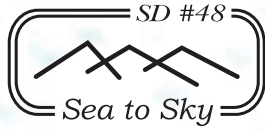


EndoTherm[®]

CASE STUDY: Spring Creek Community School
Whistler, Canada

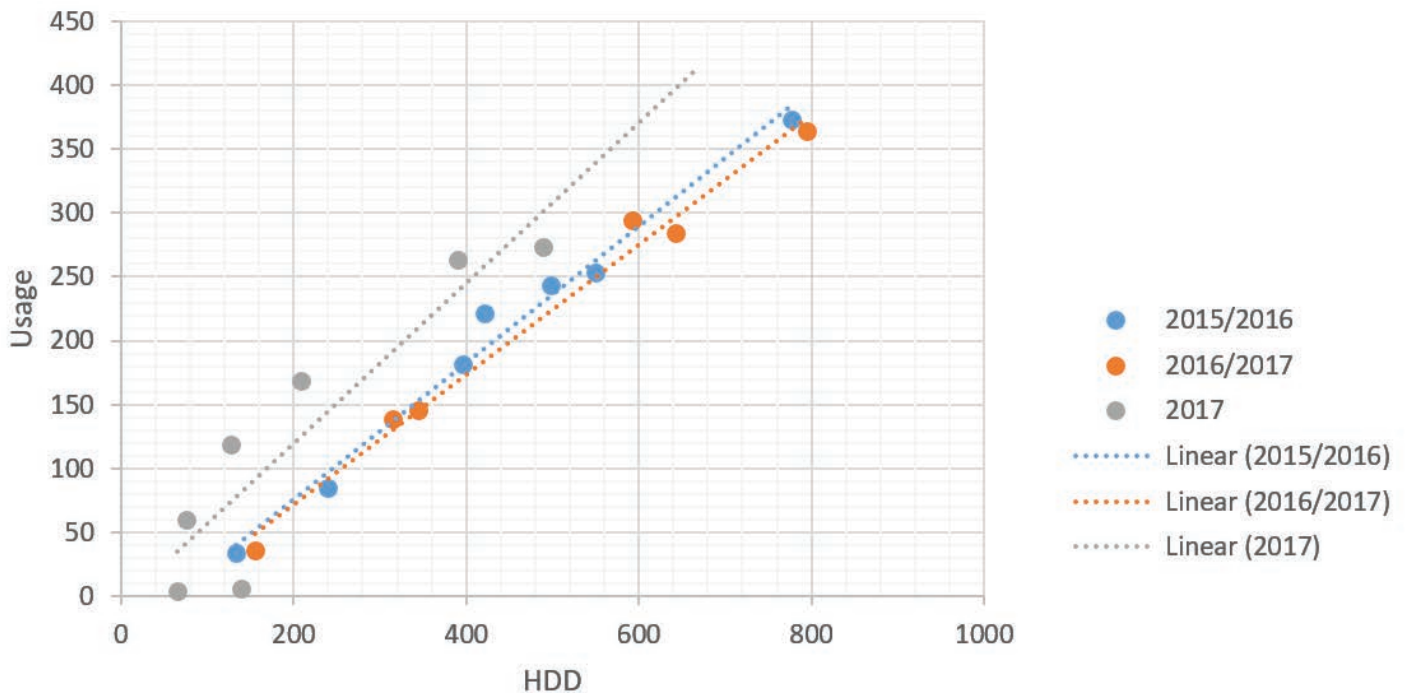


The performance of EndoTherm was piloted by the Sea to Sky School District at Spring Creek Community School in Whistler, Canada.

The school is heated by a 1,500Mbtu boiler and 30 Litres of EndoTherm was installed in September 2017.

METHODOLOGY

The preferred methodology follows the International Protocol for Measurement & Verification of Performance (IPMVP). A baseline is established by comparing usage (GJ) with Heating Degree Days taken from a nearby weather station at a temperature base of 18.5°C. A baseline analysis of the previous three heating seasons was undertaken to look at historic heating trends.



12.75
%

TOTAL SAVINGS

FINANCIAL SAVING



\$1,339

CO₂e SAVING

8,028 kg

KEY INFORMATION

Installed: Sep 2017
Trial period: 5 Months

Boiler spec:
1,500MBTU boiler

EndoTherm[®]

