

Customer Success Story

Swire Properties Boosts Energy Efficiency and Sustainability with Trane's Leading Climate Solution at One Island East

I. Project Overview

Swire Properties Limited sought to revamp its chiller system at One Island East (OIE), a 68-storey triple Grade-A office tower located in the business hub of Taikoo Place, Quarry Bay.

To achieve this goal, they partnered with [Trane Service Hong Kong](#), a leading heating, ventilation, and air conditioning (HVAC) provider, to upgrade the existing chiller plant with seven ultra-high-efficiency [Trane® CenTraVac® Water-cooled Centrifugal Chillers](#). This upgrade would not only significantly enhance energy efficiency to reduce energy consumption and save operating costs, but also minimize the OIE's carbon footprint.



II. The Mission

The primary objective of this project is to upgrade from their decade-old constant-speed water-cooled chillers to modern variable speed models that could deliver significant improvements in energy efficiency. The project team had faced with these major challenges:

- Optimizing the plant's cooling capability to achieve annual energy saving of 700,000 kWh without sacrificing the comfort level of office tenants
- Overcoming site constraints for the delivery and installation of the new chillers
- Ensuring an uninterrupted supply of chilled water to tenants 24/7 during the upgrade
- Supporting Swire Properties' Sustainable Development (SD) 2030 Strategy to integrate sustainable development into every facet of its business

Despite all these challenges, Trane was able to deliver a comprehensive and effective solution that met the client's needs and exceeded their expectations.

III. Trane's Solution

Trane Service Hong Kong, renowned for supplying innovative HVAC solutions and ethical business practices, was the preferred partner for this project. Trane's strategic approach included:

- Detailed site assessments to ensure new chiller compatibility with the existing architectural framework and piping system.
- A guarantee of continuous chilled water provision to tenants throughout the transition phase.

Trane proposed the installation of seven ultra-high-efficiency CenTraVac® Water-cooled Centrifugal Chillers with a combined capacity of 8,520 tons of refrigeration (TR), featuring variable speed drives and an eco-friendly hydrofluoroolefin (HFO) refrigerant R514A. This refrigerant has a negligible Global Warming Potential (GWP) of less than 2. Moreover, leveraging a low-pressure technology, Trane was able to significantly decrease refrigerant leaks while enabling net-zero greenhouse gas emissions, helping Swire Properties to fulfill its commitment to environmental responsibility and sustainability.

IV. Project Implementation

Trane's implementation of the project started with meticulous planning and unfolded as follows:

- **Chiller Selection**

The project was aimed to maintain a 24-hour supply of chilled water and avoid any disruption to the chilled and condensed water systems. Hence, an intensive review of the spatial dynamics was conducted to ensure seamless integration of the new chillers. The Trane team then carefully selected three most suitable CenTraVac® models based on the site conditions and customer needs.

- **Energy Optimization**

The Trane CenTraVac® chillers feature excellent performance, with full-load coefficient of performance (COP) values reaching up to 6.44, exceeding the standard rating by 9.15%. The part-load COPs were equally impressive, surpassing the statutory requirements by 18% to 20%.

Trane's expert technicians have made significant progress in the OIE project by successfully installing three chiller units with a combined capacity of 1,560TR, all while minimizing disruption to the building's operations. Installation of a 1,030TR unit is currently underway, and the entire project is expected to be completed by August 2024.

- **One-stop Service**

Trane is committed to delivering not just the equipment but a seamless one-stop service experience, which encompasses meticulous installation, rigorous testing and commissioning, as well as preventive maintenance and repairs of the chiller system, to prevent unexpected downtime and ensure reliability, energy efficiency, and customer satisfaction.

V. Key Outcomes

The OIE project demonstrates Trane's dedication to environmental responsibility and innovative HVAC solutions, bringing about these notable positive impacts:

- **Enhanced Energy Efficiency**

The state-of-the-art Trane® CenTraVac® chillers have led to remarkable energy savings, surpassing the client's initial target, and significantly reduced the building's carbon emissions.

- **Sustainability Milestone**

By adopting the ultra-low GWP refrigerant R514A, Swire Properties has made a significant step towards reducing the building's carbon footprint, aligning with its sustainable development goals. The OIE building now boasts an energy-efficient chiller plant that not only ensures lower operating costs but also exemplifies the building owner's commitment to green initiatives.

- **Maintained Business Continuity**

The project is being carried out while minimizing disruption to the daily operations of all building tenants despite the challenging setting and strict spatial constraints. Owing to proper planning and precise execution, the building's business continuity has been maintained throughout the process.

In summary, Trane's cutting-edge CenTraVac® chiller solution and client-centric one-stop service have not only met Swire Properties' immediate needs for energy efficiency but also successfully positioned the OIE building as a sustainable property. This has set a precedent for future similar projects and reinforced Trane's reputation as a provider of innovative and environmentally conscious climate solutions.

