

Water Management Audit Report

Recommendations Report: UEL - Residential Areas_East Blocks

Overview

Your site is part of a Water Efficiency Programme which has been set up by **Aqualogic** in order to monitor the effect of water efficiency improvements on overall water consumption.

The total cost of water efficiency improvements recommended and the potential savings can be viewed below. The the financial savings have been calculated based on your current tariff rate and are shown **per year**. If further savings can be made they will be detailed later in this document.

This report details the recommended actions and illustrates the potential benefit that the site could realise. Recommendations have been calculated using Aqualogic priority recommendations system and the assumed cost of water is detailed below **per 1000 litres or m³**. The audit process concluded that although there was a mix of working water devices, there was scope to make water efficiency improvements.

Summary Information

The below summary information has been calculated using information gathered onsite, such as number of taps and flow rates. The number of uncontrolled urinals and their flush frequency. The amount of people on site per day and amount of days that the site is open, Using these figures we have generated a savings estimate.

Calculated site savings estimate: **1.7 % water saving per annum.**

Below are estimates, based on your sites actual read meter data, the saving that can be made based on the savings estimate. The tabled figures are percentage reductions applied to your site billed data.

| Percentage Savings Estimate | Read Annual Consumption (m3) | Cost of recommendations |
|-----------------------------|------------------------------|-------------------------|
| 1.7 | n/a | £ 3,574 |

| Total projected saving m3/yr | Financial Savings /yr | Payback Period (months) |
|------------------------------|-----------------------|-------------------------|
| 721 | £ 1,146 | 37.4 |

| Benchmarking Information: | Current PCC m3/yr | Potential PCC (m3) m3/yr |
|---------------------------|-------------------|--------------------------|
| | 66.6 | 65.4 |

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This is the Water Management report summarising the work carried out, the results and the findings of the work carried out by Aqualogic.

Report Reference: Docklands Campus PORD140344

| Current Site Details | | | Audit Details | | |
|------------------------------------|--|----------------------|--|-----------------------------|------|
| Name | UEL - Residential Areas_East Blocks | | Carried out by | Steve Davies | |
| Address | Docklands Campus, University Way, London | | Company | Aqualogic | |
| Contact Name | Sara Kassam | | Date of Audit | 22 June 2010 | |
| Contact Position | Energy & Environment Manager | | Toilets | No. of male toilets | 783 |
| Contact Tel No. | | | | Avg size of male cisterns | 6.4 |
| Contact email | | | | No. of female toilets | 16 |
| | | | | Avg size of female cisterns | 6.8 |
| Description | UEL_Residential Buildings_East Blocks | | Taps | No. of hot taps | 799 |
| | | | | Avg hot tap flow rate | 10.0 |
| | | | | No. of cold taps | 799 |
| | | | | Avg cold tap flow rate | 10.0 |
| Occupancy Levels: | Male | Female | Urinals | Urinal places | 0 |
| Staff | 10 | 10 | | Uncontrolled cisterns | 0 |
| Other | 300 | 300 | | Controlled cistern | 0 |
| Totals | 310 | 310 | | Total cistern volume | 0.0 |
| Weeks/year | 40 | | Showers | No. of wall mount showers | 786 |
| Days/week | 7 | | | No. of hand held showers | 13 |
| Hours/day | 18 | | | Avg shower flow rate | 6.78 |
| Billing/Reading Information | | | Water efficiency products installed | Yes | |
| Swimming Pool? | No | | Leakage on site | Unknown | |
| Number of R meters? | Unknown | | Any overflowing cisterns? | No | |
| Read water usage | n/a | M ³ /Year | Any defective existng fittings? | Yes | |
| Read water cost | n/a | £/year | | | |
| Person consumption | n/a | M ³ /Year | | | |

Saving Estimates

These are predicted figures based on the information gathered during the survey and standard usage profiles. They may differ from actual figures and are used to generate a potential savings percentage.

