



The University of
Nottingham



Environment Annual Report 2008/09



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Introduction

Over the last 12 months we have continued to work hard to improve the environmental performance of the University, whether it be through environmentally-conscious building design, energy efficiency measures, diverting waste from landfill, encouraging the use of sustainable transport or developing a comprehensive Environment Strategy.

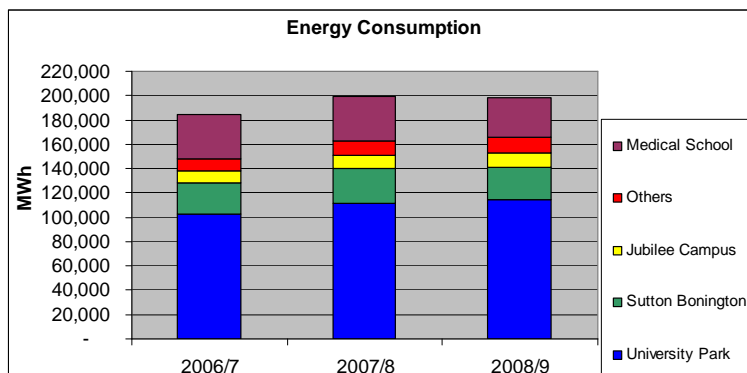
The University's commitment to reducing its environmental impact has been recognised in a number of 'green' awards, including a 2:1 in People & Planet's Green League 2009. The campaigning group's league table awarded degree-style classifications to Universities based on their environmental management and performance. The University of Nottingham came in at joint 38th place (out of 131) - a rise of 18 places from last year. We also completed Universities That Count, scoring just above the HE sector average in Business in the Community's environmental benchmarking index (55 universities took part).

Looking more widely, we have seen increasing emphasis on climate change, with carbon management becoming a strategic issue for many organisations. It is acknowledged that the higher education sector needs to play its part in meeting national targets for carbon reduction. HEFCE has already signalled to institutions a more demanding approach to carbon reduction and the need for carbon management plans. Indeed, HEFCE plans to adapt its Capital Investment Framework to establish a link between carbon emissions and future capital allocations. HEFCE's 2009 grant letter from the Secretary of State made it clear that the HE sector is expected to achieve emissions reductions which are at least in line with UK government targets set out in The Climate Change Act 2008. The legally binding targets commit the UK to greenhouse gas emission reductions of at least 80% by 2050 and at least 34% by 2020, against a 1990 baseline.

This brief report gives an overview of our performance and activity in 2008/09. If you would like to find out more about what we are doing or how you can get involved please get in touch (see back page for contact details).

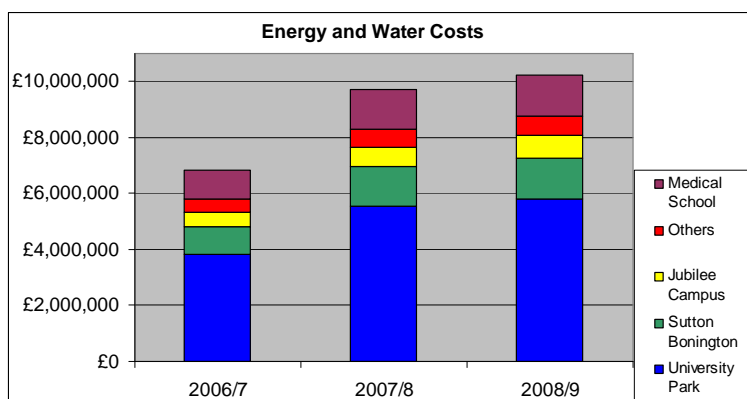
The Environment Team

Like-for-like energy consumption decreases 5.6%



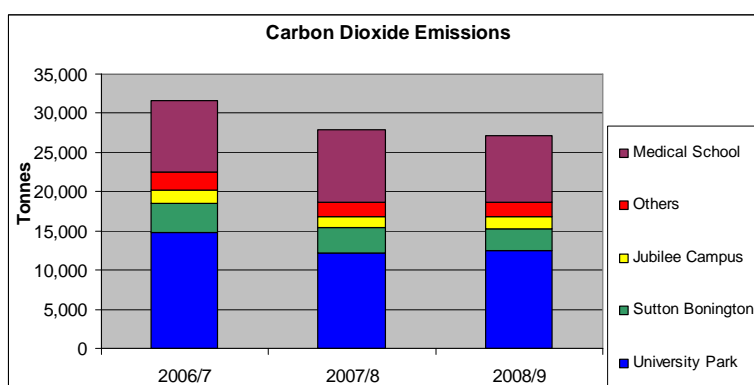
Overall energy consumption (at 198.1 GWh) decreased by 1% in 2008/9, reversing last year's upward move. However, if the effect of the continued cooler weather and the increase in floor area (up 2%) are considered, then a final consumption of 209.3GWh could have been expected, so savings of 5.6% were achieved in a like-for-like comparison.

