

THE TIMES
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SUSTAINABILITY

APRIL 14 2006



**Bright ideas
that could
save the planet**

Green Gown
Awards 2006



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INTRODUCTION

We are a year into the United Nations Decade of Education for Sustainable Development (2005-14).

What seemed a remote and worthy sentiment 12 months ago has become a pressing issue for governments, society and universities.

Soaring energy prices are tied to questions about fossil fuel reserves; how — even whether — they can be eked out; and if not, how the developed world will sustain its high living standards while alleviating critical shortages in the developing world and meeting its aspirations.

Climate change effects are demonstrably with us, and at the most basic of levels. Pollution affects every society as landfill sites reach capacity and evidence emerges of the impact on personal health.

No university can ignore these phenomena. At the very least an institution that fails to engage with the issues is in effect throwing money down the drain or watching it go up in not-so-proverbial smoke.

The Government and the funding councils are prodding all institutions to do more. But the picture is at best patchy. This supplement celebrates the winners of the Green Gown Awards 2006. They are in a minority — the issue has yet to break fully out of the ghetto. Long-time campaigners such as Sara Parkin are clear that time is running out for universities to adopt sustainable policies and embed their principles within courses across every discipline.

Companies such as Severn Trent Water are leading the demand for graduate recruits with incontestable sustainable development literacy.

The writer Malcolm Gladwell has popularised the concept of the tipping point — borrowed from the moment in epidemiology when a virus breaks out in a community — to describe a cluster of small changes all happening at once. It may be that 2006 represents that moment for sustainable development policies and practices in our universities.

Countdown to global meltdown

The Government needs to invest political energy in supporting a creative climate for research into the environment before it is too late, says Sara Parkin

In January, Chancellor Gordon Brown asked Sir Nicholas Stern, head of the Government Economic Service, to examine the economics of climate change, with the given that humanity is causing global warming and that we are already experiencing the adverse impacts. Questions about the nature of the impacts may exist, but, says Sir Nicholas, uncertainty about their gravity does not. "Recent science indicates that some of the risks are more serious than previously thought."

Much of the science to which Sir Nicholas refers comes from UK universities that belong to a global scientific collaboration co-ordinated by the Inter-governmental Panel on Climate Change. The panel's fourth assessment, due in 2007, is expected to bring the news that not only are the global climate systems that drive the Gulf Stream and support tropical rainforests destabilised, but also that the policy implications of mitigating the worst and adapting to the inevitable are beginning to look like an impossible mission.

Fine words have been spoken and action plans written by governments and international organisations, but little is done. Five-year reports from the Millennium Ecosystems Assessment and the Millennium Development Goals make glum reading as not even watered-down targets are met.

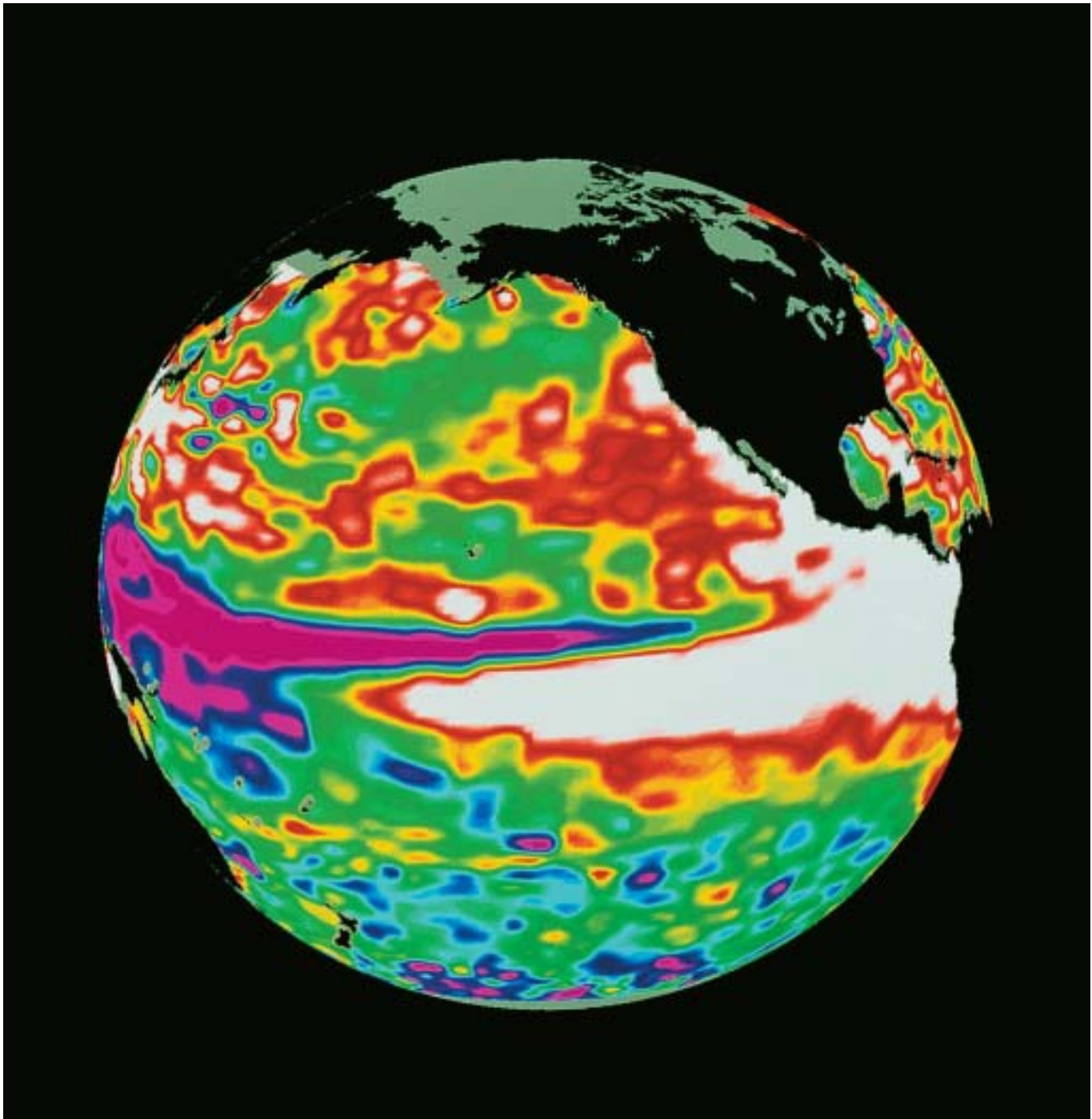
Another UK Energy Review follows a 2003 White Paper notable for how little energy was expended on its implementation. Panic permeates the new review because of worries about oil and gas supplies.

