

# Case Study #04

Voltage Power Optimisation



## Putting the brakes on energy costs

**Why it is interesting:** It is an example of how **powerPerfector's** energy saving solution can benefit a range of sites. Whilst we have saved millions of pounds and thousands of tonnes of carbon for retailers, manufacturers and high profile sites like the Tower of London, some of our best savings come from sites with very simple loads. In our work for Southwark Council, we have achieved a 19.3 per cent saving on the energy bill at Peckham Town Centre Car Park.

### Southwark Council, Peckham town centre car park

#### Annual Savings

kWh:	103,304
CO <sub>2</sub> kg:	77,500
£:	9,000
ROI:	57 months
NOx kg:	117

Don't take our word for it...

*"Following the **powerPerfector** installation we have been extremely pleased with the results - a saving of up to 19.3%. This is a significant saving in energy consumption and money and has far exceeded the level of savings we were expecting."*

Will Walker  
The Carbon Reduction  
Programme Manager

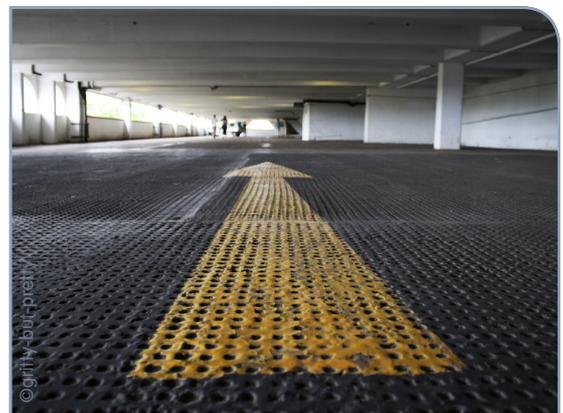


#### Further information

For information on this, or any of our case studies, please contact:

020 7262 6004  
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Southwark Council has set a challenging target to reduce carbon emissions in the borough by 80 per cent of current levels by 2050. As part of that commitment the Council has installed three **powerPerfector** units - including at a ten storey car park in Peckham.



Car parks see some of our most impressive savings. The combination of heavy lighting loads and long operational hours mean a high proportion of the unit's capacity is used for longer – improving the Return on Investment.

Lighting is particularly susceptible to losses at high voltage and, by bringing the voltage to the correct level, savings can be delivered with no discernible drop in light levels.

Voltage logging on the site showed that the average voltage was 240 volts, 10V higher than the nominal supply in the UK and 20V higher than the optimum voltage for the electrical loads on site.

#### Savings after installation

Following the installation, there was no change to the operation of the building, however the energy savings started instantaneously and continue every day at the site. Four months after the installation the electricity consumption was analysed to find a reduction in electricity use of 19.3 per cent, equating to an annual carbon dioxide emissions saving of 77,500kg.

As well as reducing energy consumption, **powerPerfector** reduces the strain on your equipment, and many of our clients tell us that this increases its lifespan.

For example, a lightly-loaded induction motor operating at an optimum 380V instead of a 'raw' 415V experiences less heating and vibration, reducing wear on bearings and prolonging its life. The life of incandescent light bulbs is almost doubled by optimising their supply voltage.

The exact saving is difficult to quantify, but we estimate it to give you a 10 per cent reduction of your maintenance and capital replacement costs.

## Measurement & Verification

A savings analysis should come in two parts, firstly a detailed savings plan, in which the site is analysed and a methodology for determining the savings is agreed upon before installation, and secondly a savings report, which quantifies the avoided energy use.

