





# 180 Site Surveys

1000s of Photos

### Display Energy Certificate

How efficiently is this building being used?

HM Government

Bristol City Council  
Avonmouth C of E School  
Catherine Street  
Avonmouth  
Bristol  
BS11 9LG

**Certificate Reference Number:**  
0710-3041-0198-5040-9040

The certificate indicates how much energy is being used to operate this building. The operational rating is based on meter readings of all the energy actually used in the building. It is compared to a benchmark that represents performance indicator of all buildings of this type. There is more advice on how to interpret this information on the Government's website [www.communities.gov.uk/energy](http://www.communities.gov.uk/energy).

#### Energy Performance Operational Rating

This tells you how efficiently energy has been used in the building. The numbers do not represent actual units of energy consumed; they represent comparative energy efficiency. 100 would be typical for this type of building.

More energy efficient

A	0-25
B	26-50
C	51-75
D	76-100
E	101-125
F	126-150
G	Over 150

Less energy efficient

**183** would be typical

#### Total CO<sub>2</sub> Emissions

This tells you how much carbon dioxide the building emits. It shows tonnes per year of CO<sub>2</sub>.

05/2008

#### Previous Operational Ratings

This tells you how efficiently energy has been used in this building over the last three accounting periods.

05/2008

#### Technical information

This tells you technical information about how energy is used in this building. Consumption data taken in 2008/09.

Main heating fuel: Natural Gas  
Building Environment: heating and natural ventilation  
Total useful floor area (m<sup>2</sup>): 1214  
Asset Rating: 10A

	Heating	Electrical
Annual Energy Use (MJ/wh/yr)	112	39
Typical Energy Use (MJ/wh/yr)	135	45
Energy from renewables	0.0%	0.0%

#### Administrative information

This is a Display Energy Certificate as defined in SI 2007/961 as amended.

Assessment Reference: 06/09/08/10/11  
Property Reference: 5461940003  
Assessor Name: Paul Barker  
Assessment Number: 5710000030  
Accreditation Scheme: Bristol Accreditation Ltd  
Employer/Trading Name: Bristol City Council  
Employer/Trading Address: Catherine Street, Bristol, BS1 1EP  
Issue Date: 17/10/2008  
Valid Until: 30/09/2010  
Related Party Disclosure: Paul Barker is an employee of BCC, occupier of the building.  
Recommendations for improving the energy efficiency of the building are contained in the accompanying Advisory Report.





# UK requirement

Lasts for 7 years but no requirement to act on it

This looks very boring

## Advisory Report

Report Reference Number: 0330-0928-5490-4492-1092

Building Occupier  
Bristol City Council

Address  
Avonmouth C of E School  
Catherine Street  
Avonmouth  
Bristol  
BS11 9LG

Building Type(s): Schools And Seasonal Public Buildings

### ADMINISTRATIVE INFORMATION

Issue Date:	2008-12-17
Valid Until:	2015-12-16
Total Useful Floor Area (m²):	1314
Assessment Software:	SystemsLink ORT - 1.0.0
Property Reference:	349419450000
Type of Inspection:	Physical

### ENERGY ASSESSOR DETAILS

Assessor Name:	Paul Barker
Employer/Trading Name:	Bristol City Council

### 1. Background

Statutory Instrument 2007 No. 991, The Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations 2007, as amended transposes the requirements of Articles 7.2 and 7.3 of the Energy Performance Buildings Directive 2002/91/EC.

This report is an Advisory Report as required under regulations 16(2)(a) and 19 of the Statutory Instrument SI 2007/991.

ing the building:

a early 1970's, single storey school building. This is of steel frame construction with brick cavity blower door topped with approximate 100mm of pvc strips up to the roofline. The roof is a metal decking roof built up felted weathering. The windows are fairly new and double glazed.

ing and Natural Ventilation

ntity used (kWh)

164

31

with the Government's approval are SystemsLink ORT - 1.0.0. The final visit of the building.

dance, the Energy Assessor should complete the report prior to producing this Advisory Report.

