

BOMBARDIER TRANSPORTATION

CONTROLLING A LARGE FACTORY SITE

Bombardier Transportation is renowned as one of Europe's largest manufacturers and repairers of railway rolling stock and equipment. With a turnover of more than £350m, the company employs over 5000 persons at six locations in the UK. Products include some of the most advanced rolling stock in the world, including the Class 465 Networker EMU's and Networker Turbos for Network Southeast.

The company actively considers conservation and environmental issues. A stroll around one 45 acre site reveals environmentally friendly gas fired radiant tube heaters installed in each of the 25 workshops, automatic roller shutter doors, a modular boiler system for heating the canteen and office areas, and suspended warm air heaters in selected areas. These were all installed following an energy audit which highlighted excessive fuel charges of £800,000 pa compounded by the maintenance costs of £77,172 needed to keep the 20 year old steam raising plant operational. Following the decentralisation capital investment of £754,000, energy costs have been reduced to £300,000. A large amount of this total has been saved by a system which is hardly seen, never heard but functions 24 hours a day, 365 days a year -



an Allen-Martin Computerised Energy Management System. This advanced, user friendly BEMS monitors the performance of each heater throughout 120 zones, predetermines and adjusts temperature settings relative to external conditions, affords total flexibility within each zone to shut down certain heaters to correspond with shift patterns and occupancy levels, as well as controlling the boiler sequencer operation. A network of 160 intelligent outstations transmits data back to the PC graphic to allow minute by minute zone observation.

An alarm system is built-in to detect sensor malfunction and roller shutter door operation. ABB Transportation has plans to use the system to its full potential by including total lighting control and full alarm detection for individual heaters, as well as monitoring process and air conditioning plant.

The decision by Bombardier to invest in Allen-Martin technology has certainly paid dividends. A pay-back period of just over 12 months was achieved as a result of the energy savings. In addition there are the advantages afforded by improved comfort conditions and enhanced flexibility of control.

Energy conservation continues to be an important issue, even at shop floor level. The misuse of energy can affect the overall profitability of each project when completed. Each project manager is now required to assess weekly energy requirements. The Allen-Martin system monitors energy consumed and the actual cost is apportioned to each project. In addition maintenance engineers achieve substantial benefit from using the PC software to record accurate maintenance reports.