Approved by Council 29 November 2012

GOLDSMITHS
University of London

WATER MANAGEMENT STRATEGY

Executive Summary

The main aim of this water strategy is to establish procedures and recommended actions to enable Goldsmiths, University of London, to use, conserve and discharge water as sustainably as possible. The Water Act 2003 puts the onus on public bodies, including academic institutions, to conserve water. Only by looking at the wider picture, at what is happening globally, nationally and London-wide, does this requirement make sense on campus. The twenty proposals for 'Securing London's Water Future' extracted from The Mayor's Water Strategy published in October 2011, are therefore included in Appendix 1.

Water is our most precious and vital natural resource. However water is not always available naturally in the same places as the highest pressures of people and growth. The impacts of climate change and rising demand for water are putting increasing pressure on our water resources. Water also uses electricity to treat, pump and heat it, so saving water can save energy thereby contributing to carbon management.

As a nation, we expect a safe, reliable and constant supply of potable water to flow through our taps and waste water and sewerage to disappear out of sight to treatment plants. Although there is acceptance that extreme weather conditions can cause major floods, communities want facilities in place to allow rainwater overflows to discharge without damaging property or our environment. The parallel purpose of this strategy is therefore to educate staff and students about all aspects of water i.e. consumption, waste and drainage and raise awareness of how individuals can conserve water both on campus and at home through easily implementable actions as listed in appendix 3.

1 Introduction and Context

Goldsmiths Campus

1.1 Water usage

Consumption in halls of residence is obviously higher than in buildings used for teaching and administration due to the volumes required for washing and cooking. Residential properties comprise Batavia Mews, Chesterman, Dean House, Loring Hall, Raymont Hall and Surrey House. Non-residential buildings range from the largest users - Richard Hoggart (Main Building), Ben Pimlott, the Library & Rutherford Building (RISB), Warmington Tower and Education and Lockwood Buildings, to lower usage in Deptford Town Hall and Loring Sports Ground, down to the thirty smaller properties on Laurie Grove, Dixon Road, St James, St Donatts, Lewisham Way and New Cross Road. The New Media Building opened in 2010 has been awarded BREEAM excellent status and will provide useful comparative indices in future years.

A variety of problems including underground leakages, estimated readings and faulty water meters in past years, have resulted in inadequate data for monitoring purposes let alone annual comparisons. The recruitment of volunteer staff to take monthly water meter readings has assisted in providing more accurate water consumption

information for Estates to analyse. The following tables not only provide potable and waste water costs but indicate that our water efficiency measures are taking effect:

Residential

Year	Cubic Metres	Water Cost	Waste Cost	Total Cost
2010/11	50,436	£58,832	£28,078	£86,910
2009/10	51,997	£64,426	£42,520	£106,946
2008/09	34,750	£31,456	£29,714	£61,170

Non-Residential

Year	Cubic Metres	Water Cost	Waste Cost	Total Cost
2010/11	30,782	£35,170	£16,834	£52,004
2009/10	28,619	£35,466	£21,535	£57,001
2008/09	35,199	£33,848	£31,922	£65,841

1.2 Goldsmiths' Sustainability in Construction and Refurbishment Policy

This includes actions not only to conserve water but also to use rainwater and grey water. Operation and maintenance of water infrastructure and equipment, along with monitoring and auditing are the responsibility of Estates. Procurement is within the remit of Estates, Halls & Catering in conjunction with Finance. Investment in 'pay now, benefit later' projects is required to achieve long-term financial savings through reductions in annual running costs, such as use of rainwater, where appropriate, to replace conventional supplies for toilets and similar purposes. Adoption of best practice techniques in new development and refurbishment projects will achieve major change by facilitating action to reduce both water consumption and effluent production.

1.3 Goldsmiths Carbon Management Strategy and Action Plan

Standards and procedures to manage water consumption are part of this strategy to reduce CO_2 production. Effective water management reduces demand on both water and energy.

1.4 Goldsmiths Environmental and Sustainability Policy Statement 2009

Commitment to efficient water management is made via: Objective 13 to "Implement cost-effective energy and water conservation measures that will reduce consumption" and Objective 14 to "Undertake regular energy and water audits".

These objectives will be achieved by introducing and maintaining sustainable water practices in the design, construction, maintenance and management of its estate. Goldsmiths is able to work in partnership with Lewisham Council and the London Universities Environment Group to apply pressure on Thames Water to achieve beneficial action.