## SECTIONS

1. Building Fabric, Usage and Layout
2. Doors & Windows
3. Ventilation
4. Heating system
5. Lighting
6. Hot water
7. Insulation
8. Energy Awareness
9. Potential for Onsite Renewable Energy Generation

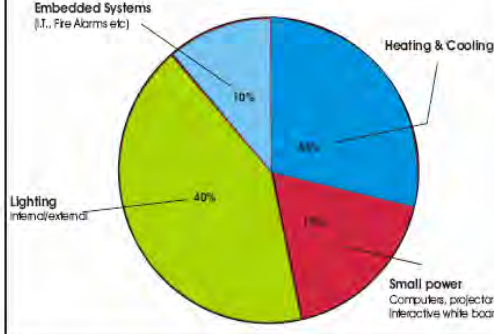
## Voluntary Report

**Advisory Report Summary Sheet**

Site name: \_\_\_\_\_

Annual energy spend: Electricity £ \_\_\_\_\_ Gas £ \_\_\_\_\_ Oil £ \_\_\_\_\_

Energy cost breakdown:



Category	Percentage
Lighting (internal/external)	40%
Heating & Cooling	30%
Small power (Computers, projectors, interactive white boards)	15%
Embedded Systems (IT, Fire Alarms etc)	10%

General Observations:

- Lighting energy usage very high.
- Building generally overheated during afternoon.
- Relatively high "small power" usage.

display

**Recommendations**

A large part of your sites energy use and cost expenditure is tied up with lighting.

- Consider installing infra red movement detectors to control lighting in areas such as seldom used corridors, stairwells, toilets and classrooms.
- Ensure that lights aren't left on when there is sufficient daylight coming in from outside - it's NEVER more efficient to leave lights on all day, rather than turn them on and off when required.
- Appoint a child in each class to be a light monitor, so that lights are off at playtimes and lunchtimes.
- Security and other external lights should not be in operation during daylight hours - make regular checks to ensure timers are adjusted appropriately.

Heating your site uses the next highest amount of energy and cost.

- Ensure that heating is set at a level that is reasonable - factoring in that each person within a building gives off 0.5 kWh of heat and that electrical equipment, solar gain and lighting also contribute to interior temperatures - if you are having to open windows in the afternoon you are simply heating to high and too long.
- If controls such as frost stats and compensators have been fitted NEVER allow people to fiddle with them or override heating times.
- Impress on staff the importance of dressing to suit the seasons and that temperatures between 19 and 21 degrees can not really be called "freezing"!

Consider small scale renewable energy installations.

- Small scale wind and photovoltaic arrays (aka solar panels) may be expensive (although will become cheaper as the amount that generators have to pay for excess generation inputted to the grid) but can provide a useful educational purpose.
- Solar hot water installations are more viable on a small scale and could be used to provide hot water for the kitchen.
- Installing a modern biomass boiler to replace (in particular) oil or gas fired systems will improve DEC ratings by reducing CO<sub>2</sub> output and should also be cheaper in the long run. Provision will need to be made for storage of wood chip.

Instigate a wide ranging Energy Awareness programme

- It was noted during the site survey that large numbers of lights were left on in empty rooms and that there were a number of areas that had sufficient daylight to allow lights to be turned off. Staff (and pupils) need to be aware that they can turn off these lights.
- Teachers and pupils should be made aware of what electrical equipment can be turned off when not in use - e.g. Computer monitors, printers, interactive white boards etc.
- Cleaners should be also aware that they needn't leave lights on after they have cleaned rooms - more often than not rooms are then empty for more than an hour.

display

That's an Improvement !  
Can you help me make it  
even better ?





Hay they might listen to me !

## Awareness in Schools

1. We are going to work with 10 pilot “Sustainable Schools” to work up how to use DEC as a curriculum resource to meet UK Gov objectives for all schools by 2020.

