

Warwickshire County Council

Annual Energy Review

Building Energy Consumption

April 2011 to March 2012

Report prepared by Resources Group: Physical Assets / Construction Services / Energy Team

V1. 03 August 2012

V2. 21 January 2013

V3 8 February 2013

<http://www.warwickshire.gov.uk/energyandwater>



valid until 31/12/12

*Working for
Warwickshire*

Contents

Summary	5
The WCC Energy Management Function.....	6
Policy	6
Legal Compliance	6
Projects.....	7
Energy Procurement.....	7
Data Management	7
Account Queries	8
Staff Engagement / Behavioural Change / Demand Side management	8
Communications & Reporting	8
Finance / Budget.....	8
Partnership Working	9
Schools.....	9
Total Energy Consumption reported for the CRC 2012	10
Electricity Consumption per unit of floor area (kWh/m ²).....	10
Reasons for the Wide Range of Values Associated with Energy Consumption and Cost.....	11
Electricity Cost per unit of floor area (£/m ²)	11
Electricity Cost per pupil (£/pupil)	12
Electricity Consumption per pupil (kWh/pupil).....	13
Gas Consumption per unit of floor area (kWh/m ²)	14
Gas Cost per unit of floor area (£/m ²)	15
Gas Cost per pupil (£/pupil)	16
Gas Consumption per pupil (kWh/pupil just primary schools).....	17
Gas Consumption per pupil (kWh/pupil just secondary schools)	18
Carbon Reduction Commitment – Energy Efficiency Scheme (CRC)	19
Reported Emissions.....	19
Reasons for Year on Year Changes in Emissions	20
Costs of Reporting for the CRC	20
Financial Implications of Failure to Report Accurately for the CRC	20
Energy Costs 2011 / 12	22
Purchase of CRC Allowances.....	22
Who is Involved in the CRC Reporting?	22
CRC Performance League Table (PLT).....	22
CRC Simplification.....	23
Street-lighting.....	23
Water Consumption.....	24
Communications.....	25
Web	25
Energy and Water Efficiency Service –	25
Energy and Water Efficiency Performance –.....	25
Energy Policy/Carbon Management Action Plan –.....	26
Building Energy and Water Efficiency	26
Case Studies	26
Studley High School Dishwasher	26
Barrack Street Offices, Warwick 47 kW peak photovoltaic array.	27

ERV Kitemark for Energy reduction with BSi	27
School Energy Management	27
Partnership Working	27
West Midlands Energy Managers' Forum (WMEMF)	27
Terms of Reference for the WMEMF	28
WMEMF Energy Behaviour Change Programme / Awareness Pilot	29
ESPO Energy Contracts.....	30
Display Energy Certificates (DECs) and Advisory Reports	30
Energy Monitoring and Reporting.....	34
Automated Meter Reading (AMR).....	34
Systemslink.....	34
Electricity AMR Pilot with Aylesford, Polesworth and Coleshill Schools	34
Aylesford School.....	35
The Coleshill School	35
Polesworth International Language College	36
Implementing Changes to Authorised Supply Capacity and Meter Classification ..	36
Salix Energy Efficiency Projects	37
WES School Energy & Water Efficiency Service.....	40
Renewable Energy (2010-11).....	40
Longer Term Energy Security.....	41
Renewables.....	42
Appendix 1 - Performance Indicators and Benchmarks	43
Electricity consumption per unit of floor area (kWh / m ²)	43
Electricity cost per unit of floor area (£ / m ²)	45
Electricity cost per pupil (£ / pupil)	48
Electricity consumption per pupil (kWh / pupil)	50
Gas consumption per unit of floor area (kWh / m ²)	53
Gas cost per unit of floor area (£ / m ²).....	56
Gas cost per pupil (£ / pupil)	59
Gas consumption per pupil (kWh / pupil)	61
Potential Savings cf. Benchmarks.....	63
Carbon Trust Benchmarks	63
Potential Gas Savings in Primary Schools (if benchmark was achieved).....	64
Potential Electricity Savings in Primary Schools (if benchmark was achieved) ..	65
Energy Efficiency Best Practice Benchmarks	69
WCC Electricity Benchmarks	70
Potential Electricity Savings (if benchmark was achieved)	70
WCC Gas Benchmarks	72
WCC System Build Gas Consumption Benchmarks	73
CLASP	74
Reinforced Concrete (RC) Framed	75
Sectional Concrete	75
Steel Framed.....	76
Traditional	76
Various.....	86
Vic Hallam	88

This publication reports on activities undertaken by WCC's Energy Team and energy consumption for buildings in WCC's property portfolio (see appendix). The data was gathered for reporting on the Carbon Reduction Commitment (CRC) and forms part of the evidence pack.

Summary

This report gives a summary of the energy management function and activities at Warwickshire County Council (WCC).

This report also gives information about energy consumption (electricity and gas) at WCC properties for the financial year 2011 – 2012 and compares it to data from 2010 - 2011.

The 2011 - 2012 energy data was collected for reporting on the Carbon Reduction Commitment Energy Efficiency Scheme (CRC) and forms part of the required CRC Evidence Pack.

