



Barry McKean  
**Energy  
Manager  
Of The  
Year  
2004**

When Barry McKean was appointed Energy Conservation Manager for Knowsley Metropolitan Council he decided to first assess the current status of the existing stock. The most recent energy costs were used to provide an order of priorities. The expensive energy items were found to be electric, water and gas, in that order. High up on the energy list were six leisure centres with a total annual bill of around £400,000. A manual examination of the bill history for each site highlighted that at least one leisure centre had almost doubled its electric bill over the last 18 months. All previous attempts to identify the reasons for this increase had failed.

Prior to commencing his new post with Knowsley, Barry had used an energy monitoring system called Eco Warrior. This had resolved, in a matter of a day, a dispute over an electricity account that had gone on for more than 14 months. He decided to use the same product to see if he could resolve the reason for the apparent increase in electricity consumption.

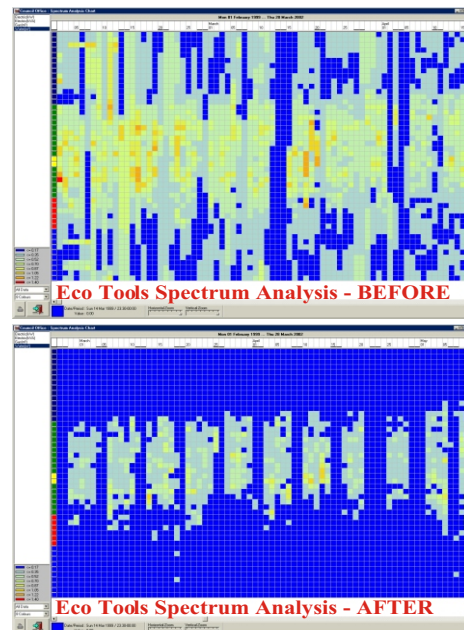
A pulse output was provided for kilowatts and kVAR from the main electricity meter. The electricity meter operator did this work at a cost of £120. The monitoring software was installed at a cost of £695 on a redundant Personal Computer which was brought back into service. A low voltage four twisted pair cable was run between the electric meter and the Duty Manager's office. Almost immediately on starting the monitoring system it became apparent that the power factor correction equipment fitted just over a year ago was not working. It was decided to ignore this fact until the reasons for the increase in energy consumption became fully apparent and provable to those involved.

After a month the system readings were

compared with that of the next electricity bill. The bill was almost, but not quite, double the readings taken by the monitoring system. However, when the system kVAR-hour readings were added to the kilowatt-hour readings they equalled the bill in kilowatt-hours. A mistake in setting up the new telephone meter reading system had resulted in the two meter registers being incorrectly added together. This is why the fitted meter accuracy tests had not shown a problem and why the regional electricity company's bill checking had also not thrown up an error. A refund of £20k was obtained.

The system has since been installed in other leisure centres in the group. The total cost of installation was £12,300 for the six centres, an average of just over £2000 per centre. During the first 12 months after installation, the system, by showing where and when energy was being wasted, had contributed in realising further savings of £36,000. Giving an excellent return on investment.

Another site to benefit from the same monitoring and targeting system was a council depot with a very high water consumption. The results were very surprising and showed high out of hours water use.



Using the data provided as a guide to the problem areas, a further two thousand pounds was invested in water control devices. The total package resulted in a subsequent reduction in the water bill

from £10,000 to £3,700 per annum. An annual saving of £6,300, from a system which cost less than £1000 to install.

Based on the success of the monitoring in the Leisure Centres and council depot it was decided to extend the scheme. This time the council wanted to know if the system could be equally successful in properties of much smaller energy consumption's and in particular schools. The aim was to prove such equipment used properly could effect real reductions even in lower energy consumption sites. In one year the combined savings from the five schools totalled £12,755 set against a total energy spend (electric, water and gas) of almost £86,000 per annum. This equates to savings of approximately 15%.

The monitoring system found water leaks and boiler controls not operating properly. Its main strength was seen to be enabling the Site Manager to actually see and therefore control consumption, particularly out of hours, at weekends and in holiday periods.

The average KMBC Primary School spends £9,900 per annum on electric, water and gas. Assuming these savings can be repeated at other KMBC schools the average saving would be £1400 per annum.

“The use of a Monitoring and Targeting System has worked well within Knowsley Council buildings. We have proven to ourselves and others that this approach can save energy and pay for itself within a very short period of time. Large or small sites can benefit by savings in the order of 15%. We now have about thirty of our buildings using the system and we are extending it to more sites as funds become available”.

For More Information Contact

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