



Queen Mary, University of London



Queen Mary, University of London, has its roots in four colleges: Queen Mary College, Westfield College, St Bartholomew's Hospital Medical College and the London Hospital Medical College. The College has approximately 9,000 students, including over 1,600 students following postgraduate and research programmes. As a result of a merger in 1995 Queen Mary incorporates two medical Colleges: St Bartholomew's and the Royal London. The Library is part of Information Services and supports all College teaching and research. It has over half a million books and journal volumes, a fast expanding collection of AV and electronic materials, plus computers and study suites.

Challenge

- ❑ To reduce the energy consumption and cost of electricity in the library building by tapping down the high voltage supply by 7% with the installation of a 210kva **powerPerfactor** unit. Minimum voltage prior to installation was 238v – minimum voltage after installation is 221v.

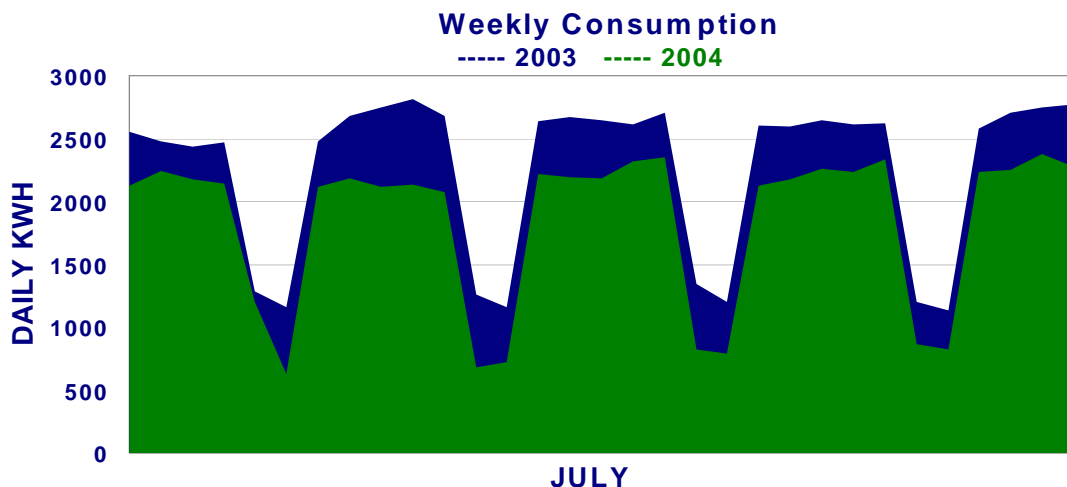
Method

- ❑ To compare the day to day consumption of the Library in July 2003 to July in 2004 after the installation of **powerPerfactor** by utilising the half hourly electricity data supplied by **Utiylix** for the month referred to in the graphs.
- ❑ **N.B** No fundamental changes in infrastructure had occurred in the building during the two years.

Benefits

- ❑ Reduced electricity consumption and costs.
- ❑ Reduced CO2 emissions, lessening the environmental impact of the college's operations.
- ❑ Protection against transients (spikes) that damage computers and other sensitive equipment.
- ❑ Suppression of harmonics to ensure compliance within G5/4 requirements.

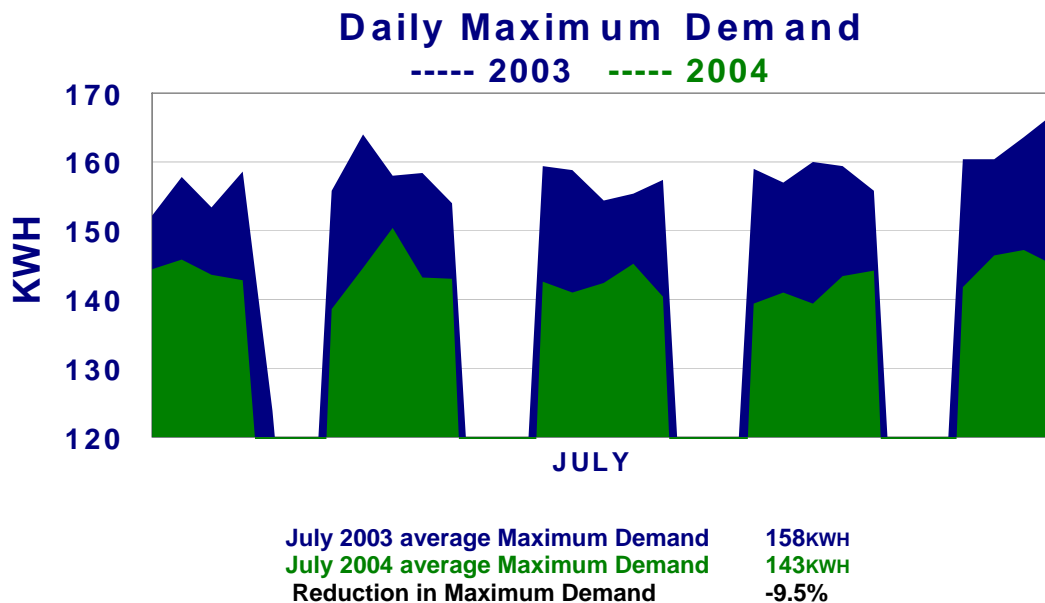
The following graph shows the library's daily consumption (KWH) during July 2003 and the same period in 2004, following the installation of a 210KVA – 300amp **powerPerfactor**.



July 2003 average week day Consumption 2628kWH
 July 2004 average week day Consumption 2208kWH
 Reduction in consumption -15.9%



The following graphs show the Highest Demand during July 2003 and the same period in 2004, following the installation of a 210KVA – 300amp **powerPerfactor**.



Summary

- ❑ The data collected has enabled a like for like comparison and an early indicative assessment of the energy savings generated from the installed **powerPerfactor**.
- ❑ By comparing the daily consumption values following installation with the values obtained over the same period of the previous year it can be seen that all the values have been reduced.
- ❑ The **KWH** consumption is **15.9%** lower than prior to installation.
- ❑ The opportunity to tap down by a further 2% exists.
- ❑ All equipment in the Library works efficiently.
- ❑ Return on Investment of 36% on unit cost and installation at current cost of 3p per kwh.
- ❑ Queen Mary, University of London, is now reviewing other buildings with a view to rolling out **powerPerfactor** as a part of their energy saving initiative.

John Elam, Energy Manager, who initiated the use of the technology, and colleagues in the Estates Department are pleased with the installation of the **powerPerfactor** and are seeking funding for further installations as part of their energy efficiency investment programme. They are also looking at the installation of a further three **powerPerfactor** units for a large block occupied by Biology/Student Union/Computer Sciences, together with a programme of work involving balancing of phases, and power factor correction; as an alternative to having to make a larger investment in a new supply as the existing supplies are insufficient to meet increased requirements.