

# bulletin

## water demand management

Issue 94, April 2009

## Water Resources Strategy

Water resources are under pressure. By 2050, climate change could reduce the amount of water available by 10-15 per cent and by then an additional 20 million people will stretch the remaining water resources even further.

These are two of the main messages in the Environment Agency's *Water for People and the Environment - The Water Resources Strategy for England and Wales*.

The National Audit Office in its review of water resources management reported that the replacement cost of water that the Environment Agency licences is worth some £72 billion, with its true value to society being incalculable. The Environment Agency's strategy looks at the actions required for the future *'as water becomes more scarce, and it becomes more valuable'*.

The forecasts of future water demand are set out under four scenarios (*'uncontrolled demand'*, *'local resilience'*, *'innovation'* and *'sustainable behaviour'* - see *Bulletin 93* for fuller details) with a variation of a 15 per cent decrease for sustainable behaviour to a 35 per cent increase under uncontrolled demand by 2050.

Ref: GEHO0409BPTK-E-E (issue 94, April 2009)

### Valuing water

The Strategy promotes a stronger role for demand management the devotes a whole section on how water and the water environment are valued..

There is a need for people and businesses to value and hence use water more efficiently, and have a greater understanding of how managing water resources effectively will benefit society and the economy.

Pricing of water and innovative tariffs have their place but people also need to recognise how investment in water efficiency technology will facilitate this. Water users need to have clear information on the options available, the Folkestone and Dover water bill, showing how water used compares with the neighbourhood average, being cited as a positive example.

There should be a co-ordinated communications campaign to ensure that water efficiency and water conservation messages are more effectively targeted. The expanded remit of the Energy Saving Trust to cover energy and water will help provide consistent messages and should be much more effective in reaching consumers and changing behaviours.

*(continued on page 2)*

### Awards - deadline extended

The Environment Agency has extended the deadline for entries for the *2009 Water Efficiency Awards* by four weeks in recognition of the busy agenda that many businesses are facing. Companies wishing to be recognised for their efforts to reduce water consumption now have until Friday 15th May 2009 to enter. To enter the awards is free and all you have to do is complete an application that includes:

- The category which is most appropriate for your submission
  - A project description of no more than 1,000 words.
- To download an application and for further information on the categories and judging process please go to [www.water-efficiency-awards.org.uk](http://www.water-efficiency-awards.org.uk)

### In this issue

- 1 **Water Resources Strategy**
- 3 **BSI rainwater guide, CSRIO greywater protocol**
- 4 **WTL, water trading, water allocation**
- 5 **UKWIR leakage projects**
- 6 **Ecobuild waterwise seminars**
- 7 **UKGBE and AECB on Code for Sustainable Homes**
- 8 **EEA/EC on water scarcity and drought**
- 9 **EST, WBCSD, Water efficiency database**
- 10 **US and South Africa news**
- 11 **Reflections**

## Water, energy and carbon

Water and energy feature strongly in the Strategy.

*‘Simple demand management measures, particularly those which reduce the amount of hot water used in the home, have huge potential not only to promote water and energy efficiency but also to reduce the carbon footprint of water supply, use and disposal’.*

Included is a table comparing the carbon life cycle cost of the range of supply and demand management options. The energy link crops up again in the conviction that water companies, particularly those where water resources are under pressure, should be required to contribute to a *‘Water Efficiency Commitment’*, similar to energy efficiency, where companies fund efficiency measures for their customers and act in a service provider role.

## Leakage best practice

In their plans water companies, overall, predict that leakage will reduce by only two per cent between 2015 and 2035. By applying best practice and technology the Strategy predicts leakage could be 30 per cent (1,000 Ml/d) lower by 2025 than now.

Leakage performance and targets are set in the context of the supply-demand balance, but there is a growing need to link water company maintenance programmes to mains and leakage targets. Hence there should be a longer term modelling of capital and operation costs for managing the mains infrastructure in a sustainable way.

## Buildings and regulations

Regulations are seen as a key area in delivering water efficiency. The Strategy supports a whole-building performance standard that can be developed for non-household buildings, both as a regulatory level and a voluntary code above that.

Developers should work in partnership with water companies and others to explore the feasibility of achieving *‘water neutrality’* when new housing developments are proposed, within the context of a water cycle strategy. To help drive this ambitious and regular reviews of the Water Fittings Regulations will be crucial as technological advances take place and a wider range of products are included.

The Strategy also supports appliance labelling schemes that improve consumer choice by making information available on the water efficiency of a product when it is bought, an approach advocated by the All Party Parliamentary Water Group. Further incentive should be developed especially by removing or reducing VAT on water efficient products.

## Strategic approach

The Strategy supports the balancing of managing demand and developing resources and wishes to see a more strategic approach and a need for effective sharing of supplies.

Such a role is expanded upon in the section stating that the structure of the public water supply industry will need to change to provide an incentive to ensure a sustainable water industry in the medium to long term. This is especially because *‘the established water industry model has rewarded companies for selling as much product as possible to customers’*.

A water service companies approach would put the provision of sustainable water services at the centre of the companies’ delivery and their reward structure and the document cites American experience in the energy sector that could be relevant to England and Wales.

