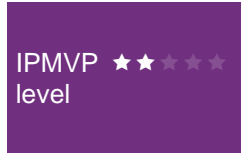




**Organisation:** Copthorne Barracks, Shrewsbury  
**Sector:** Ministry of Defence (offices)  
**Requirements:** Reduce energy usage, with limited budget  
**Services provided:** Behaviour change course for staff volunteers  
**Provider:** Speedwell Energy Services  
**Achievements:** 10% electricity and 20% gas usage reductions



## The Customer

The Copthorne Barracks, Shrewsbury, HQ of the 5<sup>th</sup> Division, Ministry of Defence were built between 1877 and 1881. They initially included a hospital, married quarters, stabling and stores and went on to become the regional centre for infantry training.



## Objectives

The objective was to reduce energy costs by delivering a training programme that would allow all staff to actively participate and take control of their energy usage.

The training did not need to be in-depth, as the staff were not intended to be energy managers or engineers but were required simply to understand how they and their colleagues used energy and that they would gain personally from more efficient usage.

## Services provided

As capital funding was limited it was decided to take a no/low technology approach to mitigating energy usage on the site, to generate savings that could be re-directed to fund projects. A simple, but informative training package was developed that could be delivered in-house to staff.

The aim was to deliver a course consisting of six modules, each of an hour long, delivered face-to-face over a day, with a simple multiple-choice test at the end to ensure that the participants had listened; this was backed with a small prize to encourage attention, and to send a message that active energy management could deliver rewards to the staff as well as the management. For the Copthorne Barracks session, thirty volunteers

participated, from the military, civilian and contractor staff, covering all the office buildings.



The six modules covered what the issues were, the reasons for energy efficiency (cost, environment and security), how the staffs' behavior affected this, what the staff could do to control usage, how to go about this and simple technical knowledge to help (how to set a thermostat, how to make other staff aware and how to encourage them to adapt their behavior to make an impact). The lessons were designed in such a way that they related directly to the staff involved and could also be applied to their home environments; no industry jargon or technical descriptions were used, but it was assumed that the staff had some knowledge of the subject.

A poster and leaflet campaign was also created for the volunteers to deliver following the training and designed them so that they could be modified to include unit insignia.

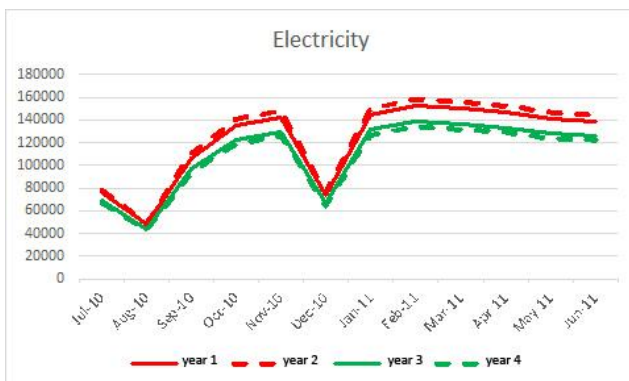
To ensure that the training was effective, energy usage for the office buildings was monitored for the following two years, so that it could be compared to the data for the preceding two years. Degree day



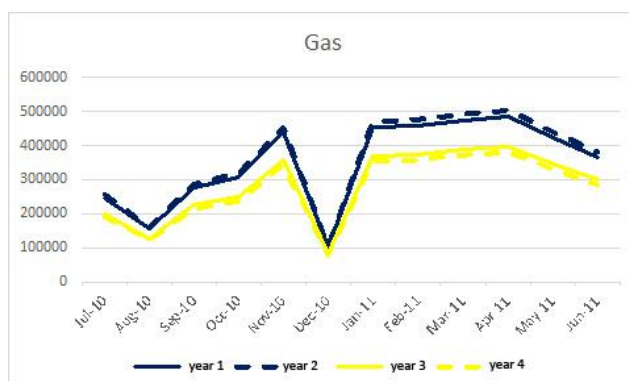
data and tempo data (occupancy of buildings) was also used to take seasonal and usage variances out, to allow a more direct comparison.

## Results

Taking the two energy sources there was an obvious drop in overall patterned usage for both years Year 3 (11%) and Year 4 (7%) compared to the average figure for Years 1 and 2. The initial large drop can be assumed to be the result of the training and work implemented by the staff, with the slight increase being down to slowing of enthusiasm time progressed.



The large reductions in July and August are due to the summer school holidays and the reduction of staff on site by approximately 55% during a period of six weeks; The reduction in December is due to a two-week closure of the site, with only security staff remaining on site. After considering seasonal variances from year to year, and the 'tempo' (movement of staff on and off the site), the identified drop in usage in Year 3 and Year 4 is down to the staff changing behavior in their usage of the site energy resources.



## Summary

The reduction in energy consumed amounted to an ongoing average of 154,052 kWh for electricity and

838,511 kWh of gas, equating to a financial saving of £88,648 and a reduction in emissions of 227 tonnes CO<sub>2</sub>e overall. A follow up survey showed that the overall average reduction of 10% for electricity and 20% for gas remained, with the ongoing awareness programme run by the site staff keeping the programme active; however, when the programme ceased the following year, energy usage effectively returned the same level of usage as Year 1.

Feedback from the staff involved in the programme was positive and they showed an interest in the subject that continued after the training. It was concluded that a simple training course aimed at non-technical staff can be very effective in meeting financial and environmental impact reduction policies, without significant capital investment. The cost of delivering was £3,000 compared to the annual energy cost reduction of £88,648.

However, whilst an effective programme can reduce the energy usage by an average of 7% for office environments (the results for other building usage varies according to their purpose), the main conclusion is that there must be an ongoing permanent approach to behavior management, to maintain the savings, and to ensure that a cohesive policy can be delivered.

If you would like to speak to Speedwell Energy Services, please call 07814 155253 or email [Roger0910@btinternet.com](mailto:Roger0910@btinternet.com)