

INSIDE **TRACK**

“...for reasons to be cheerful, think micro.”

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“No longer can we assume inexhaustible supplies on tap.”

7

“...the average UK individual's annual CO₂ emissions are about ten tonnes.”

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TAPPING THE POTENTIAL

achieving water sustainability in the UK



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comment



Caroline Read
policy officer

With water consumption levels rising unabated and John Prescott's drive for 200,000 new homes in the driest, most flood-prone parts of the country, Green Alliance has decided that it's time to wade into the water debate.

Water is necessary for survival, but we treat it very lightly. We use and flush it away, relaxed in the knowledge that our water utilities will continue to provide a high-quality endless supply. This has resulted in high per capita domestic water consumption and a whole series of environmental and infrastructural consequences, including supply pressures, high wastewater volumes increasing the likelihood of localised flooding events and needing resource-intensive treatment.

In this edition, we hear from a range of commentators on the water debate. Nick Reeves, executive director of the Chartered Institute of Water and Environmental Management, tells us that public understanding and debate are needed if we are to sustain long-term changes in our attitude to water use. Andrea Cook, chairman of Northumbria WaterVoice, takes a look at the impacts of water pricing and identifies solutions that deliver environmental outcomes without penalising the poor. Lynne O'Sullivan, sustainability director at Broadway Malyan, gets down to the practicalities facing the development community, with an architect's perspective on the barriers and opportunities for water technology in new build.

As development plans are finalised for the *Sustainable Communities* growth areas, Green Alliance is working to promote better water policy, to increase the inclusion of efficiency and flood mitigation measures, and to encourage industry to contribute to the solutions. Our two projects in this area are described in more detail on page 4.

Also, on page 11, Mayer Hillman gives an insight into his latest book *How we can save the planet*, urging for greater action on climate change.

It has been another busy quarter at Green Alliance, during which we hosted Michael Howard's major environment speech and, with other environment groups, contributed advice to a speech by Tony Blair in the same week. We also launched our micro-generation manifesto and our report on PFI and sustainability during this period. All of which you can read more about in this *Inside Track*.

reasons to be cheerful

It's not easy to feel upbeat right now about the state of the war on climate change.

The sceptic is back in the White House, and a revision to the UK's emissions forecast has made the challenge of meeting the Government's 20 per cent carbon reduction target by the end of the decade, look even greater than before. But for reasons to be cheerful, think micro.

The Government has made an important commitment in the Energy Act 2004 to develop a micro-generation strategy by December 2005. This represents a great success for Green Alliance's Energy Entrepreneurs network, together with planners, architects, entrepreneurs and energy experts. We have been making the political case for micro-generation to government. In September, Green Alliance published a blueprint for the Government strategy, which has won support from Energy Minister Mike O'Brien.

A new generation of technologies is making home energy generation a reality, from mini wind roof turbines to heat pumps that extract solar warmth from the ground. Bringing energy generation closer to people in this way will forge the vital link between our concern about climate change and our energy consumption at home.

However, there is considerable resistance to micro-generation. Policy-makers are accustomed to a centralised energy system based on power stations. But with the promised micro-generation strategy we now have an opportunity to start to change these mindsets, and bring micro-generation into the mainstream.

There's good news on the ground already. Thanks to our campaign, a revision to national planning guidance now encourages local authorities to require all large new developments to generate a proportion of their own energy on-site. Merton Borough Council has already introduced such a policy, Liverpool, Edinburgh and Bristol are among 40 councils poised to follow suit.

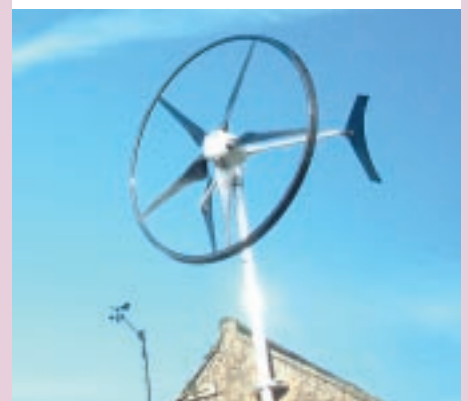
It is often assumed that solar panels and mini wind turbines are inherently too expensive. Such assumptions are self-fulfilling. Niche products are always expensive. Costs will go into free fall once policies are introduced to boost demand, allowing manufacturers to move from 'built-to-order' to mass production.

