Fairview Mall –Pilot Project of an Advanced Monitoring and Controls System (CATALYST)

In April 2015, First Capital Realty (FCR) installed CATALYST, an advanced monitoring and controls system, manufactured by Transformative Wave, on four heating/ventilation and air condition (HVAC) units as part of a pilot project at Fairview Mall, an enclosed shopping centre, in St. Catharines, Ontario. Fairview Mall was originally built in 1961. A major renovation was completed in the early 1990s converting the HVAC system from a central heating/cooling plant to a distributed network of 17 common area and 25 tenant-packaged roof top units (RTUs). Four 25 ton common area RTUs were identified for the pilot project.

The goals of the one year pilot project were to:

1. Decrease energy consumption,
2. Increase operator control, and
3. Increase occupant comfort in common areas of the enclosed shopping centre.

Demand controlled ventilation (DCV), variable frequency drives and advanced economizer controls were identified as control strategies to be included in the pilot project.

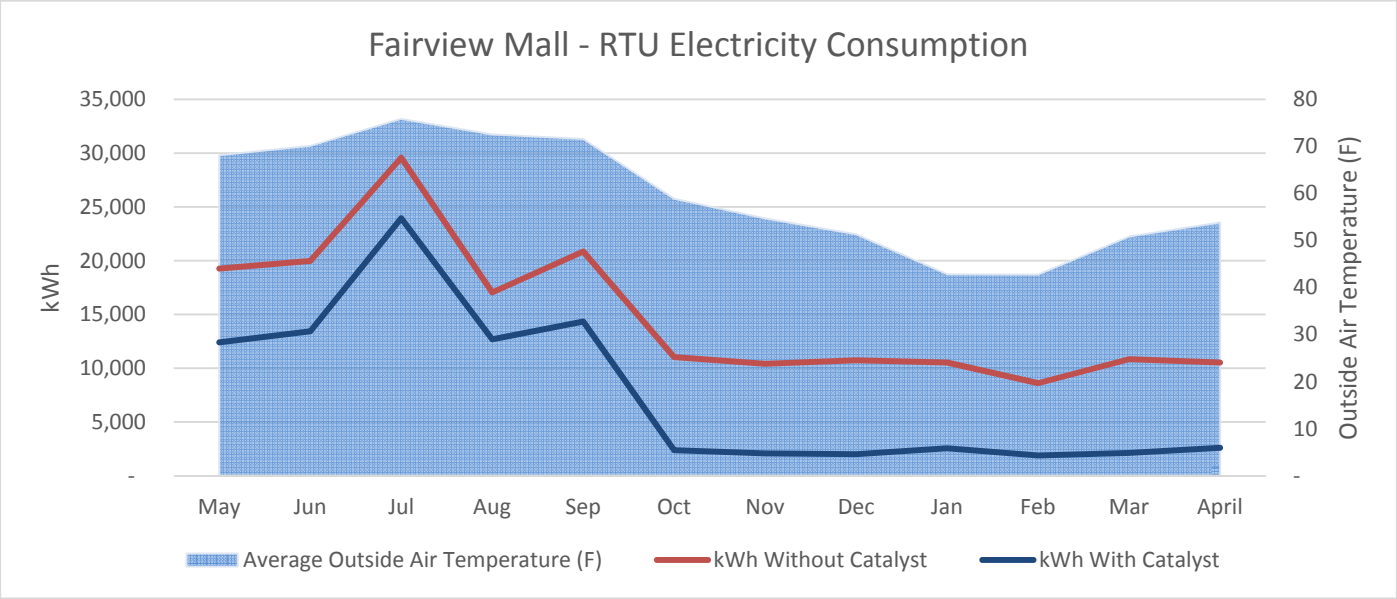
Unlike a traditional building automation system (BAS), which only monitors and controls equipment operation, the CATALYST can optimize RTU operations via advanced algorithms to maximize efficiency. With more than 30 monitoring points added to each of the four RTU to optimize ventilation, damper position and fan speed, the CATALYST reduced overall energy consumption, increased operator controls and maintained indoor occupant comfort.

The results of the Fairview Mall pilot project, successfully reduced RTU electricity consumption by approximately 49% compared to the base line, saving 87,003 kWh and approximately $10,504 in the first year of operation.

Financial Results:

Project Cost	$	34,715
Government Incentives	$	11,159
Final Project Cost	$	23,556
Utility Cost Savings	$	10,504
Simple Payback (years)		2.2

Results:



In addition to energy efficiency, the CATALYST provided advanced fault detection to identify and report equipment problems as they occurred. This maintenance feature eliminated delayed response to potential operational problems.

First Capital Realty has expanded this pilot project to three additional properties in Toronto, Ontario. Toronto Hydro is monitoring these pilots to verify energy savings.