



Improve energy optimization, efficiency, tenant comfort and wellness

JLL & Ivanhoe Cambridge at Vaughan Mills Shopping Centre utilize advanced fault detection and diagnostics (FDD) to drive data-directed maintenance and optimization to reduce equipment usage, energy and water consumption, lower greenhouse gas emissions, and improve tenant comfort.

Conservation Actions

The site team and service contractors collaborated, to develop and implement strategies for data-driven maintenance and energy optimization efforts onsite. With so many moving parts in the retail industry, Vaughan Mills needed to anticipate future maintenance and operating concerns. Retrofits such as fault detection, are part of the next generation of diagnostics, which interacts seamlessly with existing BAS to provide the most efficient building operation. Fault detection was the optimal strategy for performing a preventive maintenance project that proved to be extremely beneficial on multiple levels, including improved building performance and sustainability.

Reductions in runtime for key HVAC units provide the most substantive way to measure savings while data-driven maintenance measures help identify potential issues before they arise, saving time and unscheduled downtime.

Measureable Outcomes

These steps have resulted in enhanced comfort, less energy usage, and prolonged equipment life at this location. Data-driven maintenance has resulted in time savings for the building crew in identifying and resolving issues. This means determining issues before they result in unscheduled downtime or harm.

Reductions in runtime for key HVAC units provided the most substantive way to measure savings because of the changes (see Figure-1). These account for a significant portion of the base-building energy savings due to the unique makeup of this complex*.

Vaughn Mills selected RYCOM to implement their Data Analytics & FDD Platform and Service (powered by Bueno) to collect data from the Building Automation System (BAS) and meters in order to improve energy optimization, maintenance efficiency, and tenant comfort and wellness. As part of these managed services, RYCOM Building Systems Advisors serve as an extension of the Operations/Facilities Management team and use root cause analytics to proactively identify issues before they become energy concerns, strain HVAC systems, or cause tenant comfort issues.

Figure 1 - List of Opened and Closed Measures in 2020, 2021, and to date in 2022.

Year	Number of Actions	Utility Savings	Operational Savings	Electrical Savings (kWh)	Gas Savings (GJ)
Opened in 2020	75	38,355	8,250	257,000	181
Closed in 2020	58	15,695	5,850	104,200	64
Opened in 2021	50	17,175	3,948	122,840	0
Closed in 2021	55	17,735	4,918	124,440	47
Opened in 2022	14	820	1,179	5,870	0
Closed in 2022	11	1,800	959	12,000	6

* The scope of the FDD analytics project is solely focused within common areas of the mall, as tenants manage their own HVAC systems.

Total Savings

Since 2020 and year-to-date in 2022, the total savings are as follows:

Utility 91,580 **Electrical 626,350 (kWh)**
Operational 25,104 **Gas 298 (GJ)**



About the Property

Vaughan Mills is the leading outlet destination in Canada, with the finest specialized and premium shops, entertainment, and dining. It has an area of 1,596,940 square feet, more than 210 retailers, and over 14.6 million yearly visitors. At \$4,487psf, Vaughan Mills is home to one of the most profitable Food Halls in Canada, with several of the country's largest selections. In addition, they offer an unparalleled shopping experience with major fashion and lifestyle brands, along with world-class entertainment and tourism.