It's worth harking back to early scepticism around micro-processors or PCs. Back in 1943 the Chairman of IBM, Thomas J Watson, was heard to say "I think there is a world market for about five computers". He thought we'd just use big centralised mainframes: computers the size of a room. We have been happy to move from the macro to the micro in IT. With some imaginative policies, the same will apply to energy.

Green Alliance and the energy entrepreneurs network will be working over the next year to ensure that the Government's micro-generation strategy will make mini wind turbines and solar panels as much a norm for us all as the family PC.

Our micro-generation manifesto

- integrate micro-generation into new build by setting targets in planning and procurement, particularly for the growth areas in the *Sustainable Communities* plan;
- encourage local authorities to plan for community-scale grid networks that supply locally-generated heat and power to new or existing developments;
- introduce incentives for energy suppliers to develop energy service contracts that enable existing householders to retrofit micro-generation;
- reform the fiscal framework to enable householders to see microgeneration and energy efficiency as an investment in their property value; and,
- develop the simplest possible procedures for householders and small businesses to apply for grants and grid connection.



Renewable Devices

A micro-generation manifesto, by Joanna Collins, is available to order from www.green-alliance.org.uk

Thanks to the Ashden Awards for Sustainable Energy for supporting this work.

a new course for water



The Government is waking up to the need to tackle the problem of rising water demand. It is currently addressing water efficiency and flood risks in the regions targeted for growth under the *Sustainable Communities* plan and considering the challenges of river basin management set by the EU Water Framework Directive. Now is the prime opportunity to influence the course of future water management in the UK.

Working with the development, construction and water communities, and government planners, regulators and academics, Green Alliance has been addressing the breadth of issues associated with supplying water to new developments. It is clear that the technology is available to address water efficiency on a scale never before seen in the UK, and time is right for strong leadership to push it forward.

Green Alliance is making the case to government for high water efficiency standards to be central to a Code for Sustainable Buildings and to future reviews of building regulations. The *Sustainable Communities* plan provides a great opportunity to set new national standards for water-efficient homes.

Following our recent seminar on the water pricing review, we are now looking into the sustainability of the regulatory framework that supports the water industry in England and Wales. Through dialogue with the major players in the water industry and regulatory bodies we are investigating how the EU Water Framework Directive objectives can be achieved within the current system and what long-term considerations should be incorporated.

For more information, contact Caroline Read cread@green-alliance.org.uk
We are grateful to Thames Water, Water UK and RSPB for their support of these projects.

sustainability challenge

The Government is missing a major opportunity to ensure that thousands of new schools and hospitals in the UK are beacons of sustainability. The Private Finance Initiative (PFI) is the route of choice now for procuring the majority of new public buildings. All secondary schools in England will be rebuilt or renovated over the next fifteen years, at least half via the PFI route, with an annual investment of £2billion over that period.

But contractors are not being rewarded for bidding for PFI contracts on the basis of sustainable design. Invariably, it is the least cost proposal that wins. This has serious implications for the

deeper objectives of the departments responsible for health and education. Transport, food and materials procurement choices by the NHS are not just environmental concerns, they will have direct or indirect impacts on public health, and embedding sustainability goals in the procurement of new health facilities should be central to government health policy.

Based on the insights of senior players, Green Alliance has developed recommendations for ensuring that PFI projects meet high social and environmental standards. These have been scrutinised by a range of experts, and are addressed to the policy-

makers: HM Treasury and the Private Finance Units of government departments. We hope that the Treasury's forthcoming guidance on PFI bid evaluation will reward contractors for forward-thinking and sustainable design, in line with the Government's sustainable development strategy.

