

Clearwater Court bathroom refurbishment

What: Thames Water & Emcor replaced the water fittings in two bathrooms inside our main office – Clearwater Court in Reading – and have **reduced water consumption by more than 78 per cent**. Although our existing fittings were reasonably efficient to start with, the aim of the project was to establish how much we could reduce water consumption by while maintaining a pleasant bathroom experience for staff and visiting stakeholders. The original fittings were:

- Standard dual-flush toilets (average measured consumption of 5.6 litres per flush)
- Percussion taps (avg flow of four to six litres per min. Avg duration of 10 to 14 secs per use)
- Urinal sensors (Nine-litre cistern, four flushes per hour, seven days a week)

We replaced these with the following new water efficient fittings:

- Propelair toilets (1.5 litres per flush)
- Cistermiser sensor taps (avg flow of 3.5 litres per minute. Avg duration of 25 secs per use)
- Cistermiser urinal sensors (0.5 litres per flush, six flushes per hour, seven days a week)

Why: We supply water to the largest population of any UK water company. With our population set to grow from 8.2 million to 11.3 million by 2050 and future abstraction subject to stricter limitation, the focus on water efficiency is vital. Along with leakage reduction and introducing smart meters, water efficiency is core business for our investment and operations throughout the AMP6 period and beyond. This focus applies to both domestic and commercial customers. However, improving the water efficiency performance our own fittings and assets will be vital to demonstrate to our customers that simple improvements to water use fittings are a worthwhile investment. This project demonstrates that we practice what we preach.

This water efficiency project is providing results to support two main outcomes;

1. The development of a business case, with our facilities manager EMCOR, to underpin the upgrading of all bathroom fittings in our offices. Our Clearwater Court office alone has 16 bathrooms.
2. Providing a water efficiency benchmark case study, promoting the most water efficient office bathroom in the UK. This case study will be promoted to all our business customers, outlining the water savings, cost savings and payback periods that can be achieved.

How: As part of our own asset and staff engagement improvement efforts, Thames & Emcor agreed to pilot a refurbishment project in two bathrooms (men's and women's) at Clearwater Court. After discussions with Propelair (WCs) and Cistermiser (urinal sensors and sensor taps), we agreed to first install water sub-meters on all input pipes to the WCs, taps and urinals. A two-week monitoring period provided us with a footfall and water consumption benchmark. Propelair, Cistermiser and EMCOR staff installed the devices over a weekend and we promoted the new fittings to all Clearwater Court staff the following week, using internal newsletters and group emails to make staff aware of the trial. EMCOR took water meter readings at set intervals since the installation, which allowed us to compile a clear before and after picture of the savings achieved.

How Much: Our new bathroom fittings have **reduced water use by around 78 per cent**, from our pre-existing fittings which were already reasonably efficient.

- The two refurbished bathrooms are now **saving more than 11,500 litres every week**. This would **save more than 0.5ML each year**, enough to supply 1,250 homes.
- If we made these changes to all bathrooms in our Clearwater Court office, we could save a **projected 4.1 million litres each year**.

Supporting Information:

Thanks to the success of our communications to internal staff, and an innate curiosity, bathroom usage significantly increased after our new devices were installed. The men’s bathroom increased from 695 users per week to 1,128. All water use and savings results were then normalised to match the baseline pre-refurbishment footfall.

Savings per week (Seven days)	Men’s (litres)	Women’s (litres)	TOTAL
Propelair WC (x2 each bathroom)	2,445	4,384	6,829
Cistermiser Sensor Taps	1,000	1,067	2,067
Cistermiser Urinal Sensors	2,650	-	2,650
TOTAL	6,095	5,451	11,546



Figure one: Photos of the three water efficient devices fitted.

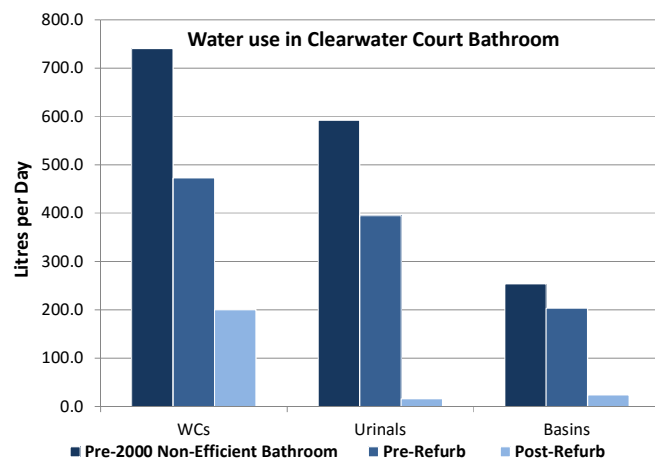


Figure two: Article in the Thames Water internal magazine ‘The Source’ – Sept 2015.

Figure three: Graph illustrating the pre and post-refurbishment metered water use amounts, alongside a projected consumption figure for an older non-efficient office bathroom.