In the Medical School, historically an energy-intensive building, fossil fuel consumption decreased by around 15% as a result of energy-saving projects there, on top of a 9% reduction last year. Details of some other energy-saving projects undertaken are provided in the box below.



Energy and water costs increased again in 2008/9, to a new high of £10.2 million (excluding taxes) - a rise of 5% on the 2007/8 figure. However, this was actually a very good performance, as world energy prices reached record highs in Autumn 2008. Our purchasing strategy of buying gas and electricity monthly allowed us to defer the purchase of much of our energy until prices had fallen in 2009.

Carbon dioxide emissions down 3%

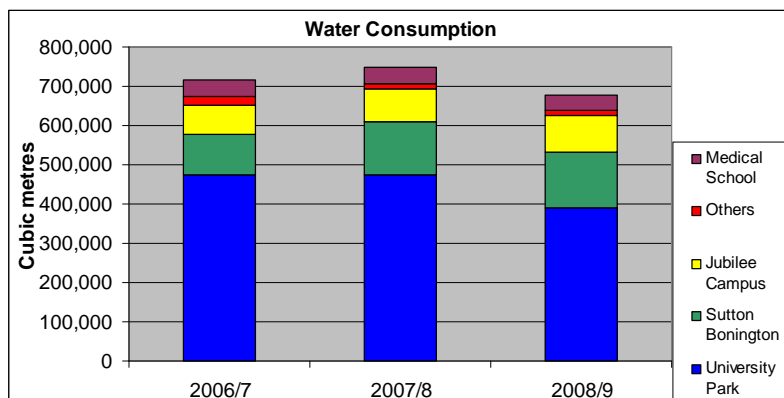


Overall emissions of carbon dioxide from all energy sources fell for the third year running, down 3% overall. This was down to reductions in energy consumption. The University has continued to purchase 'green' electricity from renewable sources, which has saved some 35,520 tonnes of carbon dioxide compared to 'non-green' electricity supplies.

Energy-saving investments in 2008/9

- ★ Improvements to corridor ventilation systems in Medical School
- ★ Building Management System controls in Portland lecture theatre and Great Hall, Trent Building
- ★ Low-energy lighting and controls in Tower Building
- ★ 'Free cooling' in King's Meadow Data Centre, using cooler outside air to supplement air conditioning
- ★ Purchase of PC shutdown software, to enable inactive desktop PCs to be switched off remotely
- ★ Replacement of single-glazed windows in Coates Building
- ★ Installation of additional sub-meters, to provide real time data on electricity consumption

Water consumption decreases 9%



Water consumption decreased by an impressive 9% in 2008/9. Total water consumption was as high as 925,590 cubic metres back in 2004/5 - 36% above the current level.

Most campuses saw modest rises in 2008/9, but these were more than offset by reductions achieved at University Park.

Although usage in buildings is now reasonably well-controlled with the introduction of devices such as Cistermiser urinal controls, overall

consumption is heavily influenced by leakage on our networks. It is thought that identification and repair of a number of leaks has been responsible for this year's reductions.

Monitoring fume cupboards



Fume cupboards are fitted in laboratories for the protection of users but, if not properly controlled, the fans can use large amounts of electricity and large volumes of heated or cooled air can be lost from the building. The Estate Office has been working with academic schools to raise awareness of the issue, liaising with technical managers, labelling fume cupboards and monitoring energy use.

Around 300 of the University's 600+ fume cupboards are monitored by the Building Management System (BMS), which enables the Estate Office to provide regular electricity consumption data and calculate potential cost savings.

Running a fume cupboard 24/7 costs around £4,500 per year, so reviewing the operation of fume cupboards is important from both a financial and environmental perspective. To find out if BMS data is available for your laboratories please email andrew.bryers@nottingham.ac.uk.