PFI: meeting the sustainability challenge is available to order from www.green-alliance.org.uk
With thanks to AWG plc, for their support of this project. AWG owns Morrison plc, which manages and maintains public infrastructure in the UK.

head to head



September saw a first for British politics when Tony Blair and Michael Howard went head to head with speeches on climate change on successive

days. Michael Howard struck first, with a speech to the Green Alliance-ERM Environment Forum on 13 September. Acknowledging the urgent need for action at an international level, he set out a Conservative philosophy on a range of domestic policies. He also made the case for microgeneration, acknowledging Green Alliance's work in this area (see page 3).

Tony Blair followed this with a speech for the tenth anniversary of the Prince of Wales Business and the Environment Programme. He also chose to focus on

the UK's role internationally, through the Presidency of the G8 next year, whilst acknowledging the need for the UK to lead from the front at home.

Green Alliance director Guy Thompson was part of a delegation of green NGOs that met the Prime Minister to advise him on his speech. We were therefore pleased with his commitment to promote best practice through new build in housing stock and secondary schools, and his strong lead on the business opportunities in moving to a low carbon economy.

Earlier in the day, Green Alliance played a central role in organising and facilitating a discussion group for Tony Blair, comprising young people working at the cutting edge in a range of sectors. Hosted by Solar Century, the group confronted the Prime Minister on the business case for tackling climate change and the politics of the international response.

Following hot on the heels of the speech by Charles Kennedy to Green Alliance last March, could this flurry of activity mean that the environment might feature centre-stage in next year's general election?

Read Michael Howard's speech at www.green-alliance.org.uk

in the pipeline

Climate change

To inform the upcoming review of the Climate Change Programme, Green Alliance and the Institute for European Environmental Policy have carried out research on what needs to happen next. A seminar in November will discuss recommendations and the work will be published in January.

Health and environment

Green Alliance will be marking the publication of the Public Health White Paper with an expert seminar, exchanging ideas between health professionals and environmental experts, and looking at potential policy linkages, to achieve both health and environment benefits.

Energy efficiency

Improving energy efficiency is a central aim of the government's Energy White Paper. But are the current incentives for suppliers and consumers effective enough to meet the targets? With the UK Business Council for Sustainable Energy, in January we will be publishing new policy proposals aimed at unblocking current barriers to energy efficiency.

For more information about these projects contact Rebecca Willis willis@green-alliance.org.uk

spending round results



Treasury officials are past masters at managing expectations. So perhaps it should not have been such a surprise

that, after months of being told that Spending Round 2004 was going to be a bad deal for the environment, the final outcome had a few sweeteners for the green lobby after all. Even more gratifyingly, some of these could be traced directly back to all the work that Green Alliance had done with the green groups in raising the profile of environmental considerations early on in the process.

The biggest win was the decision to drag the Department for Transport into the Public Service Agreement target on climate change previously shared by Defra and the DTI. We hope this will herald a much-needed change in mindset within the department towards its responsibilities for meeting government carbon reduction targets. Whilst the spending allocations were a mixed bag for the environment, Defra did at least get a modest real growth increase, with waste and energy efficiency prominent.

For more information contact Guy Thompson, gthompson@green-alliance.org.uk

water pressure

Some areas of the UK are drier than parts of the Middle East, yet there is still no urgency to match development with water availability and to use water efficiently, according to CIWEM's **Nick Reeves**.

It's time to wise up on water and realise its true value. Because when we talk about water in the UK, the dominant factors are economic and political.

Matters of ethics and social justice and, indeed, availability just don't figure. It's the price consumers will stand before politicians get twitchy that dominates the debate, and this is wrong. It allows millions of gallons of expensively-treated drinking water to flood away every day due to consumer wastage and, despite improvements in recent years, a quarter of water in some areas still leaks away from water mains before reaching the tap.

That we lose enough treated water every day to supply a city the size of Leeds is wrong. And when people around the world are dying for want of water we, a technologically advanced nation, should be leading by example on water conservation and efficiency.

