

Water efficiency case study: University

17,791m³ a year identified water savings

£43,312 per annum potential savings

Reduction of 39% on their current water use

Background

In May 2014, we provided a London university with a water efficiency audit to look at its current water use practices and see whether there was a possibility of reducing water consumption without impacting on day to day business.

The university is located in central London and the building surveyed was an eight-story student accommodation block, open seven days a week. There was a total of 620 students using the rooms and facilities.

Existing water use was 45,600m³ per year, costing the site nearly £111,300 per annum. The opportunity to identify environmental savings was welcomed by the team at the university and consequently they were keen to accept our offer of a water efficiency audit in an effort to reduce current water use.

Identified opportunities for water efficiency

Toilets

There were a variety of toilets installed at the university but the majority were single-flush toilets using 7.5 litres per flush. Newer models of single-flush toilet only use six litres per flush and dual-flush toilets only use an average of 4.5 litres.

There was scope to reduce water volumes used for toilet flushing by either installing cistern displacement devices, which reduce the flush volume by 1.2 litres and are available from us free of charge, or by retrofitting the toilets to convert them into dual-flush systems. The audit found these changes could save the university approximately 853m³ per year - a £2,082 saving on its water bill.

Urinals

There were a number of uncontrolled urinals present within the areas surveyed. Uncontrolled use consists of urinals flushing regardless of the frequency of use. This can include drip feed flushing, timed flush control (where the urinal flushes at a given interval throughout the day and night) or where controls were installed but they have either broken or been disconnected. The university had a number of uncontrolled urinals and would benefit from installing passive infrared (PIR) sensors on these. This would ensure that flushing only occurs after a set time following the urinal's use, eliminating unnecessary flushing. If installed on all uncontrolled urinals, the university could save 961m³ of water and £2,346 on its water bill each year.

Showers

At the time of the audit there were over 440 showers installed in the building surveyed. All of the showers tested used more water than the recommended eight litres per minute. It was therefore recommended that, where possible, showerheads be replaced for water efficient models. For showerheads which are not changeable, it may be beneficial to investigate the pressure associated with the water distribution system. Buildings are often set up to distribute water at a very high pressure when a pressure of only 1.5 bar is usually more than adequate. If direct alteration of the system is not possible, pressure reducing valves can be used in order to achieve a lower, more even pressure on each floor. Care should always be taken to test whether all appliances function to a satisfactory level when altering water pressure. If the university was able to reduce the flow of its showers to eight litres per minute it could save 15,977m³ of water per year and see a reduction of more than £38,980 on annual water bills. There would also be additional monetary savings on their energy bill from the hot water saved.

Through engaging with us to investigate its current water use and gain advice on how to improve practices, the university's management has identified and quantified potential water savings in the order of **17,791m³ a year** - saving around **£43,412** on annual bills. This was a 39 per cent saving on water use in one of their accommodation blocks. If these findings were applied to other accommodation areas on site the savings would be amplified.