£300k revolving carbon fund



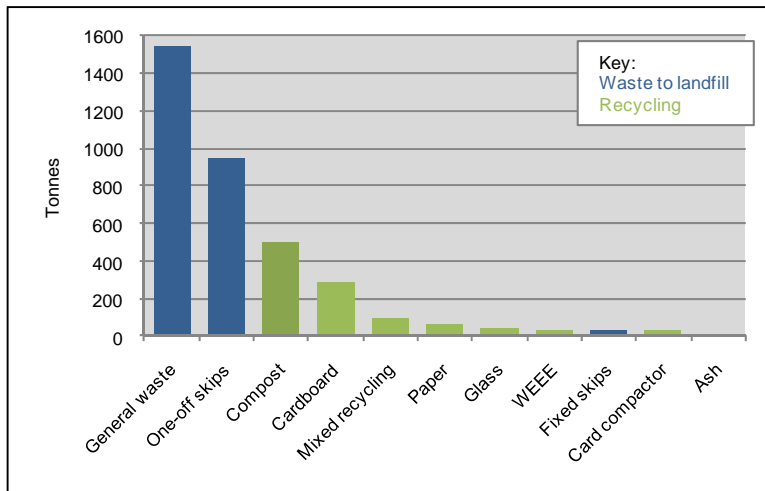
Following a rigorous application process, the University has been awarded a recoverable grant of £300,000 from HEFCE to fund carbon saving projects. The financial savings made from these projects will then be available for the University to reinvest in further carbon reduction projects, making the fund self-sustaining.

Projects must deliver carbon dioxide savings and financial savings, with priority going to projects which offer longer term carbon dioxide savings. Potential projects include enhancing the roof insulation of buildings; fitting controls which will allow building conditions to be programmed and optimised through the University's Building Management System; and upgrading heating controls.

The grant only has to be repaid to HEFCE when the University has exhausted all eligible projects.

Ambitious recycling target

In 2008/9 the University recycled around 29% of the waste generated. Disappointingly this didn't reach the target recycling rate of a monthly average of 35%. Nonetheless, recycling diverted over 1,000 tonnes of materials from landfill, generating a saving in the region of £36,000 (as waste sent to landfill is subject to a landfill tax which increases annually).



We have set a target recycling rate of 40% by 2011/12. We hope to meet this ambitious target by identifying opportunities for recycling new waste streams, such as portable batteries and food waste, and working to reduce the overall waste produced, particularly from one-off skips (which account for 27% of the University's waste).

We will continue to promote existing good practice, e.g. for office clearouts and disposing of electrical appliances.

Tour of Wastecycle's recycling facility

As part of the Eco-Action Week in March, staff and students were given the opportunity to visit Wastecycle's Materials Recycling Facility where waste is sorted and baled for re-processing. Wastecycle is currently the contractor for the majority of the University's mixed recycling scheme, so the tour of the recycling facility in Colwick provided a good insight into what happens to our recycled waste when it leaves campus, helped to explain some of the restrictions on materials accepted by the mixed recycling scheme and how we can work to reduce contamination.

More recycling opportunities



We've continued to expand recycling facilities, installing new recycling bins across campus. These all offer facilities for recycling paper, card, tins, cans and plastic, and some larger bins also accept glass.

To find out where external bins are situated go to: www.nottingham.ac.uk/estate/environment/recyclingmap.html

You can now put a far wider range of plastics in the mixed recycling bins. In addition to plastic bottles, the University's mixed recycling scheme now accepts yogurt pots, plastic cups, margarine tubs, plastic food containers and bubble wrap. The card cups used in Nottingham Hospitality catering outlets are also accepted in the mixed recycling.

Not sure what you can recycle on campus?

- ✓ Books
- ✓ Cans
- ✓ Card
- ✓ Clothes and shoes
- ✓ Glass bottles
- ✓ Ink cartridges
- ✓ Mobile phones
- ✓ Paper
- ✓ Plastic bottles

See www.nottingham.ac.uk/estate/environment/recycling.htm

More tax free bikes



Staff wanting to buy a bike for cycling to work now have even more choice since the University has become a member of Evans Cycles' Ride2Work programme. In 2008/9 around 150 staff took advantage of the cycle purchase schemes.