The Strategy sets out a whole list of actions, together with the timescale required and the lead organisation and other organisations to be involved, to address a whole range of issues including:

- promoting incentives to reduce demand
- allowing water companies to address affordability issues with customers
- allowing people to use water more efficiently, and improve the efficiency of fixtures, fittings and appliances
- providing better information on a product’s water efficiency
- allowing more effective communication so that people can make more informed choices
- increasing investment in technology for all types of use, including agriculture and industry.

Regional Action Plans will be issued following the main Strategy. These plans will show how the actions in the England and Wales strategy can meet local circumstances, and will allow different priorities to reflect local needs. To download the Strategy and the summary report visit [www.environment-agency.gov.uk/wrs](http://www.environment-agency.gov.uk/wrs). Comments on the Strategy are welcome via email: [wrstrategy@environment-agency.gov.uk](mailto:wrstrategy@environment-agency.gov.uk)

## Support

The latest in the series of documents supporting the Strategy, *Governance, Policy and Legislation for Water Resources*, expands on sustainable planning and the management of water resources. This includes fuller details on the issues of water use in buildings, a water efficiency commitment, water neutrality, sharing resources and improvements in leakage management. For details visit <http://publications.environment-agency.gov.uk/pdf/GEHO0309BPOO-e-e.pdf>

# A rainwater harvesting code

The publication of a BSI code of practice represents a significant step forward in the use of rainwater harvesting. This is timely, given the Code for Sustainable Homes, and will give guidance to all those involved in applying the technology. A BSI greywater code of practice is also in the pipeline.

BS 8515:2009 *Rainwater Harvesting Systems - Code of Practice* gives guidance on the design, installation, testing and maintenance of rainwater harvesting systems for the supply of non-potable water in the UK. It applies to both retrofitting and to new build.

It covers systems supplying water for domestic water uses (in residential, commercial, industrial or public premises) that do not require potable water quality, such as laundry, WC flushing and garden watering. However, it does not cover systems supplying water for drinking, food preparation and cooking, dishwashing and personal hygiene.

It deals with individual and communal systems, and those providing stormwater control, but does not cover water butts.

A workshop was held at BSI headquarters in February to introduce the code of practice and also to give delegates an update on both rainwater harvesting and greywater reuse. The Chairman of BSI's Water Reuse Committee, John Griggs, explained how the Standard met Government's requirements, quoting Defra's Future Water that said '*to increase confidence in these developing technologies we will work with others to develop standards for non-potable water use*'.

To produce such a code was a major organisational exercise and required considerable coordination with other water related BSI committees.

BSI Technical Committee CB/506 (Water Reuse) is composed of a wide range of stakeholders including the Environment Agency, DEFRA, CLG, UK Rainwater Harvesting Association, WRAS, Water UK, British Water, Waterwise, CPA, BMA, NHBC, APHC, BPF, BPCF, Loughs Agency, Northern Ireland Environment and Heritage, BRE and various BSI Committee Liaisons. The committee also co-opted Richard Kellagher of HR Wallingford. BRE's John Griggs reminded the audience that this is '*not just a committee, we want all the stakeholders to be involved*'.

The code of practice covers three basic types of rainwater harvesting systems:

- water collected in storage tank(s) and pumped directly to points of use
- water collected in storage tank(s) and fed by gravity to the points of use
- water collected in storage tank(s), pumped to an elevated cistern and fed by gravity to the points of use.

These systems include:

- internal or external locations for tanks
- single or multiple linked tanks
- freestanding or fully/partially buried tanks
- communal tanks supplying multiple properties
- packaged systems or components.

## Greywater update

The workshop delegates were informed that BSI are in the process of identifying expertise to aid the development of two standards, provisionally titled:

- BS 8525-1, *Greywater Treatment — Code of Practice*
- BS 8525-2, *Greywater Treatment — Specification for Performance Testing of Products and Systems*.

John Griggs outlined potential future work:

- *Commercial Rainwater Harvesting Applications*
- *Water Reuse for Irrigation and Other Outdoor Applications*
- *Community Scale Rainwater Harvesting and Greywater Reuse Systems*.

Paul Millard, representing Water UK, introduced the work on the greywater Code of Practice, due by the end of the year, but he insisted the priority was '*to get it right*'.

Professor Rodney Cartwright covered health aspects emphasising that it '*needs properly qualified plumbers*', especially when dealing with installation issues such as cross connections and colour coding. He gave overall advice of '*don't have a false sense of security and do keep it simple*'.

BS 8515:2009 *Rainwater Harvesting Systems. Code of Practice*. Jan 2009, £158, members: £79, 50pp, ISBN: 978 0 580 60490 4. Visit [www.bsi-global.com/en/Shop/Publication-Detail/?pid=00000000030171876](http://www.bsi-global.com/en/Shop/Publication-Detail/?pid=00000000030171876)

## CSRIO

John Griggs covered developments in other countries mentioning in particular CSRIO's December 2008 *Greywater Technology Testing Protocol* by Clare Diaper, Melissa Toifi and Michael Storey produced with support of Australia's *Smart Water Fund*. Each of the States has its own method and it is hoped that this establishes a national greywater treatment testing regime. The testing involved a synthetic greywater that contains basic everyday products that Australians use with water in their homes, such as soap, toothpaste and other personal care products as well as washing powder. Details can be found at [www.smartwater.com.au](http://www.smartwater.com.au)

## WTL adds water reuse

A new category of water reuse has been added to the *Water Technology List* that allows investors in qualifying equipment to claim enhanced capital allowance. The category includes the existing membrane-based filtration systems alongside other wastewater recovery and reuse technologies, such as aeration, wastewater evaporation, fluid filter, sand filters and dissolved air flotation systems. Visit [www.eca-water.gov.uk](http://www.eca-water.gov.uk) for details.

