

# Sigma M&T Software

## TEAM helps Birmingham Airport reduce its energy consumption

Despite substantial expansion and rising passenger numbers in recent years Birmingham Airport has managed to reduce energy consumption. A major part in identifying excess consumption has been the TEAM Sigma Software, which the airport uses to turn vast amounts of raw data from their elaborate sub-metering system into meaningful energy management data.



*"We cannot thank TEAM enough for showing us a way to achieve these savings and add value to our business."*

Geoff Brunt, Engineering Manager

## Background

Birmingham Airport is the third largest airport outside London, and the UK's seventh largest overall, handling over 9 million passengers a year.

Over the last ten years, Birmingham Airport invested more than £200m to develop its infrastructure, and has the capacity to service 36m passengers a year on its single runway.

Back in the year 2000 the airport had around 5 million passengers per year with an energy consumption of 46.5 million kWh, now with nearly double the amount of passengers, energy consumption has reduced to 41.5 m kWh.

## Importance of Energy

The total energy bill for the airport 2014/15 is estimated to be around £6m. After removing tenant and concession usage the final bill for the airport itself will total around £3.5m. Electricity accounts for around 75% of the total energy cost, gas for 22% and water for only 3%.

There is a big focus at the airport on energy efficiency and a reduction in consumption, from a financial and environmental perspective. The target for the 2014/15 financial year is a 5% energy reduction, based on the 2013/14 baseline year. This equates to energy cost savings of £175K.

## Energy Savings

Energy is not a fixed overhead, and after staff salaries it is the airports biggest controllable cost. There is a strong belief at the airport that you need access to meaningful information to reduce energy consumption.

In a drive to improve the level of data visibility Birmingham Airport installed 150 sub-meters adding to their existing 500 electrical sub-meters already in place.

They are using the TEAM Sigma energy management software to turn the large amounts of raw metering data into relevant energy information. TEAM software is then used to produce weekly reports analysing increases in energy consumption to detect where plant and equipment has gone out of parameter.

Geoff Brunt, Engineering Manager at the Airport said: "The key for me are the weekly exception reports. They highlight where energy is wasted but also where savings have occurred. This means Sigma software enables us to measure the performance not only of plant and equipment but our own performance in driving down energy costs. And it really has produced fantastic results for the business."

In August 2013 electricity consumption at Birmingham peaked at 26.5m kWh. A degree day cooling analysis identified that the high consumption was largely down to running the cooling plant which is a substantial cost to the business.

Geoff added: "Sigma Software highlighted this. If a piece of equipment/a sensor is 1% out of its calibration it can add 10, 15 or even 20% to your overall energy bill. In 13 months we managed to reduce electricity consumption in the terminal alone by 2.6m kWh."

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## Energy Responsibility

Birmingham Airport hold monthly Energy Steering Group Meetings with the head of each department to discuss progress on current projects. This process helps to ensure that energy stays high up on the agenda and energy news is filtered down into each department.

Using a combination of the TEAM Sigma Analysis tools and some custom reporting Birmingham Airport are able to produce month department reports, which are shared at the monthly steering group meetings. These reports include:

- Year on year usage comparisons
- Financial year to date
- Degree day weather corrected consumption
- Forecasts for the year
- Plant and equipment consumption breakdown
- Energy reduction targets and commentary

All this is designed to help each department understand where energy is used in their respective areas and how they are performing both individually and against each other. "The competitive element at management level has been very effective: Managers are very keen to be seen to be performing well and they are asking lots of questions if they are not." said Geoff Brunt.

Birmingham Airport have gone through a rigorous process to identify energy champions to become the eyes and ears of the energy team on the ground. They represent the energy saving message in the different areas of the business and become a catalyst for energy reducing actions. To support the champions they have created an energy portal allowing staff to submit ideas for energy savings.

## Plans for the Future

Following a good start to the year, the original energy saving target for 2014/15 of 5%, equating to £175,000 has been increased by £200k. And the airport is well on track to achieving this. This saving equates to 1026 tonnes CO2 equivalent which means that with the carbon reduction commitment cost per tonne at £16/t, this saves a further £16,424 for the business.

"We believe that TEAM has played a significant part in supporting us on our journey and this journey has not stopped. We have tackled the low hanging fruit, but we believe we can sustain the energy savings into the future." added Geoff Brunt

## About TEAM

TEAM is a leading supplier of integrated energy and carbon management solutions, providing monitoring and targeting software, utility bill validation and consultancy services across a wide variety of sectors.



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