Savings on income tax and national insurance contributions mean that University employees can buy a bike and accessories for cycling to work with savings of up to 50% on the shop price. After you've chosen a bike and accessories, the University creates a voucher to cover the retail price of the purchase. You then pay twelve monthly instalments and, after a final payment, the bike is yours. For more information about applying see:

www.nottingham.ac.uk/estate/environment/cyclescheme.html

NCT 13 runs through University Park



The University has continued to work with public transport providers to improve services to and from campus. The No 13 bus service, operated by Nottingham City Transport (NCT), now runs via University Park, providing a link between the city centre and Beeston (via Castle Boulevard).

The half-hourly service stops behind the Portland Building for Beeston bound buses and at East Drive bus bay for City bound buses. As with any bus services operated by NCT, staff and students can use their University card as a bus pass. Cards can be topped up in the Portland Building or at the NCT Travel Centre in the Old Market Square in Nottingham city centre.

See www.nottingham.ac.uk/about/visitorinformation/busservices.aspx for timetables of all bus services, including the free inter-campus hopper buses.

You told us...

In Spring 2009, we carried out a Staff Travel Survey. As we continue to look for new ways to increase transport choice for both staff and students, the data gathered from the survey has been used to develop a number of projects over recent months and will be used to update the University's travel plan.

Car share scheme - the University has teamed up with the UK's largest car sharing network to provide a car share scheme specifically for University staff. Over 200 staff have joined to date. See www.nottingham.ac.uk/carshare

Cycling partnership - the University is a key partner in a £3 million project to encourage staff, students and visitors to the city's university campuses and the Queen's Medical Centre to walk and cycle more. The two-year project will include improvements to cycle routes and facilities, both on and between campuses, alongside investment in new services such as cycle hire, cycle training and guided rides.

Improved bus services - the enhanced No 13 service complements the No 34 UniLink term-time service, with the No 13 service operating all year round, late into the evening and at weekends.

Results of the travel survey are available at www.nottingham.ac.uk/estate/docs/Travel%20Survey%20Results%202009.pdf



Eco-Action Weeks

The Environment Team joined forces with the Student Union's Environmental and Social Justice committee to run two Eco-Action Weeks. The March week focused on a different environmental issue each day, with a range of events, tours, information stalls and interactive exhibits to raise awareness on University Park, Jubilee and King's Meadow campuses. Similar events were on offer at Sutton Bonington campus during an Eco-Action Week held at the end of April.

Events held during the two Eco-Action Weeks offered opportunities for both staff and students to get creative, get active and engage in debate. Highlights include:

- local food markets at Jubilee and Sutton Bonington
- second hand bike sale
- tour of the BASF eco-house on University Park
- evening screening of *The Day After Tomorrow*
- Big Breakfast for cyclists
- guided garden and geological walks around campus
- cycle ride along sections of the waterside Big Track route
- battery amnesty
- free cycle rickshaw around campus
- Dr Bike - free bike 'health check'



I've bin recycling - have you?



This is the question posed by 8-year old Natasha from Portland Primary and Nursery School. As part of the University's support for the school's World of Work week, the Environment team visited the Bilborough school to run activities on recycling and waste minimisation. In addition to making carbon wheels to calculate their carbon footprint, and finding out how many plastic bottles it takes to make a fleece jacket, children in year 4 were set a challenge to design a poster to promote recycling at the University and Portland School. To download the winning designs, see:

www.nottingham.ac.uk/estate/environment/portland.htm

Sounds on the Downs 2009



Once again, the Environment Team were pleased to support the Sounds on the Downs Festival in June. The student-run festival encouraged people to enjoy University Park campus and aimed to demonstrate that a large event can be run with minimal impact on the environment. Off-grid electricity was used to power the main stage, the catering showcased local food producers, and stalls promoted student action and community involvement. Besides the live bands, attractions included a pedal-powered bubble machine, recycled art workshops and a 'wish tree'.

Congratulations go to Lisa Wilson, winner of the Environment Team's competition on the day. The second-year Medicine student won a folding bike, so she now has a healthy and green way to get to lectures.

Battle of the halls



The Estate Office challenged students living in halls to cut back on their consumption in a competition to reduce the carbon footprint of student accommodation on University Park and Jubilee campuses. Each month focused on a different output: electricity, landfilled waste and water. Halls received historical data each month (a 'CO₂ snapshot') together with a target for the month and tips on how to reduce their consumption. At the end of each month the halls' performance was analysed and the results ranked.