## Envirowise on rainwater

Envirowise has issued a four page leaflet *Reducing Mains Water Use through Rainwater Harvesting*. It targets any business where rainwater can be collected in sufficient volume to be reused. It details how to quantify the volume of rainwater that can be collected and lists key considerations, such as water quality, when assessing the options for reuse. Visit [www.envirowise.gov.uk](http://www.envirowise.gov.uk) for details.

## E-behaviour

Waterwise, in collaboration with Kathryn Rathouse Social Research, have launched the *Water and Behaviour Change e-Bulletin*. The purpose of this e-Bulletin is to share research and activities related to water and behaviour change. Visit [www.waterwise.org.uk](http://www.waterwise.org.uk) for details.

## Water Loss UK

The *Water Loss UK* conference in June has been timed to take place after *Water Loss 2009* in Cape Town, and before the regular Water UK autumn leakage conference. It will bring together key IWA Water Loss Task Force speakers and practitioners from UK, Europe and beyond to update the UK water industry on some of the latest ideas, initiatives and results, and providing case study examples of international best practice in water loss management. See the 'diary' on page 11 for details.

## Alternative ways to allocate water

One of a series of studies providing the evidence base for our new water resources strategy for England and Wales, launched on 30 March.

This study considered whether the current first-come-first-served water allocation system is capable of dealing with future demand and supply pressures and, if not, what alternatives could be adopted. This paper summarises the advantages and disadvantages of:

- the current system
- the current system with all licences time limited
- trading abstraction licences
- differential water pricing.

The latter could provide an incentive to encourage abstraction to shift to when and where water is available. Prices could vary by season, use, water quality, and location. This could involve:

- prioritisation and quotas
- integrated planning with collective agreement.

Integrated planning could allow all abstractors and major stakeholders to work together to collectively manage a catchment or river basin making the best use of the available water. As an integrated approach it could include investment in resource development and demand management.

Conclusions from the study are that there is a high level of acceptance of the current system with improvements needed to deal with the lack of flexibility and incentives. Using the assessment criteria it is clear there is not one system that will achieve what is required, a combination will be the best approach.

The preferred elements of any future mechanism include:

- a minimum flow (priority allocation) for the environment
  - an effective drought response
  - an effective means of freeing up and re-distributing licensed volumes
  - more price incentives. There is a need for gradual change with a long lead in time whilst the new system should be fair, effective and properly enforced.
- Copies of the full report *Alternative Ways to Allocate Water* (product code: GEHO0109BPFJ-E-E) can be found at website [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

## Trading debate

You can follow the debate on water trading through a joint Environment Agency/Ofwat response to the *Cave Review*. The response includes the recommendation that there should be 'a review of the cost recovery framework set out in legislation within which the Environment Agency sets its charges to improve pricing signals to ensure that the abstraction charges better reflect the true environmental, social and economic value of the water'. Visit [http://217.199.176.110/publications/researchpapers/res\\_ofw\\_ea\\_interimcave.pdf](http://217.199.176.110/publications/researchpapers/res_ofw_ea_interimcave.pdf) for details.

## WRc on Regs Part G

WRc is running a series of workshops about *Part G of the Building Regulations*, that explain the changes to the regulations including the inclusion of a maximum consumption of 125 l/p/d and the amendments that allow rainwater and treated greywater to be used. Visit <http://partgworkshops.wrcplc.co.uk/> for details.

## UKWIR's leakage plans

It is apt that, in view of the impressive list of UKWIR leakage projects taking place this year, that one of these should be *Updating Managing Leakage*. It will summarise into a single document additional knowledge gained from work on leakage, principally, but not exclusively, from the twenty UKWIR leakage reports published since the internationally acclaimed Managing Leakage suite of reports were issued in 1994. It is expected to be issued in electronic format as a supplement to the original reports.

### Achieving 10%

UKWIR Client Manager for the leakage programme, Northumbrian Water's Dennis Dellow, sees the project *Long Term Leakage Goals (achieving 10%)* as bridging the gap between the more conservative approach to leakage control (engendered by the five year PR cycle) and thinking how the industry might meet significantly lower leakage levels twenty five years hence.

It will indicate the likely timescales and costs to achieve this aspirational figure of 10 per cent leakage (a level chosen to encourage innovative thinking) and determine the key technical constraints likely to arise, such as metering technology.

A recently published report, *Leakage in Trunk Mains and Service Reservoirs*, identified the range of techniques in use across the UK water industry to quantify, locate and pinpoint such leakage.

It provides guidance on the effectiveness and appropriateness of different practices with respect to estimating and controlling leakage from trunk mains and service reservoirs and aims to provide companies with more information to help them deploy limited resources more precisely and effectively.

A follow up project *Distribution: Large Trunk Mains Failures II* is building on this work by understanding the costs in developing and promoting the findings.