The Chartered Institute of Water and Environmental Management's (CIWEM) campaign on the Value of Water sets out in detail how we can change this situation so that water is treated not just as an economic good, but a valuable – and, in some parts of the UK, increasingly scarce – resource to be valued.

It is perhaps not surprising that there is public profligacy with water, given that that the UK Government continues to operate an outmoded 'predict and provide' approach to supply. Yes, it's possible to supply water anywhere,



with miles of pipeline, reservoirs years in the planning, and abstraction from rivers and wetlands habitats already under pressure from low rainfall. The so-called *Sustainable Communities* plan for south-east England seems particularly perverse: to build half a million new homes in an area with less water per head than Syria. An independent report leaked to *The Guardian* in October 2004, commissioned under European rules on Strategic Environmental Assessment, found that water resources are just one environmental area in which the plan "is likely to have serious negative impacts". The *Sustainable Communities* plan is simply not sustainable, and will merely aggravate the existing north/south divide.

So CIWEM is looking for government leadership on water management issues. There are many areas where water should feature prominently but currently does not, for example, as a material issue in the planning system. Swift action is necessary to ensure that housing infrastructure – particularly new build, and including any

'sustainable communities' – meets the highest standards in terms of water efficiency and demand reduction. This will entail amending building regulations, the Water Act and other relevant legislation as soon as possible to ensure that planners and developers are obliged to implement the best available technology in water efficiency, both for new-build and in retrofitting. There is also a clear need for further incentives to promote the installation of water efficiency and demand reduction technology, including dual pipe systems within domestic dwellings that allow greywater to be used. Otherwise, as ever, cost will drive development decisions and water will stay low on the list of priorities. There are obligations in this area already, but how many people know, for example, that under the 1999 Water Fittings

water stats

- 76 per cent of households don't have water meters, but could have, for free. Customers with a metered water supply use between ten per cent and 15 per cent less than those without: the average unmeasured household consumption is 153 litres per head per day, while the average measured household consumption is 137 litres per head per day.
- 40 per cent of the water used at home doesn't need to be the expensively and intensively-treated drinking water that comes out of the tap.
- Every day, out of 15,394 million litres of water delivered in 2002-03 in England and Wales, 3,623 million litres (nearly a quarter) leaked away. This is enough to supply the whole of Yorkshire with water for three days.

Regulations, if they are having building work done which affects plumbing and water systems, they are required “in most cases” to obtain the water supplier’s consent before any installation starts?

Those acting on behalf of government and consumers need to be brought on board as well: English Partnerships is the national regeneration agency helping the Government to support high quality sustainable growth in England. Its website claims that its developments aim to reduce water consumption by up to 50 per cent, yet requests for details on how this will be implemented in the flagship ‘sustainable urban extension’ at Lawley Village, Telford, have met with silence. Furthermore, at present only a small percentage of demand management measures for water companies are approved by Ofwat in the water pricing review process.

The Halcrow report on development at Ashford stated: “In the medium term there may be some potential to achieve demand reduction measures, *provided the necessary public policy support is in place* [emphasis added].” How far will such policy support need to go to meet this challenge? Evidence shows that after enjoying decades of cheaply available water, the public’s behaviour will change if they can see what their consumption is and match it to expenditure, in other words, if they have water meters. Households with meters use, on average, 10-15 per cent less water than unmeasured dwellings. But so far, only about a quarter of households in England and Wales have meters. And to make water efficiency at home and the installation of meters more attractive, water utilities should promote innovative water tariffs.

Of course, there are plenty of technological devices around to help with water efficiency in buildings, including ways of harvesting rainwater for use in washing machines, garden irrigation, car cleaning and other domestic needs. These should be fitted now as standard. However we must not

reducing demand

Government, Ofwat and the water utilities should:

- further promote the uptake of water meters by domestic consumers;
- research and introduce innovative tariffs which reward efficient water use (such as Anglian Water’s SoLow tariff and Mid Kent’s Low User rate);
- support research into and implementation of the use of non-potable supplies (greywater, wastewater);
- continue efforts to reduce leakage levels.

just rely on technofix solutions, because current trends in consumption will almost certainly swamp any benefits that new technologies bring.

