

Lougheed Town Centre

CASE STUDY



Chiller plant re-piping resolves operational issues, reduces energy use more than 590,000 kWh, results in \$190,000 utility rebate.

Challenge

Built in several phases to accommodate expansion needs, the Lougheed Town Centre was challenged to keep shoppers comfortable. The property's two chillers, installed during different phases of the mall's construction and serving different areas of the shopping center, were each running full-time, yet were inefficient and ineffective. The chillers were providing inadequate water distribution and insufficient cooling, particularly in the outskirts of the mall, and using an excessive amount of energy.

Solution

Shape Properties turned to Trane, their facilities partner since purchasing Lougheed Town Centre, for a solution to the issues at the property. Trane suggested re-piping the chiller plant to resolve water flow issues, and improve operations and efficiency. Based on project plans, Shape Properties moved forward, applying for incentives from BC Hydro to help fund the improvements.

Improving operations, reducing energy costs

Trane worked with the mall's operations team to decouple and re-pipe the chiller plant to improve water (and cooling) flow throughout the property to keep store owners and shoppers comfortable, even in the retail center's outlying areas. The re-piping allows one of the Trane CenTraVac™ centrifugal chillers to operate as the lead chiller and the other as a lag chiller, providing backup for peak demand days when additional cooling is needed.

Variable frequency drive (VFD) was added to the primary chiller so that it only operates as needed, reducing energy use and extending motor life. A free cooling option is also employed during certain times of the year, which allows the chiller to satisfy the load without operating the compressor motor, resulting in additional energy savings.

Lougheed Town Centre Burnaby, BC, Canada

PROJECT HIGHLIGHTS

Founded in 2005, Shape Properties, a visionary real estate investment and development company based in Vancouver, BC, has become one of the most active fully integrated developers in Western Canada. With a vision of creating vibrant urban lifestyle destinations, Shape Properties dramatically transforms the interaction between living, shopping, dining and entertainment. Driven by the philosophy of creating a dramatically different offering, along with their commitment and passion for client satisfaction, Shape Properties is elevating standards in the commercial real estate sector. The company is currently in the process of developing Lougheed Town Centre, a popular regional shopping center.

With direct access to rapid transit, Lougheed Town Centre is positioned to become a dominant regional mall.

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Ensuring optimal system operation

The building's existing Trane Tracer® Summit™ building automation system (BAS) was expanded to include control of the chiller plant's new configuration, as well as the VFD and free cooling options. Taking a proactive approach to managing the building, an onsite Trane technician uses the BAS to continually monitor the chiller plant, ensuring its efficient operation, checking set points and making adjustments as needed. The technician resolves issues when possible, and communicates the scope of any completed work or anticipated needs to Shape Properties facilities managers.

Results

Re-piping of the Lougheed Town Centre chiller plant has improved chilled water distribution, improving cooling throughout the property. In addition to achieving the mall's primary objective to resolve its operational issues, the chiller plant reconfiguration and the addition of variable frequency drive has resulted in significant energy savings.

An independent measurement and verification authorized by BC Hydro reports energy savings of 596,000 kWh after one year, exceeding project estimates by more than eight percent. The upgrade qualified Lougheed Town Centre for a BC Hydro "Power Smart" energy rebate of \$190,000.

"But it all starts with the guy turning the wrench," added Kwieton. "Our onsite Trane technician goes beyond the scope of the contract to ensure things are operating properly, and is very good at communicating with the Trane office, and with us, when any actions need to be taken. Overall, the project was a home run."

"With the incentive and the capital cost, it was an easy decision. It was a win-win situation for us in the building because we actually got better water flow throughout the property, which we had problems with, and a far more efficient plant."

- **Oskar Kwieton**, Shape Properties, Director of Facilities, Operations and Maintenance



About Lougheed Town Centre

Re-piping of the chiller plant resolved water flow issues and allows one Trane CenTraVac™ centrifugal chiller to operate as the lead chiller and another as back up.



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