

**aIM 4 SMEs CASE STUDY #004**

**UNITED KINGDOM: Belmont Hotel, Leicester (gas consumption)**

The Belmont is an independent family owned hotel in the city centre of Leicester. The buildings it occupies were built between 1862 and 1865 with Belmont House, the main part of the Hotel, originally a girl’s school. However, since 1934 it has been used as a hotel.

Seventy-five hotel rooms are equipped with flat screen televisions, internet access and en-suite bathrooms or shower rooms. Food and drinks are available in three facilities: the Jamie’s lounge and bar, the Will’s bar and Cherry’s, the main restaurant. A wide selection of rooms is also available for social events, such as parties, weddings and private dinners. The hotel holds a separate Business Centre and 10 conference rooms for business meetings and conferences.



Belmont Hotel recently installed Intelligent Metering at the hotel after a successful trial of optical character readers through the aIM4SMEs Project. Through the support of the aIM4SMEs Bureau service at Leicester Energy Agency/Leicester City Council’s Energy Management Team, they have been able to monitor and set targets for gas consumption at the premises.

**PROJECT SUMMARY**

Company name	Belmont Hotel
First metering installed	December 2008
Baseline consumption (15/12/2008 – 13/02/2009)	263,886 kWh
Final consumption (15/12/2009 – 13/02/2010)	226,729 kWh
Savings	14% (gas consumption only)

**SME POINT OF VIEW**

De Montfort University installed temporary monitoring equipment (“comet” units) to monitor half hourly gas consumption on December 2008. The Optical Character Reading (OCR) device was set up as a data logger and it was necessary to have regular access to the device to collect data and to ensure it s correct performance.

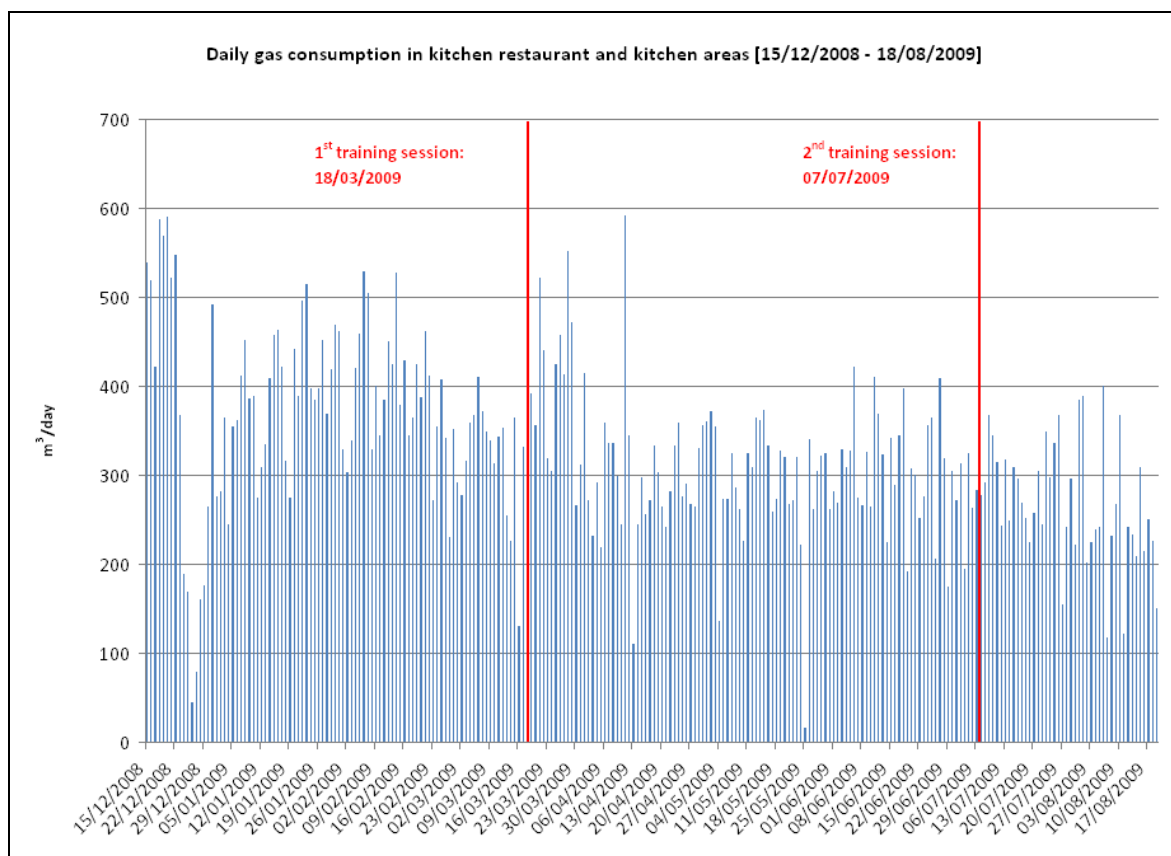
After a successful trial using temporary optical character readers (OCRs) to monitor half-hourly consumption of gas, the SME installed a permanent Intelligent Metering linked to web display of consumption data on September 2009. The permanent automatic meter reading (AMR) equipment monitors 4 out of the 6 meters onsite. The SME also utilizes a web-based portal to view their gas consumption on a day+1 basis.