2. We are going to utilise AMR metering data of school as a resource to calculate Display labels

lead by a supply teacher with local knowledge of schools



### s3: sustainable school self-evaluation

Driving school improvement through sustainable development



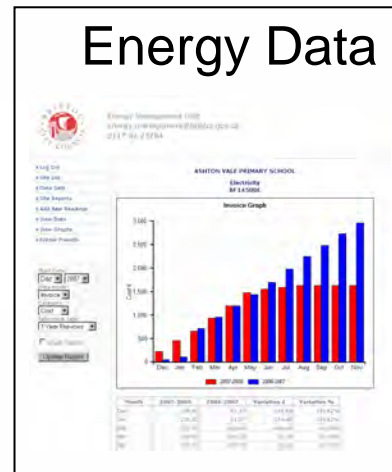
### DCSF recommendation

We would like all schools to be models of energy efficiency and renewable energy, showcasing opportunities like wind, solar and biomass energy, insulation, low-power technologies and energy management to everyone who uses the school.

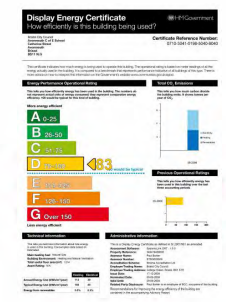
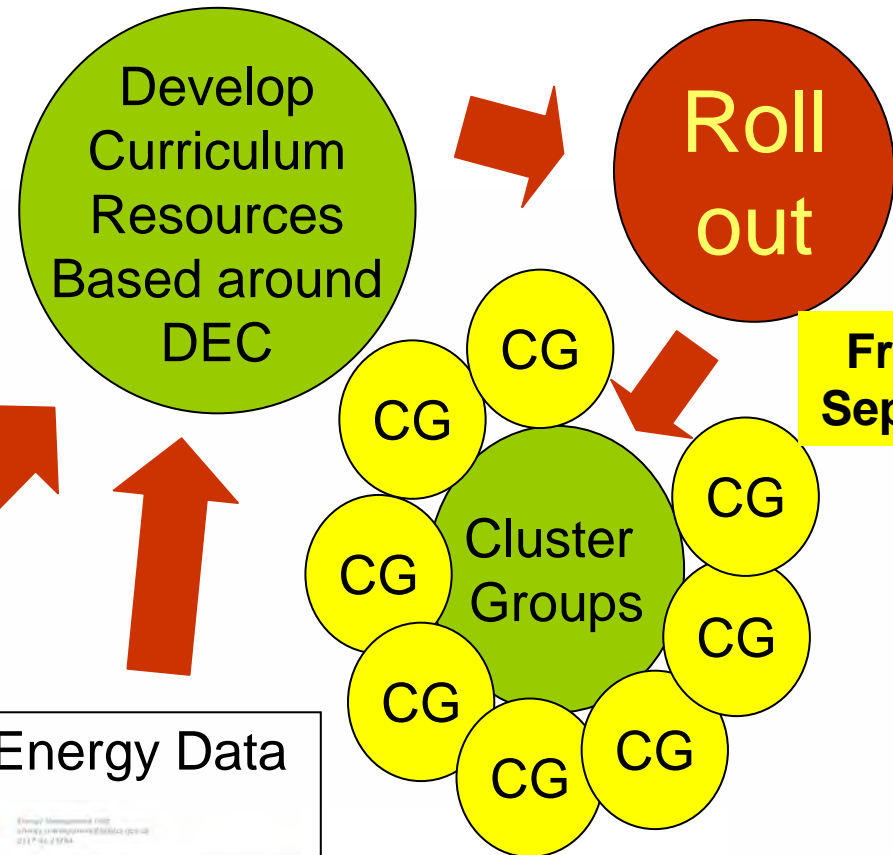
### 10 School Pilot

Energy data – Statistics  
Calculation – Maths  
Energy Loss – Physics  
Climate change – Geography  
Future scoping / Report writing – English  
Surveying techniques  
Awareness Raising

### Energy Data



## Ideas



# Schools Self assessment

Before rating your school's performance, consider the following aspects of good practice which may help you explain your rating or indicate new approaches.

## Curriculum

- ☐ Does your curriculum cultivate the knowledge, skills, values and confidence pupils need to use **energy** wisely, and is this reinforced through positive activities in the school and local area?
- ☐ Does professional development enable staff to address **energy** issues through the curriculum and in extra-curricular activities?
- ☐ Do you use information about the school's own **energy** needs and practices in the curriculum, across key stages and subject areas?
- ☐ Are staff and pupils involved in schemes to promote **energy** efficiency and renewable energy?

