

## Case Study: Sheffield Hallam University



### A UNIQUE VOLTAGE OPTIMISATION SYSTEM



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Powerstar is an approved energy savings system. This product may qualify for an interest-free Energy Efficiency Loan from the Carbon Trust. Powerstar® is a registered Trademark by EMSc (UK) Limited.

Registered with the DTI MAS as a Centre of Expertise in Manufacturing.

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**Sheffield Hallam University** has always strive to reduce its impact to the environment through a variety of projects, both in environmental as well as energy efficiency. One of the main areas the University targeted was the Student Union, for the electricity consumption as well as to reduce the high level of failures of the lights tubes. EMSc carried out a full site survey and recommended their unique PowerStar voltage optimisation to help improve their energy efficiency and reduce the life expectancy of the lights.

### THE CUSTOMER

The University is one of two Universities in Sheffield with a long history in providing excellent education. The University prides themselves for been innovative and progressive and have state-of-the-art facilities.

### THE CHALLENGE

Having identified that the Student Union voltage was high and that the power quality received by the building was poor, it was left to the Powerstar team to design a system which will not only reduce the energy consumption but to also to significantly improve the power quality.



*"The PowerStar system has saved 16% of the total electricity consumption at the Student Union Building and has reduce the failure of the lights by an amazing 75%. I have no hesitation recommending PowerStar"*

*Stephen Ward, Senior Electrical and Mechanical Engineer, Sheffield Hallam University*



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### THE SOLUTION

The Powerstar designed and manufactured for the Student Union, required to remove high levels of harmonics (electrical noise) from the supply and its unique Voltage Optimisation design provided both the energy savings as well as the minimisation of harmonics thus improving the power quality at the building.

### THE BUSINESS BENEFITS

The installation was completed in March 2008 with a minimum disruption to our business. Since the installation, we have seen a reduction of 16% in our kWh consumption and 19% in the Maximum Demand. In addition, we monitored the failure of the light tubes for 18 months before and 18 months after the installation of the Powerstar system and we have seen a 75% reduction in the failures of the light tubes.

Just the reduction in the maintenance costs at the building paid for the system in less than 24 months. With the energy savings, our payback is just over a year.

### QUOTATION FROM CUSTOMER

*"We are absolutely delighted with the Powerstar system which has reduced our direct electricity carbon emissions by 16%. In addition, the significant improvement of the life expectancy of our electrical equipment due to Powerstar has shown that the overall carbon savings from this project is considerably higher. I have no hesitation to recommend Powerstar to others"*

Stephen Ward, Senior Electrical and Mechanical Engineer, Sheffield Hallam University



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