

Case Study

Public Services and Procurement Canada (PSPC)

Federal Government Buildings take Smart Building Initiative to the Next Level

PROJECT DETAILS

Client: Public Services and Procurement Canada

Location: Canada

Number of Buildings: 22

System implemented: Fault Detection
& Diagnostics, Vibration Sensors

Project Goal: Optimize Energy Efficiency
and Operational Performance

Project Duration: 2015 - Present Day

MEASURED RESULTS



1,190,187 ekgCO²/year

Reduction in Greenhouse
Gas Emissions



\$203,000

Save on Energy Incentives



\$1,018,995

Electricity Cost Savings



\$224,045

Operational Cost Savings



\$1.2 million

Total Cost Savings

SUCCESSSES



1880 actions raised to identify operational anomalies in Central Heating and Cooling Plant (CHCP) operations



Ability to inform portfolio management decisions by identifying buildings that are not fully utilized



System Wellness pilot project using vibration sensors



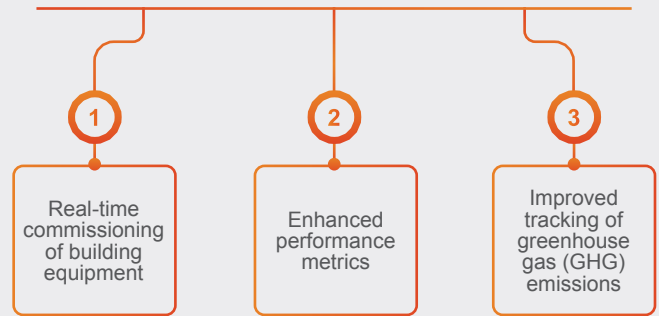
Occupancy sensors installed by RYCOM to obtain building-level people count

METHODOLOGY

In 2015, Public Services and Procurement Canada (PSPC) launched a national Smart Building Initiative to reduce their real estate property portfolio's energy consumption and greenhouse gas emissions. RYCOM has been working with the Energy Services Acquisition Program (ESAP) team to modify the Smart Building Initiative program to meet the Central Heating and Cooling Plants (CHCP) needs in the National Capital Region. RYCOM's Data Intelligence services provide PSPC with real-time commissioning of building equipment, enhanced performance metrics, and improved tracking of greenhouse gas (GHG) emissions. By using data analytics technology to monitor Building Automation Systems, local site teams and regional energy managers across the country have significantly improved the operations and maintenance of their buildings.



DATA INTELLIGENCE



CHALLENGES

The federal government has committed to reduce greenhouse gas emissions from its real estate property operations by 40 percent by 2030 and 80 percent by 2050. Before working with RYCOM, PSPC had limited means of integrating and gathering data from multiple building automation systems and had minimal smart technology service support for buildings in low-population areas. With the Smart Buildings initiative being a priority for PSPC, they needed to implement a solution that allowed for proper systems monitoring and data collection to ensure the buildings ran efficiently without compromising tenant comfort.

SOLUTIONS

The goal of this project was to optimize energy efficiency and operational performance to achieve a carbon neutral portfolio by 2050 to meet Government mandates. Implementing new analytics algorithms and thresholds to monitor equipment efficiency and plant performance has enabled PSPC to closely track emissions, operations and efficiency changes over several years. Additionally, RYCOM has also piloted the use of vibration sensors for predictive maintenance. The sensors monitor the resonant frequencies of air handling unit fan shafts, pumps, chillers, and cooling towers providing instantaneous data that automatically generates insights about how these systems can be maintained, tweaked or tuned for optimization.