



Ringmer Community College, East Sussex

Stephen Green

Secondary pupil-led commitment to managing energy

Summary

Ringmer is a rural Community College near Lewes in East Sussex which celebrates its 50th Anniversary in 2008. The 798 pupils come from a variety of backgrounds and are of mixed ability. Two hundred pupils have volunteered to be Eco Reps, to improve the environmental performance of the college, and to change the attitudes of teachers and pupils to environmental issues. Positive actions have spread through the curriculum and everyday activities, resulting in the attainment of the Eco-Schools Green Flag Award.

There is a total commitment to engaging pupils in all aspects of the college's environmental activities. Not only are they involved in monitoring energy and waste around the school but they also regularly visit other schools, colleges and community groups to present their environmental work and encourage others to follow their example. They have also presented to trainee teachers at Sussex University and give tours to people interested in their sustainability work.

The main building at Ringmer dates from when the college was founded, and its original heating system is inefficient and has minimal controls. Despite this, the caretaker manages to control the system manually to reduce energy use, and Eco Reps report malfunctioning radiator valves. A graduated system of charges deters departments from leaving lights and IT equipment switched on, and Eco Reps 'name and shame' those which perform badly on energy and paper use. As well as good energy housekeeping, Ringmer shows its commitment to sustainable energy more obviously by the generation of electricity from a 2.5kW wind turbine and a 7.5kW solar photovoltaic (PV) array. A new Sixth Form teaching block which opens in September 2008 will be heated by a ground source heat pump and will incorporate passive ventilation, energy efficient lighting and controls. The pupils have been actively involved in the design of this new building.

Uniquely, since 2001 the college has employed a part-time Eco-Coordinator to drive the environmental programme agreed by governors, the Principal, staff and pupils.

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The college

Ringmer Community College is situated near Lewes in East Sussex within a predominantly farming community with mixed housing. It has technology college status, with 798 pupils and 115 staff. Only 7% of pupils receive free school meals and there are few pupils from ethnic backgrounds other than white and British. Adults not involved in agriculture tend to work in the service sector and commute to Lewes and Brighton.

The college comprises a range of buildings dating back to the 1950s. The original building, which is the largest on the site, is in need of repair or replacement. From an energy point of view it is highly inefficient, particularly with regard to heating. An additional teaching area was built in 2002 and adheres to modern building standards with movement sensors and variable lighting. A new Sixth Form block is due to open in September 2008. There is also a swimming pool on site for school and community use.

Behavioural activities to promote sustainable energy use

There is a total commitment to engaging pupils in all aspects of the environmental activities in the college. This has been led by the governors, who insist that pupils are consulted at all times and are involved in any decision making, and also made the decision to employ a part-time environmental coordinator. The Eco Rep system is a key part of the environmental focus. There are now 200 registered Eco Reps, all volunteers, with 15 appointed as Senior Eco Reps. College uniform includes a polo shirt and the Senior Eco Reps have their titles embroidered on their shirts as well as the school logo. All Eco Reps have badges to signify their status. Most of the actions which pupils and staff take to use energy more sustainably could easily be followed in other schools. Some examples follow.

Eco Reps are engaged in monitoring energy use and waste around the school, ensuring that lights and appliances are not left on, and that doors and windows are not left open unnecessarily. With the original 1950s heating system still in use, there are often problems with radiators being stuck on or off, and the pupils report these to the caretaker.

It is difficult to know if energy is being used carefully without keeping track of use. The Ringmer caretaker therefore reads the meters every month and the bursar checks the consumption data against utility bills when they are received. She also compares consumption with previous years to monitor performance, so any unexpected use is tracked down quickly.

The growing use of IT equipment has led to increases in electricity use at many schools, and one of the main problems is making sure that everyone remembers to switch equipment off when they have finished using it. Ringmer has developed an innovative combination of technical and motivational measures to tackle this. Firstly, the 'log off' facility has been removed from PCs so that the user only has only the 'shut down' option, which ensures that equipment is not left on standby. Secondly, the IT department monitors if any computers are left on at the end of the day and which department used the room last, then charges negligent departments. The normal charge is £5 every time a classroom is found with lights or equipment on at the end of the day. However, this charge is increased if equipment has been left on for a whole weekend or holiday period.