### Pressure

Pressure management is recognised as having a key role in reducing leakage. *Assessing the Whole Life Benefits of Pressure Management* will build on an earlier pressure management project. This work will not be restricted to considering the cost of the water saved and will also include consideration of the wider benefits and additional savings. These additional savings include reduced burst repair costs and the need for fewer surveys. The project is to develop knowledge of relationships between methods of pressure management, leakage, burst frequency, service failures, asset lives and customer service levels, for a variety of pressure management scenarios.

The project will also investigate the links between different pressure management systems, maintenance levels, the effectiveness of pressure management control and effects on the economic life of pressure management apparatus.

UKWIR leakage research has always placed an emphasis on aiding practitioners. To this end the project is to provide two models. A whole life economic benefit model is to identify the optimum pressure management system for individual situations and a second model is to advise on the most cost effective maintenance regime appropriate to individual pressure management zones.

### Wide range

Water companies have developed a wide range of practices to reduce leakage. The approach to carrying out DMA surveys depends on local characteristics such as topography, leakage patterns (the mix of small and large leaks) as well as the level of leakage.

*A Survey of Practices for the Detection & Location of Leaks* will address these issues and provide best practices for each technique and show how the new technologies influence the best working practices for each type of leakage location.

Soon to complete is *Leakage from Polyethylene Pipe Systems* that is addressing the fact that new pipes leak, particularly at T-joints. It will report on what is needed to improve performance towards leak free networks.

Due to start later this year is *Best Practice for Derivation of Leakage-Cost Curves in ELL Modelling*. Water companies use many different approaches to derive a leakage control cost curve and it is not always clear what should be included in the marginal cost of water. The calculation of the economic level of leakage (ELL) is highly sensitive to these relationships.

### Natural rate of rise

*Factors Affecting the Natural Rate of Rise of Leakage* has recently been published and examines the influence of various physical factors, such as pipe material, pipe age, soil types, pressures and joint types on the natural rate of rise.

The project investigated how leaks of different types begin and grow, from initial leak to burst repair, and how this growth profile is affected by factors such as those listed above and finding out why some leaks are visible on the surface and others are not.

Given the change of emphasis on underground infrastructure renewal from addressing water quality towards reducing leakage Dennis Dellow sees this as 'a real chance to remove leakage as a major issue'. To see a list of UKWIR reports and projects, visit [www.ukwir.org](http://www.ukwir.org)

## Ecobuild debates

The *Ecobuild* exhibition at Earls' Court was not only the setting for manufacturers to show off their latest wares it also afforded the opportunity to participate in a stimulating series of 'water wise' presentations and debates. A number of interesting issues were raised as several of the presenters were keen to ensure that opportunities for water efficiency were fully and correctly and sustainably applied.

Nick Grant of Elemental Solutions highlighted the need for critical thinking and insisted that, when justifying installation of water efficient appliances, it is important to 'do the numbers' and reassess continuously even though this might mean 'letting go long held beliefs'.

He identified the significant water and energy savings in reducing 'dead legs' and said that pipes in the hot water system should be fully insulated and should be 10mm rather than the usual 15 mm in diameter. He added that it is preferable to 'design out' water waste rather than 'bolt on' expensive technological solutions which are usually more expensive.

Ech2o's Cath Hassell insisted that water meters should be installed inside new buildings as customers then have the option of reading the meters which would increase people's awareness of how much water they use and reduce the problems associated with estimated bills. She warned that the message to use showers rather than baths was not always sound advice. She quoted a recent survey that suggested that adolescent girls' showers can last for 15 to 20 minutes.

Waterwise's Jacob Tompkins said that the UK's housing stock needs refurbishing and this will produce 'green jobs'. He added that we have the 'kit' to do it but he asked 'why is it not happening?'

One reason is that DECC and CLG, in drawing up *The Great British Refurb* which aims to make improvements available to householders in every home in every street by 2030, has omitted to include water efficiency. Jacob asked people to respond to the consultation (<http://hes.decc.gov.uk>) to rectify the situation. He felt that the *Water Technology List* (WTL), though useful, is only helping at the margins and that, if Government really intended to help water efficiency, it could abolish VAT on water efficiency products. He added that the current regulatory system is mitigating against water efficiency especially by treating such expenditure as OPEX.

Severn Trent Water's Doug Clarke described his company's pilot project on water efficiency in schools comprising 50 schools in Leicester City Councils area. It involved a water use survey (including meeting water regulations) and the servicing, retrofitting and replacement of taps and water efficient WCs. He emphasised the need for continuous monitoring and a separation of the survey and installation stages, and the importance of complementary educational activity. The average payback period was under 19 months and this excluded the energy savings. Encouraged by the results the project has now been extended to 600 schools across the Severn Trent Water region.

Christopher Gaze reminded the audience of homes at BRE's Innovation Park ([www.bre.co.uk/innovation park](http://www.bre.co.uk/innovation_park)) designed to meet levels 4, 5 & 6 of the Code for Sustainable Homes. He outlined that *Insite09*, being held from 1-4 June, is an opportunity to visit the Park and see the homes. He mentioned some of the issues rainwater harvesting and greywater recycling have to deal with that can stain the water and reduce customer acceptability. Coffee grains in the sink and tannin in wood on roofs are main culprits.

