

Case Study

Bay Centre 2021

GREATER VICTORIA
2030
DISTRICT[®]



Sustainability Leadership at Bay Centre

Bay Centre is demonstrating the viability of achieving substantial reductions in energy use and greenhouse gas emissions in commercial buildings through the integration of energy-efficiency measures while also working within the reality of financial constraints and limited control of tenant loads.

Located in downtown Victoria, Bay Centre is a 47,500 m², four-storey enclosed mall that includes retail, parking and food services. The building was constructed circa 1989 and currently receives up to 6.5 million visitors per year. Mechanical equipment accounts for the highest energy end use (33%), closely followed by lighting (33%), plug load (25%), and gas equipment (9%).

Between 2011 and 2019, the mall **achieved a 29% reduction** in both energy consumption and overall greenhouse gas (GHG) emissions. Property manager Cushman Wakefield Asset Services implemented a series of measures to achieve these reductions, including: common area lighting upgrades, heating, ventilation, and air conditioning (HVAC) controls optimizations, installation of an adaptive frequency drive (AFD) in the chiller plant, and upgrades to the building automation system (BAS). Additionally, the building recently underwent a roof replacement to improve its insulation level.



This study addresses a key challenge for the building – that it lacks a centralized heating system, meaning that custom opportunities would need to be uncovered to achieve deep energy and carbon savings.

Eleven energy conservation measures (ECMs) were identified in the study, including: recommissioning of existing control strategies or upgrades to the BAS, equipment upgrades, including replacement of remaining fluorescent and High-Intensity Discharge (HID) fixtures with LED ones, and upgrades to the existing cooling plant. One opportunity is to equip the proposed cooling tower with a new heat exchanger and variable speed drives (VSDs).

Additionally, since tenant systems account for a significant portion of the building's

energy use (64% in 2019), a more thorough understanding of the tenant HVAC loads and a tenant engagement plan will be crucial to recognize additional energy savings opportunities, most notably towards reducing natural gas consumption with improved rooftop unit efficiency and cooking equipment.

Additional opportunities could include rooftop photovoltaics (PV), the purchase of renewable natural gas, and electric vehicle (EV) charging infrastructure installations.

The Greater Victoria 2030 District will continue to support the efforts of Bay Centre and other members of the 2030 District as they implement measures identified in their energy studies and meet and surpass the 2030 targets.

“At Bay Centre, we pride ourselves in adopting progressive environmental standards and practices by continually measuring, managing and improving our environmental performance through energy, water, consumption and waste reduction” said Darlene Hollstein-General Manager Bay Centre.

“For this reason, it brings us great pleasure to join a network of North American leaders, as a founding partner of the new Greater Victoria 2030 District, and make a commitment in reducing our energy and greenhouse emissions by a further 50% by 2030.”

