



HURON PERTH HEALTHCARE ALLIANCE ST. MARYS MEMORIAL HOSPITAL

CONSTRUCTION YEAR

2023

HIGHLIGHTS

Annual Electricity Reduction =
14,751 kWh/yr

Annual Natural Gas Reduction =
1931.72 m3/yr

Annual Energy Reduction =
35,144 ekWh/yr

Annual GHG Reduction =
4.258376 tons/yr

EQUIVALENCY RESULTS

CO₂ Emissions From

1.3030631
Passenger Vehicles

0.99646
Homes' Energy Use for One Year

2.8488537
Homes' Electricity for One Year

DIRECT DIGITAL CONTROLS UPGRADE

St. Mary's Memorial Hospital (SMMH) undertook a project within the emergency department, replacing pneumatic heating, cooling, and ventilation controls with modern digital controls. This initiative encompassed the replacement of existing pneumatically controlled dual-duct boxes, perimeter radiation control valves, the air handler heating control valve, and mixed-air dampers. Pressure sensors were added to the distribution ductwork for control of fan speed. Airflows were re-balanced to align with modern healthcare ventilation rates required by the healthcare standard CSA Z317.2-19. Existing zone control dampers were added to the BAS for control and monitoring. The endeavor aimed to enhance hospital infrastructure, providing efficient control and monitoring of emergency department temperature and ventilation. This project improves overall occupant comfort as well.

ENERGY & CARBON SAVINGS

The project introduced eco-friendly innovations focusing on energy conservation and carbon reduction. Removal of a substantial portion of the pneumatic control system reduces energy consumption required by the air compressor. Installation of insulated dual-duct boxes improves heating and cooling efficiency of the system. Connections to these new terminal units were properly sealed, reducing air leakage from 26% to 18% on the 8900-cfm air handling unit. Modern control sequences in accordance with ASHRAE Guideline 36 "Best in Class HVAC Control Sequences" were utilized for the digital control of the dual-duct boxes and perimeter radiation control valves bolstering operational precision and optimizing resource usage. Existing zone control dampers are now controlled based on an occupancy schedule adjustable by the building operator and fan speed control of the air handler has been added providing the ability for staff to easily reduce airflow during unoccupied times and save on fan and heating or cooling energy. These features collectively spearheaded sustainable practices within the emergency department, fostering substantial energy savings and a notable reduction in the hospital's carbon footprint, aligning with a commitment to environmentally conscious healthcare infrastructure.