## INTERVENTIONS

Two training sessions took place to raise awareness among key staff and helping them to encourage other staff in the hotel to become more energy aware. These sessions took place in March 18<sup>th</sup> 2009 and July 7<sup>th</sup> 2009.

These training sessions were aimed at helping the hotel managers and staff understand where the energy was being used in the property and ways in which it could be reduced. Measures included ensuring that all equipment was turned off properly at the end of each day and also reducing the gas consumption in the 'rest' period between the lunch and dinner period.

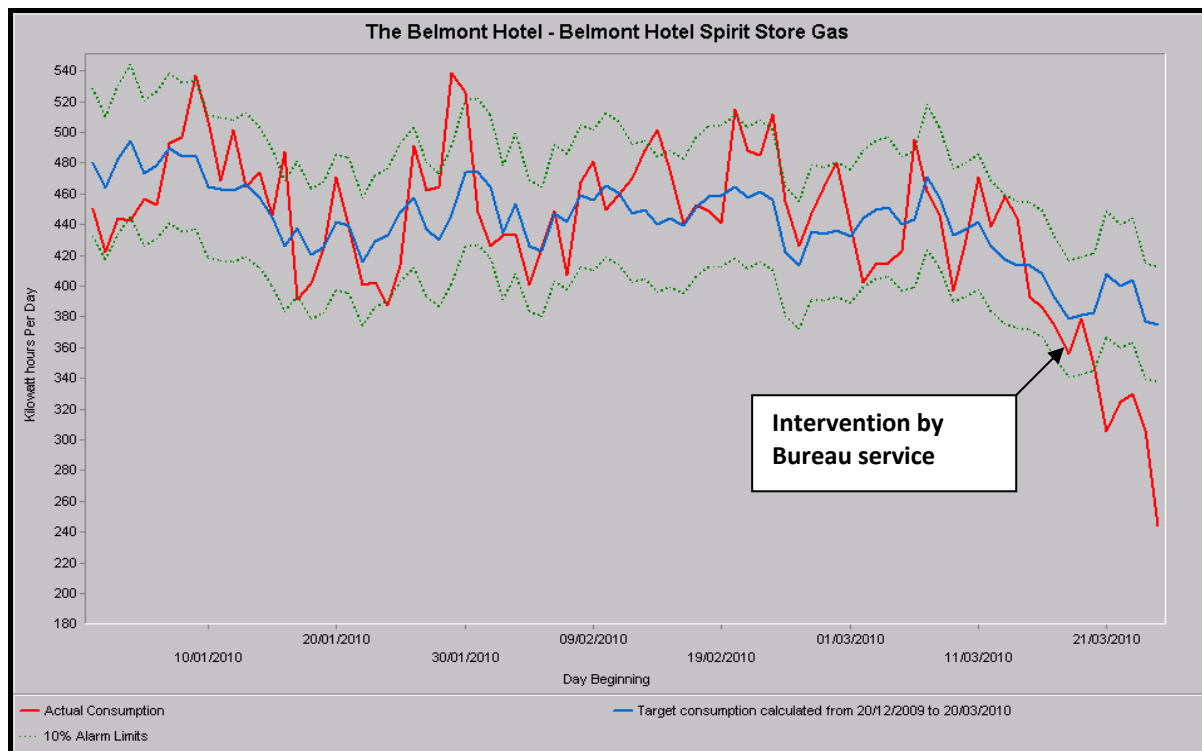
The following graph illustrates energy savings within the restaurant and kitchen areas only, based on half-hourly gas consumption data from the temporary OCR device in one meter. The energy savings are mainly related to better working practices in these areas.



