

Energy Saving case study

Latest developments from LC Automation Ltd

How can you start to reduce your energy bills?

Energy costs continue to rise, so finding ways to reduce your energy usage is a good target for any business. But where do you start?

Measure your actual energy usage

First you need to measure how much energy you are using and where that is going.

Look for easy changes

Simply turning off lights, or turning down the heating can save money. So target the easiest ways that you can make a difference straight away.

Implement the bigger challenges

Adding Variable Speed Drives to the motors that power your pumps and fans can give huge savings, so call LC Automation on 01254 685900 to discuss your potential applications.

Check on your progress

Measure your energy usage again to see how much you have saved. But don't rest on your laurels. Use this as an incentive to carry on looking for ways to save energy and reduce your costs.

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Swimming Pool Energy Saving Project will Save £5,500 per year ...every year



In association with LC Automation and the Energy Centre, North Somerset Council achieved excellent returns on their investment in energy saving equipment. In fact, their pilot project at Hutton Moor leisure centre in Weston-Super-Mare saves around £5,500 per year, giving a payback time of just thirteen weeks.

The Council appointed Steve Hodges as Energy Officer, to improve energy efficiency and reduce costs across all its operations. Recognising that he needed expert help, Mr Hodges contacted the Mitsubishi MELSMART Energy Centre who gave practical advice on each aspect of his energy efficiency brief, and identified some potential pilot projects.

Change of plans

Mr Hodges says, "Our largest swimming pool complex, Hutton Moor was ideal for an initial pilot project, so we arranged a visit from LC Automation, a local MELSMART energy specialist to assess the energy saving possibilities." The original plans included an Olympic sized, 50m pool, but as Mr Hodges explains "Before construction was completed, the plans were changed to a 25m pool with a smaller trainer pool".

The pumping and filtering plant was designed for the original specification, so the 30kW pump for the main pool, which circulates water through the cleaning filters, was far too large for its actual requirements.



To reduce the flow of water to the required rate, a control valve was permanently 80-90 per cent closed, wasting energy and causing a lot of additional noise and vibration (which was another clue to the amount of energy being wasted).



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Even though Mr Hodges is recognised for his water conservation expertise, experienced engineers with specialist equipment were brought in from LC Automation and MELSMART for the Energy Saving aspect of the project. But there were some vital considerations, as Mr Hodges explains; "The initial temptation to rush headlong into an energy reduction programme was tempered by the need to maintain the water quality in the swimming pool".

they installed the trial control system free of charge, to show it would work and save money.

Peter Jones, LC Automation's Southern Area sales Manager explains; "The whole system was housed in a single control panel, which was designed and built by engineers at our production facility in Blackburn. The single panel also helped to reduce installation time and disruption to the Leisure Centre".

But Mr Hodges didn't rest on his laurels: he ensured the pool operator used the government's Enhanced Capital Allowances scheme to completely offset the cost of the initial outlay, and also asked LC Automation to investigate any potential savings for their other pools.

Running costs were reduced from £7000 per year to just £1500... giving a payback time of 13 weeks

...improving the water quality!
The two-control systems have been running continuously for over a year with one surprising benefit. Mr Hodges explains; "Far from impairing the water quality, the fine tuning that is possible with the new control systems is so accurate that it has actually improved the quality of the pool water, which is a bonus for our swimmers."

The fine tuning over the last year has also reduced the actual running costs even further than predicted, and with no reliability problems Steve Hodges and North Somerset Council are understandably impressed.

Swimming pool not required
The excellent cost savings made by North Somerset Council are not restricted to swimming pools. LC Automation have a wide knowledge of energy saving in many areas of the automation and processing industry. If you have pumps, fans, conveyors or other single phase motors, you may be able to reduce your energy bills.

We can arrange a no-obligation site survey which will indicate possible areas where you could lower your costs. Best of all, the survey is free for qualifying companies (call for details).

Looking for more information?
For more information about energy saving or to enquire about a free energy audit, give us a call on 01254 685900 or e-mail marketing@lca.co.uk

 **LC Automation**
control & safety
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The Mitsubishi Energy Saving Inverter Drive accurately controls the pump speed... reducing energy consumption and ongoing costs.

Continual flow rate is critical

The pumps circulate water at a steady rate through the filtration systems, completely filtering the water every 3 hours, 24 hours a day. Mr Hodges expands on this; "The flow rate through the filters is critical. Too slow and the filters are not effective, but too quick and impurities can be washed straight through. So it's a fine balance."

Completely replacing the existing plant would be too expensive, so LC Automation carried out a complete energy audit to investigate a more cost effective alternative. The best solution was to build an energy efficient control system based on the Mitsubishi variable speed inverter drive, which would provide cost savings without affecting the water quality.

Confident

LC Automation were so confident that cost savings could be made,

The new system very accurately controls the pump speed and power consumption which in turn produces the optimum water flow, reducing energy consumption without sacrificing the water quality.

Savings of over £5,500 per year...

"The results were immediate," says Mr Jones; "The inverter reduced the operating frequency of the motor from 50Hz to just 32Hz, which is an actual power saving of around 70 per cent!" Calculations and measurements using an ultrasonic flow meter at the initial stages of the project showed that the cost of running the main pool

Mitsubishi Variable Speed Drives are at the core of this energy saving solution

pump were over £7000 per year. But after spending £2000 on the inverter panel this could be reduced to just £1500 per year, a payback time of 13 weeks.



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