2012 is the second year WCC has undertaken CRC reporting. With more voluntary automatic meter reading (AMR) for electricity being installed, the data continues to improve. Even so, the data can still be improved upon year on year.

The data provides a basis for further more detailed investigations wherever it provokes questions.

Both higher than average and lower than average energy consumption need to be investigated to find out:

- why this is the case
- to better understand energy consumption in WCC properties
- to gather more accurate data where necessary
- to learn from best practice in order to know what to do to reduce costs where things can be improved, and
- to develop Warwickshire specific benchmarks and targets

The WCC Energy Management Function

The areas of activity undertaken by the WCC Energy Management Function are listed below:

Policy

1. Understand and manage WCC's energy consumption.
2. Use data alongside research. Put in place a programme to reduce energy costs and environmental impact, comply with greenhouse gas (GHG) legislation and maintain or improve WCC's reputation with key stakeholders.
3. Keep abreast of national policy on and the implications of: long-term energy policy and costs; carbon emissions; security of energy supply and the economic, social and environmental implications of peak oil and depletion of fossil fuel reserves.
4. Deliver corporate energy policy statements and clear objectives for improvement.
5. Establish systems and map processes necessary to achieve the objectives set.
6. Develop and report on targets and energy performance indicators quarterly and annually.
7. Review and update the Energy Policy for Physical Assets every two years to ensure continual improvement.
8. Review and update the Carbon Management Action Plan every three years to ensure continual improvement.
9. Develop an investment strategy and carbon hierarchy to guide and justify the implementation of zero and low carbon technologies across WCC's estate.
10. Support the Environmental Management Systems Officer in the on-going implementation of the environmental management system ISO14001 and other relevant energy certification schemes (such as the ERV Kitemark or ISO 50001) and participate in scheduled internal and external audits.
11. Contribute evidence for Customer Service Excellence processes.
12. Align WCC policy with sub-regional and national climate change and energy strategies, adapting organisational systems to ensure targets are met.
13. Assist in the development of energy-conscious design, maintenance, and operation policies as required.
14. Assist in developing an approach for whole building low carbon retrofits.

Legal Compliance

15. Conduct or arrange energy audits, sites surveys, performance tests and investigations.
16. Ensure timely collection of in-house meter readings.
17. Implement sub-metering and data logging where required.
18. Maintain legal compliance with the Energy Performance of Buildings Directive (EPBD).
19. Produce Display Energy Certificates (DECs) and associated Advisory Reports (ARs) for corporate properties and subscribers to the WES Energy and Water Efficiency Service for school properties. It is the legal responsibility of the occupier to have in their possession a valid DEC / AR if they are legally required to have one (currently required for publicly accessed buildings over 500 sq.m.).



valid until 31/12/12

*Working for
Warwickshire*

The penalty for failure to display a required DEC is £500 and a further £1,000 for failing to obtain an Advisory Report. There are around 119 buildings (schools and corporate) between 500 sq.m. and 1,000 sq.m. and around 290 buildings (schools and corporate) over 1,000 sq.m. Therefore the maximum possible fine for continual non-compliance with this legislation would therefore be $((£500 * (119+290) + (£1,000 * (119 + 290) = (£204,500 + £409,000) = £613,500$.

20. Maintain legal compliance with the Carbon Reduction Commitment Energy Efficiency Scheme (CRC) legislation, submit an annual report on carbon emissions for corporate properties and schools and participate in the process of purchasing Allowances. The purchase of Allowances covering WCC's emissions of carbon dioxide cost £455,736 in July 2012. The financial implications of failing to report accurately are significant and continual non-compliance with this legislation could result in fines over £500,000. Further details are covered later in this report.

Projects

21. Identify, prioritise, and record opportunities for improving energy performance and security.
22. Undertake feasibility work and develop project business cases.
23. Develop a programme of energy-saving projects through Salix.
24. Develop a programme of energy-saving and water-saving projects through the internal energy fund.
25. Maintain a register of energy-saving, water-saving and alternative energy opportunities.
26. Measure and verify the savings achieved.
27. Keep abreast of potential energy and water saving products.
28. Commission and supervise specialist consultants as necessary.
29. Maintain an issue log and work with colleagues on remedial works where there are on-going problems following project implementation.

Energy Procurement

30. Maintain a watch on prices and other developments in the short, medium and long term energy markets.
31. Work with ESPO on providing data needed for new contracts for energy supplies, AMR and meter operating contracts.
32. Work with ESPO to arrange events for schools to ensure maximum buy-back into ESPO energy contracts.

Data Management

33. Maintain an accurate and comprehensive energy reporting system, including Systemslink, for performance reporting and providing feedback to staff and members.
34. Maintain records of energy suppliers, gas transportation & distribution companies, metering companies, and regulatory bodies.
35. Maintain links with current energy suppliers.



valid until 31/12/12

*Working for
Warwickshire*

36. Collect and collate half-hourly and hourly demand profile Automatic Meter Reading (AMR) data from electricity suppliers and corresponding data for fuel consumption.
37. Analyse energy consumption histories on a monthly basis to detect exceptions.
38. Diagnose, investigate and rectify detected exceptions.
39. Maintain an up to date DEC / AR scheduling tool.
40. Work with condition surveyors to receive random sample of meter reads.