In the long term, the only thing that will change attitudes to water is improved public understanding of the effects of climate change, the water cycle and its importance to life and health. This should involve a grown-up public debate about meeting the real cost of providing water and maintaining an infrastructure that doesn’t leak.

regional differences

- In 2002-03, water was most expensive for Folkestone and Dover Water customers, at an average of £184 per property and cheapest for Portsmouth customers, at £99.
- Average water consumption per person each day is highest in Sutton and East Surrey Water’s area, at nearly 172 litres. It is lowest in Severn Trent and Tendring Hundred’s areas, at 128 litres.
- Total leakage is highest in Thames Water’s area (266 litres per property per day) and lowest in Sutton & East Surrey’s (54.5 litres per property per day).

The Government and the water industry will have to act now to kill off the perception that water can continue to be a cheap and limitless resource. Getting across the message about how much money is spent, and where, to keep water quality high and improve the water environment and our access to it would be a good start. Under the Water Framework Directive there is finally action on upstream solutions like a reduction in the use of pesticides and fertilizers in agriculture, which cost millions to remove. But the public needs to understand the link between demand for intensively-produced cheap food, water pollution, and their water bills.

There must be an active public information and awareness campaign geared to increasing acceptability of the use of greywater and wastewater re-use, otherwise expensive and energy-intensive de-salination plants and unpopular reservoirs will be needed in the near future to meet ever-increasing demand. And why not start with changing attitudes in the formative years? There is room for improvement in getting the message across to young people. How about water featuring as a topic in its own right in the National Curriculum?

Where could all these messages come from? An independent central body (perhaps a Water Saving Trust, like the body for energy conservation), would be well-placed to co-ordinate messages and initiatives to educate the public, carry out research, and recommend policy and legislative change. It’s got to be worth a punt.

Wising-up on water is a priority. It behoves us all to understand its true value and regard it as precious as we have come to regard the cappuccino. No longer can we assume inexhaustible supplies on tap.

Nick Reeves is executive director of CIWEM, and a Green Alliance member. For more information visit www.ciwem.com

poor relations

Andrea Cook describes how issues of social equity have been given scant regard in the current review of prices for all water and sewerage companies for 2005-10.



WaterVoice has looked at the impact of a range of policy initiatives on water prices during the current water price review (PR04) and promoted 'joined-up' thinking, including placing the spotlight on affordability of water. The result is a much greater recognition that the decisions of the economic and environmental regulators have social consequences and understanding of the need for strategies and services which help those who are vulnerable.

Whilst the economic approach to regulation has produced some successes - such as reduced prices and improved service standards - and £50 billion has been spent on environmental improvements since privatisation in 1989, it is poorer consumers who pay a disproportionate amount of their income on such an essential service.

Ofwat produced its Draft Determinations for the industry on 5 August and consultation on the proposals has now ended. The companies request for average price increases was cut from 29 per cent (or £72) to 13 per cent (£34), not including inflation, exceeding WaterVoice's target for Ofwat of reducing proposed price increases by one third. Final determinations will be issued on 2 December although companies still have the option of a referral to the Competition Commission. But even 13 per cent over five years is significantly higher than inflation, hurting those on low fixed incomes the most, and there is the prospect of further increases to meet necessary improvements under the Water Framework Directive.

So what lessons have been learnt from PR04 to date, and how do we reconcile the need to incorporate the longer-term considerations of demand management and the requirements of the Water Framework Directive with strategies to help poor consumers?

In the price limits it proposes Ofwat has said publicly that 'prices will be what they have to be'. This doesn't mean that they will be acceptable to a majority or affordable to most; the regulator's responsibility is to ensure that the companies can finance their functions and that they do so efficiently. Its duty to contribute to the achievement of sustainable development will come into effect when the Water Services Regulation Authority (replacing the Director General with a Regulatory Board) is established in 2006.

