

Sustainable Cooling Innovations at a Bangkok Skyscraper for Green Mark Platinum Success



Challenge

A prime mixed-use development in Bangkok aimed to achieve one of the best chiller plant efficiencies in Thailand, targeting an energy consumption rate lower than 0.55 kW/RT. This ambitious goal required a robust design, precise installation, and effective preventive maintenance services. The project needed to incorporate high technology and innovation to minimize energy consumption while accommodating the building's heat load at all times, in order to align with Green Mark standards and ensure uninterrupted banking operations.

Solution

Trane was awarded the contract to design and construct the chiller plant management system (CPMS). The solutions provided included:

- High-accuracy chiller plant management system that complies with Green Mark's measurement and verification requirements.
- New high-efficiency chiller units with a total capacity of 2,250 RT.
- Installation of all major equipment, including water pumps, cooling towers, water treatment system, and ball tube cleaning system, etc.
- A major design breakthrough involved reconfiguring the piping layout and converting to a variable flow primary pumping system configuration. This change significantly improved chilled water pumping efficiency.

Result

- Achieved the Green Mark Platinum certification, awarded by Singapore's Building and Construction Authority for excellence in environmental standards.
- The chiller plant realized a 31.2% energy saving, translating to an estimated energy saving of 1,304,875 kWh/year.

Project Highlights

Market: Thailand

Segment: Commercial

Products and Services used:

- 2 X CVHG and 1 X CVHE CenTraVac™ water-cooled chiller
- 1 X HSWA Magnetic Bearing water cooled chiller
- Water pumps, cooling towers, water treatment systems, ball tube cleaning systems
- Energy management System

Featured Products



Product name: HSWA Magnetic Bearing Water-Cooled Centrifugal Chiller

At a glance:

- Capacity range: 100-400 RT
- Refrigerant: R-513A / R-134a
- Direct drive multistage compressors
- Oil-free, magnetic bearing compressor technology
- Competitive efficiency balancing full-load and part-load
- Compact size ideal for easy installation



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