London Context

1.5 The Mayor's Water Strategy

Greater London has a population of 7.8 million which is expected to rise by 7% by 2026. The capital also caters for 13 million visitors each year. Daily consumption amounts to 1,870 million litres per day. During a dry year, there is a shortfall of some 200 million litres per day. The Greater London Authority produced a draft Water Strategy in 2009 developed with the support of Thames Water and the Environment Agency. By the time The Mayor's Water Strategy was revised and approved in October 2011 (see Appendix 2), there were 3.32 million households in Greater London. A programme to make up to 1.8 million homes more water and energy efficient launched in 2010 could save 46,000 litres of water and half a ton of carbon per home.

Goldsmiths must take account of the recommendations, and play its part in the delivery of the approved strategy as it contains proposals to ensure London avoids water shortages, drainage problems and reduces flood risks in the future.

1.6 Thames Tunnel

Thames Water is planning this major new 7.2 metre diameter sewer following the route of the Thames for 22 km at a depth of 75m. It will protect the river from increasing levels of pollution – 39 million tonnes of untreated sewerage –overflowing annually from London's Victorian sewers. Cleaning up and protecting the Thames will benefit the health and well-being of our capital city, achieve European Union environmental standards and utilise the potential of this underused asset in the future.

UK Background

1.7 Households

Two-thirds of dwellings that will be in use by 2050 already exist so it is important that people learn to use water wisely now. The 3 million new homes planned by 2020 need to be designed to high water efficiency standards. 38% of UK total water use comes from rivers, lakes and groundwater reserves. Changes in the way we live, including more power showers, dishwashers, washing machines and smaller households, mean we use more water per day. On average, each person in our region uses 167 litres per day compared to 140 litres in the 1980s. The national average is 146 litres pp/per day.

1.8 The Sustainable Drainage Systems (SUDs)

This code of practice aims to facilitate implementation of SUDs in developments in England and Wales. It enables control of excessive rainfall and extreme weather events. It is vital that understanding of how water, environments and ecology interact is improved.

Global Perspective

1.9 More than 1 billion people in the developing world have inadequate access to water and 2.6 billion lack basic sanitation, resulting in 1.8 million child deaths p.a. We must all 'Think global – act local'.

2 Targets

2.1 To reduce water consumption by at least 20% by 2015. This amounts to 7000 cubic metres in both residential and non-residential properties.

2.2 To encourage staff and students to achieve Defra's target to reduce current usage amounting to an estimated 167 litres to 120 litres per person per day.

3 Legislation

3.1 The Water Act 2003 Imposes a duty on all public bodies to conserve water.

3.2 Synopses of the Water Industry Act 1991 and the Water Supply (Water Quality) Regulations 2000 are provided in appendix 2.

4 Action Plan

4.1 Corporate Water Management Strategy

The Estates Committee will oversee the water strategy and report to Council. Its recommended actions can be achieved with the support and assistance of an inter-departmental support group within the remit of the Environmental Sustainability Sub-Committee.

4.2 Performance Review

Evaluation of the success, failure and sustainability of initiatives taken to reduce water consumption, particularly with regard to spend-to-save projects and major new build or refurbishment projects is essential. Collation and analysis of detailed consumption data for both the year immediately before and after any such initiative is undertaken, along with calculations during the planning stage allow a performance achievement target to be set.

4.3 Capital Development – New Build & Refurbishment Specifications

Adoption of sound design and maintenance standards and techniques will ensure optimisation of all existing water consumption in line with Goldsmiths Sustainability in Construction and Refurbishment Policy. Swift action is required to address excessive use arising from failed or old infrastructure and equipment, poor management or lack of awareness. The feasibility of abstracting water from the remaining boreholes and wells existing on campus must also be investigated. This requires consent and

licensing by the Environment Agency once water quality, volume and any treatment required are established.

4.4 Long-term Maintenance, Operational & Facilities Management

- Replace any oversized water meters
- Retrofit efficiency measures when replacing water equipment
- Identify and fix leaks as soon as possible
- Repair any dripping taps (up to 20ltrs per day)
- Fit isolation valves and tap restrictors
- Ensure that all new toilets purchased are dual flush
- Introduce waterless and urinal controls
- Fit eco-pulse or aerated showerheads
- Insulate pipes
- Use underground water storage and introduce water butts to harvest rainwater for grounds, trees and shrub maintenance
- Regularise metering arrangements for fire fighting water supplies.

4.5 Water Consumption Monitoring

Introduce profiling and targeting by using specialist software (such as STARK) to facilitate effective water management.

4.6 Water Audits

On-going recruitment of departmental volunteers to undertake monthly water meter readings enables efficient water management by Estates via:

- information on current usage;
- historical consumption data for future reference;
- benchmarks to assess individual property performance;
- identification of costed opportunities for improvement.