James Blood described GROHE's work on refurbishing hotels insisting that cost savings are important in the current economic climate. Nowadays you do not have to compromise on design and performance. He described refurbishment work on a 100 bed hotel that saved £19,000 a year on water bills (excluding energy savings) and said the *Water Technology List* also contributed a similar one-off saving during refurbishment.

Lively and heated debates are increasingly absent at seminars but *The Recycling vs Efficiency Debate Under the Code for Sustainable Homes* bucked the trend. The debate centred on how to meet levels 5 & 6 of the Code. Can it be achieved by installing water efficiency or is rainwater harvesting and greywater recycling the answer to meeting the 80 litres per person limit?

Representatives of the Rainwater Harvesting Association, Lutz Johnen of Aquaity and Steff Wright of the Gusto Group, saw rainwater harvesting as a means of changing the mindsets of residents by getting them directly involved in a whole sustainability approach. Such systems also give housebuilders flexibility and can fit in neatly with SUDS and flood attenuation.

Jacob Tompkins, Cath Hassell and Judith Thornton, Senior Lecturer at the Centre for Alternative Technology, in support of water efficiency, highlighted rainwater harvesting's large carbon impact. Jacob Tompkins insisted that we are afraid to address customer behaviour and we should be telling customers to reduce their water use. He cited Zaragoza reducing its water consumption from 180 to 100 litres through such a direct approach. We are not giving metered customers sufficient information and could include graphs of water use with the water bills. Judith Thornton did not see adding energy use to the side of a building as helpful and cited a number of environmental problems

including that in the most water stressed areas there is insufficient rain for rainwater harvesting when most needed. GLA's Andrew Tucker added that the current Australian approach of appliance regulation and labelling was the most apt way of achieving water efficiency.

## UKGBC on the Code

The UK Green Building Council took the opportunity of Ecobuild to launch the report *Making the Case for Sustainable Buildings*. It recommends that:

- There should be a *Code for Sustainable Buildings* that covers all new and existing non-domestic buildings in the UK
- The Code should be an overarching framework, making it easier for industry to understand policy and regulatory requirements and implement them effectively, throughout all stages of a building's lifecycle.

It calls for a kind of 'MOT' at regular intervals throughout a building's life while minimum standards are progressively raised over time. Details at [www.ukgbc.org/site/news/showNewsDetails?id=133](http://www.ukgbc.org/site/news/showNewsDetails?id=133) Also at Ecobuild, the Green Building Store launched a new package of water-saving products which can help specifiers achieve Levels 3 & 4 in the water category of the *Code for Sustainable Homes*.

## AECB's standards

The AECB (Sustainable Building Association) has issued *Water Standards* that are based on performance requirements for individual water-using devices rather than a whole building calculation method, which '*tends to encourage game playing with credits being awarded for fittings that can be easily changed*'. The supporting report adds that a whole building calculation approach also allows cold-water savings to offset increased hot water use.

It confirms that AECB standards might seem to be less ambitious than the *Code for Sustainable Homes*. This is in part because water recycling is not encouraged and in part because acceptable performance is considered which sets a lower limit on tap and shower flows and bath sizes. Thus whilst an enthusiast might choose to fit a very low flow shower head or a spray tap in the bathroom, most users would find such fittings unacceptable and so would almost certainly replace them, perhaps with a very high flow rate fitting.

Instead the AECB Standards follow the North American and Australian lead by requiring fittings of the lowest water use that have been shown to be acceptable to the majority of users. The report concludes that user behaviour has a greater influence on water consumption than choice of fittings and that '*Good and Best Practice*' specifications should help careful users to use less water than predicted by the highest levels of the Code. The reports can be downloaded via [www.aecb.net/tech\\_nav.php](http://www.aecb.net/tech_nav.php)

## Conference roundup

CIWEM – Water Conservation, 5 March

The Environment Agency's Trevor Bishop's main message was that, in other sectors, targets haven't always been helpful and that we need to focus on outcomes. He said that '*targets are the last millennium approach*' and companies shouldn't need an economic level of leakage (ELL) target because the boardroom should drive the company to operate at ELL anyway.

He also said that funding and evidence for demand management relative to resource development still isn't balanced and that is why demand management needs the '*extra push*'. He reported that a corner is being turned as we are starting to see water company forecasts of reduced per capita consumptions.

The key theme of Jonathan Reed's, Peter Bretts Associates, presentation on behaviour change was that people are more influenced by personal recommendations than advertising.

Entec's Rob Lawson gave a brief history of '*water neutrality*' an update of the subject and the latest thinking insights into further work required. This included a more complete process for target setting, clearer links with existing regulation and developing guidance for stakeholders on funding and implementation.

A full list of presentations can be found at [www.coastms.co.uk/Conferences/WC09.html](http://www.coastms.co.uk/Conferences/WC09.html)

## Construction workshop

A Water Usage in Construction Workshop was held in February to look at the *Strategic Forum for Construction Target* that '*by 2012, water usage in the manufacturing and construction phase reduced by 25% compared to 2008 usage*' ([www.strategicforum.org.uk/targets.shtml](http://www.strategicforum.org.uk/targets.shtml)).

The discussion revolved around setting the boundaries for the manufacture of construction products (only include consumables used by construction industry) and for the construction phase itself (activities on site including 'domestic' use e.g. washrooms).