And yet it asks the wrong questions. For the right ones, we return to the Chancellor. In March 2005, he said that the market should trade in the services of energy, not energy per se. Only by asking how to provide affordable, secure supplies of low-

carbon heat, power and light for people in different places do innovative answers emerge. Before the next spending round, Mr Brown will ask questions about public spending of all departments in relation to climate change. Can universities create an enjoyable and creative climate to stimulate innovations in radical resource efficiency? If we are to achieve our environmental, social and economic goals at the same time, this nation's intellectual

'Fine words have been spoken and action plans written by governments and other organisations, but little is done'

capital needs to be put on an emergency footing. And not just in technological innovation either. In judging the economic performance of its member states, the Organisation for Economic Co-operation and Development recognises the role of education. But an enormous growth in human and social capital could be achieved with little or no impact on the environment but great benefit to the economy and



Dark days for the blue planet: the devastating effects of El Niño are visible across the world

global security. There is a big job here for the arts, humanities and media studies.

Good examples of universities rising to the sustainability challenge exist. But getting value for money remains an issue. Optimising the efficiency of how a university teaches, researches and develops graduates has been recognised as simply good business in a globalising market. But optimising the contribution of the institution to the biggest challenge — a shift to a more sustainable path for human progress — is not yet at the heart of this process. Even so, UK higher education is admired for how far it has got. Wales has a statutory duty to implement sustainable development and a strategy that stretches from schools to universities. The 18-

institution strong Higher Education Partnership for Sustainability developed ideas and tools that have been picked up because they worked on processes that could be personalised by different institutions. The Environmental Association of Universities and Colleges has brought clarity to issues of resource and waste reduction, transport policy and biodiversity management. Bodies such as the Engineering Council have set sustainability competencies as a prerequisite for professional registration. Other universities are taking part in the Professions in Partnership for Sustainability scheme, which has a cascade effect on university departments and employer training.

But is change happening fast enough?

No. The Department for Education and Skills is due to publish its Sustainable Development Action Plan, but will it mobilise political energy and resources to back it? China and India are competing on quality as well as cost for supplying business research and development needs. Employers are asking for sustainability literacy as a feature of “graduateness” — though they struggle to articulate what that means in practice. More than soaring utility costs, these are all reasons why a go-slow strategy is not an option for any UK university.

Sara Parkin is founder of Forum for the Future, the UK’s leading sustainable development charity. www.forumforthefuture.org.uk

Millions of helping hands

Staff and students have the chance to play a big part in driving the national agenda. Let's make sure we don't pass it up, says Steve Egan



The UK's universities and colleges educate 2 million students a year and employ almost 300,000 staff. They have a great opportunity to support a sustainable society by teaching young people and by generating and transferring knowledge through research.

They can also contribute by influencing local, national and international networks. As organisations, they also have a significant impact on the environment. For example, each year universities and colleges are responsible for:

- Consuming 5.2 billion kWh of energy at a cost of more than £200 million
- Using more than 16 million cubic metres of water
- Spending £3 billion on goods and services
- Causing more than 1 million people to undertake journeys to work and study almost every day
- Sending hundreds of thousands of tonnes of waste to landfill and incineration.

Sustainable development makes business sense — through improving operational efficiency, enhancing reputations and making connections with the concerns of future markets. The case is made stronger by increasing pressures such as rising energy prices and additional legislation.