4.7 Education and Awareness

Commitment to regular education for all departments is essential to ensure that good practices are introduced and reinforced, and bad practices negated. Implementation of efficient housekeeping measures supported by education and awareness schemes, (see appendix 3: Tips on Water Usage), are essential to achieve the necessary culture change and thereby effective reduction of water consumption. Many people are unaware of the high quality of London's tap water; the benefits of drinking water to health and wellbeing; and that consuming bottled water contributes to climate change. The College already implements its policy to use tap water in refillable bottles for all meetings on campus.

4.8 Procurement

The Water Efficiency Product Labelling Scheme was introduced by the BMA to allow product comparison and purchase of appliances that meet the industry's efficiency standards. New water-using appliances must meet one of the top three ratings as specified at www.water-efficiencylabel.org.uk

4.9 Implementation Initiatives

To enable a realistic implementation timescale for these initiatives, the following measures will be implemented on a rolling basis over the timescales shown.

Measure		Timeline
i.	Identify areas where water can be saved	2012 - 2014
ii.	Seek low/zero cost options if done outside refurbishment, in conjunction with advice from Thames Water	2012 - 2014
iii.	Implement water efficiency options during all levels of refurbishment	2012 – Onwards
iv.	Plumbers to install water efficiency measures such as water hippos & percussion taps during quiet periods	2012 - 2015

5 Governance & Progress Monitoring

In addition to council and senior management team approval, adoption of this water strategy will require adequate employee briefing; process monitoring to ensure that the practices are being employed; and record keeping to demonstrate the level of achievement attained. This will enable future application for ISO 14001 accreditation or working with Thames Water to address issues resulting from the introduction of the new water charging arrangements.

6 Conclusion

Goldsmiths can both demonstrate by its actions and inform and encourage its staff, students and the wider local community to contribute to addressing the protection of water resources by the adoption of the approach detailed in this strategy.

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Appendix 1 Securing London's water future: The Mayor's Water Strategy 2011

Action 1 The Mayor will lobby Defra to ensure that there is greater coherency between the planning, funding and delivery of water company business and resource plans.

Action 2 The Mayor will lobby Defra, Environment Agency and Ofwat to develop a simple, transparent mechanism for comparing the costs and benefits of supply and demand measures in water company plans that fully accounts for the short- and long-term social, environmental and economic costs. Secondly, The Mayor believes that in the face of growing demand and declining supplies, it makes sense to use the water that we have more wisely. The Mayor will work with partners to implement a 'six-point plan' of integrated actions to help Londoners and London's businesses save water and money.

***Point 1**. Improve the water efficiency of London's existing buildings through retrofitting simple cost-effective measures. This saves Londoners money and offsets the demand for water from new development.*

Action 3 The Mayor will work with London's water companies and other partners to further integrate water efficiency into London retrofit programmes.

***Point 2**. Ensure all new development is super water efficient. This reduces residents' bills (all new development is metered), the need for new water resources and the impact on the environment.*

Action 4 The Mayor will lobby government to ensure that improving the water efficiency of homes is promoted and supported in the Water White Paper and the Green Deal.

Action 5 The Mayor will work with London's water companies and developers to monitor the water usage in new homes to see if the actual water efficiency matches the predicted water efficiency..

Action 6 In the next review of the London Plan, the Mayor will draft a new policy requiring all new workplaces to achieve an improved water efficiency standard such as AECB's 'best practice' levels or WRAP's 'highly efficient practice'.

***Point 3**. Raise Londoner's awareness of the financial benefits of increase water efficiency – many Londoners would be able to save money by being more water efficient and even having a water meter.*

Action 7 The Mayor will lobby government and Ofwat to improve water company customer engagement, for example, through providing more informative water bills.

Action 8 The Mayor will work with London's water companies to raise awareness of Watersure, optant metering and assessed charges through Citizens Advice Bureaux, Voluntary Action Centres, doctors' surgeries and social housing providers.

***Point 4.** Increase the number of homes that have a water meter. Paying for the volume of water consumed is the fairest way to pay for water, yet less than a quarter of London's 3.2 million homes have a meter. Having a meter helps consumers be aware of how much they are using and provides information to help control their bills.*

Action 9 The Mayor will work with London's water companies. Environment Agency and Ofwat to support the already planned introduction of water metering throughout London, with the aim of metering all houses and blocks of flats by 2020 and all individual flats by 2025.

Action 10 The Mayor will lobby government to investigate the opportunities and benefits of combining the 'smart' energy metering programme with enhanced water metering.

***Point 5**. Change the way Londoners pay for their water. The current system does not encourage or reward water efficiency, nor sufficiently protect those who cannot afford to pay.*

Action 11 The Mayor will lobby government and Ofwat to enable tariffs that incentivise and reward water efficiency, whilst protecting vulnerable customers.