The real challenge is to identify and analyse data sources to establish the 2008 baseline – a number of sources from existing activities were suggested and will be explored further. BERR insisted that the forum should not impose any additional reporting requirements on businesses.

The next step will be to establish a water expert sub-group to help monitor industry progress.

## Water efficiency is good for health

In 2003 a collaboration between the water sector and the Department of Health resulted in Water UK publishing *Water Efficient Hospitals: Efficient Use of Water Could Save Your Hospital Money*. Such optimism is now being realised as the Department of Health has issued *Health Technical Memorandum 07-04 Water Management and Water Efficiency – Best Practice Advice for the Healthcare Sector*.

During 2002/3, the NHS in England consumed 40.3 million cubic metres of water and produced 34.4 million cubic metres of sewage. The report estimates that financial savings of up to 20 per cent may be achieved through water-efficiency measures, with little or no cost in investment which translates to a possible saving of £9.5 million a year.

The memorandum is a comprehensive look at water use across the NHS estate (including GP surgeries) and rejects water efficiency measures where patients health might be affected. It also encompasses flooding and hygiene issues. Hence the attraction of ‘non-touch’ taps.

Best practice centres around leakage control, water efficient taps, low flush toilets and urinals/urinal controls and water used in boiler feed. It is as much about management as technology. Senior management should designate a water champion and provide necessary resources and powers to conduct a water audit and coordinate the water strategy. Champions should act as coordinators for implementation, sources of data and a channel for reporting to senior management. Staff involvement is also high on the agenda.

Full of benchmarks the document gives case studies from Dorset, Gwent and St Thomas’ Hospital. The document can be found at [www.tsoshop.co.uk](http://www.tsoshop.co.uk)

## WSG ends

The last minutes of the *Water Saving Group* are available at [www.defra.gov.uk/environment/water/conserves/wsg](http://www.defra.gov.uk/environment/water/conserves/wsg). The group formally came to an end in November 2008 and expects work on water efficiency to continue within each of the individual organisations formerly represented on the group.

## GreenPlumb

*GreenPlumb* - a new initiative from the Chartered Institute of Plumbing and Heating Engineering is to be launched later this year. It will help consumers to locate professionals who are qualified to specify, design, install and maintain renewable technologies. In addition, *GreenPlumb* accredited members will be encouraging consumers to help the environment by adopting water conservation solutions. A presentation of the subject is in the agenda at the annual conference on 30 May.

## WaND

Those awaiting the results of the WaND project ([www.wand.uk.net](http://www.wand.uk.net)) are informed that the Construction and Research Information Association (CIRIA) is currently distilling out the project outputs and will produce a guidance for water professionals. In the meantime a CD portal of project highlights is available on request by emailing: [a.j.slater@ex.ac.uk](mailto:a.j.slater@ex.ac.uk).

## Thames support efficiency

Edie reports that Thames Water have announced falls in commercial water use and lower new building forecasts are leading to lower water demand predictions. They do state that their ‘demand management programme, which includes leakage reduction, more metering and water efficiency, remains at the centre of our plans, but in some cases we have been able to extend the period for this work to be undertaken’.

## Out of red, into the green

In his first major lecture since becoming Chairman of the Environment Agency, Lord Chris Smith took up the theme that green initiatives can beat the credit crunch, citing the Obama rescue package.

He quoted estimates from the Climate Change Centre of Excellence at HSBC, comparing the green percentage content of stimulus packages on a country by country basis. The initial analysis shows that green investments represent 16% of the Obama proposals. The comparative figures are 34% for China, 19% for Germany, 10% for Spain, and 69% for South Korea. The equivalent figure for the UK is a disappointing 7%.

It represents some good specific initiatives, but it has tended to be in bits and pieces. There is as yet no sense of an overall, coherent, planned, national strategy to see green investment as central to the recovery.

Lord Smith cited the forthcoming Budget, together with the publication of the low-carbon industrial strategy, as precisely the place to do it.

The speech can be found at [www.environment-agency.gov.uk/news/103364.aspx](http://www.environment-agency.gov.uk/news/103364.aspx)

## Water crunch

The world is heading toward ‘water bankruptcy’ as demand for the precious commodity outstrips even high population growth. This is the headline of a report issued at the Davos Forum, *World Economic Forum Water Initiative - Managing Our Future Water Needs for Agriculture, Industry, Human Health and the Environment*. Speaking at the Davos forum, UN Secretary General Ban Ki-moon said: ‘the water problem is broad and systemic. Our work to deal with it must be so as well’. Visit

[www.weforum.org/en/initiatives/water/index.htm](http://www.weforum.org/en/initiatives/water/index.htm)

## EST welcomes Strategy

In a press release welcoming the Environment Agency's water resources strategy, Philip Sellwood, Chief Executive of the Energy Saving Trust commented '*water is a key element of the Energy Saving Trust's new five year strategy. So important that we, in partnership with Waterwise, have just been awarded £1 million from the EU's LIFE (<http://ec.europa.eu/environment/life/>) programme to pilot ways of integrating water efficiency with energy advice at our local energy advice centres in Edinburgh, Cardiff and London*'.