Account Queries

41. Check energy supply invoices and obtain refunds and rebates.
42. Identify and rectify incidents of shipperless gas supplies.

Staff Engagement / Behavioural Change / Demand Side management

43. Coordinate and mentor a network of energy champions when resources allow.
44. Conduct or arrange staff awareness and motivation programmes.
45. Operate an energy-saving suggestion scheme when resources allow.
46. Devise, commission, and deliver or supervise energy training programmes.
47. Design student / intern work programmes as opportunities arise.
48. Recommend changes in patterns of consumption to minimise charges and reduce Maximum Demand (MD).
49. Work with WES schools in a pilot programme to reduce Authorised Supply Capacities (ASC).
50. Refine a three year communications / behaviour change campaign and deliver activities.

Communications & Reporting

51. Monitor and advise senior management and members on legislation, regulations, and carbon trading schemes.
52. Collect weather statistics, occupancy and production figures, and other measureable variable factors which affect energy consumption.
53. Establish normal relationships between consumption and relevant driving factors.
54. Collate comparative data and yardstick figures for benchmarking purposes.
55. Report on energy consumption, renewables generation, energy costs, associated transmission and distribution costs, budget variances, costs of exceptions, and savings achieved as required.
56. Maintain an up to date energy / carbon tracker spread sheet to show carbon savings from delivered projects.
57. Develop technology specific case studies and fact sheets.
58. Develop a library of web based resources.

Finance / Budget

59. Assist with the preparation of energy team budgets.
60. Prepare capital bids for energy projects.
61. Prepare funding bids to external organisations.
62. Renew annual staff contracts.
63. Calculate break even cost of delivering an energy and water efficiency service to schools through WES.



valid until 31/12/12

*Working for
Warwickshire*

Partnership Working

64. Produce DEC's as a traded service for other Warwickshire Public Sector organisations as time allows generating income.
65. Work with sub-regional partners – Coventry & Solihull.
66. Lead on specific aspects of the low carbon work-stream for the West Midlands Property Alliance (WMPA).
67. Lead on coordinating activity and quarterly meetings through the West Midlands Energy Managers' Forum (WMEMF). IEWM allocated to the WMEMF a sum of £100,000 for delivery of a small number of replicable energy saving projects across the WM.
68. Lead on coordinating meetings for a Behaviour Change / Communications pilot on behalf of WMEMF with Worcestershire County Council, Coventry City Council, Solihull Metropolitan Borough Council and Warwickshire Borough and District Councils.
69. Use climate change and WCC web pages to host a resource library for WMEMF.
70. Develop a WMEMF blog for sharing of day to day information.
71. Feedback regular updates into the WMPA Board, SWM and IEWM.
72. Help establish current energy performance measures and develop a consistent method of benchmarking.
73. Participate in energy benchmarking groups.
74. Produce a generic version of the three year communications campaign and roll-out to all Local Authorities (LA) in the WM.
75. Contribute to developing a library of school lesson plans for energy activities.
76. Work with partners to develop alternative financing mechanisms.
77. Learn from best practice and leading Green Deal providers.

Schools

78. Deliver WES Energy and Water Efficiency Service to schools.

Total Energy Consumption reported for the CRC 2012

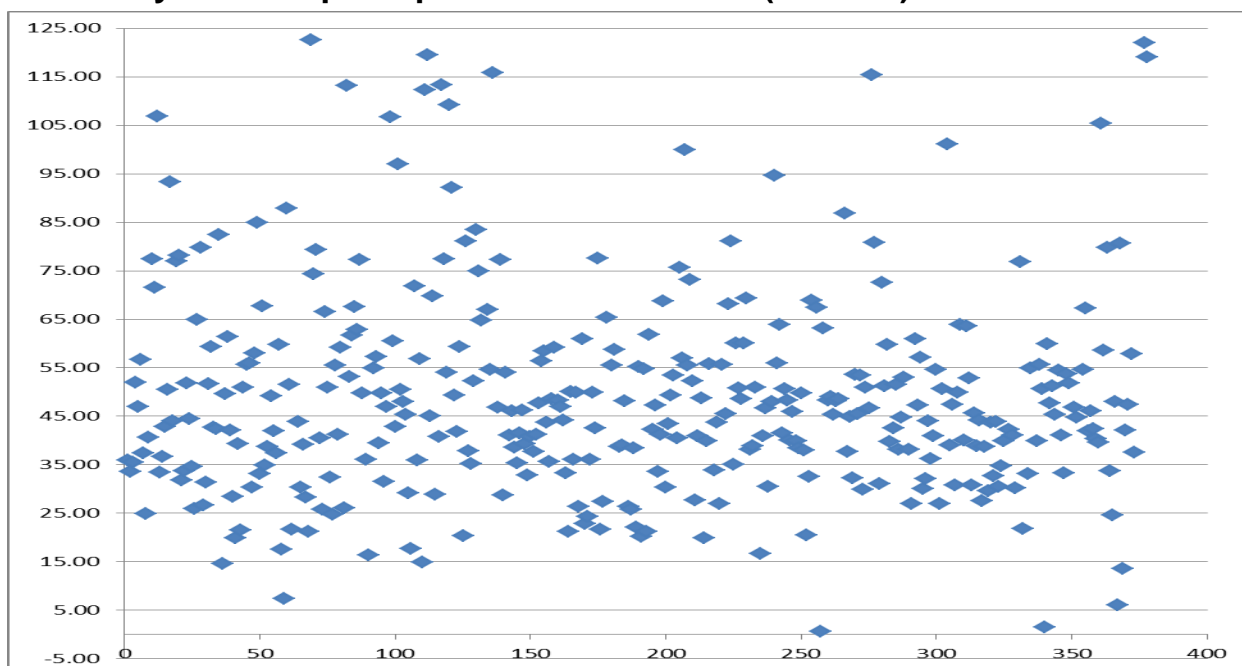
Core and residual electricity consumption data was collated for 378 properties with a gross internal floor area of 763,179 m².