The Higher Education Funding Council for England has developed a plan for interacting with the sector, taking into account the Government's strategy, *Securing the Future*. Implementing this plan will bring lasting benefits, but we also recognise that making sustainable development a central part of our

operations demands a co-ordinated approach. Therefore, our plan for 2006-11 will be published in April so that we can support institutions in embedding it in their own way.

Sustainable development is about changing the way individuals and organisations think and act. To facilitate this, we are providing grants through our Leadership, Governance and Management Fund. The five projects funded to date involve:

- Managing and enhancing biodiversity on campus
- A sector-specific environmental management system called Ecocampus
- Building good practice in energy and environmental management
- Measuring and benchmarking performance using the Business in the Community indices for environmental

and corporate responsibility; and a guide on ethical behaviour and standards.

Nordic countries consistently top international rankings such as the Environmental Sustainability Index (ESI, www.yale.edu/esi), with the UK 65th out of 146 countries in 2005. But in the pilot of the 2006 Environmental Performance

Index (www.yale.edu/epi), which uses different measures, the UK is rated fifth.

Other countries are increasing their commitment to sustainability; it is vital that the UK is not left behind. At Hefce, we do not expect institutions to do what we are not prepared to do ourselves, so we have developed a set of performance indicators to benchmark against similar organisations, and we have also committed to developing a holistic plan for a corporate social responsibility policy.

We have the opportunity to drive the national agenda; let's ensure higher education plays a full part.

Steve Egan is acting chief executive of the Higher Education Funding Council for England.

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'Universities can support a sustainable society by teaching and by transferring knowledge through research'
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Higher education is in a unique position to realise the dividends of sustainable buildings, says Peter James. The rewards are not only fiscal and functional — the very best work is celebrated in Heepi's prestigious Green Gown Awards

The Green Gown Awards demonstrate that many UK universities and colleges are responding well to the challenges of sustainable development. In some categories, such as energy efficiency or innovation, winning and commended entries are only the tip of the iceberg. Elsewhere, those honoured have few peers because thus far the sector has few examples of good practice.

This is especially true of sustainable construction. The National Science Learning Centre at York University and the Administration and Student Services building at Southampton University demonstrate that modern structures can be designed, constructed and operated to minimise the impact on the environment. They also show that far from compromising a building's functionality, sustainable construction can enhance it. This is partially achieved through the building itself: using natural rather than artificial lighting and ventilation; optimising internal layouts; maximising use of solar and other forms of renewable energy; reducing waste water by recycling by other means; and using sustainable materials. Moreover, buildings can be situated so that wind exposure is limited, solar gains are optimised and public transport access is straightforward. Such measures "keep on giving" throughout the building's lifetime thanks to lower operating costs, especially in periods of rising energy prices.

Higher education has faced a near doubling of electricity and gas prices in recent years, with more increases expected in the future. It is also facing pressures for better energy and environmental performance from revised building regulations, carbon minimisation measures such as the Emissions Trading Scheme and the implementation of the European Energy Performance of Buildings Directive. Many experts expect even more demanding requirements in future.

More sustainable buildings are therefore inevitable. The good news from experience elsewhere in Europe and North America is that the buildings' high performance is



See the light: Green Gown projects

Build smart for a bright future

not confined to energy and environment issues but extends to their functional features. Natural lighting and ventilation not only eliminate the need for energy consumption, they also help boost productivity and reduce illness and absenteeism related to sick-building syndrome. These benefits are especially

important when one considers that the lifetime salaries of occupants often account for 100-200 times the capital cost and 20 times the lifetime operating costs of a building. "Daylighting", natural materials and other green features also help to create the stunning buildings and campuses that contribute to student and staff recruitment, as recent research by the Commission on Architecture and the Built Environment has suggested.

Unfortunately, many (although not all) such buildings have had slightly higher capital costs than conventional structures. These are usually recouped within a short period, but if, as is generally the case in higher education, there is little linkage between capital and operating budgets, then even small initial cost increases can be unaffordable. Worse, the most cost-effective opportunities for environmental benefit generally occur in the early stages of the design process, through optimising factors such as building orientation, layout, and services. Unfortunately, environmental concerns are seldom considered at this stage. The evidence from the US is that the initial capital premium of sustainable buildings diminishes when multiple developments provide opportunities for learning. More collaboration is needed, both between universities and colleges and between them and external bodies such as regional development agencies.

UK higher education is distinctive in being one of the few sectors that can plan on long-term ownership and use of its facilities and can therefore reap the full benefits of wise investment in high-performance buildings. Failure to invest will not only create a long-term cost burden, but will also disadvantage UK universities and colleges as more international competitors begin to take sustainability seriously.