Although there is no specific green procurement policy at Ringmer there is an awareness of what is required, and a culture of 'doing something' even if it is not ideal. For instance, the only recycled paper which Ringmer could afford was of poor quality and jammed in the

printers, so they have reverted to purchasing paper produced from sustainably managed forests. However by restricting paper allocation to each class and department, consumption of paper has declined and so has photocopying. Some departments have shown a 40% reduction in their paper use. Pupils recycle materials when possible: for instance waste wood from the technology department is used for fuel. Paper plates are also banned from the school. The active recycling process now means that over 100 tonnes of material are recycled annually by the college. This has also reduced the amount of waste being collected and going to landfill by a similar amount.

Eco Reps attend meetings with staff and governors and give presentations at assemblies to report on progress. They also run an annual 'name and shame' event, which highlights departments which have done badly on resource use.

The pupils have had input when decisions are made on buildings and energy use. For example, a pupil had the idea of building a wind shield to protect a doorway that faced the prevailing wind. Pupils have been able to influence the design of the Sixth Form centre. One of their suggestions which has been incorporated is to have the sun shield louvres made from wood instead of metal and plastic.

Eco Reps regularly visit other schools and community groups to present their environmental work, and have presented at national and international conferences. They have also presented to trainee teachers at Sussex University, and give tours of the school to people interested in the sustainability work. Pupils were recently asked to review the environmental performance of a local church, and assess whether it was eligible for the Eco-Congregation award. The ethos of the school extends to the local community, where pupils actively encourage recycling and energy efficiency. For instance they have attended a farmers' market to hand out energy saving pledges that they had made, and did a 'green feature' on local radio. They also promote fair trade at local events.

Global Action Plan (GAP), a non-for-profit organisation, has worked with some of the Eco Reps for the past four years, introducing them to strategies and activities to help them fulfil their role. The school has purchased one of GAP's 'Energy Bikes', which is used to show how much effort is required to power different electrical appliances.

Parents are supportive of the sustainability work in the college and pupils take the sustainability messages home with them, sometimes through a specific project like reading gas and electricity meters. Energy and environmental issues are also covered on the college website and in the prospectus, ensuring that parents and others are aware of what is happening.

Lewes is part of the Transition Towns movement, and a representative has been in to the college to meet with some of the Senior Eco Reps to discuss future cooperation. The pupils are also involved with local issues on energy, such as plans for a nearby wind turbine – several Eco Reps went to a council planning meeting and presented their views. Two senior Eco Reps gave evidence at the subsequent public enquiry

Sustainable energy technology

The 1950s building still uses its original oil boiler which has been converted to gas, with the original pipe work, radiators and no thermostats – a highly inefficient system. Governors have supported the college in lobbying the County Council to consider a replacement biomass boiler, better insulated pipe work and modern energy-efficient radiators. Rather than simply view the heating as a 'lost cause', in the meantime Ringmer has tried to get the best out of the existing system. The caretaker controls the system manually by shutting it down for a period mid-morning - when the building is fully occupied and likely to overheat,

and after lunch - when the residual heat will keep the building warm until the end of the school day.

A survey by the college has established the level of insulation in the main building and negotiations are taking place with the County Council to increase this as a priority. There is an ongoing commitment that during any refurbishment replacement equipment must have an environmental benefit. So although much of the old building is single-glazed, this is gradually being replaced with double-glazing. Similarly, old taps are replaced with push-down versions, and when old light bulbs or fluorescent tubes fail they are being replaced with more efficient ones. Lighting is switched off in areas where it is not needed and there are stickers or posters by switches to remind people to turn them off. The newer part of the building has motion sensors to turn lights off when they are not needed.

The college has a 2.5 kW Proven wind turbine and a 7.5kW solar PV array. These provide a significant contribution to the electricity demand and serve a valuable educational purpose, as well as demonstrating Ringmer's commitment to sustainable energy to the local community. There are display panels in one of the science labs showing electricity generated by the two systems.

The new Sixth Form building is being built to modern standards, and in addition will incorporate a ground source heat pump for heating, passive ventilation, and energy efficient lighting and controls.

Sustainable energy in the curriculum

The secondary curriculum is much more structured than that in the primary sector. Teaching is through subjects leading to national qualifications and there is very little flexibility in the timetable. Energy is predominantly taught in science, geography, technology, PSHE and citizenship. However, Ringmer has arranged the curriculum so that the Eco Reps are given time to engage in environmental activities as part of their learning and not simply as additional tasks or clubs at the end of the day. What is refreshing at Ringmer is that, where possible, energy education is applied to local situations. All teachers and pupils are encouraged to 'own' environmental issues and take responsibility for them. The college hopes that pupils will leave with the information they need to make their own environmental choices in the future.