There is little doubt that Ofwat has done an admirable job in managing expectations from a range of stakeholders. But environmentalists and consumer representatives remain concerned about the number of items relating to the Water Framework Directive which have been deferred and the implications this has for transparency in decision-making and price stability.

Although companies are protected by the ability to apply for an interim price determination between 2005 and 2010 if there are significant changes in revenue forecasts, for consumers this is a particularly sensitive issue. Customers want price stability, not the 'peaks and troughs' which have

of water pricing

characterised previous price reviews. Customers want smoother profiles over the five-year period and not ‘front-loading’ in the early years because of the heavy debt burden carried by the industry. But many of the issues which Ofwat is seeking to manage are not for an economic regulator to solve alone.

Against this background WaterVoice has identified a number of areas where an integrated approach to economic, environmental and social considerations will both protect the environment and the poorest consumers. It is clear that government must play a more significant role in defining a policy framework, and enabling solutions that are both sustainable and equitable. This would include developing the following strategies:

- **Tackle the diffuse pollution caused by fertilisers and pesticides running off farmland into watercourses.**

It would be based upon ‘catchment-sensitive’ farming, with the emphasis on devising local solutions and delivering targeted education and pollution prevention programmes to encourage better farming practice. All customers, including people least able to afford to, currently pay approximately £20 per household for the cost of cleaning up the agricultural environment. This includes £16 million per year to remove excess nitrate from drinking water supplies and £120 million per year to remove pesticides.

- **Reassess the charging policy which underpins the price control process.**

Particularly to look at the differential between unmeasured and measured customers and how this relates to the current policy on optional metering, and the relationship between fixed and volumetric charges. The average water and sewerage bill proposed by Ofwat for unmeasured customers by 2010 is £283; for metered customers, the typical bill will be £258. The move to compulsory metering is fraught with tensions and problems but much could be gained from a pilot scheme in a water scarce area such as Eastern England where, in the Anglian Water region, 54 per cent of households have water meters and there is a growing divide in the customer base.

- **Provide financial support for low-income consumers through the tax credits and benefits system.**

The current review of affordability appears blocked by the territorial attitudes of government departments and a ‘can’t do, won’t do’ philosophy designed to thwart Defra’s efforts to deliver more radical solutions, which should be in place by April 2005 if they are to be effective. The current climate of ‘financial inclusion’ sees the use of mechanisms such as Water Direct, where deductions are made from benefits, as a ‘last resort’: but it is WaterVoice’s experience that customers want choice and flexibility. Many would regard deductions to utility suppliers as a way of managing essential services like water and energy.

The Environment Agency is examining the concept of a Water Saving Trust (WST) for the Government, based on the principle that water efficiency has a significant role in the proper management of water resources. A WST could operate more strategically and authoritatively than water companies operating independently. It could potentially have programme administration, education, promotion, labelling, product approval and target-setting within its remit. If it gets general support it should also deliver consumer, as well as environmental, benefits including schemes aimed to help lower income groups to realise efficiencies.

The opportunities are there to both help poor consumers and achieve sustainable solutions. Let’s get on with it.

Andrea Cook is chairman of WaterVoice Northumbria and a member of the WaterVoice Council. She was a member of the UK Round Table on Sustainable Development from 1995-99 and chaired its study of economic regulation. She is also a life member of Green Alliance. To find out more about WaterVoice go to www.ofwat.gov.uk

reflections of an architect

Lynne Sullivan discusses the potential for water conservation in new development and the limitations to uptake.

Despite recent flash flooding, we are told Londoners have less available drinking water per capita than Madrid or Istanbul.



The Government expects a substantial increase in household

numbers in the south east and yet we are already no strangers to hosepipe bans during dry spells. But still we continue to build houses with more ensuite bathrooms and building regulations ignore water usage limitations. Conversely the water levels in the London basin chalk aquifer continue rising at unprecedented rates threatening building foundations and tunnels. How does the designer steer a sensible course through this maze of conflicting drivers, and spend client's money wisely?

