



HSBC Tower Office Building

Prince George, B.C.

 **Majestic Management**

CHALLENGE: Majestic Management, the largest property management firm in Prince George, BC, wished to upgrade its property portfolio and implement a turnkey design/build project to modernize the building's zoning and ventilation systems and improve tenant comfort.

SOLUTION: Designing a turnkey solution, Trane worked with Bob Hillhouse, B. Math CS EEE, at Majestic Management to develop a solution that would help enable building systems to perform as intended to meet long-term efficiency and comfort goals. The solution included replacing aging air handling units, chillers, boilers and controls, while implementing new energy saving strategies. A dedicated heat recovery chiller and water-cooled screw chiller were installed to match the capacity of the existing chiller. The chiller combination enabled simultaneous heating and cooling to better control temperatures and create zones to satisfy individual comfort preferences. The ventilation system was modernized with the installation of new air handlers with Dynamic V8 Air Cleaning Systems. Several other upgrades were made to the HVAC equipment and boilers including variable frequency drives to reduce fan, gas, and electrical use and operational costs.

RESULTS: As a result of the collective contributions of the retrofit team members, the project realized their stated objectives of improved tenant comfort, drastically reduced energy costs, and lower life cycle costs.

Energy costs decreased by more than 50 percent, enabling the building manager to save over \$100,000 a year in electricity costs and approximately \$50,000 annually in natural gas costs. The project was awarded energy incentives of \$100,000, and an additional \$100,000 in tax incentives. According to Bob Hillhouse, Majestic Management was advised that the building ranked within the top ten most energy efficient buildings in Canada.

Revisited in 2021: Trane followed up with Mr. Hillhouse in March 2021, nine years after the Dynamic V8 Air Cleaners were installed. "Yes, we installed them in 2012. Believe it or not, we still have the original filter media—they are absolutely unbelievable. I've never seen anything like it. There is still no additional pressure drop from when we installed them. It's crazy. And everything downstream is still perfectly clean. No build up in the coils. The ducts look brand new—nothing on them."

KEY PARAMETERS

Type of Facility: Existing Building (EB)

Function: Office Building

Area: 10 Stories

MECHANICAL SYSTEMS

HVAC: Trane Canada

TEAM

Owner: Majestic Management Group Ltd.

Interior Mechanical Consulting: Steve Woodmass