Peter James is co-director of the Higher Education Environmental Performance Improvement project, financed by the Higher Education Funding Council for England and based at Bradford University, which organises the Green Gown Awards. www.heepi.org.uk

14,727 glowing ideas to help save the planet

UK institutions are developing a range of inspired initiatives to preserve forests and songbirds, reduce water use, cut fuel costs... and strike a few cheeky poses into the bargain. Olga Wojtas looks at the winners of the Green Gown Awards 2006



► **ENERGY AND WATER EFFICIENCY**
Sheffield Hallam University

The 1995 drought led Sheffield Hallam University to focus on water conservation by developing techniques to identify potential leaks and reduce the amount of water used. Between 1996-97 and 1999-2000, it cut its water consumption by a quarter, winning a national water and waste management award. But costs continued to rise, and the university realised that it had to achieve sustained savings.

Energy manager Charles Morse "had to understand how water was being used within a building before we could determine where water was being wasted". A quarter of all the water used in the university was on a single site, its 645-bed Student Village.

Sheffield Hallam has now achieved savings averaging 24 per cent in its "top

five" targeted sites, without any major investment in metering or other capital equipment. It has fitted washbasins with flow restrictors and isolation valves costing only a few pounds. It has made 15 per cent savings across all its sites within three years, amounting to more than £35,000 a year and offsetting the impact of price rises.

Morse says: "We focused on the areas where we felt we could make the most impact. We did this using simple techniques and basic materials, but the most important ingredient was the dedication of the staff involved."

Sheffield Hallam continues to check for changes in water consumption anywhere on the campus. Morse says: "Money that isn't paid to utility companies is available to spend in ways that benefit our students and staff. We think that our experience could be applied at many other institutions."

► **INNOVATION**
Bradford University

Bradford students are playing a key role in the environmental management of the campus thanks to an innovative module that lets them carry out practical case studies. They have surveyed travel patterns, investigated car park management and carried out a review of grounds maintenance, including a litter survey and baseline information on the use of pesticides and chemicals.

The module, now in its third year, is a core part of all undergraduate programmes in geography and environmental science, and land and water management. The module was established through a partnership between environmental science academics, the careers development service and the university's environment manager.

Liz Sharp, senior lecturer in environmental management, believes



Bottles, bulbs, birds and puppets: a few of the sustainability projects that caught the judges' eyes in the Green Gown Awards 2006



that the joint approach has been crucial in making the module work, enabling real-life environmental issues to be used as a learning tool.

"We see skills such as working in groups, report writing and critical reflection on personal practice as core to the curriculum. It's motivating for students if they feel that the work they do is utilised."

Clive Wilson, Bradford's director of estates, says: "It is partly because of the enthusiasm shown for the environment by students on this module that we have been inspired to push forward the regeneration of the university campus along ecologically sustainable lines."

Highly Commended Hertfordshire University

Hertfordshire University has reinstated coppicing to protect an ancient 10-acre hornbeam and oak woodland on its

campus. The university has created a biodiversity masterplan, which safeguards 35 species of wildflower and 22 species of bird, including bullfinch and song thrush.

Hertfordshire believes many universities overlook biodiversity, concentrating instead on issues such as waste, energy and transport. But, says a university spokesperson, the sector owns more than 11,400 hectares of land in England alone and can play an important role in conserving the nation's natural heritage.

Highly Commended Sussex University Environmental Society

Higher education's version of the Women's Institute calendar involves a bevy of Sussex University's most outgoing students revealing (almost) all in the name of ecological awareness.

The Environmental Society's 2006

calendar features eye-catching photographs and highlights green themes. A student feeding chickens promotes organic food, while a student lying in autumn leaves is used to warn against buying goods made from tropical hardwoods.

The calendar was photographed by students, using student models and artistic directors. It was produced on recycled paper for £2,100, and has made a £3,000 profit for three charities, including a sanctuary for former battery hens.

SMALLER INSTITUTIONS

Harper Adams University College

Shropshire's Harper Adams University College is using pioneering technology to produce energy for its campus from crops grown on the college farm.

The college has joined forces with Talbott's Heating in Stafford, a firm that has developed a prototype biomass generator. Talbott's combined power unit, producing electricity and heat, provides the base-load electricity supply for the entire campus. The college estimates that using fuel generated on the college farm will lead to significant savings in carbon emissions, equivalent to installing 14,727 energy-saving light bulbs. It also expects financial savings from annual energy costs for non-residential buildings of about £178,000. It hopes to reduce its expenditure by 14.5 per cent in the first year but, more importantly, looks to a high degree of security from external fuel price rises.

College principal Wynne Jones says: "We aim to undertake research on the system and to demonstrate the practical benefits of biomass as a sustainable and secure source of energy."

Highly Commended York St John College

York St John College student union has taken an innovative approach to the age-old town-versus-gown tensions in cities with a large student population. It uses humour to tackle the problems of noise and litter. Its SSHH! (Silent Students-Happy Homes) campaign featuring Zippy from the children's television programme *Rainbow* encourages students to "keep it zipped" when returning from late-night events. The "Pick It Up Girls" — students in pantomime outfits armed with megaphones — star in a poster campaign to discourage campus littering.

► SUSTAINABLE CONSTRUCTION

York University

York University's National Science Learning Centre is the hub of a national network offering innovative continuing-development courses for science teachers.