Core gas consumption data was collated for 289 properties with a gross internal floor area of 716,196 m².

The energy consumption reported in the CRC Annual Report Summary is as below:

Fuel Source	Actual Supply (kWh)	Estimated Supply (kWh)	Total (kWh)
Core Electricity	28,532,141	1,534,244	30,066,385
Residual Electricity	3,801,725	6,310,117	10,111,842
		Total Electricity	40,178,227
Core Gas	74,690,417	10,428,730	85,119,147
Residual Gas	0	0	0
		Total Gas	85,119,147

Electricity Consumption per unit of floor area (kWh/m²)



Graph of Electricity Consumption per unit of floor area (kWh/m²) for each property.

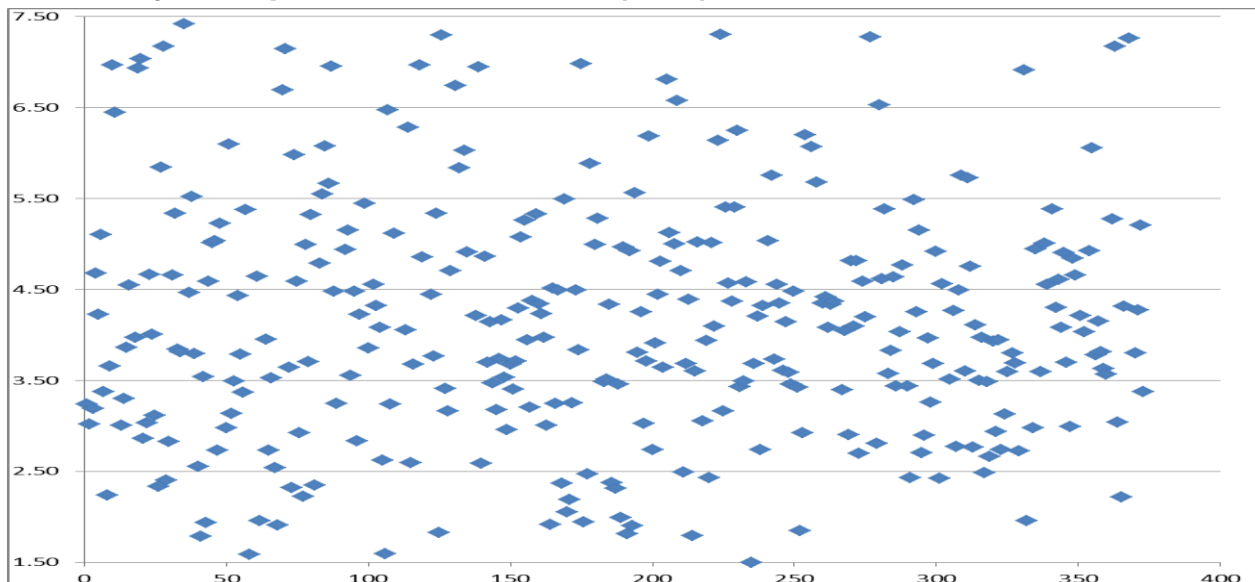
Item	2010/11	2011/12
Most frequently occurring electricity consumption range	30 kWh/m ² - 60 kWh/m ²	25 kWh/m ² - 55 kWh/m ²
Electricity consumption per square metre of floor area range	3 kWh/m ² - 1,276 kWh/m ²	0.72 kWh/m ² - 352 kWh/m ²

Reasons for the Wide Range of Values Associated with Energy Consumption and Cost

The wide range of values is due to a number of reasons such as:

- There could be a high number of under-estimates or over-estimates accepted on which invoices were paid rather than being based on customer reads where an actual read was not taken.
- The property may have been vacated during the year resulting in low consumption.
- The meter reported on may supply more properties than where the address is – such as Shire Hall meter also covers Barrack Street.
- The data sets that have been made available to us may be incomplete.
- There may have been a change of supplier during the year.
- There may be billing issues such as corrections, overcharges and refunds.
- We only look at communal areas of business centres.
- Pupil numbers should be treated with caution as they change regularly. Some of the pupil numbers we have may not be up to date.