| | |
|--------------------------------------|-----------------------------------|
| Cost of water | £1.59 £/M ³ |
| Pre-install consumption | 41262 M ³ /Year |
| Pre-install person consump | 66.6 M ³ /Year |
| Post-install potential | 40541 M ³ /Year |
| Post-install person potential | 65.4 M ³ /Year |
| Total potential savings | 721 M ³ /Year |
| Total potenatial savings | £1,146 £/year |
| Calculated saving potential | 1.7 % |

Data Analysis (Logging)

Data logging of the water meter has allowed for a flow snapshot to be taken. Up to 30 days consumption has been logged. The results are detailed below and are compared to billing data. The savings potential has been calculated using the percentage potential. Figures quoted in cubic metres per day.

| | |
|---|----------|
| Logged Daily Consumption | n/a |
| Logged Person Consumption | n/a |
| Urinal NF Contribution | |
| Based on the recorded flush frequency of surveyed urinals. It has been calculated that urinals will contribute the following to base flow. Figures quoted in cubic metres per hour. | |
| Uncontrolled Urinal Usage | 0 |

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Water Efficiency Recommendations

Following the water efficiency audit careful analysis of the findings were carried out and the following recommendations were made. Details of locations can be found in APP A schedule.

| | | RRP Cost | RRP Fitting Cost | Discounted Cost | Discounted Fitting Cost | No. Req. | Total Cost |
|----------------|---------------------------|----------|------------------|-----------------|-------------------------|----------|------------|
| Toilets | Dual flush valve upgrades | £ 31.00 | £ 60.00 | £ 25.00 | £ 55.00 | 0 | £ - |
| | Ecobeta Upgrades | £ 19.50 | £ 40.00 | £ 15.00 | £ 22.50 | 0 | £ - |
| | Cistern Dams | £ 3.95 | £ 7.50 | £ 2.00 | £ 4.00 | 0 | £ - |
| | Save a Flush | £ 2.95 | £ 7.50 | £ 2.00 | £ 4.00 | 13 | £ 78.00 |
| Taps | Push Taps - Retro | £ 21.00 | £ 10.00 | £ 15.00 | £ 8.00 | 0 | £ - |
| | Push Taps - Complete | £ 28.50 | £ 25.00 | £ 24.00 | £ 15.00 | 0 | £ - |
| | Inline restrictors | £ 10.50 | £ 15.00 | £ 8.00 | £ 8.00 | 0 | £ - |
| | Aerators | £ 4.95 | £ 5.00 | £ 2.00 | £ 2.00 | 799 | £ 3,196.00 |
| | Re-time | £ - | £ 10.00 | £ - | £ 10.00 | 0 | £ - |
| Urinals | Service | £ 62.50 | n/a | £ 52.50 | n/a | 0 | £ - |
| | Hydromate - Mains supply | £140.00 | £ 125.00 | £ 125.00 | £ 100.00 | 0 | £ - |
| | Hydrocell - Battery | £ 74.00 | £ 62.50 | £ 90.00 | £ 55.00 | 0 | £ - |
| | Hydrocell Ultra - Battery | £157.00 | £ 62.50 | £ 145.00 | £ 55.00 | 0 | £ - |
| | Isolation valve | £ 10.50 | £ 15.00 | £ 8.00 | £ 12.00 | 0 | £ - |
| Showers | AV Wall mounted shower | £ 90.00 | £ 54.50 | £ 75.00 | £ 50.00 | 0 | £ - |
| | Wall mounted shower | £ 35.00 | £ 15.00 | £ 25.00 | £ 15.00 | 0 | £ - |
| | Hand held showers | £ 25.00 | £ 15.00 | £ 22.50 | £ 15.00 | 8 | £ 300.00 |
| | TD Valve - New | £ 60.00 | £ 54.50 | £ 35.00 | £ 65.00 | 0 | £ - |
| | TD Valve - Replace | £ 45.00 | £ 25.00 | £ 35.00 | £ 22.50 | 0 | £ - |

| | |
|---|-------------------|
| Cost of water efficiency upgrades | £ 3,574.00 |
| Cost of additional recommendations | £ - |
| Total cost | £ 3,574.00 |
| Payback period (Months) | 37.4 |

Efficiency Recommendations summary

Toilets: Where possible we will convert your existing toilets using dual flush conversions or water displacement devices.