## Campus

- ☐ Have you undertaken a school **energy** audit?
- ☐ Does your school improvement plan (or related plan) cover **energy** efficiency and the use of renewable **energy**, with associated performance goals?
- ☐ Do you monitor progress with **energy** efficiency, and report on agreed performance goals?
- ☐ Does professional development prepare staff to contribute to **energy** efficiency measures?
- ☐ Is **energy** efficiency included in the remit of the school's sustainable development co-ordinator, or part of a named person's job description?

## Community

- ☐ Does the school use its communications, services, contracts and partnerships to promote **energy** efficiency and renewable **energy** among its stakeholders?
- ☐ Does the school have links with **the local authority** or with outside bodies that can support its efforts to become a model of sustainable energy management?



The Dynamic Digit  
Strikes again



## How YOU can help improve your schools energy rating



and your teachers too!

Save £££'s!!!

And reduce  
it's carbon  
footprint  
too!



### You can:

Turn off your computer  
monitors when you've  
finished using them



Teachers - when making a  
hot drink only boil the  
amount of water you need!  
Not a full kettle

Turn your lights off when  
there is enough sunlight  
coming in through the  
windows



Turn off electrical  
equipment when not  
using it - don't leave  
things on standby!

You can also turn  
off the lights in  
your classroom at  
playtime and  
lunch times

You can make  
sure that doors  
and windows  
are closed  
when it's cold  
outside



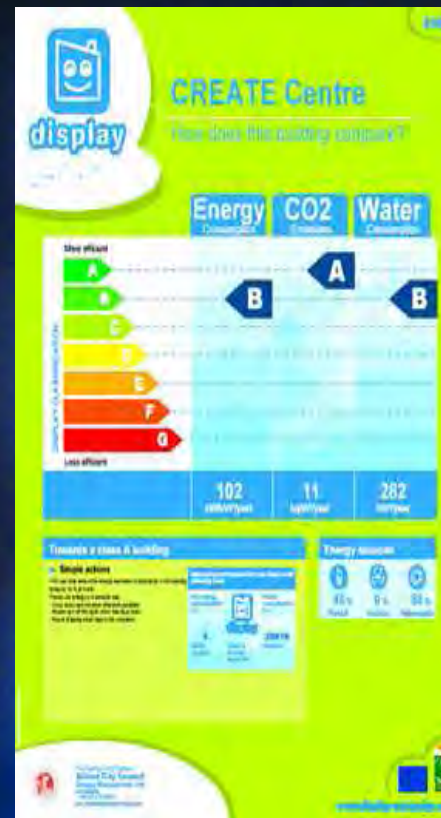
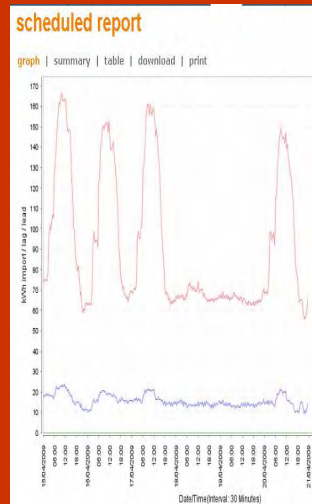
Don't let hot taps run - it's money  
down the drain!

Ask not what Green Finger can do for you - but what you can do for Green Finger!