The £11 million purpose-built centre offers practical examples of sustainability in construction. It features a geothermal heating and cooling system that saves an estimated £11,000 a year and a sedum roof, a low-maintenance "living carpet" of plants that absorbs rainwater and reduces heat loss. Much of its pipework is made from

..... recycled material. Natural ventilation, low-energy high-efficiency lighting with a state-of-the-art control system and rainwater flush systems all feature. There is an on-site recycling centre. Office waste is recycled, and pencils are made from recycled plastic cups.

'A geothermal heating and cooling system saves about £11,000 a year, and a "living carpet" of plants cuts heat loss'

..... A roof-top weather station contributes to climatic change study alongside a greenhouse for biological science. A science trail runs through the grounds and webcam links with schools are planned so that children can study owls, moths and birds.

The centre was set up by the White Rose University Consortium with funding from the Wellcome Trust in response to the concerns about the dearth of young people studying science after the age of 16. Director John Holman says: "It is part of the national network of Science Learning Centres that Wellcome has established in partnership with the Department for Education and Skills, with a mission to inspire a future generation of young scientists by inspiring their teachers.

"Our vision is to create a place of quality and atmosphere to show science teachers the importance of the job they do. The centre is a striking building full of light with the latest facilities for teaching science. It is itself a science teaching aid but also gives us a fascinating context for the teaching of energy transfer and earth science."

► SUSTAINABLE PROCUREMENT

Glasgow University

Glasgow University spends an average of £30 million a year on capital projects and is committed to cutting energy costs and



environmental pollution in the process.

Since 2003, it has beefed up the energy conservation brief it gives to design consultants using the Building Research Establishment's Environmental Assessment Method (Breeam) benchmark for assessing buildings' environmental performance. Designers have to show after the first year that the buildings have achieved the projected targets for energy consumption.

Glasgow's four newest buildings, costing more than £51 million, have all had an energy assessment. A biological field station at Loch Lomond has won an "excellent" rating, while a cancer research facility and computing science building are rated "very good".

The £31 million biomedical and cardiovascular building was planned before Breeam was adopted, but energy conservation was seen as crucial. Biomedical research is energy intensive, but installing energy-efficient equipment, ranging from

condensing boilers to occupancy detectors, has cut consumption by 25 per cent. The investment will be recouped in three years. Carbon dioxide emissions have also been reduced by 457 tonnes a year. Staff were involved in regular meetings to ensure that the design met their needs as well as fitting into Glasgow's business plan.

The university believes that staff and the local community take pride in sustainable buildings, which also boost Glasgow's environmental credibility and help attract students to its environmental science degrees. The buildings also make good case studies for students. Glasgow was the first Scottish university to gain energy efficiency accreditation in 1998, and reaccreditation in 2001 and 2004. Nearly 45 per cent of campus electricity is drawn from renewable sources.

Albert Young, energy conservation officer, says: "We were proud to be shortlisted for this prestigious award. This will complement



the Green Gown energy efficiency award we received in 2005 as it recognises our continuing commitment to be at the forefront of sustainable construction."

► TRANSPORT

Bournemouth University

A few years ago, Bournemouth University faced severe parking problems. There was no incentive for staff to consider alternatives to driving, and local councils would not grant planning permission for developments on its two campuses without a travel plan to cut car use. So Bournemouth introduced a "carrot-and-stick" travel plan for staff and students.

Stuart Laird, site operations manager, admits there was initial opposition. It was crucial to persuade senior management to ring-fence parking fee income for alternative travel schemes, and to keep staff and students informed about the plan.

The university website explains the



ALAMY



reasoning behind the plan and outlines the travel options available. Income from parking charges, expected to total £150,000 this year, has enabled Bournemouth to appoint an environmental officer and to support a range of "carrots" including cycle shelters, shower facilities, a business mileage rate for cycle use and improved bus services. Subsidised Unilink services link Bournemouth's two campuses, and there are ticket machines in university reception areas. Staff and students get reduced fares on other Wilts & Dorset Bus company services. An interactive website gives real-time information on the timetable.

Laird says: "The Unilink bus operation was ranked in the top five fastest growing bus companies in 2005 and has had a very positive impact on the local travel plan for the conurbation, making a strong contribution to both boroughs' passenger targets."

An online car-share scheme is also in operation. Senior staff no longer have

Cycle of change: from a green roof to green transport, the award-winning projects are revolutionising local campus environments

reserved parking, and sections are set aside to ensure availability for late starters and shift workers.

► WASTE

Leeds University

The UK's second-largest university has removed 5,000 office waste bins to encourage staff and students to recycle and reduce waste management costs.

Leeds has installed 2,000 recycling bins for paper, plastic, cans and glass across campus. Before the scheme, only 240 tonnes of waste were recycled, while 1,200 tonnes went to landfill, incurring a tax of £20,000 as part of £104,000-a-year waste management costs.

