

採用機電裝備合成法安裝大型設備更輕鬆

MiMEP Greatly Facilitates Installation of Large Equipment

機電署首次在總部大樓應用「機電裝備合成法」更換空氣處理機組，大大提升工程效益。「機電裝備合成法」利用「場外預製、場內裝嵌」的方式，預先在工廠生產機電組件，然後運送到總部大樓進行組裝，減少現場安裝工序。上述工程的施工期由原來的九天縮短至三天，大幅節省時間。

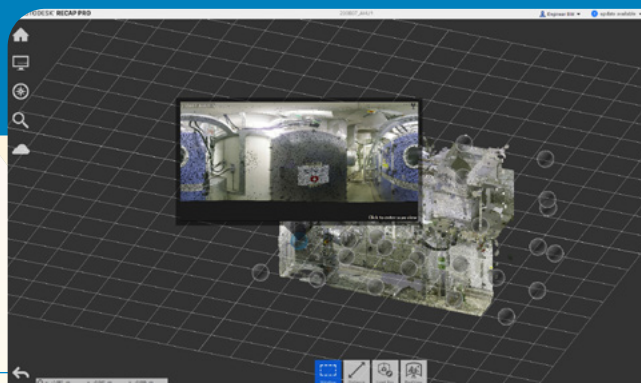
機電署團隊在工程開展前，先對機房進行全面的三維點雲掃描，並運用建築信息模擬技術所收集的數據規劃工程細節，包括識別潛在的喉管碰撞、制訂裝置搬運路線、確定預製喉管模組的尺寸，以及預留維修所需的空間。有關的前期規劃工作有助減少現場安裝時間，從而提高整體工作效率。此外，由於工序簡化，空氣處理機組在工程期間的停運時間因此大幅減少，對日常營運造成的影響也得以減低。

我們在工廠內完成項目的所有基本測試，提前解決可能出現的硬件和訊號問題，並縮減測試和運作的工序。此外，團隊使用數碼化控制組件，通過物聯網技術實時監察空氣處理機組的運行數據，以便維修人員在發現異常情況後即時跟進，實現預防性維修保養。

機電署也積極把「機電裝備合成法」應用於客戶部門的機電設施安裝和更換工程，運用創新科技提升工程效率，充分體現了機電工程營運基金第三個五年策略計劃中「提供以客為本創新服務」和「創新業務流程」兩大策略。現時，機電署已有不少工程採用「機電裝備合成法」，包括為大龍獸醫化驗所更換大型製冷機組、為其他客戶場地更換空氣處理機組等。未來，我們會繼續致力推動技術應用和發展，為客戶提供更快捷高效的工程服務，創造公眾價值，建社惠民。

機電署對機房進行三維點雲掃描，利用建築信息模擬數據規劃工程細節。

The EMSD conducted a 3D point cloud scan of the plant room and planned works details with BIM data.



The EMSD adopted the Multi-trade integrated Mechanical, Electrical and Plumbing (MiMEP) approach to replace the air handling unit (AHU) in our Headquarters for the first time, greatly improving the works efficiency. The MiMEP method enables “off-site prefabrication and on-site assembly”, where electrical and mechanical (E&M) components are pre-manufactured in a factory and then transported to the Headquarters for assembly, thus streamlining the on-site installation process. The works period was much shortened from the original nine days to three days, resulting in significant time saving.

Prior to commencement of the works, the EMSD team first conducted a comprehensive three-dimensional (3D) point cloud scan of the plant room, and, with the data collected by Building Information Modelling (BIM) technology, planned works details, including identifying potential collision of pipes, developing transportation routes for the installations, determining the dimensions of the prefabricated pipe modules, and reserving space for maintenance. The preliminary planning work enabled time saving in the on-site installation stage, and thereby enhancing overall work efficiency. Thanks to the streamlined process, the disruption of AHU operation during the works was markedly reduced, and the impact to daily operations was also minimised.

We had completed all the basic tests of the project in the factory, resolving the possible hardware and signalling failures in advance, as well as simplifying the testing and commissioning procedures. In addition, digital control modules were used for real-time monitoring of the operation data of the AHU through Internet of Things technologies, so that maintenance personnel can respond immediately when abnormalities are detected, thus achieving preventive maintenance.

Using I&T to enhance works efficiency, the EMSD has also been actively applying MiMEP technology in the installation and replacement of E&M facilities for client departments, fully embodying the two key strategies of “Providing Customer-oriented Innovative Services” and “Innovating Business Processes” outlined in the third Five-year Strategic Plan of the EMSTF. Currently, the EMSD has adopted MiMEP technology in a number of works including the replacement of chillers at Tai Lung Veterinary Laboratory and the replacement of AHUs at other client venues. In the future, we will remain committed to promoting the application and development of technologies to deliver prompt and efficient engineering services to our clients, in order to create public value for community betterment.

是次更換空氣處理機組工程採用了「機電裝備合成法」。
The MiMEP technology was adopted in the AHU replacement works.



如欲了解第三個五年策略計劃的詳情，歡迎瀏覽專題網頁 (<http://5yearplan.emsd.gov.hk>)，以及訂閱電子通訊以獲取計劃的最新消息。

For details about the third Five-year Strategic Plan, please visit the thematic website at <http://5yearplan.emsd.gov.hk> and subscribe to our e-newsletter for updates.