Through the competition's five-month period Nightingale Hall gave the strongest performance, with Melton and Derby Halls taking second and third place respectively. Nightingale Hall JCR committee received £750 to spend on an environmental prize of their choice.

Environmental Champions Network

The University's Environmental Champions Network now has around 75 members of staff across Schools and Professional Services. Over the last year Environmental Champions have been involved in promoting an energy awareness campaign, planning Eco-Action Week, piloting the car share system, identifying opportunities to improve recycling rates, and investigating anomalies in electricity and water consumption.

In addition to this activity, a number of Environmental Champions have been very pro-active in developing new initiatives in their school or department. Examples include reporting electricity consumption data to departmental management team; collecting organic waste in the staff kitchen area to compost at home; producing a School Green Team newsletter; and surveying colleagues to find out more about current recycling practices.

In 2009/10 we plan to develop a network of student Eco-Warriors to complement the network of staff Environmental Champions. A list of all Environmental Champions is available at:

www.nottingham.ac.uk/estate/environment/championlist.html

Pop-up banners for loan



The Environment Team has an updated suite of roller banners that can be used to raise awareness of the University's environmental impacts and work to minimise these impacts.

Topics covered are:

- Car share scheme
- Energy
- Environmental management
- Recycling
- Transport

Please email sustainability@nottingham.ac.uk to book the banners.

Did you know...

Recycling just one plastic bottle saves enough energy to power a 60W light bulb for 6 hours.

Source: www.recyclenow.com

Did you know...

The School of Veterinary Medicine and Science Building at Sutton Bonington has a rainwater harvesting system that collects rainwater for non-potable water requirements, such as flushing toilets.

Green Flag still flying



The University has once again been awarded a Green Flag. The 2009 Green Flag is the seventh annual award for University Park campus, which still remains the only Green Flag recipient in the higher education sector.

Green Flags are widely acknowledged as the benchmarks of excellence for parks and recreational spaces. They are only awarded when several standards are judged to be met including high quality horticulture, working local community partnerships, environmental quality, cleanliness, accessibility and sustainability.

Over the past few years the University has won several other awards for its landscaping, including Britain in Bloom Public Park Award 2005, British Association of Landscape Industries award for University Park's Millennium Garden, East Midlands In Bloom 2008 'Special Award' For Horticultural Excellence, and Nottingham in Bloom Gold Award 2009 for University Park's North Entrance summer bedding plant display.

Linking up for biodiversity

The University is working with Nottinghamshire Wildlife Trust to enhance the biodiversity of our campuses. In January, John Everitt, the new Chief Executive and an alumnus of the University, visited the University to see the campuses, understand more about our grounds and landscape management and identify ways that we could develop closer links with the Wildlife Trust. The first stage of this has been the commissioning of a biodiversity audit for University Park, which will be used to inform future landscape developments. The University has also sponsored an award in Nottinghamshire Wildlife Trust's Green Guardians Environmental Awards 2009.

Bats, geology and conifers - a wealth of walks



Over the last year the Environment Team has organised a number of walks to enable staff and students to appreciate the flora and fauna found on campus. The Grounds team led 'Conifers on campus' - a guided winter tree walk around University Park, taking in specimens such as the Brewer's Weeping Spruce opposite Derby Hall and nine Gum Trees in the Amphitheatre Dry Garden close to Lenton and Wortley Hall. A self-guided walk booklet complete with map, photographs and commentary is available at: www.nottingham.ac.uk/estate/docs/grounds_winter_tree_walk_booklet.pdf

Following the popularity of last summer's evening bat walk, we ran a further two guided bat walks in August and September this year. Led by volunteers from South Nottinghamshire Bat Group, the walks began with an illustrated talk before setting out across University Park in search of different species.

Other walks included 'Rock around the campus' - a guided walk highlighting interesting geological features on University Park, and a guided garden walk led by The Friends of University Park. Both walks can be downloaded from: www.nottingham.ac.uk/estate/grounds

'Excellent' for Nottingham Geospatial Building



Nottingham Geospatial Building, the first of the University's new builds to be assessed against BREEAM (a widely-used environmental assessment method for buildings), has been awarded the highest rating of 'excellent'.