Keith Pitcher, the university's environmental officer, says: "We have seen a doubling in recycling over the past two years, which, for a large university, is a fantastic response. Cleaning staff time is now spent more on cleaning rather than on emptying individual office waste bins."

Recycling has saved £14,000 over ten months and from this year annual savings will be £47,000. The scheme's total cost was £92,000. Some 32 environmental coordinators — appointed from among the staff — help promote and advise on the scheme.

Students research waste management and carry out energy management, procurement and transport audits and attitude surveys.

The university and Leeds City Council have installed recycling facilities in student accommodation, achieving a 20 per cent recycling rate in the first few months. Items being recycled range from batteries and furniture to mobile phones and grass. Recycling toner and printer cartridges raises money for charities, while unwanted computers have been sent to schools in Lesotho and Kenya.

Recycling paper, cardboard and wood has saved corresponding amounts of raw material from tree-felling, and Leeds has changed its purchasing policy in favour of recycled paper products. The university no longer needs 77,500 replacement liners for the bins removed from campus.

Leeds has met its first recycling target of 25 per cent of its waste, which is set to rise to 30 per cent by 2010.

Pitcher says: "A lot of people making a small change has resulted in this success."

Wind of change

For the past 20 years, Oxford Brookes has not shied away from the fiendish task of putting green theory into practice. Graham Upton explains

Oxford Brookes University has been a major investor in sustainable development research over the years, culminating in the establishment in 2004 of the Oxford Institute for Sustainable Development. The OISD is a multidisciplinary body drawing together research from the School of the Built Environment and also from other parts of the university.

Our strength in developing research, consultancies and community links is recognised through the Higher Education Funding Council for England's third-stream funding, via the Higher Education Innovation Fund and the promotion of Knowledge Transfer Partnerships.

Turning point: Oxford Brookes has undertaken research into the construction of wind farms

Sustainable development is relatively easy to define. According to the 1987 World Commission on Environment and Development, it is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". But as Sir Howard Newby, Hefce's former chief executive, has pointed out, it is "fiendishly difficult" to put into practice.

Oxford Brookes's staff have been engaged this work for the past 20 years.

They have fulfilled key roles set out for higher education in Hefce's consultation document on sustainable development last year. OISD research has attempted to find social and technical solutions to the challenges presented by sustainable development, as well as to develop understanding of the social, economic and political barriers to achieving this.

The OISD has more than 60 academic and research staff and about 100 doctoral students. It addresses issues that affect



Check in with CaSPr when

Universities may face prosecution if they dump computer monitors in a skip. But David Somervell, Edinburgh University's energy and sustainability manager, wonders how many institutions know this.

Somervell is secretary of the Environmental Association for Universities and Colleges Scotland (EAUC-S), which last November launched the Campus Sustainability Programme (CaSPr) to support staff responsible for sustainability issues. Specifically, it will encourage best

Institutions north of the border are working to embed sustainability on campus, says Olga Wojtas

practice in energy consumption, travel and waste management, including keeping its 32 members up to speed on the 400 pieces of environmental legislation.

"There's potential for inadvertently

breaking the law and polluting the local or global environment, which has quite substantial reputation risk issues," he says. "That's where CaSPr comes in. I couldn't say we're unique, as we are ploughing a similar furrow to others, but the approach we are taking is to engage the greatest possible number of institutions and to assist in mainstreaming the concept of sustainable development."

The Scottish Executive says universities and colleges have a vital contribution to make to the UN Decade of Education



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communities all over the world and advises the Government and associated agencies on the way we should live in the future.

With a client list that includes the research councils and charities, the European Commission, the Office of the Deputy Prime Minister, the Home Office, the Department of Trade and Industry, the World Bank, regional and local government and various members of the commercial sector, Oxford Brookes is in a position to make an impact well beyond its boundaries.

Elizabeth Wilson, senior lecturer in environmental planning, has produced guidance for the ODPM on planning for climate change. With her colleague, lecturer Jake Piper, she has also contributed to the South East's capacity to manage climate change by analysing how different organisations are adapting. The research, funded by the South East England Development Agency, is being used to promote partnerships across the region.

At an international level, the OISD was

invited to join a European Union-funded expert network on the regeneration of brownfield sites.

The OISD has also worked with industry to promote sustainability. The steel giant Corus has funded a professorship at Oxford Brookes to explore sustainable approaches to steel production. John Glasson, co-director with Mike Jenks of the OISD, and colleagues have undertaken research for many companies in the energy sector on the environmental impact of the construction and also decommissioning of power stations, including the building of Sizewell B, and, recently, large wind farms.

The Centre for Environmental Studies in the Hospitality Industry carries out research and consultancy initiatives in environmental management, sustainable development and corporate social responsibility. It is Oxford Brookes's mission to ensure that the university is not a major polluter — initiatives to reduce energy consumption, water management and to manage its waste better are in place. Our School of Technology building is being constructed to the highest environmental standards, with innovations such as solar chimneys to heat and ventilate our workshop and teaching spaces. Oxford Brookes' Green Commuter Plan won a Green Gown Award last year.