The three-year project runs until January 2012. Philip Sellwood went on to say '*we therefore welcomed the opportunity to work with the Environment Agency to align our strategies and to ensure that water efficiency at home, and its potential to reduce green house gas emissions, receives the attention it deserves*'.

## WELS on the way to saving

The Australian *Water Efficiency Labelling and Standards Scheme* (WELS) was introduced in July 2006. The Institute of Sustainable Futures was commissioned by the Government '*to analyse the cost-effectiveness of WELS in contributing to the overarching objective of water security, compared to other urban water management options*'.

The resulting report *Cost-Effectiveness Analysis of WELS* (<http://www.waterrating.gov.au/publications/cost-effectiveness-of-wels.html>) concludes that over the period 2005-06 to 2020-21, WELS is estimated to reduce Australia-wide water consumption by a total of 800 GL. The most significant conservation potential is from showerheads (290 GL) and washing machines (280 GL), followed by toilets and urinals (185 GL).

It also concludes that WELS compares favourably to other water urban water management options which have been recently implemented, or are proposed for implementation, in various Australian states and territories. As a proportion of the overall water savings, the direct contribution to water savings due to WELS on taps and dishwashers is expected to be much smaller, constituting approximately 6% of total savings.

## WBCSD's links

The World Business Council for Sustainable Development (WBCSD) is a CEO-led, global association of some 200 companies dealing exclusively with business and sustainable development. At the Fifth World Water Forum in Istanbul it issued *Water, Energy and Climate Change - A Contribution from the Business Community*.

This included important policy recommendations from business to climate negotiators and policy-makers:

- provide reliable climate change risk data, models and analysis tools
- integrate water and energy efficiency in measurement tools and policy
- bring water issues into the mainstream, and ensure that water authorities and institutions have staff trained to deliver common management practices, education and awareness raising
- encourage best practice through innovation, appropriate solutions and community engagement.

It also includes 25 case studies showing how business is already linking water, energy and climate across their operations. Details at [www.wbcsd.org](http://www.wbcsd.org)

## Water efficiency database

The *UK Water Savings Database* ([www.water-saving.org](http://www.water-saving.org)) has been launched by UKWIR. There are details of approaching one hundred water efficiency projects on the database and the service is open to all and individuals are provided with a private account. A structured entry format enables comparisons on costs and water savings for each water efficiency measure.

Users can use the database to:

- view the standard summary results of individual projects
- view the gaps in current demand management knowledge
- add data for projects that are not already in the database
- update data for ongoing projects that are already on the database
- use the discussion forum.

## California - worst drought?

The Sierra Nevada snowpack is smaller than normal and California may be at the beginning of its worst drought in modern history. Residents have been urged to conserve water. The snowpack was about 61 per cent of its usual depth across the 400-mile-long mountain range, according to the state Department of Water Resources.

Department Director Lester Snow said the results indicate California could be heading for a third dry year saying '*We may be at the start of the worst California drought in modern history*'.

## Water scarcity & drought

The World Water Forum in Istanbul in March provided an opportunity for international organisations to publish reports on water scarcity and drought. The European Environment Agency issued *Water Resources Across Europe - Confronting Water Scarcity and Drought* that states ‘*the balance between water demand and availability has reached a critical level in many areas of Europe, the result of over-abstraction and prolonged periods of low rainfall or drought*’. The demand management element is strong, epitomised by ‘*Europe needs a sustainable, "demand-led" approach to water resource management, focusing on conserving water and using it more efficiently. Successfully achieving demand-led water management across Europe will both address the need to adapt to climate change and contribute to lower energy consumption because water and energy use are closely linked*’. The report can be downloaded via [www.eea.europa.eu/publications/water-resources-across-europe](http://www.eea.europa.eu/publications/water-resources-across-europe)

## EU Communication

The EU has published a commission staff working document (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SEC:2008:3069:FIN:EN:PDF>) that accompanies the follow up report to the *Communication on Water Scarcity and Droughts in the European Union* (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0875:FIN:EN:PDF>)

## EPA's fix-a-leak

The EPA announced a *Fix-a-Leak* campaign in the week leading up to World Water Day to remind Americans of the environmental and economic benefits to fixing leaks from household plumbing fixtures and irrigation systems. Details at [www.epa.gov/watersense/fixaleak/index.htm](http://www.epa.gov/watersense/fixaleak/index.htm)

## AWE suggests maximum water use thresholds

As a service to water utilities and regulatory bodies, the Alliance for Water Efficiency has developed suggested maximum water use thresholds for a variety of products that are commonly rebated or promoted as water efficient.

This template of thresholds was developed by a multi-stakeholder group in which water utilities and manufacturers participated, and reflects those categories where quality product is available, product performance is proven, reference standards are available, and water utilities have a track record of experience with the products. Details at [www.allianceforwaterefficiency.org/](http://www.allianceforwaterefficiency.org/)

## Message from South Africa

Thanks to Jay Bhagwan, Director of Water Use and Waste Management at the Water Research Commission in South Africa, for his kind comments about the *Bulletin* (we always welcome feedback). He also alerted us to the following recent studies: TT 358 – *The Status and Use of Drinking Water Conservation and Savings Devices in South Africa*.

TT 315 – *Aqualite* - new water balance software  
TT 256 - *The Development of a Successful Unaccounted-for Water Management Programme in the Rural Water Supply Context*.