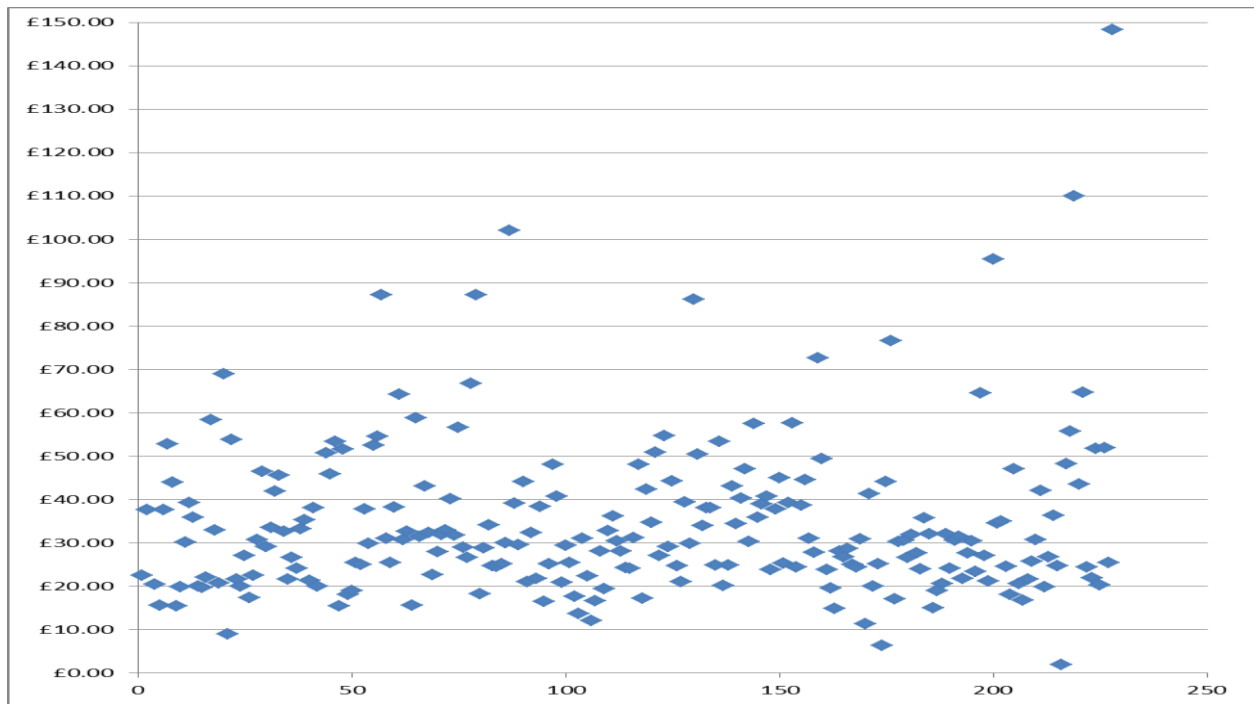
Electricity Cost per unit of floor area (£/m²)



Graph of Electricity Cost per unit of floor area (£/m²) for each property.

Item	2010/11	2011/12
Most frequently occurring electricity cost range	£2/m ² - £5/m ²	£2.50/m ² - £5.50/m ²
Electricity cost per square metre of floor area range	£1/m ² - £104/m ²	£0.55/m ² - £31.71/m ²

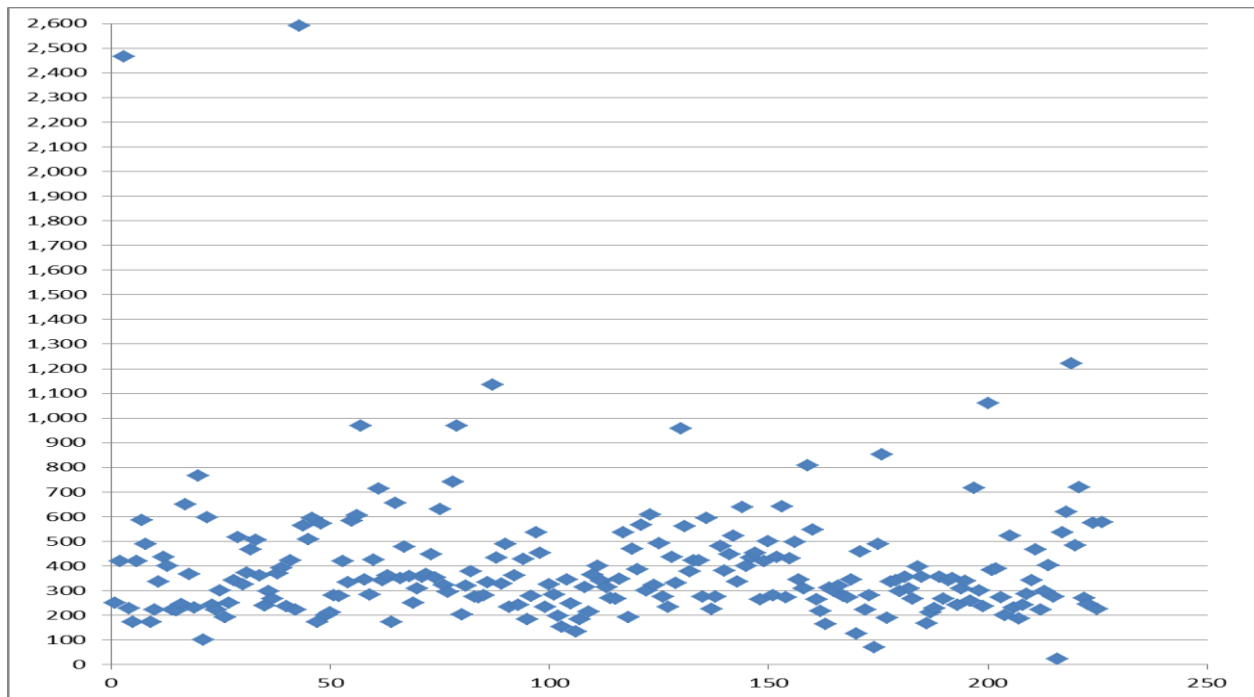
Electricity Cost per pupil (£/pupil)



