Leakage Investigation Survey

Client: Blackburn

Mains water meter information

Size (mm)	15-28	✓	32-50		75-100		125-200		Above 200mm	
Serial number	C1012345698									
Readings (1)	1774.617				Time:		09.33 08/12/2022			
Readings (2)	1774.677				Time:		09.38 08/12/2022			
Location	Internal behind tool chests									

Leakage Activities

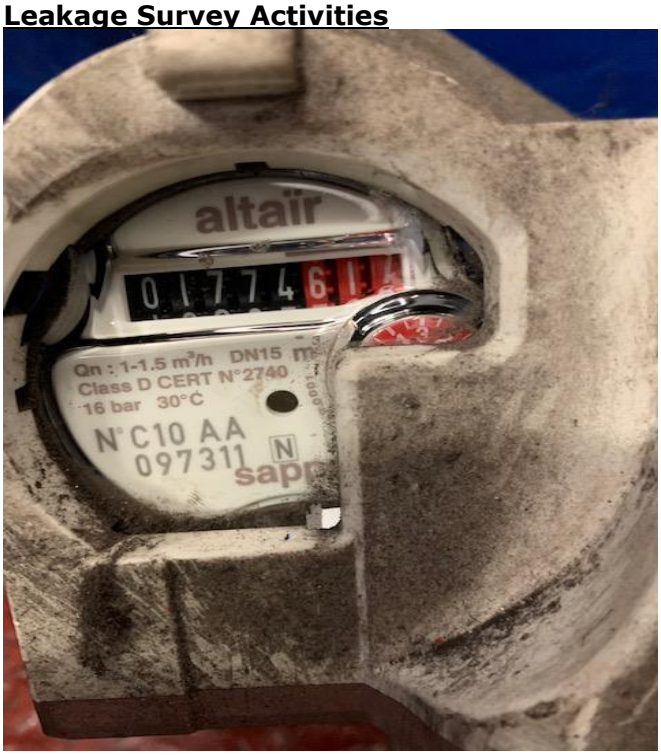
Acoustic sounding		Correlation		Ground microphone		Environmental Inspection	✓
Other	Isolation of rising main						
Pipe traced		CAT & Genny			Distance		
Pipe correlated	Accelerometer		Hydrophones		Distance		