13 toilets in the washrooms and facilities around your site have been identified as requiring devices fitting.

Taps: Where possible we will convert your existing taps using flow regulators, aerators or non concussive (push) taps.

799 taps in the washrooms and facilities around your site have been identified as requiring devices fitting.

Urinals: Where possible we will service your existing urinal controls. Furthermore we will fit new devices where required.

0 urinals in the washrooms and facilities around your site have been identified as requiring devices fitting.

Showers: Where possible we will convert you existing showers using areated shower heads.

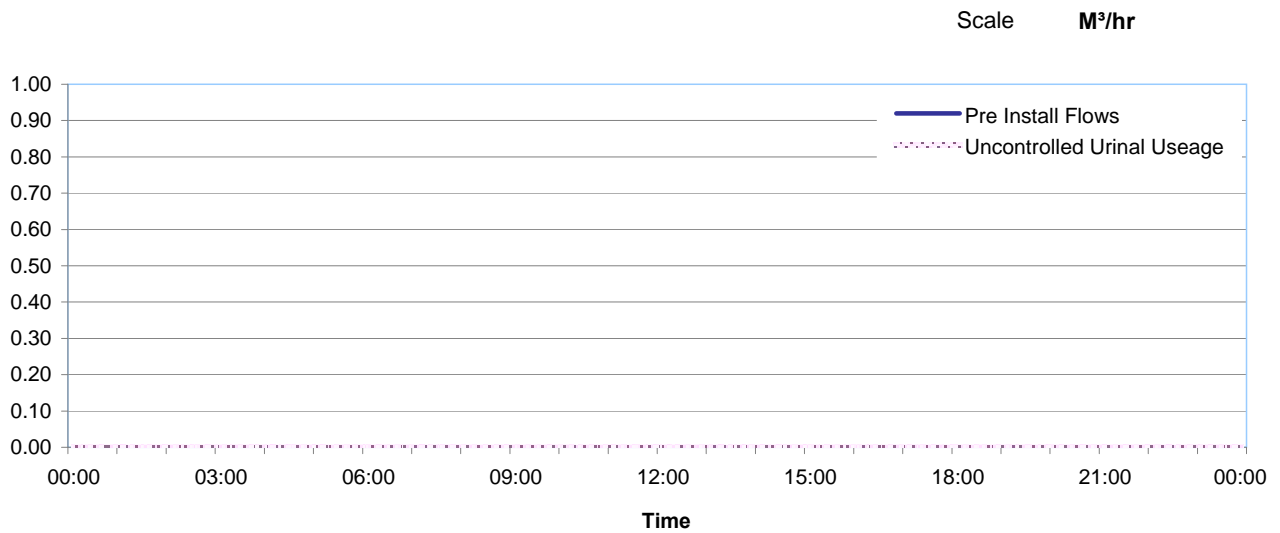
8 showers in the change areas and facilities around your site have been identified as requiring devices fitting.

All recommended products are WRAS or equivalent approved and feature or are compatible with devices listed on the Water Technology List. These are approved by DEFRA as water saving.

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Logged Flow Data Analysis

Any flow data collected before the fitting of water efficiency devices will be shown in graph below



Savings Breakdown

| Savings Headlines | | | | | Pre-Installation | Post-Installation |
|-------------------|-------------------------------|--------------|----------------|--------------|-----------------------------------|-----------------------------------|
| | Savings m ³ /Yr | Savings % | | | Consumption m ³ /Yr | Consumption m ³ /Yr |
| Taps | 174 | 20% | Taps | Hot | 434 | 347 |
| | | | | Cold | 434 | 347 |
| Toilets | 391 | 6% | Toilets | Male | 3320 | 3190 |
| | | | | Female | 3515 | 3255 |
| Showers | 157 | 0% | Showers | Handheld | 546 | 389 |
| | | | | Wall Mounted | 33012 | 33012 |
| Urinals | 0 | 0% | Urinals | | 0 | 0 |

Notes

Leakage / Unaccounted For Water