Graph of Electricity Cost per pupil (£/pupil) for schools and academies.

Item	2010/11	2011/12
Most frequently occurring electricity cost per pupil range	No data available	£20/pupil - £40/pupil
Electricity cost per pupil in schools and academies range	No data available	£1.96/pupil - £233.25/pupil

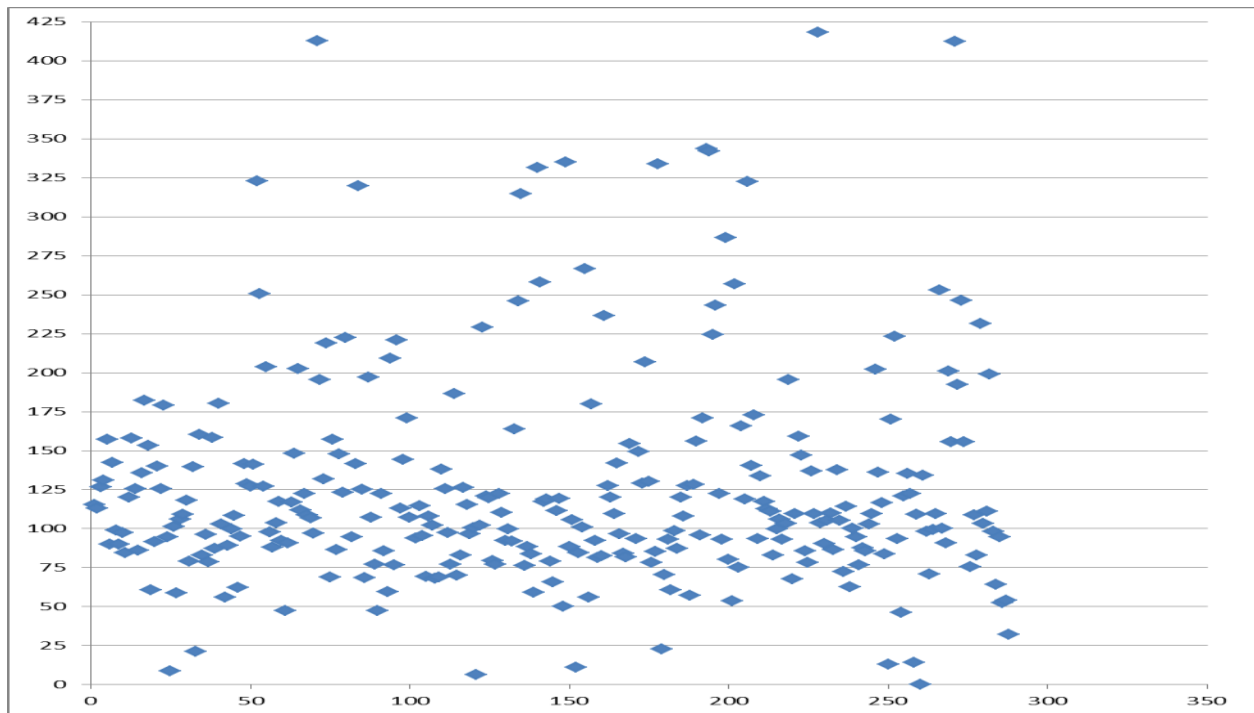
Electricity Consumption per pupil (kWh/pupil)



Graph of Electricity Consumption per pupil (kWh/pupil) for schools and academies.

