Leak Detection Site Survey Report

30th January 2015

We attended the Plymouth branch on Thursday 29th January after receiving a high consumption water bill from South West Water.

We arrived on site and began by locating the water meter which we found to be located about 0.5 miles drive from the Plymouth site on a separate road named, Huxley Close. It sits in the pavement near to the DVLA compound. The meter serial number was checked and correlates to the water bills we receive (00M017923). To ensure we had the correct water meter, we turned a kitchen tap on whilst observing the water meter. When the kitchen tap was turned on, the water meter increased in speed, we then turned the tap off and the water meter returned to a flow of 300 litres per hour.

Picture 1 - Plymouth Water Meter

Picture 2 – Plymouth Water Meter Location

The meter was reading 12,581m³ with a **flow rate of approximately 0.3m³ per hour**, giving an **average daily usage of 7.2m³.** An average daily usage of 7.2m³ per day carries a **daily cost implication to Wolseley of £39.74** and an **annual cost implication of £14,506.56**.

The branch would normally have an average daily usage of **0.3m³ per day** which equates to **a minimal daily cost of £1.66** and an **annual cost of approximately £604.44**.

Due to the rise in consumption, there is an **unaccounted water loss on site of approximately 6.9m³ per day**. This equates to an **unaccounted daily cost to Wolseley Plymouth of £38.08** and an **unaccounted annual cost of £13,902.12.**

We looked around the building and found the rising main in the warehouse. There is no stop tap on the rising main where it comes out of the ground. The pipe rises up to high level and then it branches off in two directions. One branch goes left to a water storage tank and then back down to feed the toilets, kitchen etc. The branch to the right goes all around the warehouse to a hose tap then it crosses to the shop and there is a supply to the drinks machine. There was good noise on the rising main so we decided to isolate each branch and see if it would any difference to the leak noise and the flow rate through the water meter.

There was a stop tap to on the left hand branch at very high level, which was too hazardous to try and attempt to access however there was another stop tap on the branch by the water tanks. We closed this stop tap and found that the leak noise disappeared. We then went to the water meter and this had also stopped spinning indicating that the leakage/water loss was on the left hand branch within the main building.

Picture 3 – Rising Main in the Warehouse

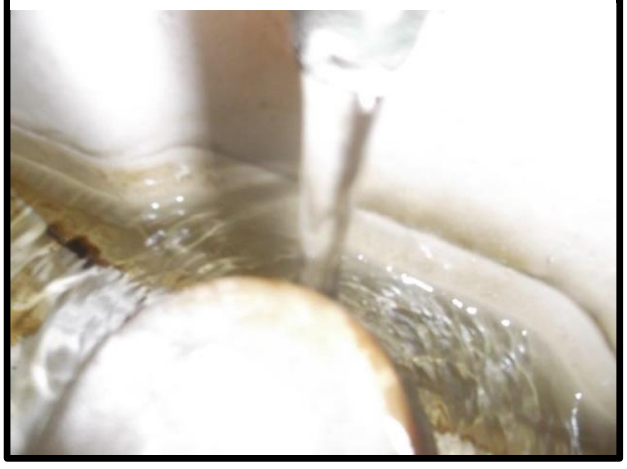
Picture 4 - Stop tap on left branch used to isolate the left branch supply

We went back to the stop tap and re-opened it and checked to see what the branch was feeding. On walking into the staff and public toilets and the kitchen, running water could be heard. We checked all the cisterns and urinals in both staff and public toilets. We eventually found that there was a continual flow of water into the Public Gents toilet.

We lifted a ceiling tile above the urinal and we discovered a cisternmiser type urinal control which was running continuously. On the inlet side of the urinal control there is an isolation valve, so we shut this to stop the flow to the urinal cistern. We then went to the water meter again and found that the water meter was stationary.

Picture 5 - Defective Cisternmiser in Gents Public Toilet

Picture 6 - Cistern running continuously



Conclusion

There is a loss of 300 litres per hour at Burdens Plymouth which we found to be going into the building. Further investigations show that this entire loss is going into the Public Gents urinal.

Recommendations

Fit a new urinal control on the 15mm copper pipework in the public Gents toilet. There is a local isolation point by the urinal (the ball fix valve) and the control is mains fed, not tank fed.

Cost: £85 + VAT + Postage (Supply only)

Annual Saving: £13,902.12