

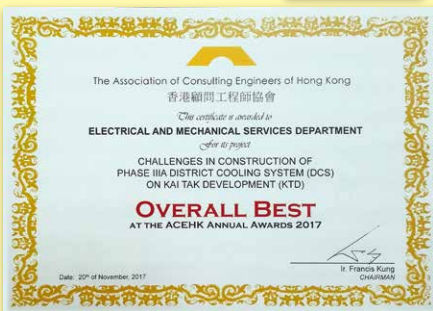
# 創新技術應付工程挑戰 勇奪顧問工程師協會年獎

## EMSD Recognised by ACEHK Annual Awards for Innovative Techniques to Overcome Engineering Challenges

**機**電署採用創新的專業技術來應付工程期間的種種挑戰，順利克服為啟德發展區區域供冷系統鋪設海底管道的困難，並憑此在香港顧問工程師協會的首屆年獎比賽中勇奪「整體最佳大獎」。這既是對我們卓越工作的認可，亦是對團隊解難能力的肯定。頒獎禮在2017年11月20日舉行，當日邀得運輸及房屋局局長陳帆先生及發展局常任秘書長（工務）韓志強先生分別作主題演講和頒發獎項。

啟德發展區區域供冷系統第三期（組合甲）的工程項目在建造過程中遇到不少挑戰，包括如何將冷凍水由系統的南廠輸送至位於啟德明渠進口道另一岸邊的香港兒童醫院。我們利用全港直徑最大的隧道鑽挖機，以無坑頂管法於海牀下放置兩條直徑2.8米的套筒，再在裏面鋪設兩條冷凍水管。這項全港首創的海底工程的最大挑戰，在於我們須在整個鑽挖過程中不斷密切監測鑽挖方向及進度，並確保前方沒有任何障礙物，工程技術要求極高。我們在項目中首次引入製冷量高達5 000冷噸（17.5兆瓦）的製冷機組，規模屬全港最大。

在整個啟德發展區區域供冷系統完成後，每年料可節省高達8 500萬度電，相當於減少排放59 500公噸二氧化碳。樓宇接駁這系統後，亦可節省安裝製冷機組的建設費用，估計約佔總建築成本的5至10%。美國、新加坡，以及歐洲和中東多國已廣泛採用區域供冷這項技術，特區政府亦正積極研究於本港其他新發展區加以採用。



香港顧問工程師協會頒授的「整體最佳大獎」表揚我們團隊的專業解難能力。

The ACEHK "Overall Best Award" recognises our team's professional problem-solving capability.



副署長/規管服務賴漢忠先生（左一）及總工程師/能源效益B陳柏祥先生（左二）代表本署出席香港顧問工程師協會的頒獎禮，並從發展局常任秘書長（工務）韓志強先生（左三）手上接過獎項。

Mr. Lai Hon-chung, Deputy Director/Regulatory Services (1st left), and Mr. Chan Pak-cheung, Chief Engineer/Energy Efficiency B (2nd left), attend the ACEHK Annual Awards Presentation Ceremony on behalf of EMSD and receive the award from Mr. Hon Chi-keung, Permanent Secretary for Development (Works) (3rd left).

In the inaugural Annual Awards of the Association of Consulting Engineers of Hong Kong (ACEHK), EMSD was awarded the "Overall Best Award" for our effort in adopting innovative and professional techniques to successfully tackle numerous challenges and problems encountered in the laying of the subsea pipelines for the District Cooling System (DCS) at Kai Tak Development (KTD). This is a recognition of our excellent work and an affirmation of our team's problem-solving capability. The Annual Awards Presentation Ceremony was held on 20 November 2017. Mr. Frank Chan, Secretary for Transport and Housing, and Mr. Hon Chi-keung, Permanent Secretary for Development (Works), were invited to deliver a keynote speech and present the awards respectively.

The DCS at KTD Phase III (Package A) project met with a host of challenges, one of which was to supply chilled water from DCS South Plant to the Hong Kong Children's Hospital on the other side of the Kai Tak Approach Channel. By employing the city's largest tunnel boring machine, two sleeve pipes measuring 2.8m in diameter were laid below the seabed by trenchless pipe jacking method, with two chilled water pipes installed within each sleeve pipe.

The biggest challenge of this first-of-its-kind subsea pipe jacking work is that close monitoring of the direction of advancement and progress is required throughout the entire jacking operation, and that it must be ensured that the path of the tunnel boring machine should be clear of obstacles, a task that necessitates an exceptionally high level of engineering technique. In addition, we installed a chiller plant of 5 000 refrigeration tonnes (17.5 megawatt of refrigeration cooling capacity) for the first time in the project, the largest of its kind in Hong Kong.

Upon the completion of the entire DCS at KTD, an estimated 85 million kWh in electricity consumption can be saved every year, that is equivalent to a reduction of 59 500 tonnes of carbon dioxide emission per annum. By connecting to the DCS, user buildings can save on installing their own chillers and the associated equipment, which accounts for 5 to 10% of the total building cost. DCS has been widely adopted in other parts of the world, such as the United States, Singapore, and many European and Middle Eastern countries. The SAR Government is also actively studying the possibility of adopting the DCS in other new development areas in Hong Kong.