# **Endo**Therm

#### Report No: ETBAGCH Approved by: B McMullen (CEng. MIChemE)



#### INTRODUCTION

The Bagatelle Care Home, operated by the Greenock Medical Aid Society is built on 4 levels and accomodates 41 residents. Like all Care Homes it must be kept warm (26°C). There are two heating systems, An old Potterton Boiler system serves the older part of the home while a more modern ACV Boiler system serves the newer part of the building.

There are 100 radiators in the older part of the building and 60 radiators in the new part of the building.

The older Potterton boilers provide hot water to two Lochinvar Water Heaters which heat the domestic water used in the older part of the building. Domestic hot water is provided by the ACV heaters in the new part of the building.

#### ADDITION OF ENDOTHERM™

EndoTherm<sup>™</sup> is a biodegradable mixture which has been shown to greatly reduce the surface tension of water. This changes the way that bubbles form when water is heated and the way heat is transferred in heating systems.

We estimated 10 litres of water per radiator and based on 1600 litres of system capacity added EndoTherm<sup>TM</sup> to the system. This was added by isolating a radiator and adding the product through the bleed valve.

The chemical was added in early November 2011.



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#### RESULTS

The recorded usage for June / July 2011 were compared with June / July 2012 using degree day data:

Year	kWh Used	Degree Day (DD)	kWh / DD
2011	3281	173	18.96
2012	3100	244	12.7

Savings without degree day = (3281 - 3100)/3281 = 5.5% Savings with degree day = (23.13 - 15.5)/23.13 = 33%

#### DISCUSSION

The high savings indicated are attributable to both the addition of EndoTherm<sup>™</sup> to the boiler system and also to the Constant Dosing of EndoSan<sup>™</sup> (EndoSan<sup>™</sup> is an ecological disinfectant product that can be used for a multitude of applications across many market sectors).

EndoSan<sup>™</sup> is know to save around 15-18% of energy by allowing the hot water temperature to be dropped from 65°C to 48°C for Legionella control.

#### The savings therefore attributable to EndoTherm™ are estimated to be approximately 15%

### CONTACT US

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