Background Information

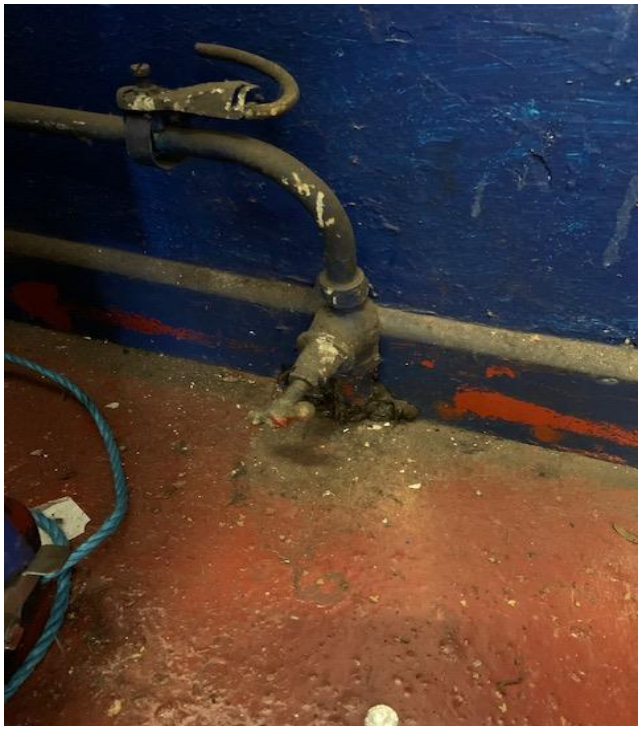
Continuous flow at meter and high bills

Activity Summary

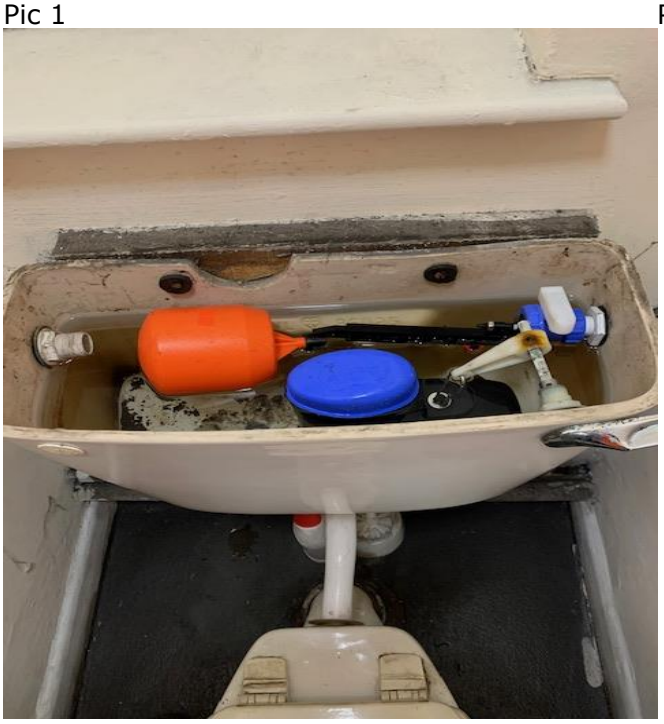
Leakage Survey Activities



Pic 1

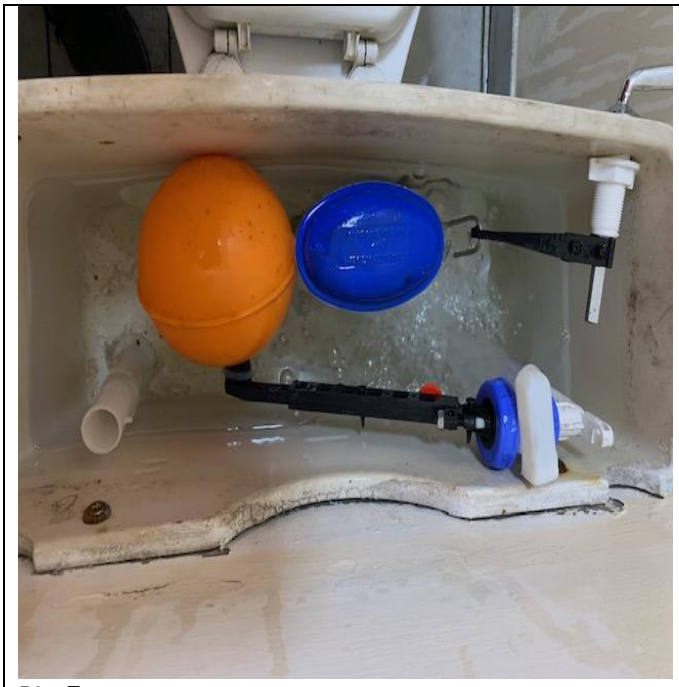


Pic 2

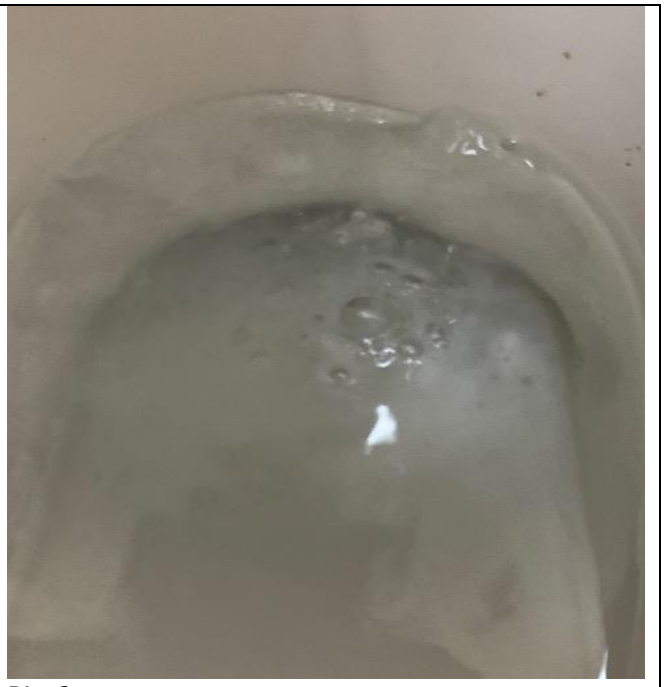


Pic 3

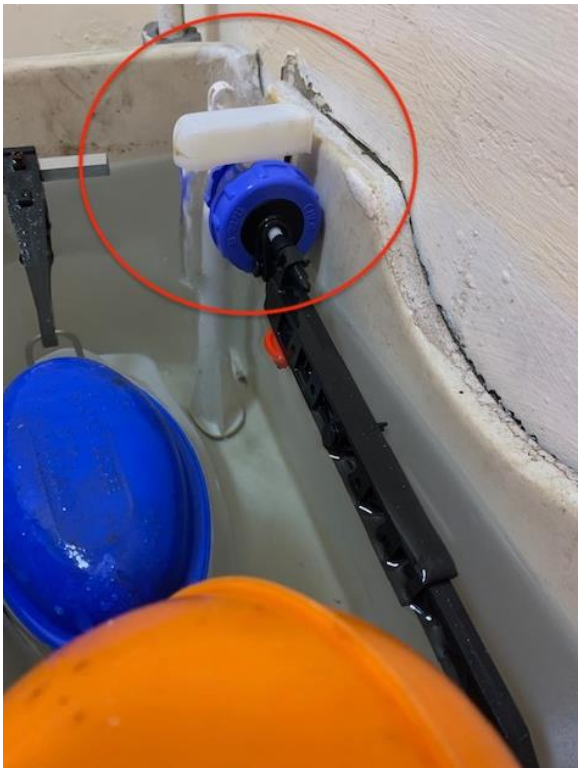
Pic 4



Pic 5



Pic 6



Pic 7

On arrival at site I checked the main revenue meter (pic 1) located internally behind tool chests, the meter had a constant flow rate of 12 litres per minute, which equates to = 17.28m3 per day = 6,307m3 per year = £19,300 per annum.

I first shut the internal stop tap (pic 2) and checked all end user areas and all were shut off confirming that the meter supplied the site.
On restoring the mains water supply I began to check all end user areas for leaks.

I followed the pipework around the premises just to make sure the supply didn't go to ground to supply an outside tap, all the pipework was above ground confirming that the issue with continuous flow was an internal problem.

All WC's and sink taps were all in good order in the garage area, however in the public area there is a female WC (pic 4) which was in good order.

A male WC which was filling constantly and running through the integral overflow (pic 5) and direct into the WC bowl (pic 6).
On lifting the ball arm the water did stop but the cistern continued to drain into the bowl, with this happening I released the ball arm and let the cistern refill and again the water was going straight into the WC bowl thus coinfirming that the cisterns syphon mechanism wasn't working correctly.
I would think that the diaphragm inside the syphon is damaged and making the cistern continuously flush.

It was also noted that the ball valve is a left hand side botton feed type, however the one that is installed is too tall for the cistern (pic 7) the cistern lid sits on top of the ball valve because of this and therefore needs replacing.

In all the cistern requires a new replacement syphon and a new replacement ball valve.

We have isolated the water supply to save waste and the WC has been locked off so that it cannot be used until repaired.

We have now informed the water retailer this has been sorted and the leak has now stopped.

Summary & Recommendations

Summary:

Replace syphon in WC cistern located in male public washroom

Replace left hand bottom feed ball valve with new shorter type (recommend a suspended type ball valve) see pic 4

Survey carried out by

Engineer	H2O Building Services	Date	8th December 2022