



NEWFIELD AUTOMATION

SPECIALISTS IN INDUSTRIAL CONTROL SYSTEMS

Case Study – Energy Usage Survey/Report Manchester International Airport – Terminal 1 Baggage Handling System

The baggage handling system installed at Manchester International Airport - Terminal 1 is fitted with over 500-conveyors. They are used to transport passenger baggage from the Check-in area through to the make-up carousels, where they are loaded into containers before being taken to the respective aircraft.

As the conveyor system is already equipped with variable speed drive technology, which provides a more energy efficient solution as opposed to standard DOL (Direct On-line) starters we were asked to survey the electrical distribution system, monitor and review the energy usage of the baggage handling system (over a 7-day period) and compare this data against the operational periods of the system.

A total of 7-off sub-station locations were identified as supplying the respective 3-phase mains distribution to the respective baggage handling system, these were subsequently fitted with power metering/logging equipment.

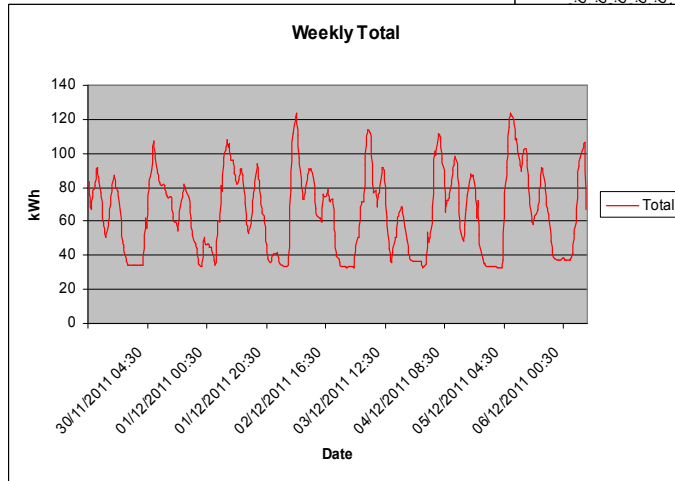
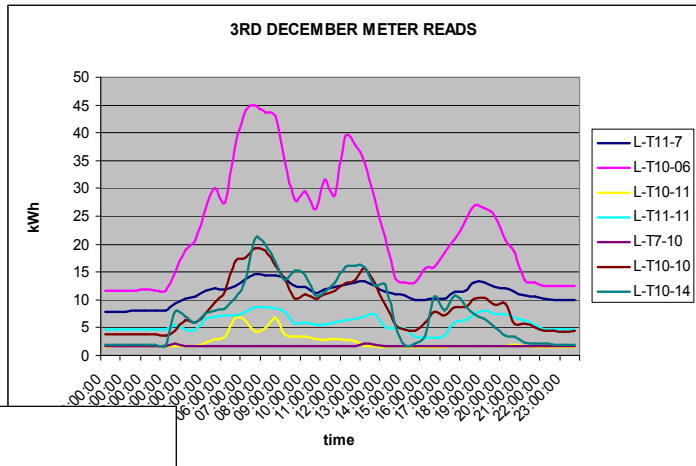


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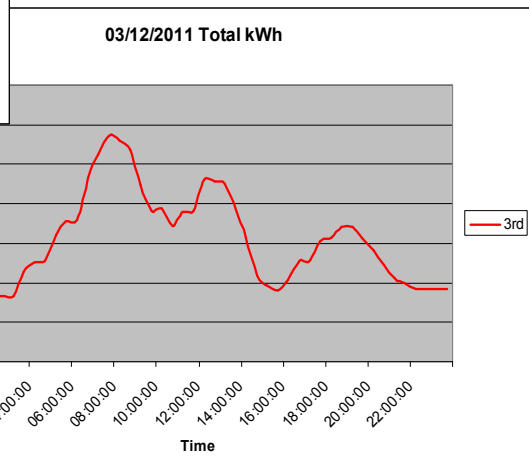


The captured data allowed for a number of graphs to be produced, showing the daily and weekly total kWh readings for the connected equipment.

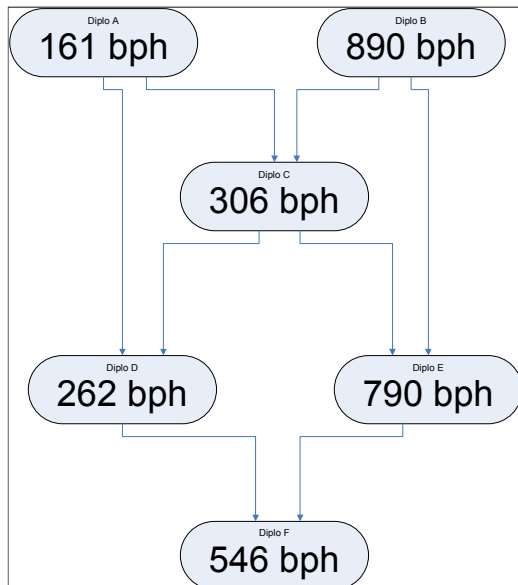
This data was then compared against the operational periods of the baggage handling system, so as to determine base load and operational load.



By analysing the associated data we were able to identify that whilst large parts of the conveyor system were in operation, it was not always required, as the throughput capacities of the system were by no means particularly high.



As a result we made a number of recommendations to the operational team of the airport so that they were able to adjust the quantity of conveyors in use and therefore reduce their overall energy usage.



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