Alexandra House: 25% Energy Savings in a 50-Year-Old Tower



Challenge

Alexandra House, a 50-year-old Grade-A commercial tower in Hong Kong needed to modernize an aging R134a chiller plant while supporting rising cooling demand.

The site required to address efficiency degradation in the original aging R134a chillers, lower its environmental impact, and align with long-term carbon reduction goals.

Solution

- Trane upgraded the plant with five high-efficiency Trane® CenTraVac® water-cooled centrifugal chillers utilizing ultra-low-GWP R514A refrigerant.
- TRACE™ 700 simulation and a hybrid variable speed drive (VSD) / constant speed drive (CSD) configuration were applied to optimize plant performance.

Result

1. Total energy consumption fell by roughly 25% in 2025 versus the 2019 baseline, despite approximately 20% higher cooling demand.
2. The upgraded system exceeded statutory COP requirements by more than 6% and reduced direct refrigerant-related climate impact by 99.9%.

Project Highlights

Market: Hong Kong

Segment: Commercial

Products & Services used:

- 5 X CenTraVac® water-cooled centrifugal chillers
- Hybrid VSD/CSD configuration

Featured Solutions



Product name: CenTraVac Water-Cooled Chiller (Model: CVHG)

At a glance:

- Capacity range: 325 – 1,300 Ton
- 50Hz/60Hz
- Compressor type: Centrifugal compressor
- Heating and cooling capable
- R514A refrigerant
- Best full load efficiency: 0.48kW/RT
- Low pressure
- Rapid restart after power outage

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