



## Customer Success Story

### Trane's Innovative Solution Enhances Air Quality and Passenger Experience at MTR Stations

#### Project Highlights

<b>Customer</b>	MTR Corporation Limited
<b>Industry</b>	Public Transport Operation and Property Development
<b>Products</b>	Trane® Smart DC Fan Coil Unit and NCCO Air Treatment Unit
<b>Location</b>	Washrooms at 9 MTR stations, e.g., Hung Hom and East Tsim Sha Tsui

#### The Challenge

MTR Corporation Limited (MTRC), the operator of Hong Kong's urban metro system, has a purpose to "[Keep Cities Moving](#)". MTRC provides passengers with more comfortable and convenient railway services through continuously enhancing its station facilities. To better serve the needs for comfort of passengers, MTRC introduced a mandate that from July 2022, all interchange stations along its railway lines shall be equipped with washrooms.

However, in washrooms at older MTR stations, there was a lack of air-conditioning and ventilation systems, leading to passenger complaints about odors and discomfort in their search for an escape from the summer heat. MTRC recognized the need to retrofit these older station washrooms to create a hygienic and comfortable air-conditioned indoor environment for the public. MTRC would also increase energy efficiency by utilizing smart temperature controls at the major stations in its network.

#### Trane's Solution

MTRC approached [Trane Hong Kong](#) and engaged it to carry out a series of retrofit works in nine of its station washrooms, in order to adopt an advanced temperature-controlled air-conditioning solution in its station washrooms while adhering to its green energy-saving principles. Trane provided the latest Smart DC Fan Coil Unit powered by a direct-current motor, which achieves energy savings of up to 70% when compared to those using traditional alternating-current motors. Additionally, Trane used a Nano Confined Catalytic Oxidation (NCCO) unit, which leverages an innovative air purification technology combining catalytic oxidation and filtration, to remove harmful pollutants and odors from the air and to ultimately provide the optimum results in air quality.

Trane's Smart DC Fan Coil Unit offers energy-saving features and low noise levels, while ensuring optimal comfort. In the automatic wind speed mode, the fan motor can operate at a speed as low as 350 RPM, which is the key to controlling both noise and power consumption. Moreover, the Trane Fan Coil Unit can achieve rapid cooling by quickly adjusting the environmental temperature to a comfortable level, maintaining control of the temperature within +/- 0.5 degrees Celsius under stable conditions.



Trane’s fan coil air-conditioning unit and NCCO air treatment unit first underwent a successful pilot run at Hung Hom station’s washroom. It was found that the levels of airborne particles and germs were dramatically reduced, and the MTRC was pleased with the results. After that, another pilot run was performed at the East Tsim Sha Tsui station, following which MTRC adopted the same design and equipment for washrooms at seven more stations, namely Austin, Prince Edward, Yau Tong, Tseung Kwan O, Fo Tan, Tai Wai, and Lo Wu, to improve the air quality there.

### Key Outcomes

Trane’s advanced air-conditioning and air treatment technology has enabled these washrooms to offer passengers a hygienic and comfortable indoor environment, complete with smart temperature controls for superior energy efficiency. The Smart DC fan coil units and NCCO air treatment units provided by Trane have contributed to energy savings by up to 70% when compared to traditional AC motors. The retrofits have also resulted in a notable reduction in airborne particles and pathogens in the air, successfully lowering health risks for users of the washrooms. Ever since the retrofits were completed, MTRC has received significantly fewer complaints regarding hygiene and air quality issues.

“We are very impressed with the energy-saving performance and reliability of Trane’s Smart DC Fan Coil Unit. Trane Hong Kong has contributed significantly to improving indoor air quality and energy efficiency in our stations. We are grateful for their expertise and support,” said Mr. Ki Sun Wong, Design Support Engineer of Integrated Facility Engineering Dept at MTRC.

Trane’s dedication to providing energy-efficient solutions and cutting-edge air treatment technology supported MTRC in achieving its green energy-saving objectives, while enhancing the comfort and experience of passengers. The project’s success has laid a solid foundation for future collaboration between MTRC and Trane in enhancing air-conditioning and air quality across various MTR facilities.