Item	2010/11	2011/12
Most frequently occurring electricity consumption per pupil range	No data available	200 kWh/pupil - 400 kWh/pupil
Electricity consumption per pupil in schools and academies range	No data available	22 kWh/pupil - 2,592 kWh/pupil

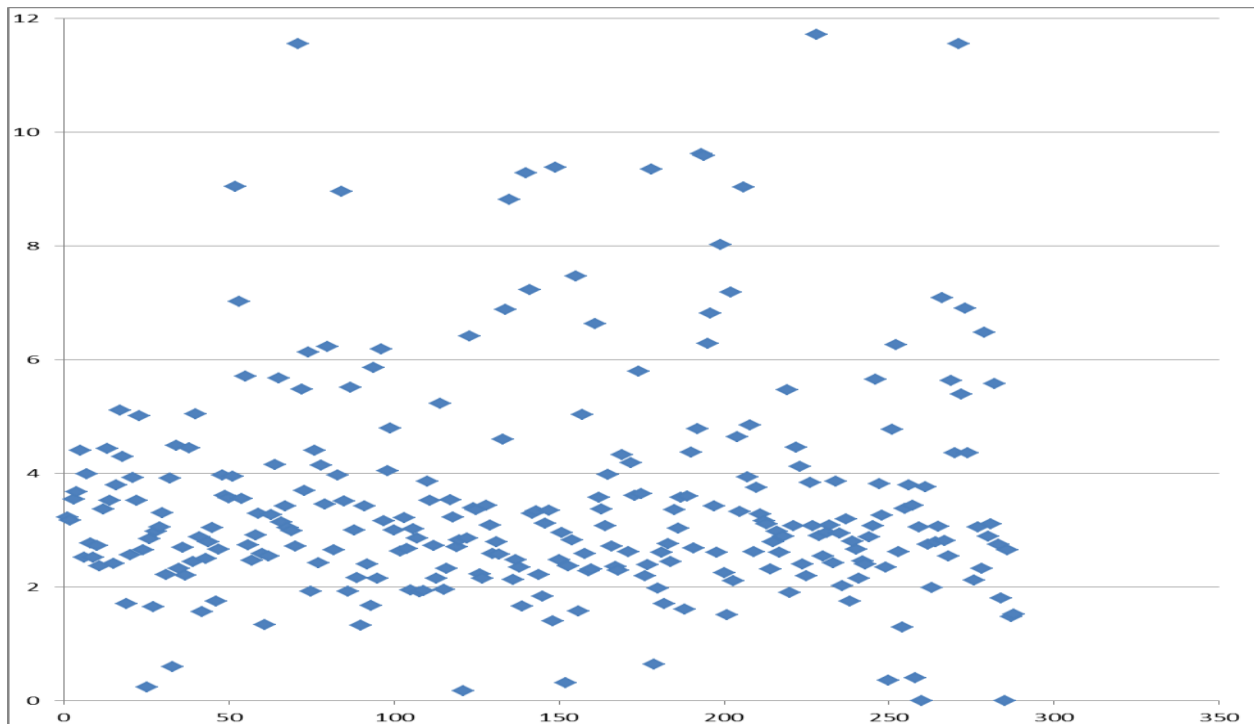
Gas Consumption per unit of floor area (kWh/m²)



Graph of Gas Consumption per unit of floor area (kWh/m²) for each property.

Item	2010/11	2011/12
Most frequently occurring gas consumption range	110 kWh/m ² - 160 kWh/m ²	75 kWh/m ² - 125 kWh/m ²
Gas consumption per square metre of floor area range	9 kWh/m ² - 3,831 kWh/m ²	6.28 kWh/m ² - 2,522 kWh/m ²

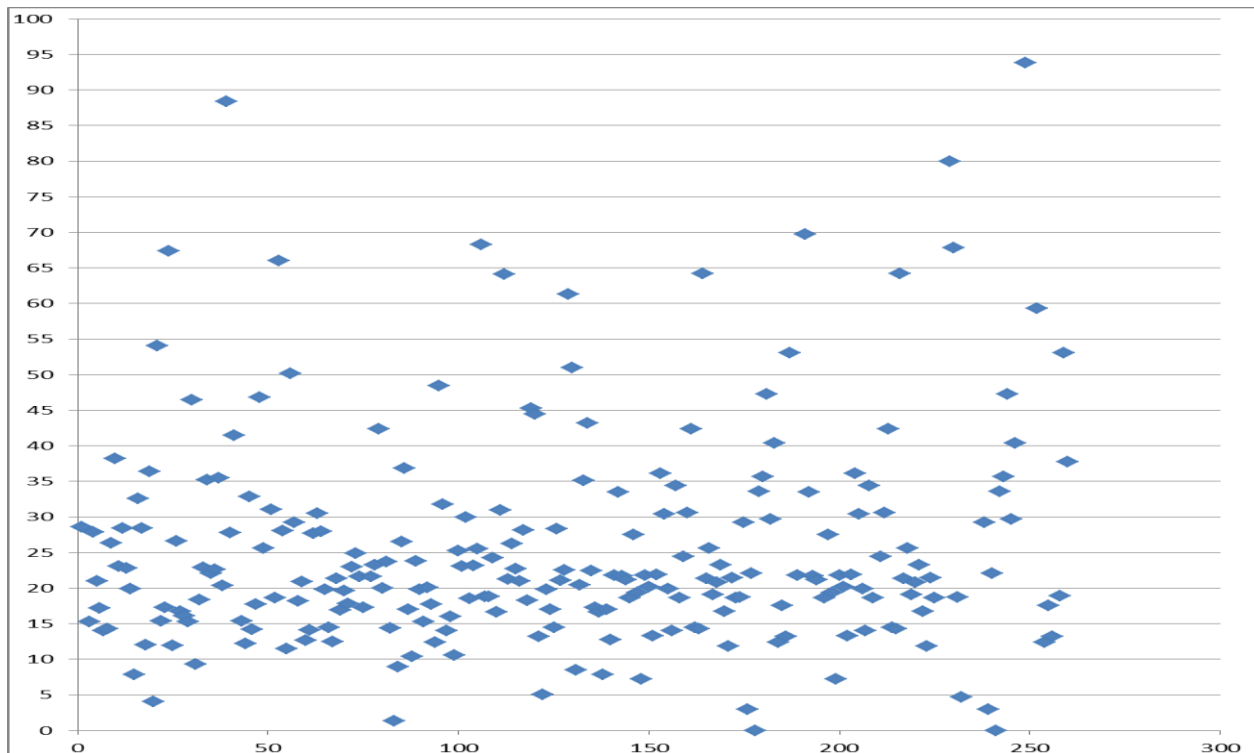
Gas Cost per unit of floor area (£/m²)