# Interactive Display Certificate



**Keep Up the  
good work  
Carbon use  
is Falling this  
week**

**REMEMBER  
To switch off  
when you  
leave**

**Thank You**

To be installed at 7 Main sites

Images from - Meeting Monitor™

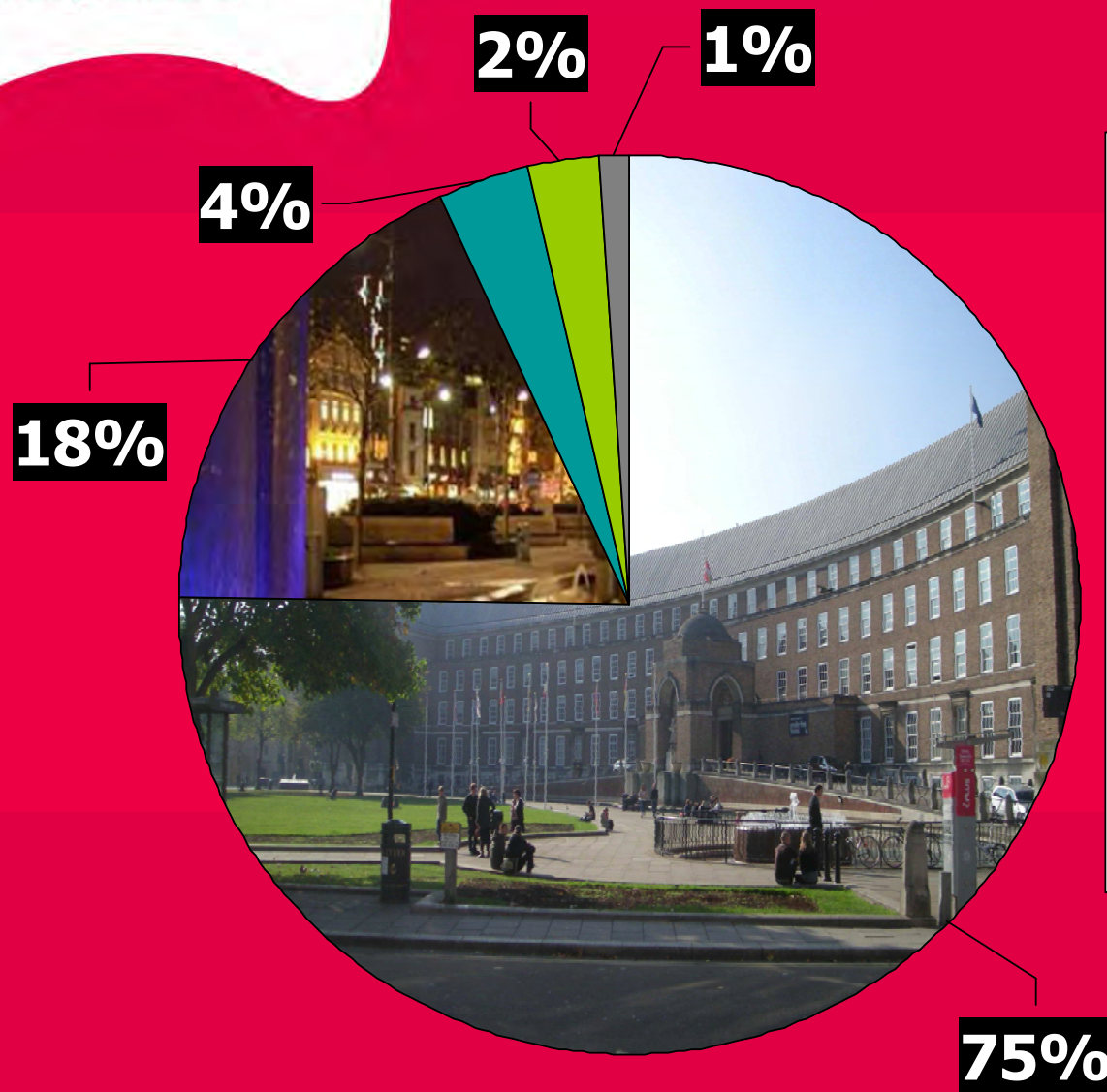




- Staff Training Programme being worked up through Corporate training unit
- Presence at Doors Open days in September
- Exhibition potential for this.
- Possible “One Year on” event – might get Media interest Nov 09.



## 06-07 Carbon Emissions t CO<sub>2</sub>

**56,400**



	<b>Buildings</b>
	<b>42500</b>
	<b>Street lighting</b>
	<b>10000</b>
	<b>Transport fleet</b>
	<b>2000</b>
	<b>Business travel</b>
	<b>1400</b>
	<b>Non-buildings</b>
	<b>600</b>