

Brockington College, Enderby, Leicestershire



Using pupil power to make significant savings

This case study focuses on energy management in a modern secondary school building including energy monitoring and engagement (via a team of 'eco-warrior' pupils) that helps encourage behaviour change. This has resulted in significant financial savings for the school from reduced energy bills.

Brockington College is a Church of England School with Specialist Technology Status and has over 800 pupils for their first three years of secondary education. It is located in Enderby, near Leicester and is housed in a new building completed in 2007. Brockington College is committed to the Eco-Schools programme.

Checklist

This case study focuses on:





Background

Brockington College has been committed to reducing its impact on the environment for 15 years and has won three Green Flag Awards in the last six years from the Eco-Schools programme.

The environment is taught in Personal, Social, Health and Citizenship Education, a compulsory subject in Key Stage 3 in the

national curriculum. This helps pupils understand and explore this diverse subject, both in theory and very often in practical hands-on projects. Since the school enrolled on the SCoRE* program in 2012, it has concentrated its efforts on energy efficiency so that activity is now on a larger scale than before, generating substantial financial savings and reducing environmental impact.



Eco-Pond



Green travel related information on the notice board



Pupils with bat box



Pupils with Green Flag Award

Project Particulars

Outcome

Meter readings and the difference in energy bills, including gas and electricity, show that Brockington College has made total savings of £12,500 since 2011. This significant outcome has been achieved thanks to some remarkable work by the school's team of 'eco-warriors', who are coordinated by Humanities teacher and Eco-Schools coordinator Irena Clark.

First Steps

One of the first actions following enrolment was an energy survey and audit carried out by Leicestershire County Council. Various opportunities

for saving energy were identified and listed as actions to be taken going forward. Alongside the audit, the carbon emissions of the establishment were calculated using data from the previous year's energy bills. This was also to be used as a baseline to calculate savings in the future.

The natural next step in the process was to monitor the school's ongoing energy usage. This facility was provided in the form of an energy management and monitoring system called Simplicity which could be viewed online. This was funded by the county council as part of a trial of the Simplicity system after the college paid to join the SCoRE programme.

Communications

The project details and goals were communicated to the whole school in school assemblies to get everyone on board, with follow-up reminder messages and updates every few months. Messages relating to saving energy are displayed in the form of posters and as rolling messages on the plasma screen television in the cafeteria. Parents are kept updated on progress via quarterly bulletins. Brockington College also keeps in touch with other schools involved in the SCoRE project in Leicestershire via email in order to share knowledge and lessons learned.

Action Plan

An energy assessment of the school was made using an energy management matrix tool which helped identify specific improvements. An action plan was formed listing recommended actions, person responsible, target and completion dates. This plan is updated periodically. Actions taken so far have included:

- Raising awareness and promoting behaviour change

The Eco-Team's mission is to raise more awareness leading to pro-environmental behaviour change. "It's more about changing habits" says Ms Clark.

The eco-warriors have worked to raise awareness among staff and other pupils. They check classrooms during breaks and lunchtimes for lights and equipment not in use but left on, and leave green reminders on staff desks. Repeat offenders are noted and referred to the Principal!

The pupils have also carried out active labelling of switches following a traffic light system with a green label indicating that the switch can be turned off without permission when not required, amber that it can be turned off after seeking the user's permission and red that it must never be turned off.

Plasma TV displaying green messages in the cafeteria



Pupils with poster reminding occupants to turn off lights and equipment after use

The pupils also take other pro-active measures to be energy efficient, including reminding teachers to open the blinds after a lesson with a projector to let the sunlight in so that the lights can stay off.

The energy management system Simplicity has been integrated into teaching, providing pupils with a real time resource to understand concepts related to energy efficiency. The pupils have been trained in the software and are able to track the impact of their actions via the data generated.

Altering of heating and air conditioning times and temperatures

The Eco-Team has altered heating times and temperatures in the school to ensure optimum consumption. The thermostats in the classrooms were reduced by one degree and then by a further degree after ascertaining that it did not seem to affect the comfort level of the occupants.

The temperature settings of the radiators in corridors were reduced from 5 to 3. The temperature of the under floor heating system on the ground floor was reduced by several degrees and by 30 minutes without adversely affecting the comfort levels of the occupants.

Air-conditioning temperatures were also altered to avoid overcooling; the temperature in the ICT room and server room was reduced from 19 to 24 °C to avoid overcooling.



Pupil turning off stickered light switch

The Eco-Team also identified by studying graphs in the Simplicity software that school boilers were unnecessarily left on over weekends. It led to changing the boiler settings and timings, and to better monitoring of the heating system so the heating was kept on only when needed and turned off at other times. The resultant savings due to this action alone have been in the region of hundreds of pounds over a month.

Saving energy with ICT

The ICT department has run scripts on computers to enable automatic shutdown of computers after 30 minutes of inactivity, at certain less busy times of the day and after school hours when not in use.

Other savings

Kitchen staff were brought on board and requested to turn on tills 20 minutes before lunch time instead of keeping them on all the time. Thermal imaging of the school was done which proved an interesting visual aid for the students, allowing them to see where pockets of heat were escaping from the building.

Staff including the Principal are trained to turn off the boilers to ensure that there is always someone available to do it in the absence of Premises staff.

Lighting

Brockington College, Enderby, Leicestershire

Results and Achievements

The energy efficiency work done will help towards achieving Eco-Schools Green Flag accreditation again. The school has also benefited from increased morale and conviction to do the right thing. The pupils have learnt a lot through the project. "The kids are amazed at how little they

have to do to make an impact" says Ms Clark.

"I thoroughly recommend the Leicestershire SCoRE programme to other schools. It helped to bring our staff and pupils together in the name of the environment,

whilst teaching the next generation about the importance of energy conservation in their future. If this doesn't convince you to become involved then the savings will" suggests Principal Chris Southall.

Reflections and Next Steps

The Eco-Team members are proud of their achievements. Eco-Schools coordinator Irena Clark believes a lot more energy saving measures are possible, which are evident on walking around the school:

- More efficient lighting and energy saving bulbs
- Working harder towards promoting staff awareness and change of bad habits
- Looking into grants and schemes that will help with energy management, with prospective enlargement of the site and pupil numbers

Further Information and Contact Details

Irena Clark,
Humanities teacher
and Eco-Schools coordinator,
Brockington College

E: ijj@Brockington.Leics.sch.uk

T: 0116 286 372

W: www.brockington.leics.sch.uk



One of a series of case studies about schools' action on reducing carbon emissions through work on sustainable energy. These case studies have been developed by Climate East Midlands for the benefit of other schools who wish to cut their own costs and carbon. Other case studies in the series can be viewed at the web address below.

E: info@climate-em.org.uk

T: 01664 502 620

W: www.climate-em.org.uk/resources/category/casestudies

Research, interviews, writing and photos by Michael Howard and Gayathri Kini.

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www.benchmark-design.co.uk

***SCoRE programme**

This was an East Midlands wide energy and carbon reduction project with 9 local authorities and 80 pilot schools and ran in 2011/12. It was managed by the Carbon Trust in conjunction with Briar Associates and commissioned by Climate East Midlands as part of the Government-funded Climate Change Skills Programme.

Information and resources can be found at: www.climate-em.org.uk/projects/score-schools-collaboration-on-resource-efficiency/

Leicestershire County Council's SCoRE web pages: <http://eis.leics.gov.uk/services/score/Pages/default.aspx>

