

Case Study Thorntons reap the benefits of developing a mass balance July 2012

Thorntons

“ We thought we were managing water really well until we completed a detailed water balance as part of the Federation House Commitment (FHC). The help we received quickly brought sharply into focus what was really happening. Immediately we have been able to save a significant amount of water and also reduce our water bills by over £60,000 per year – quite a result! ”



Rebecca Dilks, Environmental Project Manager, Thorntons plc

Thorntons is Britain's largest independent chocolate manufacturer and retailer. Chocolates are manufactured at the company's site in Alfreton, Derbyshire, which was opened in 1985 and has been expanding ever since. The company became an FHC signatory in 2011, and soon after signing received a free technical support on-site visit. During the initial meeting it became evident that Thorntons was already 'serious about water' but was keen to do more.

“We had previously invested in a sophisticated utility data-logging management system, which included utilities monitoring software,” explains Rebecca Dilks, Environmental Project Manager at Thorntons. “The system was designed to also accept readings from the main incoming water meter so that we could routinely plot and trend water consumption across the site.

“We also invested in an extensive water sub-meter installation programme, which feeds back to the utilities

monitoring software, so that most, but not all, of the main water-using areas on the site are metered and monitored.

“Before joining the FHC, we hadn't completed a detailed water balance but had relied on trending water consumptions via the utilities monitoring software to monitor water use patterns. Nothing unusual had been seen – no rapid spikes or increases – although we did notice that background water consumption over Christmas didn't drop completely to zero.

“During the initial FHC on-site review, we developed a draft water balance for the site and received help to prepare a schematic of the factory processes. Water flow data from the main incoming meter and sub-meters obtained from utilities monitoring software was added onto this. This process allowed us to identify the data gaps and focus our efforts on measuring/calculating/estimating these using support from the FHC technical advisors.

“Once the data on the water balance was complete, it became evident to us that the water balance did not actually balance!” Dilks says. “It seemed we were consuming (and paying for) some 30,000m³ water a year which was not apparently being used anywhere.

“When further checks and investigation of site geography and water distribution failed to reveal a possible water use of this magnitude, we decided to call in a leakage detection company.

“Within a few hours on site, two underground leaks were discovered: one estimated at 3 – 4m³/h and another at 0.5 – 1m³/h. On finding this, we knew we had to act swiftly and the leaks were repaired within days. This has reduced our water consumption by an equivalent greater than 20,000m³/y. With the site's average cost of water of 78p/m³ and trade effluent charges of typically £2.35/m³, we expect to save over £60,000 per year.”

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