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## 客戶成功故事

### 特靈創新解決方案提升港鐵站空氣質素及乘客體驗

#### 項目摘要

客戶	香港鐵路有限公司
行業	公共交通營運及物業發展
產品	特靈®Smart DC 風機盤管及 NCCO 空氣淨化系統
地點	九個港鐵站的洗手間 (包括紅磡站及尖東站等)

#### 迎接挑戰

香港鐵路有限公司 (港鐵公司) 作為本市地鐵系統的營運者，秉持「[讓城市前行](#)」的使命，透過不斷完善車站設施為乘客提供更加舒適便捷的鐵路服務。為了進一步滿足乘客對於舒適度的需求，港鐵公司規定自 2022 年 7 月起，其鐵路沿線的所有轉綫站都應配備洗手間。

然而，較舊的港鐵站洗手間內空調及通風設施不足，導致乘客抱怨有惡臭氣味以及在悶熱的炎炎夏日因無法覓得一絲涼意而感到極為不適。港鐵公司明白有必要對這些舊洗手間進行翻新，為公眾創造一個衛生及舒適涼爽的室內環境，同時在其鐵路沿線的主要車站實施智能溫控來提高能源效益。

#### 特靈方案

港鐵公司邀請[特靈香港](#)參與九個車站內洗手間的翻新工程，目的是要在港鐵站洗手間內實施先進的溫控解決方案並堅守節能減耗的原則。特靈提供了最新 Smart DC 風機盤管，採用直流電動機驅動，與傳統交流電動機相比可節省高達 70% 的能源。另外，特靈使用創新納米氧聚解空氣淨化系統 NCCO (Nano Confined Catalytic Oxidation)，將催化式氧化及過濾技術有機結合，以去除室內空氣中的有害物質及異味，並最終令空氣質素達致最佳水平。

特靈 Smart DC 風機盤管具有低噪音、節能且兼顧舒適度的特點。在自動風速模式下，風扇電機能夠以低至每分鐘 350 轉的速度運行，這是控制噪音與能耗的關鍵。此外，機組在穩定的工作環境下可在極短時間內調節室內氣溫至舒適的水平，從而實現快速製冷，而偏差不超過正負 0.5 攝氏度。

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特靈首先在紅磡站內洗手間對其 Smart DC 風機盤管空調機及 NCCO 空氣淨化系統進行運行測試，結果發現空氣中懸浮微粒及病菌的含量顯著降低，港鐵公司對此感到滿意。隨後，港鐵公司在尖東站進行了試驗，並在另外七個車站（柯士甸、太子、油塘、將軍澳、火炭、大圍及羅湖站）的洗手間內採用相同的設計及設備，以改善空氣質素。

## 主要成果

特靈憑藉先進的空調及空氣處理技術協助港鐵為乘客提供衛生、舒適的洗手間環境，並運用智能溫控系統以實現最佳能源效益。與採用傳統交流電動機的設備相比，特靈提供的 Smart DC 風機盤管及 NCCO 空氣淨化系統可節省高達 70% 的能源。翻新工程亦令空氣中的懸浮微粒及病原體數量大幅較少，成功降低如廁者的健康風險。工程完成後，港鐵公司接獲的有關衛生及空氣質素問題的投訴亦明顯減少。

港鐵公司整合設備工程部設計支援工程師黃其新先生表示：「特靈 Smart DC 風機盤管的節能性及可靠性令我們嘆為觀止。特靈香港為改善港鐵車站的室內空氣質素及能源效益做出了重大貢獻，我們非常感謝他們的專業知識和支援。」

特靈致力於提供節能解決方案及尖端空氣處理技術，以支持港鐵公司實現其環保節能目標，同時提升乘客的舒適度和體驗。該項目的成功為港鐵公司與特靈進一步合作以提升其他港鐵設施的空調系統及空氣質素奠定了堅實基礎。

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