Historically designers have relied on an external supply network to 'hook into' for new development, providing energy, water and sewage outflow, without needing to consider the implications of the increased use from the development or the downstream consequences. Thinking more broadly, the designer must question whether the prevailing infrastructure enables sustainable development. If a creaking and leaking water infrastructure

cannot serve development sustainably, the designer must consider other measures such as on-site infrastructure to reduce dependence on the reticulated system.

At the macro-level, privatised utility companies are now expected to address some of these structural issues. Planning policy (i.e. *The Planning Response to Climate Change*) is beginning to recognise the importance of infrastructure on the built environment's uptake of natural resources. This recently launched ODPM document encourages local authorities to consider strategic issues, and offers design guidance to developers, providing opportunities to rethink water demand, storage and water use techniques. Increasingly, the use of sustainability checklists (e.g. the South East England Development Agency checklist adopted by many planning authorities) encourages developers to mitigate surface water drainage and increased pressure for water resources.

To develop a sustainable design strategy the designer must have a much broader grasp of technical issues and consider options to increase resilience to climate impacts, flood resistance and mitigation such as porous paving, swales and balancing ponds. These types of Sustainable Drainage Systems (SUDS) significantly affect site layout and landscape and thus present non-traditional design solutions.

Although wider infrastructure may be 'off limits' to the designer, to reduce potable water consumption it may be possible to consider site-wide measures. There are 'dual supply' precedents where rainwater and wastewater are recycled within the site, although this is still unusual practice. In some cases reed beds as a landscape feature are provided to clean rainwater or even sewage ('black water') which can be reused for outside use, WC flushing and washing machines (estimated as 50 per cent of our demand). It is worth noting that

trials in Germany have shown that using soft rainwater in washing machines can increase their operating life.

However, as most clients plan to sell the building or homes on completion, they see little incentive to commit to, or market, design features that deliver long-term, society-wide benefits. Vehicles to manage these long-term communal or shared harvesting systems will also not be readily available until they are more frequently installed.

Reducing water demand by the consumer is an easier fix than the macro-scale infrastructure. But it may not be a vote-winner. To address water efficiency the Sustainable Buildings Task Group, of which I was a member, recommended that building regulations should enshrine measures to reduce average per capita water consumption by 25 per cent by 2005, while also recommending a new Code for Sustainable Buildings defining a best and advanced practice standard of water efficiency beyond building regulations. Here the designer would need to specify water-efficient appliances, fittings, control devices etc as a minimum measure, and then consider rainwater and greywater recycling to further reduce the volume of potable water used for toilet flushing, etc.

Greywater recycling systems are mandatory in Tokyo for larger buildings, but here there is considerable client prejudice against central systems that recycle other people's wastewater. Add to this the fashionable trend of high-tech lifestyles and the designer is hard pushed to make any headway on water conservation. This is where a national education campaign on sustainability is badly needed. Interestingly, the market transformation programme for labelling washing machines and dishwashers has led to overwhelming support for water (and energy) efficient appliances.

Lifestyle choices increase demand for water. While the designer must specify water-efficient appliances, they must also look at closing the resource loop through on-site treatment, storage and grading. Technological issues need to be ironed out to instil trust in both the specifier and the end-user. At the same time, utility companies must look at more sustainable forms of

infrastructure that grade, treat and store the various effluents with a 'fit-for-purpose' philosophy rather than a 'one-size-fits-all' approach. Lastly, the consumer must be made aware of water's real value, perhaps with a more progressive approach to rates, to reduce damaging profligacy. The solution in this case is a whole of many parts.

Lynne Sullivan, RIBA, is sustainability director at Broadway Malyan, a leading architectural and integrated design practice with offices throughout the UK and Europe. Find out more about them at www.broadwaymalyan.com

limiting the ravages of climate change

Mayer Hillman was one of the first proponents of carbon rationing. His latest book is *How we can save the planet*. Here, he argues for much more urgent action to tackle climate change.