Located on the Innovation Park at Jubilee campus, the new building houses the University's Institute of Engineering Surveying and Space Geodesy (IESSG), Centre for Geospatial Science (CGS) and GNSS Research and Application Centre of Excellence (GRACE).

Environmental features of the building include a biomass boiler fuelled by wood pellets, rainwater harvesting system, energy efficient lighting, showers and drying cabinet (to encourage walking and cycling), passive design measures to promote energy efficiency and avoid excessive heat gains or losses, and TermoDeck ventilation system.

The University will aim for subsequent new builds also to be designed and validated against the BREEAM standards. In future they will be assessed against BREEAM HE - a version of the assessment specifically designed for the higher education sector.

More eco-homes at Green Close



The latest additions to Green Close, where the Department of the Built Environment's Creative Energy Dwellings project is building a series of eco-houses, are the Tarmac houses. Tarmac's challenge was to build two semi-detached homes that could provide a blueprint for low cost, scalable zero-carbon housing. The two properties were built to meet the minimum requirements of the Code for Sustainable Homes (CfSH) Level 4 and 6 using conventional, ready-available masonry products and techniques.

Environmental features of the homes include a biomass boiler, rainwater collection systems, sunpipes in the roof to provide daylight to the internal stairwells, and solar thermal panels which should provide 70% of the overall hot water demand. The house built to CfSH Level 6 standard also includes solar photovoltaics and additional insulation. A major programme of monitoring will analyse the energy usage and thermal efficiency of the houses, as well as how occupants potentially have to adapt to living in a CfSH Level 6 property.

Straw bale building planned for Sutton Bonington



Work has started on the development of a straw bale building at Sutton Bonington. The new building is intended to house the Division of Agricultural and Environmental Sciences currently based on University Park and to provide additional facilities for the Schools of Biosciences and Veterinary Medicine and Science. Walls will be constructed from prefabricated straw bales finished with a lime render, which will offer high levels of thermal insulation with low embodied carbon. A gas-fired combined heat and power plant will provide both electrical power and thermal heat for the building, thereby reducing CO₂ emissions. The building is scheduled for completion for summer 2011.

The University has committed itself to becoming a leading green University. Working with colleagues across the University, we will build on both our research and operational excellence to achieve this. Some of the initiatives that are planned for or already underway in 2009/10 include:

- Launching a University-wide Environment Strategy
- Appointment of a Director of Sustainability in the Estate Office, who will have responsibility for continuing to embed sustainability into all aspects of the University's operations
- Developing an environmental management system (EMS) for the University through participating in the EcoCampus programme - an EMS designed specifically for the HE sector
- Completing the Universities That Count programme. We completed the environmental element of the social responsibility benchmarking index in 2008/9, but the University intends to complete all four pillars of the index for 2009/10: community, environment, marketplace and workplace.
- Working towards the Carbon Trust Standard, which is awarded to organisations that measure, manage and reduce their carbon footprint
- Developing a network of Student Eco-Warriors to complement the staff-based Environmental Champions Network
- Exploring opportunities for on-site low carbon energy generation and long term energy solutions
- Expanding recycling facilities across the University
- Incorporating low carbon technologies into planned capital projects, e.g. straw bale wall construction at Sutton Bonington
- Launching a 'green' marketing campaign in early 2010
- Continuing to increase transport choice for staff and students through current schemes, and further enhance the experience for cyclists through U-cycle Nottingham (the new cycling partnership project for Nottingham)
- Engaging with the University's suppliers and contractors to ensure that goods and services procured meet the University's environmental standards
- Working with the Students' Union to further raise awareness of environmental issues amongst the student community
- Supporting the roll out of Information Services' Green IT Programme

A few ways to support the University's environmental policy...

- ★ Use the free hopper buses to travel between campuses
- ★ Make the most of the recycling facilities - you'll find them in halls, libraries, academic buildings, offices, snack bars and outside on campus
- ★ Find out who the Environmental Champion is for your school or department (see p7 for further details)
- ★ Report any heating and lighting faults promptly to the Estate Office Helpdesk
- ★ Activate the energy saving features on photocopiers, computers and other equipment
- ★ If you need to print documents, use recycled paper
- ★ Use video conferencing and Skype to reduce the need to travel to meetings