Due to the success of using the temporary OCR device of one meter in the cooking areas, the SME invested in permanent automatic meter reading equipment to monitor 4 out of the 6 gas meters onsite including the kitchen and restaurant areas as well as the heating and hot water systems.

For the 4 gas meters that were being monitored a number of adjustments to timers and controls were recommended to reduce consumption rates. This included shortening the heating period and ensuring correct management of kitchen equipment.

The graph below shows the impact of reducing the heating times for one of the boilers onsite used for the heating system and hot water. The blue line is the target consumption based on historical use and weather patterns and the red line represents the actual consumption. For this meter there was a reduction of 490 kWh in the first week after intervention by the Bureau service.



The situation improved greatly after identifying small changes in the timers and controls for hot water and heating boilers. Adjustments were made to all boilers being monitored to reduce consumption rates.

The premises officer has utilized the data to recommend improvements to equipment, particularly in the kitchens where devices were being left on due to poor controls. The data obtained through the Intelligent Metering system is also being fed into a programme of staff awareness raising at the hotel to try and further reduce consumption rates through behavioral measures

## CONCLUSIONS

Before the Intelligent Metering was installed the premises officer found it difficult to keep track of gas use onsite due to the number of boilers and gas-fired equipment present.

Two different technologies have been used to monitor the energy consumption of this SME. The first system was based on manually down-loaded data loggers (OCR), which needed site access every month. Although it was a low cost solution, it was time consuming regarding



data collection and energy analysis. The second one is a permanent automatic meter reading (AMR) linked to a DataBird radio-based communication system, which is automatically connected to a database in the Leicester City Council operating under DynamatLite. The latter system has the following advantages over the OCR devices: meter readings are more accurate and reliable, daily updated, easy-accessed through software and offers a software-based energy analysis.

The web-based portal has been a key element to allowing the SME to assess, adjust and monitor energy use in a continuous feedback loop. The Bureau service has also helped to provide more detailed analysis such as target consumption rates based on weather patterns.

A large, stylized graphic of the text 'aIM 4 SMEs' in a bold, sans-serif font. The text is white and set against a background of flowing, translucent blue and green lines that create a sense of motion and energy. The lines are thicker in some areas and thinner in others, giving it a dynamic, almost liquid appearance.

# aIM 4 SMEs

## **aIM 4 SMEs – Automatic Intelligent Metering for Small and Medium Sized Businesses**

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AIM 4 SMEs is a Europe-wide project to demonstrate the potential for energy savings from automatic intelligent metering in small/medium-sized enterprises.

The project involves nine partners from five countries (Austria, Hungary, Poland, Portugal and the UK), including businesses, local/regional energy agencies, an association of municipalities, universities and a utility company. [www.aim4smes.com](http://www.aim4smes.com)

**Intelligent Energy**  **Europe**

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