Case Study #03

Voltage Power Optimisation

powerPerfector
energy saving like no other

GMFRS takes steps to extinguish energy waste

Why it is interesting: Greater Manchester Fire and Rescue Service is saving 328,700 kWh per annum following the installation of eleven **powerPerfector** VPO® units. This is equivalent to £32,000 and 179,000 kg of CO_2 emissions. The project was supported with funding by the NWIEP and managed along the PRINCE2 methodology to ensure a smooth programme. GMFRS is the first fire authority to pioneer voltage optimisation across its estate.

Greater Manchester Fire & Rescue Service

Annual Savings	
kWh:	328,700
CO_2kg:	179,000
£:	32,000
NOx kg:	372

Don't take our word for it...

"As a large energy consumer we have a responsibility to our region to minimise our impact on the environment. By procuring sustainably and working with companies such as **powerPerfector** *we hope to meet and exceed our carbon targets."*

Adam Hebden
Corporate Environmental Manager

GREATER MANCHESTER FIRE AND RESCUE SERVICE

Further information

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

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GMFRS is the second largest fire service in the country covering ten local authorities. The associated carbon footprint is large, in 2008/2009 the baseline was calculated at 8880 tonnes of CO_2. A significant proportion of these emissions come from energy consumption and the fire service has recognised the need for action. Projects from rain water harvesting to designing more effective exhausts are reflections of the progressive stance the service is taking on sustainability. It has recently been described as a 'pioneering authority' by the Audit Commission.

Eccles Fire Station – powerPerfected

Apart from the obvious drivers for sustainability, the fire service has also recognised that gas and electricity costs have risen 250 per cent in the last decade and so is looking for technologies with 'proven economic paybacks' to counter the effects of further energy price rises.

Voltage Power Optimisation Rollout

The fire service initiated a project in May 2010 to evaluate the effect of VPO® at 18 sites (20 electrical supplies) which each consumed over 100,000 kWh. VPO® was selected for its financial and environmental savings but also because of its ability to remove spikes in the incoming supply, thus protecting electrical equipment. In the civil protection arena the security of electrical supply and associated electrical equipment are essential to supporting the vital services performed. The technologies power quality benefits provide security to the whole site as the VPO® unit is integrated at the point of supply. Included in the 18 site evaluation were regional command centres, a training centre and the service's headquarters. The importance to maintaining continuity of service at these sites cannot be overstated.

Salford Fire Station – powerPerfected

The programme will save the service nearly 330,000 kWh, over £32,000 and 179 tonnes of CO_2 annually. This goes a long way to meeting the legally binding sustainability targets that the service is dedicated to achieving. The kWh reduction means that the effect of future energy price rises will be mitigated and financial savings will increase for years to come. Just as importantly the sites will benefit from the security of having VPO® safe guarding their electrical supply.

"The VPO® units will provide valuable protection for our critical sites while the financial savings help protect our budgets. The guarantee provided security when choosing VPO® as a solution and following through with the guarantee attests to the integrity of the company."

Adam Hebden
Corporate Environmental Manager

Whitehill Fire station

Impartial analysis of savings is part of the **powerPerfector** solution. This is in place alongside a performance guarantee to ensure clients see the return on invest that they base their decisions on. Unfortunately, the Whitehill site did not see the predicted level of savings and, in line with the guarantee, the unit was uninstalled at no cost to GMFRS and reinstalled at Salford Fire Station - where it is making good savings.

power quality benefits

- Blocks all common transient voltage spikes
- Improves phase to phase voltage balance
- Reduces harmonics
- Reduced maintenance costs across the site

Headquarters

The headquarters contains the command and control section and is therefore of critical importance to the operation of the authority. Following the evaluation process on the two electrical supplies onsite, it was determined that the installation would have to take place during an annual power down event. It requires specialist delivery and a specially manufactured enclosure for external use.

Following installation the site has seen savings of 12.3 and 10.5 per cent on the two supplies, reflecting the different loads on each supply. This is equivalent to saving CO_2 emissions of 87.1 tonnes or £13,000 annually.

powerPerfector projects

- All **powerPerfector** project managers are PRINCE2 practitioner certified
- Our installation partners are rigorously assessed and trained to ensure they provide the highest quality work
- Our team of field engineers perform quality control and provide an onsite response time of two hours
- An engineer is on call 24/7 to provide technical back up and response
- **powerPerfector** has a roll out capability up to 60 units per week.


powerPerfector installation at GMFRS Headquarters

There are a range of case studies and client testimonials available on our website, please visit **www.powerperfector.com** for further information.

00130-19-07-2013