

Coquitlam Centre

CASE STUDY



Creative heat recovery solution results in a 50 percent reduction in natural gas consumption, earns substantial energy efficiency incentive.

Challenge

Believing that the conservation of resources is a corporate and individual responsibility, Morguard embeds the principles of sustainability into its business. The company strives to identify and apply innovative building solutions to its owned and managed properties, in order to reduce its environmental footprint and ensure its contribution to the development of a sustainable society into the future.

The property manager was looking for ways to improve operations at Coquitlam Centre with the facility's big cooling load.

Solution

Morguard and Trane had a long-standing relationship that spanned many years and included a variety of equipment, controls, service and maintenance projects. Based on their successful past experience, during a routine visit, the Morguard operations manager took the opportunity to discuss efficiency improvement methods with their Trane representatives. "It's something I ask every time I talk to my business associates," said Petherick. "How do I optimize operations by reducing cost in a responsible way?"

Designing a creative energy-saving solution

Knowing the configuration of the centre's mechanical room with chillers and boilers in the same room, Trane suggested heat recovery as an option to reclaim and reuse the current system's waste heat that was being vented into the atmosphere. The waste heat would be used to heat Coquitlam Centre, providing a substantial energy savings. Interested in the heat reclaim solution, Morguard engaged SES Consulting to evaluate its energy savings potential.

"I wanted to make the property more efficient and cost effective for the Coquitlam Centre owners. We previously implemented lighting upgrades and added direct digital controls, but we were looking for a bigger savings."

- Ken Petherick, Operations Manager, Morguard

Coquitlam Centre Coquitlam, BC

PROJECT HIGHLIGHTS

Morguard is a fully integrated real estate company that owns, manages and invests in high-quality, geographically diversified assets across North America. The forty year old company employs more than 1,500 professionals and is the property manager for Coquitlam Centre, a 9,350,000 sq ft retail shopping mall situated on fifty-seven acres of land in the Vancouver region.

With two spacious levels of retail stores, the Coquitlam Centre is becoming a shopping destination and an integral part of the surrounding area's economic success.

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Maximizing use of recovered heat

Trane engineers and SES Consulting worked together to verify design details and the feasibility of the heat recovery system. The team developed a sequence of operations to maximize the use of the recovered heat and compiled energy savings projections for the project. The energy study data was provided to FortisBC to enable funding support for the project. Morguard's operations group included the heat recovery project details and budget in its capital plan, and presented it to the company's management group for review and approval.

Providing reliability and efficiency

The heat recovery system utilizes a Trane® Series R™ (model RTWD) heat reclaim chiller. With its compact size, the chiller fit easily through the mechanical room doorway, making installation fast and easy. The chiller's low speed, direct drive Helical Rotary compressor, with only two rotating parts, offers reliability and helps to reduce energy costs. Used in heat recovery mode, the Series R chiller generates leaving condenser water temperatures as high as 140°F (60°C).

Results

Demonstrating its commitment to energy conservation, Morguard, working with Trane, implemented a heat recovery system to reuse waste heat at Coquitlam Centre. The project is generating a substantial energy savings, with early results showing a 55 percent reduction in natural gas consumption, and is on track to meet Morguard's project criteria with a four and a half year payback. Based on projected energy savings, the upgrade has also earned a substantial incentive from FortisBC to help fund the heat recovery improvements.

"The equipment is certainly doing its job. We do water harvesting on the roof, and collect make-up water. With the more efficient cooling towers not running as much, most of the water we collect is rain water," said Petherick.

"This heat recovery project has given us a lot of satisfaction. It was a team effort, and it took a lot of effort from many different groups," Petherick added. "It has been one of the most energy efficient projects I have worked on and the results are going to be amazing!"



About Coquitlam Centre

A Trane Series R Helical Rotary Chiller offers reliability and industry-leading heat recovery efficiency.



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