The university's partnership with the Carbon Trust has led to the planting of 1,000 trees by geography students. This level of enthusiasm, coupled with serious investment, will enable Oxford Brookes to maintain its green spirit.

Graham Upton is vice-chancellor of Oxford Brookes University.

your PC gives up the ghost

for Sustainable Development (2005-14), acting as a model in their own estate development, spreading knowledge to their students and the wider community, and researching more sustainable technologies. And it has given CaSPr £120,000 over three years to help improve the sector's performance.

Pat Hoy, deputy director of estates at Strathclyde University and CaSPr sponsor in the EAUC-S, says members want training and awareness-raising for senior managers; the chance to share information, problems

and solutions; links with other organisations involved in promoting sustainability; and guidance on finding funding and support.

CaSPr's launch was supported by the Scottish Funding Council, which is encouraging institutions to take a holistic approach to sustainable development, embedding it throughout their work, including teaching and learning, estate management and research and business services. "The structure of Scottish degrees, with the ability to specialise at a relatively late stage, suggests to

me more opportunity to offer modules [on sustainable development] than would be possible in England," says David Beards, SFC senior policy officer. "Although we've got very little influence on course content, it's very good to see."

Sustainability is even helping to break down disciplinary boundaries. St Andrews University set up an interdisciplinary cross-faculty module in sustainability for students in arts and science. It was an immediate success, with students demanding a full degree, which was launched in 2004.

Ready to go the distance?

Students are keen to embrace a sustainable future, says Brian Chalkley, but transforming learning cultures requires a marathon effort, not a mad dash

Education for sustainable development (ESD) is an idea whose time has come. Although there have been false dawns, a powerful combination of circumstances is at last moving ESD up the agenda. Universities and colleges' greatest contribution will be through enabling students to develop the knowledge, skills and values that society will need for real progress towards sustainability.

ESD (like key skills) works best where it is embedded in a discipline rather than externally imposed or "bolted on". In many subjects, this is not as difficult as it might seem. Two years ago, the Higher Education Academy established a project aimed at supporting, promoting and developing ESD in the curriculum. Now most of the 24 subject centres are engaged in this. Subject centres seek to raise the general profile of learning and teaching and to encourage innovation in the disciplines they serve.

In some disciplines, notably geography, environmental science, architecture and civil engineering, sustainability is often a well-established part of the curriculum. In others, however, ESD represents relatively unexplored territory and offers exciting opportunities. Already work is starting to

bear fruit. The English subject centre has highlighted how the study of literature can illuminate themes such as consumerism, the value of nature and landscapes, and the relationship between eco-criticism and creative writing. The subject centre for philosophical and religious studies is

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'Some vice-chancellors may see ESD as political propaganda rather than an attempt to create an informed citizenry'
.....

promoting learning about sustainability from ethical and theological perspectives.

The subject centres have an important role to play in raising ESD's profile, in disseminating ideas and materials and in building staff capacity and expertise. Conferences, workshops, publications and websites are being used, as is liaison with organisations such as Forum for the Future, the Environmental Association of Universities and Colleges and

Higher Education Environmental Performance Improvement. In addition, the academy has produced ESD briefing papers for employers and senior university policymakers. It is also strengthening its links with the two new ESD Centres for Excellence in Teaching and Learning (Cetls) at Kingston and Plymouth universities. Both Cetls have ambitious plans for achieving university-wide excellence in this field and becoming institutional models of national — even international — significance.

This surge of activity is encouraging. But ESD is a marathon, not a sprint. Higher



education has many other competing priorities so building ESD commitment and expertise will take time, and some vice-chancellors may see it as political propaganda rather than an attempt to create an informed citizenry. Moreover, despite the work of the subject centres, the scale of the challenge far exceeds the sector's capacity to deal with it.

Many questions remain unanswered. Who will deliver the funding councils' ambitions within institutions? Who will offer guidance on the relationship of sustainability policies to teaching and

Campus power

Harvard is cleaning up its act, and Leith Sharp has high hopes it will set a global example

The Harvard Green Campus Initiative began in 2000 with a one-year grant. Over the past five years it has grown, in partnership with thousands of people in the university, into a \$1.1 million (£630,000) business saving more than \$5 million and more than 18 million kilograms of greenhouse gas emissions a year.

The initiative's business model is fundamentally entrepreneurial as it continuously develops and sells new services to departments that want to save money and reduce environmental impact.

Most large research universities have seen greenhouse gas emissions increase steadily at a rate of about 4 per cent a year since 1990. But in the past two years a number of Harvard schools have started to reverse this trend.

Activities across Harvard include:

- a \$6.5 million investment in energy conservation in existing buildings
- \$180,000 to reduce energy use in labs
- building energy upgrades producing 30 per cent energy-use reductions
- a green cleaning service
- using biodiesel in all university buses
- deriving biodiesel from kitchen oil
- a 42 per cent-plus recycling rate
- subsidised public transport
- improved bicycle facilities
- local and organic produce in cafeterias.