Most of us subscribe to principles of social justice. Prospects are grim however if only lip-service is paid to them. There is no more telling issue stemming from this than the one relating to our overriding responsibility to act as current stewards of the planet and to seek to ensure that the quality of life of the generations succeeding us will be enhanced rather than diminished by what we choose to do.

A cause for real concern is that the average UK individual's annual CO₂ emissions are about ten tonnes, a total two and a half times the world average. In the opinion of most climate scientists, and taking account of future world population increases, this average must be reduced to not much more than one tonne. If we do not do so soon, we will be complicit in intensifying the climate change problems we are already witnessing.

What are we doing about this? The answer is far too little. Although the Prime Minister has recently referred to the issue as "...very, very critical



indeed", his Government contradictorily carries on promoting ecologically-damaging and unsustainable manufacture, international trade and tourism.

The continuation of these fossil-fuel based practices reflects a near-universal state of denial about the significance of climate change and a complacent predisposition to avoiding facing reality by wishful thinking that current policies will enable us to 'muddle through'.

So what is the answer? On both moral and political grounds, I would argue

that the only strategy with an assured prospect of success on reducing greenhouse gases sufficiently to avoid serious destabilisation of the planet's climate is one based on equity. Its framework, *Contraction and convergence*, has been devised by the Global Commons Institute. Within it, the year-on-year 'contraction', that is ratcheting down to relatively safe levels, is targeted at the same time as 'convergence', progressively delivered according to a system of national quotas of these emissions based on population: everyone has an annual carbon ration that can be traded.

Of course, people will need to be properly informed as to why the transition to very different lifestyles must be made: the fact that we have no right either to constrain the choices of future generations, nor to burden them with the costs of coping with the damage that our self-indulgent energy-profligate lifestyles would expose them to, lies at the heart of the informing process.

Let us press the Government to take the lead in international negotiations for the urgent adoption of this just solution and for the introduction of personal carbon rationing before it is too late.

Mayer Hillman is Senior Fellow Emeritus at the Policy Studies Institute and a longstanding Green Alliance member. *How we can save the planet*, by Mayer Hillman and Tina Fawcett, is published by Penguin Books ISBN 0-141-01692-2

Green Alliance is an independent charity. Our mission is **to promote sustainable development by ensuring that the environment is at the heart of decision-making.** We work with senior people in government, business and the environmental movement to encourage new ideas, dialogue and constructive solutions.

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goodbye... and hello

Joanna Collins left Green Alliance at the beginning of November to become convener of the Sustainable Consumption Roundtable, a joint initiative of the Sustainable Development Commission and the National Consumer Council. In her two and half years at Green Alliance, Jo has championed a number of very successful, high profile projects, notably our work on micro-generation and corporate responsibility. Recruitment is currently underway for a new head of policy.

Sarah Flood, who edited Inside Track as part of her role as finance and publications manager, left us in August to work as a project manager at New Philanthropy Capital. We wish Jo and Sarah every success in their new roles.



Tracy Carty joins Green Alliance as policy officer at the end of November. Her appointment is an expansion of our policy team. Tracy will be working on our election 2005 project, energy and corporate issues. Tracy's former roles have included convening the National Resource and Waste Forum at the Environment Council and research at Defra for Lord Haskins' review of rural delivery arrangements.

We continue to be very fortunate in attracting excellent people under our volunteer programme. Thanks to **Qamer Anwar**, **Emily Woodhouse** and **Peter Lockley** for their assistance over the past three months. Also thanks to **Jennifer Bird** who worked with us during October under the Forum for the Future Scholarship Programme.

new members

We are pleased to welcome the following new members:

David Bent	Sarah Hill	Michelle Santokie
Ken Davies	David Hirst	Anthony Thomas
Jacquetta Fewster	Colin Manasse	Simon Thornton-Wood
Daniella Hawkins	Tom Oliver	

know it all

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