***Point 6**. Continue to tackle leakage – this is water we pay for but never receive. A one per cent drop in leakage would provide enough water for 47,120 people.*

Action 12 The Mayor will encourage Ofwat to develop the evidence base for Sustainable Economic Level of Leakage, including the costs and benefits of fixing leaks that takes a

Action 13 The Mayor will lobby Ofwat to review the deadline for leakage reporting.

Action 14 The Mayor will encourage water companies and other partners to promote London's drinking water. This will include facilitating ways of working with London boroughs, our stakeholders and private sector organisations on potential funding models, or schemes, that provide efficient easily accessible and free drinking water to Londoners on the move, at no cost to the tax payer. nb The Mayor is also keen for Londoners to save money and reduce their carbon footprint by reducing their bottled water consumption (tap water is 500 times cheaper than bottled water0.

Action 15 The Mayor of London will lead by example by completing the Water Disclosure Project Questionnaire for the Greater London Authority to examine global water dependencies. The mayor will integrate risks associated with global water use into the Mayor's Green procurement Code to encourage companies to consider their water risks.

Action 16 The Mayor will lobby Defra to amend the working definition of water affordability to include disposable income after living costs, and for London to have its own water affordability assessment.

Action 17 The Mayor will, through the London water Group, work with the water companies to mange water affordability in London by: a) determining whether a current definition of water affordability is applicable to London b) identifying groups of Londoners that are, or could become, vulnerable to water affordability issues c) identifying the needs of these groups d) examining how the existing initiatives including the RE:NEW programme, could be integrated and better targeted to tackle water affordability e) lobbying government to secure funding for a water affordability pilot in London.

Action 18 The Mayor will work with partners through the London Drain Forum to mange surface water flood risk and ensure a consistent approach across London. This will include: a identifying flood risk hotspots and working with partners to determine who is best placed to mange these b developing a Community Flood Plan Programme to support communities that wish to increase their resilience to flooding c developing at least three demonstration projects to show how urban greening measures can help to mange surface water flood risk.

Action 19 The Mayor will work with Thames Water and other partners to support the construction of the Thames and Lee Tunnels, as a means of greatly reducing storm discharges from the combined sewer system and improving the quality of the water in the River Thames. The Mayor will ensure cost-effectiveness and reduced disruption at all individual locations by continuing to lobby Thames Water on local issues.

Action 20 The Mayor will work with Thames Water and other partners to identify ways in which the management of sewage can provide renewable energy and reduce emissions of greenhouse gases.

Appendix 2 Legislative Framework

The Water Industry Act 1991

This Act consolidates enactments relating to water supply and the provision of wastewater services and lists Thames Water Ltd as an approved water undertaker. Part 3 imposes a duty to maintain an efficient and economical water supply system and proscribes minimum standards of performance in connection with water supply. Clause 67 of the Act allows the Secretary of State to proscribe Standards of suitable *wholesomeness* for water; prescribing the purposes for which the water is to be substances that are to be present or absent and the concentrations.

The Water Supply (Water Quality) Regulations 2000

These are enforced by the Drinking Water Inspectorate which is part of the Department for Environment, Food & rural Affairs (DEFRA). These Regulations require water utility companies to ensure that drinking water quality complies with both European and domestic legislation. Drinking water drawn from reservoirs, rivers and various groundwater sources must achieve absolute zero for potential hazardous organisms and permissible levels for contaminates posing a health risk. Equipment used in emergency or alternative water supply must comply with these regulations.

Appendix 3 10 Water Saving Tips for on Campus and at Home

On Campus

1 Don't leave tap running whilst cleaning your teeth or washing vegetables.

2 Take a shower usually as they use 2-3 times less water than a bath.

3 Use a bowl in the sink and be aware of what can/cannot be emptied..

4 Keep bottles of water in the fridge for making cold drinks.

At Home

5 Fix dripping taps asap by replacing worn-out washers; replace faulty ball-valves and deal with leaking overflow pipes.

6 Buy a dual flush toilet when replacing your loo and use short flush when possible, and use water saving devices such as water hippos) in large toilet cisterns.

7 Purchase water-efficient washing machines/dishwashers and use when fully loaded

8 Use a water butt to collect rainwater for garden plants and lawns.

9 Avoid using sprinklers for lawns and hoses for washing cars.

10 Report water leaks in streets to Thames Water 24-hour water leakline: Freephone 0800 714614 minicom: 0845 7200898 and for water problems at home: Thames Water Customer Centre 0845 9200 800 Sewage or flooding: 0845 9200 800