

Southern Water (SWS) commissioned Mouchel during February 2014 to undertake a pilot project demonstrating the practical water and cost savings achievable in a school environment and to provide industry information and know-how that could be applied more widely to a series of future beneficiary schools. Savings would be achieved through a combination of water efficient retrofit products, new fitments from Ideal Standard and where required, urinal flush control devices. Elm Grove Primary School in Brighton was chosen for its suitability and potential to save water.

An initial site assessment was undertaken and a Site Assessment Report was produced proposing the potential retrofit and replacement options for each surveyed fitment. An existing average water consumption was calculated based on a number of assumptions which were further validated using water meter readings at the school.

The recommended products were procured and then installed within the school during the May 2014 half term break. The savings for Elm Grove Primary School are calculated to be in the region of £5,000 per year through a reduction in their calculated consumption of 7,000 litres per school day. This reduction represents just over 30% of the schools average consumption of 21,000 litres per school day and has an effective Return on Investment (ROI) for this entire pilot within 205 school days. This data can be seen in the attached report.

This pilot has and continues to show that water efficiency measures should be undertaken across schools in the SWS region in a comparable manner to yield maximum savings from products with an efficient ROI. These savings will help to fulfil SWS's obligations to promote efficient use of water by its customers and also assist in spreading the message of general water efficiency across local communities and subsequently future generations through embedding correct behaviour change and education at grassroots.

“This project has been a fantastic example of partnership working that really helps to progress our Eco Schools status. We are very grateful to Southern Water. All schools are focusing on their water and energy usage to ensure that costs can be as low as possible, enabling more of our school budgets to be spent on teaching and learning.” James Waring, Acting Head Teacher.

To deliver this pilot project the following stages of work were undertaken in order to maximise potential savings. An initial site assessment was carried out on Wednesday 5th March 2014 after the school day had finished. The site assessment was conducted by the core team and included locating water using fitments, recording flow rates and volumes (where possible) whilst collating sufficient information on the type and style of the existing appliances in order to assist the selection of suitable retrofit products or where necessary, efficient replacements. During the visit suitable locations were identified as potential sites for 'child friendly' posters to accompany products and explain how the new features operate.

Meter readings were also undertaken as part of this initial site visit to provide a benchmark for usage between the site assessment and the product installation phase. The findings from the Initial Site Assessment were summarised into a report proposing the potential retrofit and / or replacement options for each scenario identified.

For this trial Ideal Standard were offering a range of new replacement products from their own catalogue while Mouchel, through their comprehensive experience of water saving devices, proposed additional new efficient replacement fittings and a vast array of retrofit products.

An existing average water consumption was calculated based on a number of assumptions which were further validated using water meter readings at the school. Potential replacement products were assessed based on their effective Return On Investment (ROI) which identified products that recover their purchase and installation costs over the shortest duration to help the school achieve larger, longer term savings.

Following a review of the report's findings and recommendations, the required products were procured to allow the project to progress to the installation phase.

Posters were designed and produced to accompany the products that aimed to illustrate their use and in some cases potential benefits. The below example intends to demonstrate the correct usage in order to achieve a full and half flush of a new push plate being installed for the children within the school. As an additional benefit, stickers were also produced and placed on both the large and small buttons to help the younger children select the correct side to push for a large amount of water or for a small amount:

Through the use of retrofit but where necessary replacement products, the majority of the water using fittings within the Elm Grove Primary School were able to be significantly improved, saving a calculated 7,448 litres per school day and almost £5,000 a year from their water bills alone. These savings will hopefully be coupled with reductions to their energy bills through a drop in hot water usage across the taps that were either replaced or retrofitted with a water saving device.

By installing devices with the most effective Return On Investment (ROI), it has been estimated that the ROI for this entire pilot can be achieved in as little as 205 school days, just over 1 school year. Although some additional savings could be achieved through complete replacement of fittings such as the toilet cisterns and pans, the greater cost of products, time and therefore larger ROI makes this option less suitable. As well as an increased disruption to the premises, complete replacement can also be seen to go against the green persona of efficiency projects as disposing of existing functioning equipment, is not as environmentally friendly as retrofitting products to enhance existing stock.

By working closely with the school's Premises Manager, we have been able to cascade information about the correct and appropriate use of products to those who are not in direct contact with the project and hand over vital maintenance information. All products have been explained in full by our plumbers and manuals provided which will help the school to maintain these fittings and ensure maximum savings are achieved over time. As only one meter within the premises is able to be assessed, we are unable to evaluate the results in their entirety. Reviewing just the second meter (S/N 147880), a reduction of 41% can be seen over the first month. This follows the calculated savings which show a potential reduction in consumption over the works that have been completed to be around 50% (14,568 litres per day to 7,119 litres per day). Although it must be noted that this meter supplies a smaller amount of the overall water that the school consumes and without data from the other faulty meter, we cannot confidently confirm the overall savings. During the process of the project, Southern Water (SWS) ran separate assemblies and events within the school to engage the pupils with the importance of water efficiency. This included an exercise SWS gave pupils to take home and record household water usage throughout the duration of the audit. Pupils were told that this would help with a study SWS are conducting into household water use in order to report back ways to reduce their water consumption. This overall engagement with the school throughout the process has been vital not only in working towards the water saving goals, but to securing the schools ongoing support to this project. Hopefully these pupils will now take these messages on and adopt them going forwards at school and at home and it will help in securing good water efficiency practices in the wider community, for generations to come.

From the data available, the project has been successful in helping the school to achieve water savings near those that were originally calculated. The potential energy savings coupled with these water savings should be visible in the near future as the school year begins.