With continued effort, Harvard will become a global model of campus environmental sustainability. This will be achieved with a business-oriented entrepreneurial spirit that will prove to the world that environmental sustainability is not just right, it is also the financially viable, business-minded thing to do.

Leith Sharp is director of the Harvard Green Campus Initiative.
www.greencampus.harvard.edu

Best foot forward: subject centres that work to integrate education for sustainable development into the curriculum are in it for the long haul

learning? How will understanding be developed among university leaders, pro vice-chancellors for learning and teaching, educational developers and staff responsible for curriculum design and delivery? How will the voices of students and employers be heard?

Although the sector has made considerable progress on issues such as energy use and recycling, in terms of student learning we are at a relatively early stage. While there are pockets of good practice, we fall well short of the cultural shift required. Increasingly,

universities will have to produce not only the technical specialists equipped to resolve particular sustainability problems, but also the political and business leaders and the informed professionals and citizens who can contribute to more sustainable ways of living and working. For higher education, this is both a major challenge and a unique opportunity.

Brian Chalkley is director of the Higher Education Academy Subject Centre for Geography, Earth and Environmental Sciences.



Catalytic converters

Industry is greedy for graduates of sustainable development courses to help ensure that it enjoys long-term commercial returns. Matt Baker reports

Sustainable development graduates are arguably among the most sought-after in the UK. The environmental services industry turns over more than an estimated £25 billion and employs about 400,000 people, and the sector enjoys year-on-year growth on a par with the aerospace and defence sectors.

According to the latest salary and careers survey by Environmental Data Services, on average, 46 per cent of employers say they are expanding their environmental teams because of government enthusiasm for new environmental strategies and policies and the introduction of European Union environmental assessment directives.

But there is a more calculating reason. "Put bluntly, businesses generally have to be much smarter and more aware about whether society is going to accept that they have a right to exist at all," says Jonathan Bailey, head of external affairs for the Manchester Airports Group.

The rising awareness of environmental issues makes some people think that the skills being taught on sustainable development courses will not be unique for long. "In ten years, I really hope there's no such thing as a sustainable development graduate because it will be embedded in everything we do," says Peter Guthrie, professor in engineering for sustainable development at Cambridge University.

"To separate sustainability from other disciplines should by then be anathema." For the time being, however, there are excellent opportunities for graduates of the 74 UK masters programmes with sustainable development elements.

Lewis Hurley, a graduate of Oxford Brookes University's MSc in environmental impact assessment and management, says: "The EU environmental assessment directive came into force halfway through my course, and employers were contacting us directly rather than waiting for us to finish the course." He now works as principal environmental assessment officer for the London Borough of Hillingdon. "It's great because you're at the cutting edge of social, political and economic change, and we're moving away from the woolly-jumper theoretical brigade into working with large consultancies and bringing sustainable development into the mainstream."

It is no easy task to persuade businesses to adopt more caution in chasing profits. Leadership in sustainable development programmes are becoming more widely available. Graduates from such courses now shape government policy, lead think-tanks and help industry implement sustainable solutions. "The question is how far can a consultancy push a client for a sustainable policy when it might compromise its earning potential?," Guthrie says.

Ethical dilemmas come with the territory.

Who is The Energy Consortium?

We are a 'Not for Profit' organisation operating exclusively for the Higher and Further Education Sectors. We have 145 members and our team of qualified energy purchasing personnel provide a range of energy related services. We have strong links with a number of external organisations including the DfES with whom we are currently leading a vfm energy purchasing review for the wider education sector.

What services do we offer?

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- Expert knowledge of alternative energy products for example index linked products
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- Contract follow up and supplier performance monitoring
- Subsidised training initiatives
- Annual conference

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- Quarterly newsletter
- Regularly updated website www.tec.bham.ac.uk
- Weekly Energy report

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- HEFCE
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- DfES
- OFGEM
- DTI
- Energywatch
- OFWAT
- DEFRA
- Transco Customer Forum
- Various other energy related groups/organisations

In addition to this we have strong links with all the energy suppliers and hold regular meetings to discuss contract performance and service levels.

Contact: Kevin Doyle (Acting CEO)

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The Higher Education Academy Subject Centre for Geography, Earth and Environmental Sciences (GEES)

Do you want to incorporate sustainability issues in your courses? Are your students interested in topics such as climate change or corporate ethics? We can help! The GEES Subject Centre has resources you can use to develop curricula and pedagogy for Education for Sustainable Development. Many other Subject Centres can also offer guidance about ESD in their disciplines. See gees.ac.uk/projtheme/esd/esd.htm



The GEES Subject Centre exists to help all professionals in geography, earth and environmental sciences in UK higher education. The Centre provides:

- * National events on topical issues in learning and teaching
- * CPD workshops for newly-appointed lecturers
- * Free workshops on a range of themes delivered in GEES departments throughout the UK
- * Enquiry service
- * The biannual publication *Planet*
- * Resource database and website

Keep up to date with activities by signing up to the GEES Subject Centre announcement list at:
<http://www.jiscmail.ac.uk/lists/gees.html>

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