He also mentioned a forthcoming report on the *State of Plumbing in South Africa*. The reports are downloadable from [www.wrc.org.za](http://www.wrc.org.za) under publications. Popular articles on these reports have been published in the *WRC Waterwheel*, also available on the web.

## US water conservation bills

The Alliance for Water Efficiency reports in its latest newsletter on two bills aimed at boosting water conservation amid growing concern over climate change.

H.R. 631, sponsored by Rep. Jim Matheson, directs U.S. EPA to create a research and development program to improve water efficiency and conservation technologies. The bill is intended to spur innovation in the collection, treatment and reuse of stormwater and water from sinks, baths and kitchen appliances. The bill would require the launch of four water-efficiency technology projects in residential and commercial buildings and the establishment of a national clearinghouse on technologies and processes to promote conservation. It also includes funding for watershed-based water efficiency planning.

Also approved was H.R. 469, sponsored by Rep. Ralph Hall, which directs the Energy Department to establish a program aimed at improving technologies to allow farmers and municipalities to use water extracted from energy projects. The measure would authorize \$20 million annually from fiscal 2010 through fiscal 2013.

Meanwhile U.S. Rep. Jerry McNerney of has reintroduced his water re-use, recycling and reclamation grant program legislation in the 111th US Congress. The Healthy Communities Water Supply Act, H.R. 700 would authorize \$250 million in funding for projects that increase the useable water supply by encouraging innovations in water conservation, recharge, recycling, reuse and reclamation.

## Reflections

### New Look Bulletin

You've probably noticed by now that we have redesigned the bulletin. We hope you like the new format and, as always, your comments are welcome.

### Water pressure

The *Water Resources Strategy* shows that water resources face an uncertain future. Climate change and population growth are widely accepted to be the main pressures on the environment exacerbated by the recession impacting on planned environmental initiatives to address these pressures.

The recession is not seen as a barrier by Lord Chris Smith who, indicated, in his first major lecture since becoming Chairman of the Environment Agency, that green initiatives can help beat the credit crunch. Environmental initiatives will result in savings, whether reduced carbon emissions or reduced water wastage. These environmental benefits would also bring about significant financial savings.

The Water Resources Strategy also recognises the need to strike a balance when planning for the future to secure enough water for people and the environment. This means investing in new resources for the future and using what we have carefully.

### How do we do this?

Issue 94 is full of examples of how demand management ideas can help when planning for future water demands. For example, the release of BS 8515:2009 *Rainwater Harvesting Systems – Code of Practice* gives a clear steer on how standards can drive technology to achieve levels of water quality appropriate for non-potable water use.

On the other hand there are those that emphasise the importance of behavioural change.

Ech20's Cath Hassell echoed this at the recent Ecobuild conference by quoting a recent survey that suggested that adolescent girls' showers can last for 15 to 20 minutes. It's clear that technological fixes on their own will not be enough to reduce water consumption.

An individual using a low flow 6l/m shower for 20 minutes would still use 120 litres per shower. That's 40 litres more than would have been used in a typical bath.

The four scenarios in the water resources strategy show that '*innovation*' and '*sustainable behaviour*' will both reduce pressure on water resources in the future. However, the biggest win will be when the two work in concert. If we can achieve this we will be well placed to face our uncertain future.

**Chris Hall**

-----  
You can contact the *Bulletin* by email:

[savewater@environment-agency.gov.uk](mailto:savewater@environment-agency.gov.uk) or by telephone: +44 (0) 1903 832275. For more information visit [www.environment-agency.gov.uk/savewater](http://www.environment-agency.gov.uk/savewater). Editor: Philip Turton, email: [philip.turton@environment-agency.gov.uk](mailto:philip.turton@environment-agency.gov.uk)

## Diary

### 15-16 April - Waterwise Conference 2009 - Delivering Water Efficiency in the UK

The fourth Waterwise Water Efficiency Conference will take place at Keble College in Oxford. Visit [www.waterwise.org.uk](http://www.waterwise.org.uk) for details.

### 28-29 May - Corporate Water Footprinting and Managing Water Resources

To be held at the SAS Portman Hotel in London. Professor Tony Allan, the 2008 Stockholm Water Prize Laureate, is the guest speaker. For information visit [www.agra-net.com/water](http://www.agra-net.com/water)

### 1-4 June - INSITE09

BRE Innovation Park is the setting for this four day event. Details at [www.insite09.com](http://www.insite09.com)

### 10 June - Water Loss UK - An International Perspective on Water Loss Management

To be held at the Crowne Plaza Hotel, Birmingham NEC the seminar will update practitioners on the work of the IWA Water Loss Task Force. There is to be a pre-seminar workshop on Pressure Management on 9 June sponsored by i20. For information visit [www.waterlossuk.com](http://www.waterlossuk.com)

### 7-9 October 2009 - WaterSmart Innovations

Following the success last October, 2009 conference will take place in Las Vegas. Details at [www.watersmartinnovations.com](http://www.watersmartinnovations.com)

### 25- 28 October 2009 - Efficient 2009

The 5th IWA Specialist Conference on Efficient Use and Management of Urban Water Supply Systems will take place in Sydney, Australia. Details at [www.efficient2009.com](http://www.efficient2009.com)