客戶成功故事

太古地產採用特靈領先氣候解決方案 提升港島東中心能源效益及促進可持續發展

I. 項目概述

太古地產有限公司擬對轄下位於鰂魚涌太古坊核心商業區的 68 層高 3A 級辦公大樓——港島東中心 (OIE) 的冷水機系統進行升級改造。

為此，太古地產與領先的暖通空調 (HVAC) 供應商 [特靈空調服務](#) 接洽，安裝七台具有超高效能的 [特靈® CenTraVac® 水冷離心式冷水機](#) 以替換舊冷水機組。此次升級不僅將顯著提升港島東中心的能源效益，以減少能源消耗及節省營運成本，而且能最大限度地減少該座大樓的碳足跡。



II. 迎接任務

該項目的主要目標是將已使用十年的恆速驅動水冷式冷水機組替換成現代化的可變速驅動冷水機型號，以顯著提升能源效益。團隊面臨的主要挑戰包括：

- 優化機房的製冷能力，在不犧牲辦公室租戶舒適度的情況下實現每年節省 70 萬度電的目標
- 克服新冷水機組交付和安裝時的場地限制
- 確保在升級期間 7x24 小時不間斷地向租戶供應冷凍水
- 支持太古地產的 2030 可持續發展策略，將可持續發展元素融入營運各個環節

儘管面臨這些挑戰，特靈仍能提供全面且有效的解決方案，滿足客戶需求並超越其期望。

III. 特靈方案

特靈空調服務以提供創新的暖通空調服務方案及秉持商業道德而聞名，是太古地產在該項目中的首選合作夥伴。特靈的策略方針涵蓋：

- 現場評估盡可能詳盡，以確保新的冷水機組與現有建築結構及管道系統兼容。
- 保證在整個升級過渡階段向租戶持續供應冷凍水。

特靈建議安裝七台總製冷量為 8,520 冷凍噸 (TR) 具超高效能的 CenTraVac® 水冷離心式冷水機組。這些冷水機採用可變速驅動器及環保型氫氟烯烴 (HFO) 製冷劑 R514A——其全球變暖潛能值 (GWP)

小於 2，可忽略不計。此外，由於採用低壓製冷技術，特靈能大大降低製冷劑洩漏的可能性，同時達致溫室氣體淨零排放，幫助太古地產實現有關對環境負責及可持續發展的承諾。

IV. 項目實施

特靈在一絲不苟的規劃下逐步展開項目施工，當中的環節包括：

- **冷水機選擇**

由於項目旨在維持 24 小時冷凍水供應，避免對冷凍及冷凝水系統造成任何干擾，因此特靈團隊首先需要對現場空間進行細心勘測，以確保新舊冷水機組的運作可以無縫銜接。然後，特靈因應現場環境及客戶需求，精心挑選了三款最合適的 CenTraVac® 冷水機型號。

- **能源優化**

這些冷水機具有卓越的性能，滿負荷效能系數 (COP) 高達 6.44，比標準值高 9.15%，而部分負荷 COP 亦非常出色，超出法定標準值 18%至 20%。

目前該項目已取得重要進展。特靈的專業技術人員在港島東中心機房內成功安裝了三台總容量為 1,560TR 的冷水機，並且在工程進行期間最大限度地降低對大樓營運的干擾。第四台冷水機 (容量達 1,030TR) 的安裝現正進行中，而整個項目預計將於 2024 年 8 月前完工。

- **一站式服務**

特靈在提供設備之餘，亦負責提供無縫的一站式服務體驗，包括細心安裝冷水機系統、嚴格的測試和校驗，以及預防性保養和維修以防止意外停機，確保可靠性、能源效益及客戶滿意度。

V. 主要成果

該港島東中心項目彰顯特靈對環境負責及提供創新 HVAC 方案的承諾，同時帶來以下重大積極影響：

- **提升能源效益**

特靈先進的 CenTraVac® 冷水機組節能效果顯著，超越客戶最初目標，同時大幅減低大樓的整體碳排放。

- **可持續發展里程碑**

太古地產採用超低 GWP 的 R514A 製冷劑，在減少建築物碳足跡方面邁出重要一步，與其可持續發展目標看齊。是次冷水機房升級不僅令營運成本降低，而且體現了客戶推行綠色倡議的決心。

- **維持業務連續性**

儘管現場環境具有挑戰性且空間限制嚴格，但特靈團隊最大限度地減少了對大樓租戶日常營運的干擾。由於項目規劃適當且執行的手法精準，在整個施工過程中，大樓的業務連續性得以維持。

綜上所述，特靈憑藉先進的 CenTraVac® 冷水機組解決方案及以客戶為中心的一站式服務，不僅滿足了太古地產對能源效益的迫切需求，還成功地將港島東中心辦公大樓定位為可持續發展的物業。該項目的成功為未來類似項目開創了先河，同時極大提升了特靈作為創新及環保的氣候解決方案提供商的聲譽。

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