CASE STUDY: Spring Creek Community School
Whistler, Canada

12.75
%

TOTAL SAVINGS

FINANCIAL SAVING



\$1,339

CO₂e SAVING

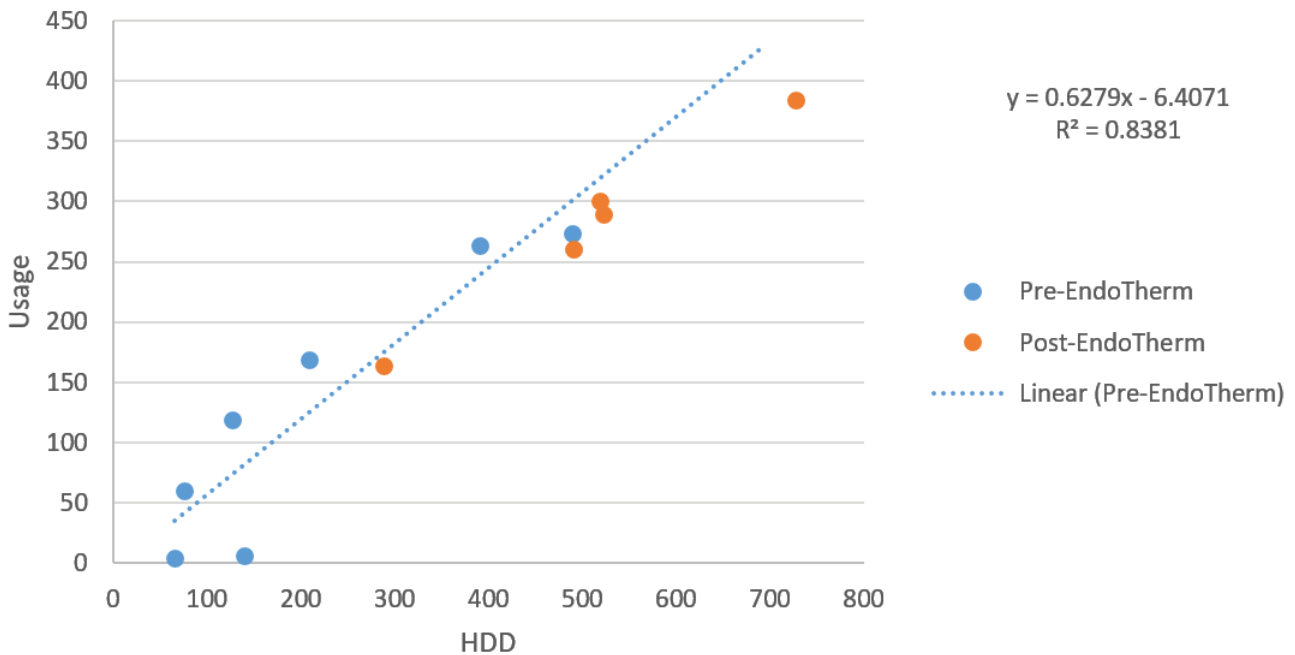
8,028 kg



The historic data on the previous page shows that the usage between August 2015 and Feb 2017 is very consistent (orange and blue points). The baseline report does however show a marked increase in consumption from Feb 2017 until September 2017. If July-September is eliminated (the two months have a combined usage less than 10GJ during the summer holidays) the remaining five months are 60% higher than the previous 18 months.

RESULTS

The consumption after EndoTherm was installed was compared with a baseline from the previous seven months.



The trendline of the historic (baseline) time period can be used to predict consumption based on the HDD values for the after period. This can be compared with recorded consumption to identify a change in usage thus a saving during the post EndoTherm time period.

EndoTherm[®]

CASE STUDY: SpringCreek Community School
Whistler, Canada



TOTAL SAVINGS

FINANCIAL SAVING



\$1,339

CO₂e SAVING

8,028 kg



RESULTS continued

	Heating Degree Days	Predicted Usage (GJ)	Actual Usage (GJ)	Difference (GJ)
Oct – Nov	490.20	301.39	260.70	40.69
Nov – Dec	522.50	321.67	289.70	31.97
Dec – Jan	727.30	450.26	384.30	65.96
Jan – Feb	518.40	319.10	300.20	18.90
Total		1392.42	1234.90	157.52

Over the monitored period it is shown that EndoTherm has saved 157.52 GJ, when charged at \$7.50 per GJ this equates to a financial saving of \$1339. The proposed ROI for the trial is within 18 months of installation.

The saving of 157.52 GJ of energy also equates to a reduction of 8 metric tonnes of CO₂e (more information on this calculation can be found at <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>). This saving is equivalent to the yearly emissions of two passenger cars.

// The EndoTherm product was installed in one of our elementary schools' closed loop boiler systems. The install was quick and easy. Mark, from Pace Chemicals installed the product and checks up on the levels to ensure adequate amounts on a regular basis and is always a pleasure to work with. Installation of the product has already resulted in a good amount of cost savings and CO₂ reduction. I would like to see the product installed in more of our school buildings. All in all, EndoTherm does everything it claims to do. It's a no brainer for me to have this product installed in our systems. //

**District Operation Manager
Sea to Sky School**