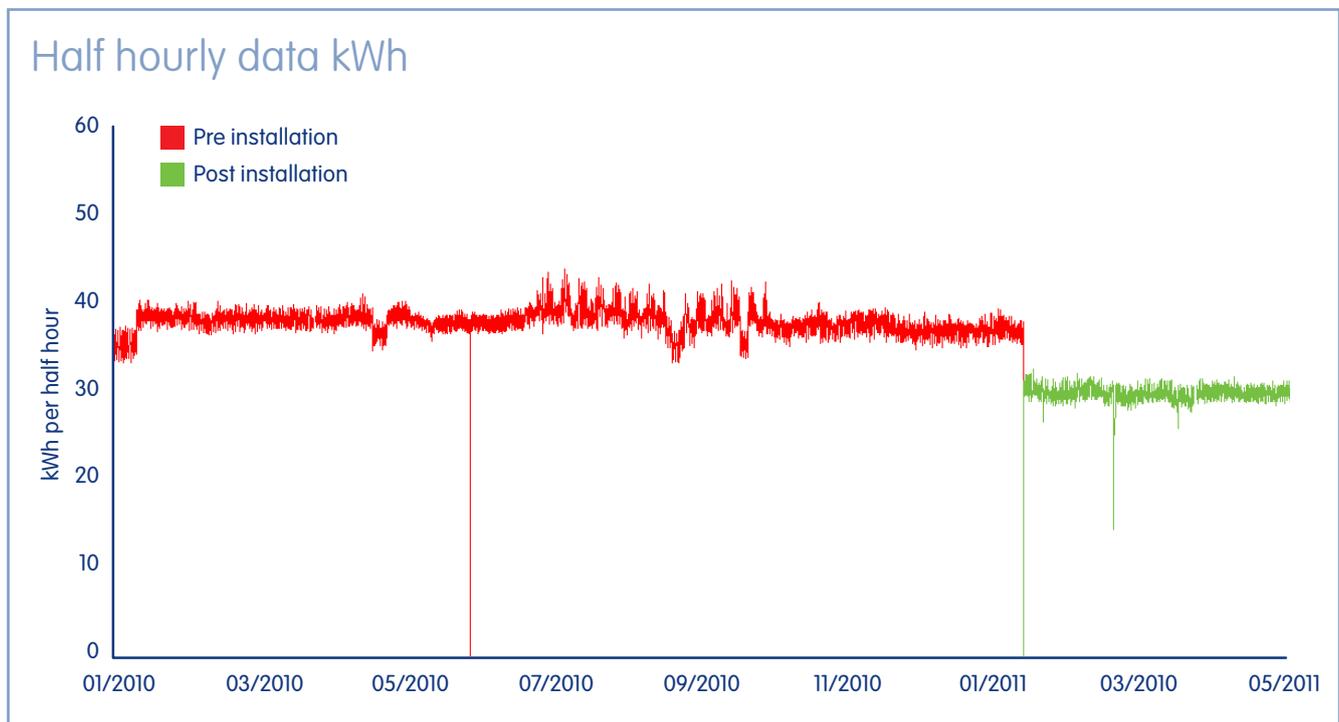
Any Measurement & Verification strategy that does not have these two ingredients could be open to ambiguity, or worse, abuse, as the savings analysis will simply be thrown together after the energy conservation measure has been implemented.

## Additional Benefits

Allied to excellent savings VPO® technology also provides a range of other power quality benefits. These all contribute to creating a more efficient, robust and reliable electrical supply for your site.

Harmonic suppression, three phase balancing and protection from common transients in an integrated, completely passive unit with no moving parts, made from ultra-high-purity materials sets VPO® apart from other voltage management technologies.

**powerPerfector** has an enviable 100% reliability record in over 4,000 installations in the UK and tens of thousands worldwide. It meant Southwark Council could fit and forget the technology with absolute confidence that the integrity of your supply was improved, and the site was running as efficiently as possible. Our analysis is carried out by a consultancy using best practice IPMVP (International Performance, Measurement & Verification Protocol) on all our VPO® projects. This gives our clients further peace of mind when selecting **powerPerfector**.



There are a range of case studies and client testimonials available on our website, please visit [www.powerperfector.com](http://www.powerperfector.com) for further information.