The college has a link with a school in South Africa, and tried living for a day in the conditions that pupils experience there, including limited use of electricity and having to walk to the end of the field and back every time they needed some water. This 'low energy day' is to be repeated this year with all departments participating in actively promoting the use of minimal resources.

Environmental issues have been incorporated within the foreign language curriculum – the pupils have done exchange visits with a French school to compare their approach to waste and recycling. There are now examples from most curriculum areas where sustainability issues are incorporated into everyday learning.

Benefits

There is an excellent ethos and culture of sustainability at Ringmer, something which is not always easy to achieve in a secondary school. A quarter of the pupils have chosen to be registered as Eco Reps. With so many pupils engaged in energy saving and other environmental activities, sustainability is not a fringe activity, or just an enthusiasm of a few environmental champions.

It is really commendable that pupils are given the opportunity to disseminate their activities within other schools, colleges and community groups. This gives excellent experience in leadership, team work and presentation skills, as well as encouraging others to learn about good environmental management and adopt similar practices.

Between 2005 and 2007, gas consumption at the school fell from 1,111 MWh to 848 MWh, and electricity fell from 313 MWh to 225 MWh; savings of 23% and 28% respectively.

The energy efficiency and renewable energy generation measures bring significant carbon and financial savings. The wind turbine and PV array generate about 18 MWh/year electricity. Electricity generated when the college is closed covers most of the base load requirements, such as that required for fridges and freezers, security lighting, computer servers, etc. The college estimates that the renewable energy sources save around £1,500 a year in electricity costs. Through the caretaker's manual control of the out-dated heating system it is estimated that there is an annual saving of £6,000 in gas costs. This system has been in place for the last two winters and has meant that to date the gas expenditure has stayed within budget despite price increases of nearly 20%. Additional electricity savings through improved housekeeping amount to £6,700 annually. The carbon dioxide emissions avoided are over 87 tonnes/year.

The re-development of the school and provision of more energy efficient buildings and systems will ensure long term reductions in energy consumption through better technology. However, it is the ethos that has already been developed which will ensure that these new facilities are used to their best advantage.

Potential for replication

The environmental practices at Ringmer could easily be adopted by other secondary schools and colleges. Much of what has been achieved is through innovative, low-cost behavioural change, rather than expensive technology. This has already been recognised locally. Stephen Green, the Eco Coordinator, and the Eco Reps are regularly invited to disseminate what they are doing and what they are achieving to other education institutions in the county. The standard of achievement at Ringmer is also acknowledged nationally, and they have an Eco-Schools Green Flag Award. Stephen is occasionally employed by the UK Specialist Schools and Academies Trust to advise schools on improving their environmental performance.

The beauty of what is happening at Ringmer is that it is uncomplicated. There is a culture and a programme of activities that have developed over the past six years due to the commitment of the governors and the Principal and the outstanding work of Stephen Green. The subject of sustainability is predominantly brokered with staff using arguments based on economics and practicality rather than environmental issues. However, pupils more readily accept information about climate change and sustainable energy as a driver for change, because they see current problems arising out of the mistakes of adults and tend to be more idealistic in their approach to problems.

With similar philosophy, commitment and approach to change, what is being achieved at Ringmer can be replicated at any school.

Management finance and partnerships

In 2001 the governors and principal of Ringmer decided that someone would be needed to drive forward their aspirations to improve the environmental performance of the college. Stephen Green was already employed by the college as a part-time music teacher and had previously had a role as an environmental health officer and was familiar with sustainability

issues. He was a natural appointment as Eco Coordinator. In the first instance the college could afford only six hours a week of his time, but this has now grown to 2.5 days per week. The amount of money saved from reducing waste and energy use has helped to cover his salary. Stephen works closely with the principal and the bursar, as an effective management team.

This team has facilitated the installation of the wind turbine and PV array. The PV was funded by EDF Energy and The Green Fund (50/50 split), whilst the turbine was funded by the Community Renewables Initiative and East Sussex County Council. The team has also ensured that the new Sixth Form teaching block is sustainably constructed and heated through the ground source heat pump.

There are positive references to the college's sustainable technologies, environmental projects and the role of the Eco Reps in an Ofsted report, of 31 January 2008. Jacqueline White, HMI, said in a letter to the students that "We were impressed with the contribution you make in the wider community and by your commitment to sustainable technologies and improving the environment."

This report is based on information provided to the Ashden Awards judges by Ringmer Community College, and findings from a visit by two members of the judging team to see their work.

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