Case study
Home Farm Primary, Colchester

2015 Ashden Sustainable School Award winner

Richard Potter, Head Teacher at Home Farm Primary School

Students at Home Farm Primary School.

94% reduction in gas use over 5 years

61% reduction in electricty use over 1 year

25 tonnes CO_2 saved each year due to solar panels

"The senior management at Home Farm make a formidable team. Their attitude to energy savings and renewables should be an inspiration to other schools."

Ashden judging panel

Starting with a challenge

When Head Teacher, Richard Potter, took over at Home Farm, he was faced with an inefficient building and large energy bills. He had previously been employed at a newly constructed school, which had been designed with many sustainable and energy saving features. He had experienced both the financial and environmental benefits of a heating system which could be controlled and managed properly.

His challenge was to create a sustainable learning environment for the students and reduce the school's energy spend.

Additionally, the school had an internal courtyard, which, due to the layout, meant that heat was continually lost through open doors.

"In the same way that we teach children to manage their money, their education or their behaviour, we also teach them to have sustainable habits because that is going to be key to their lives in the future... as well as their wallets!"

Richard Potter, Head teacher.

Thinking outside of the box

The first change at Home Farm was to enclose the internal courtyard, which created a well-insulated central hub for the school, and avoided unnecessary heat loss.

Between them, the Head Teacher and school Business Manager, Ceri Stammers, have managed to turn around a poorly managed heating system and a heat-leaking building to make Home Farm virtually self-sufficient in energy.

Great work all round

Now, the school has an active student Eco Committee, solar panels on the roof and a new building management system has been installed, all contributing to the impressive turnaround in energy efficiency.

It has reduced gas consumption to 60% of what you would expect from a building of this type. The school has also seen a 61% reduction in its electricity use.

It is the first primary school in Essex to be awarded a Grade B rating for its DEC Energy Performance Certificate.

"We use the sun as our electricity."

Freya, Year 5 student from Home Farm Primary School

Mr Richard Potter
Head Teacher
Home Farm Primary School
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The school

Home Farm Primary School is located in a suburban area on the outskirts of Colchester, Essex. There are 210 students aged between 4 and 11 years old. The school was built in 1966 in a single storey, prefabricated modular design.

Buildings and technology

The introduction of a basic Building Management System (BMS) in 2012 enabled, for the first time, management of the gas heating system to take place. The system provides both data from and control of the two Hamworthy gas boilers.

Within the four year tenure of Richard Potter and Cerri Stammers, 200 PV panels (50kW) have been installed producing a FIT payment of £3,700 within the first 10 months of operation and, more importantly, making the school virtually self sufficient in electricity. The model for the PV installation has already resulted in the replication of the system at five other schools in the county by the same contractor. The funding of the PV panels is on a lease arrangement and is therefore self funding.

A couple of years ago a central internal courtyard area, which was open to the elements, formed a walkway from which the classrooms could be accessed. This area also acted as an energy dump pulling heat from the classrooms every time a door was opened. The enclosure of this area to form a central library and multi-purpose learning area provided not only an attractive teaching space but immediately reduced the gas consumption. This simple design change has provided a permanent solution to a problem which had existed for nearly 50 years.

Together, the BMS system introduced in 2012 along with the radical step of enclosing the central courtyard has reduced gas consumption by 94%.

Behaviour change

The school is clearly proud of its environmental credentials and staff, both teaching and non-teaching, are aware of the importance of energy management. Teaching staff are responsible for the management of their classrooms including shutting down equipment and turning off lights.
The strong environmental ethos is communciated around the school via assemblies, noticeboards and newletters.

Curriculum

At Home Farm, every year group undertakes an environmental topic during each year. This includes global topics such as Climate Change as well as practical Design Technology projects using solar power. Wherever possible, the school and its environment are used as teaching aids and pupils are actively encouraged to become involved with activities like gardening and meter reading.

The future

The school plans to spend itssavings on continued improvements in lighting and equipment. It is also investigating solar water heating and considering replacing their boiler with a biomass system. Additionally, the school plans to continue to share its best practice with others.

"You produce 60% less CO_2 than an average school of your size and you only use 20% of the typical amount of grid electricity and 74% of the electrical demand comes from PV. In addition you use 45% less gas than expected"

Quote from their DEC Assessor

Home Farm Primary School has 50kW of solar panels installed on the roof, making the school self-sufficient in electricity.

Eco Reps at Home Farm Primary School, James and Freya, enjoy taking care of the plants in the school's gardening area.

BEFORE: The internal courtyard area at Home Farm Primary School before it was enclosed to reduce heat loss.

AFTER: The internal courtyard has been transformed into a multi-purpose learning space which has helped to conserve energy.