



# STEWART AVENUE PUBLIC SCHOOL CAMBRIDGE, ONTARIO

## PROJECT OVERVIEW

Stewart Avenue Public School, built in the 1960s, was a typical older school building with electric-powered heat and no air conditioning. The school board decided to install a 16 RT YANMAR VRF Outdoor Unit along with eight Indoor Units to service six classrooms and two small rooms as a demonstration and evaluation of the unit's actual savings. Toyota Tsusho Canada, Inc., Trade-Mark Industrial and MNE Engineering were all involved in the project.



## REASON FOR CHOOSING YANMAR

The YANMAR VRF system offered many benefits to the Waterloo Region District School Board for its installation at this school. The main attraction was the ability to cool and heat the school. The older building didn't have any air conditioning before the YANMAR product was installed, and the heat was powered by costly electricity. By utilizing natural gas as the power source, the school was able to dramatically reduce its operations costs and carbon footprint.

Additionally, as an older building, ceiling space was very tight, so it was not possible to run ducts to each classroom. YANMAR's system worked well by offering non-ducted indoor unit options, including five round flow cassettes and three wall-mounted units.

Finally, to make the project even more financially beneficial for the school board, the local utility, Union Gas, also provided an incentive in support of this project.

## QUICK FACTS

**Application:** Education

**Location:** Cambridge, Ontario

**Commissioning Date:** August 2016

**Product Installed:** YNCP560J-NB  
(16 ton, 2-pipe)

### Results:

- Reduced electrical consumption
- Improved indoor climate control
- Lowered emission levels

## ABOUT YANMAR VRF

The YANMAR Variable Refrigerant Flow (VRF) natural gas heat pump system provides a flexible way to efficiently heat and cool many different types of buildings, as well as reduce operating costs and emission levels.



# STEWART AVENUE PUBLIC SCHOOL

## 16 TON VRF

**“We are very proud to be the first YANMAR VRF installation at a school in Canada. We hope this unit will provide a better learning environment for our students, and we are excited to see the results of this environmentally-friendly technology in action.” - Steve Feeney, Supervisor Energy Conservation & Automation, Waterloo Region District School Board**



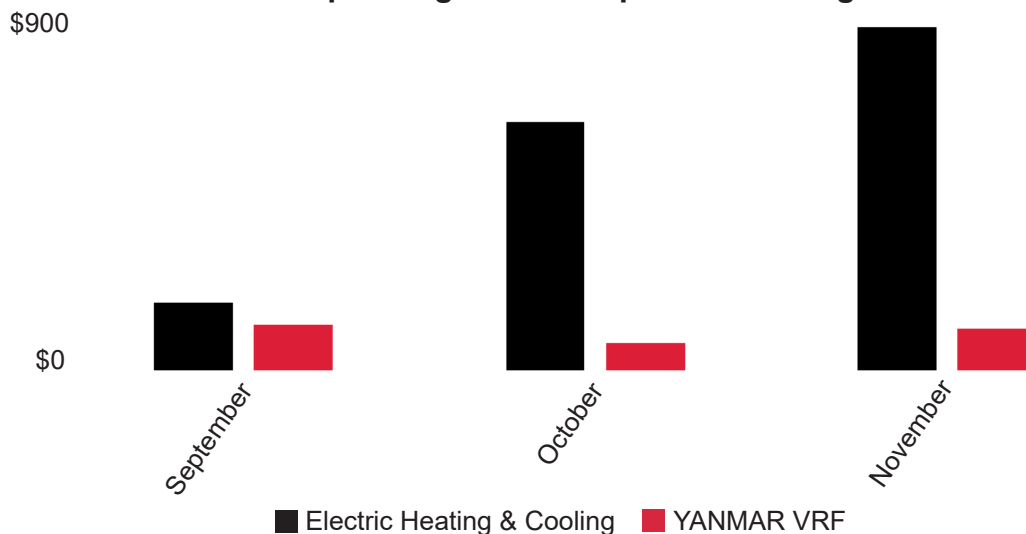
### RESULTS

- Reduced electrical consumption for heating and cooling the building by switching to a natural-gas driven YANMAR engine.
- By using natural gas as an energy source, the building produces lower amounts of harmful emissions than traditional heating and cooling equipment.

### CONCLUSION

- The September through November 2016 timeframe represents 10% of the school's annual electric costs. During this time, projected electric heating and cooling costs would have been \$1,485.20, and actual heating and cooling costs using natural gas were \$262.19 for an operating costs savings of \$1,223.01.
- Stewart Avenue Public School made the switch from electric-powered heating, and has been enjoying the unit's cooling and heating capability while residents of Ontario experience average temperatures of 61°F (16°C) to 40°F (4.5°C).

**YANMAR VRF Operating Costs - September through November 2016**



*Operating costs data is a calculated based on Remote Monitoring data and local utility costs.*