



Case Study



Monitoring & Targeting Software

Working with TEAM Sigma Software, Teesside University is already achieving substantial energy savings, despite a 7% increase in floor area.



Stephen Middleton
Access Control & Energy
Management Administrator

Background

With over 2,000 employees and 20,000 students the main campus of Teesside University is located in Middlesbrough, adjacent to the town centre.

The University has always taken its environment responsibilities seriously and was one of the first Higher Education institutions to be invited by the Carbon Trust to formulate a carbon management plan in 2006.

The University is involved in a range of initiatives that aim to highlight and improve environmental issues.

Its first Green Travel Plan was implemented in 2006 and in 2009 the University achieved the Carbon Trust Standard, the world's first independent carbon award that requires organisations to measure, manage and reduce carbon emissions across their own operations.

Its annual energy spend is £2 million and it produces 7,913 tonnes of carbon emissions every year.

Stephen Middleton, Access Control & Energy Management Administrator for Teesside University, said: "We have grown in student numbers and floor area but our aim is to reduce our carbon footprint despite this growth."

He added: "The reduction in the use of energy in all its forms – gas, electricity and fuel for transport and the energy tied up with the

use of water and raw materials - represents a major challenge to the country and the University. Every individual must play their part in reducing our carbon footprint and improve the environment if we are to survive and prosper in this very challenging period."

TEAM Sigma Software

Teesside University has been using TEAM Sigma monitoring and targeting software since 2009, to help manage their billing data, AMR data and create analysis reports.

They upload their meter reads through AMR data and billing data so they can monitor and report on their usage. The software has been essential for detecting billing errors and discrepancies.

The University has 283 AMR meters on all buildings over 1,000 m² covering electricity, gas, water, heat, server rooms, plant rooms and chillers, outside air temperature and domestic hot water services.

Stephen, explains how using TEAM Sigma has allowed him to identify savings quickly.

He said: "I monitor 138 meters on a daily basis. The software has been essential for detecting discrepancies, which previously went unnoticed. Using TEAM Sigma ensures all the data is kept in one place, which makes it a lot easier for me to carry out my daily checks and look for any obvious signs of energy waste."



Savings

CO₂ emissions hit a record high for the University in 2009/10 producing 9,645 tonnes.

TEAM Sigma has played a fundamental part in helping the University reduce its CO₂ emissions by 18% from 2009/10 to 2013/14. Water consumption has reduced by 30% during the same timescales too.

Stephen added: "Reporting plays a key part in helping me to identify the greatest of savings. I use a Period Comparison Report and a Performance League Table on each of the University's buildings, which helps me compare figures from previous years and highlights any major changes in energy usage. Both of these reports are compiled using data from TEAM Sigma."

With the help of TEAM Sigma, Teesside University identified a major water leak and savings of some £20,000 per year.

"We put an AMR on our main water meter and discovered that we were using an extortionate amount of water overnight. An extensive investigation, which involved me smashing up a manhole cover on a Friday afternoon and weeks of searching, revealed a major leak below ground beside the Student Centre. We believe it must have been leaking for more than 15-years." said Stephen.

More than £6,000 was also reclaimed from the water board because the leak had been soaking into the land and had never made it to the drain, which was situated meters away.

The University's Performance League Table, created using TEAM Sigma data, also helped identify thousands of pounds worth of savings.

Stephen said: "When the University's Darlington Campus was first built it did not have the correct inhibitor added to the heating system. This caused corrosion within the pipes, both blocking the system and filling the pipes with hydrogen gas almost completely on the upper two floors. So when it came to heating the building, the pipes would be full of gas and the heating system would be on 24/7 attempting, without success, to pump heat around the building."



The future

The aim for Teesside University is to keep striving for environmental improvements.

The University's Carbon Reduction Target is 34% of the 2005 consumption by 2020, meaning that it has to save 3,719 tonnes of Carbon Dioxide by 2020.

The University established the Environmental Advisory Group in 2010 with a target to gain EcoCampus (Platinum) accreditation. It has recently been accredited at Gold level.

EcoCampus is the leading environmental management system and award scheme for the higher and further education sectors.

To ensure that all staff are aware of environmental initiatives in and around Teesside University, regular "green" stories are published in the Grapevine - Teesside University's monthly staff newsletter.

Benefits of TEAM Sigma

For Stephen, the greatest benefit of Using TEAM Sigma has been identifying problems quickly.

"I don't have unlimited time to look for problems. TEAM Sigma is a powerful tool, it's simple to use, saves on staff time and provides us with a significant amount of data, which has helped us identify a significant amount of savings over the years."

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