' Needs

To enhance the efficiency of land utilisation and meet the needs of the Transport Department (TD) to develop smart car parks, we made our headquarters building a testing ground and completed the installation of the Puzzle Parking System in June. This new smart parking system has three storeys in total. With a design of five-grid per storey, it offers a total of 13 parking spaces, doubling the original capacity. This system not only uses a fully automated computer system to control the mechanical installations in order to help move a vehicle to a vacant parking space, which facilitates the parking and retrieval of vehicles, but it also dovetails with smart city development and incorporates multiple innovative solutions. For instance, we can reserve parking spaces for visitors via the intranet; a licence plate reader is installed at the vehicle entrance, and the allocated parking location will be displayed on the electronic screen upon verification of the

高三層的新型智能「拼圖式升降橫移立體泊車系統」能增加一倍的泊車位數量。
The new three-storey smart Puzzle Parking System can double the original parking capacity.





今年六月，我們已於沙田城門河、大埔林村河和大埔河的橋樑完成安裝物聯網感測器。圖為裝設在南運路上用以監測林村河河水水位高度的物聯網感測器。

The installation of IoT sensors at bridges on Shing Mun River in Sha Tin, Lam Tsuen River and Tai Po River in Tai Po was completed in June this year. Pictured is an IoT sensor installed on Nam Wan Road to monitor the water level of Lam Tsuen River.

car plates; users can also view the parking spaces available in real-time via the computer and smartphone applications, make a booking for car retrieval and request the system to move the vehicle to ground level in advance.

By this pilot project, we provide technical support to the TD on the development of smart car parks, and share with the trade our experience for the construction of the same type of parking system.

Milestone in Digital Transformation

Our self-developed Building Information Modelling – Asset Management (BIM-AM) system is another pilot project of digital transformation. The application of the system in the newly built West Kowloon Government Offices (WKGO) is a milestone in the development of digital transformation and of significant importance, as it is the first project that provides complete BIM model and asset information according to the BIM-AM system's delivery standards and guidelines developed by the EMSD. After incorporating comments from client departments and the trade, version 2.0 of the BIM-AM Standards and Guidelines was officially released in January 2019

and uploaded to the EMSD website. You are welcome to scan the QR code or click on the link on page four to view the content.

Develop Digitisation of Internet of Things

The digitisation of the E&M world is also a huge project. The EMSD and the Flood Control Section of the Drainage Services Department (DSD) took the lead to introduce a pilot programme for the application of Internet of Things (IoT) to provide innovative technologies and cost-effective solutions, with a view to developing a smart drainage system. We have installed IoT base stations and sensors at the stormwater pumping stations and bridges respectively near rivers that are prone to flooding during rainy and typhoon seasons, such as Shing Mun River in Sha Tin, Lam Tsuen River and Tai Po River in Tai Po, so that information on the river water level collected from the sensors can be transmitted to the Government-wide IoT Network at the EMSD Headquarters via IoT base stations for assessment of the application of IoT technologies. Wireless IoT communication technologies can provide quick monitoring of the jobs

deployed, which are not only cost-effective, but also offer rich data with a wide range of applications to serve as the basis for big data analysis. We will analyse the collected data and discuss with the DSD on further arrangements to apply the new IoT technologies for better protection of public safety during rainy and typhoon seasons.

If you are interested in I&T projects, please contact Mr. Tommy Lam, Senior Engineer, at 2808 3879.