Graph of Gas Cost per per unit of floor area (kWh/m2).

Item	2010/11	2011/12
Most frequently occurring gas cost range	£2/m ² - £5/m ²	£2/m ² - £4/m ²
Gas cost per square metre of floor area range	£1/m ² - £106/m ²	from £0.18/m ² - £70.61/m ²

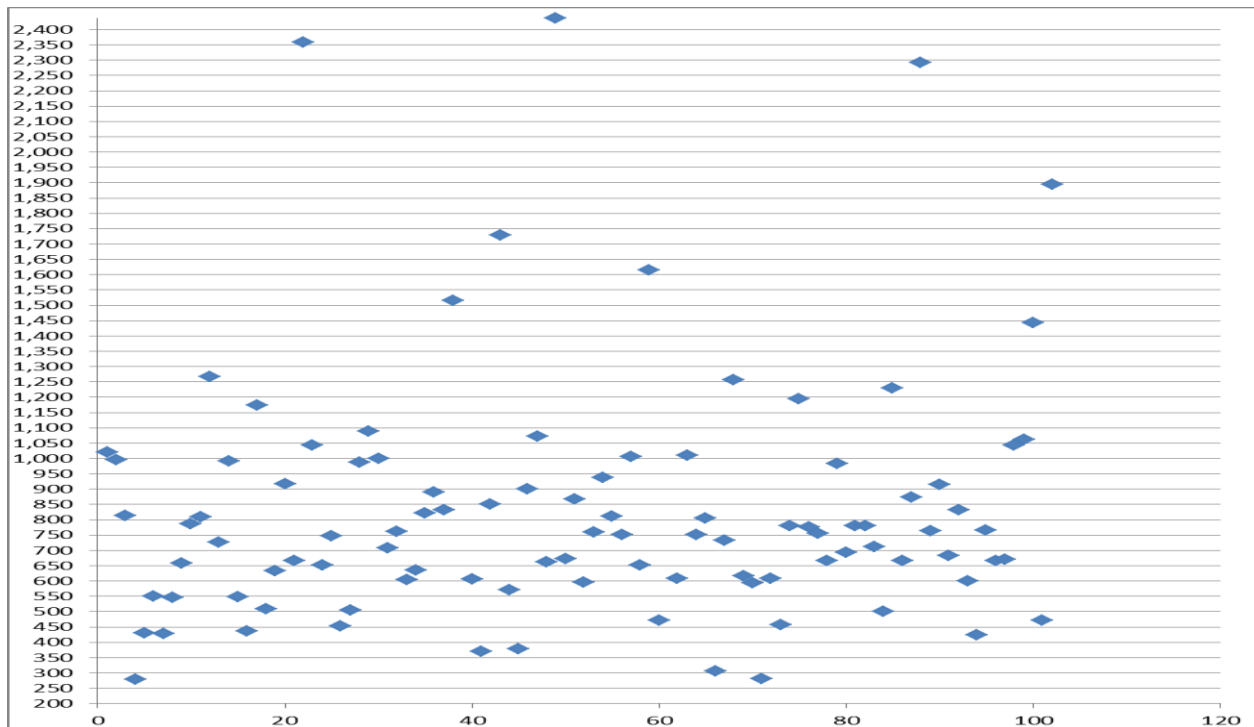
Gas Cost per pupil (£/pupil)



Graph of Gas Cost per pupil (£/pupil) for schools and academies.

Item	2010/11	2011/12
Most frequently occurring gas cost per pupil range	No data available	£15/m ² - £25/m ²
Gas cost per pupil range	No data available	£1.33/pupil - £1499/pupil

Gas Consumption per pupil (kWh/pupil just primary schools)

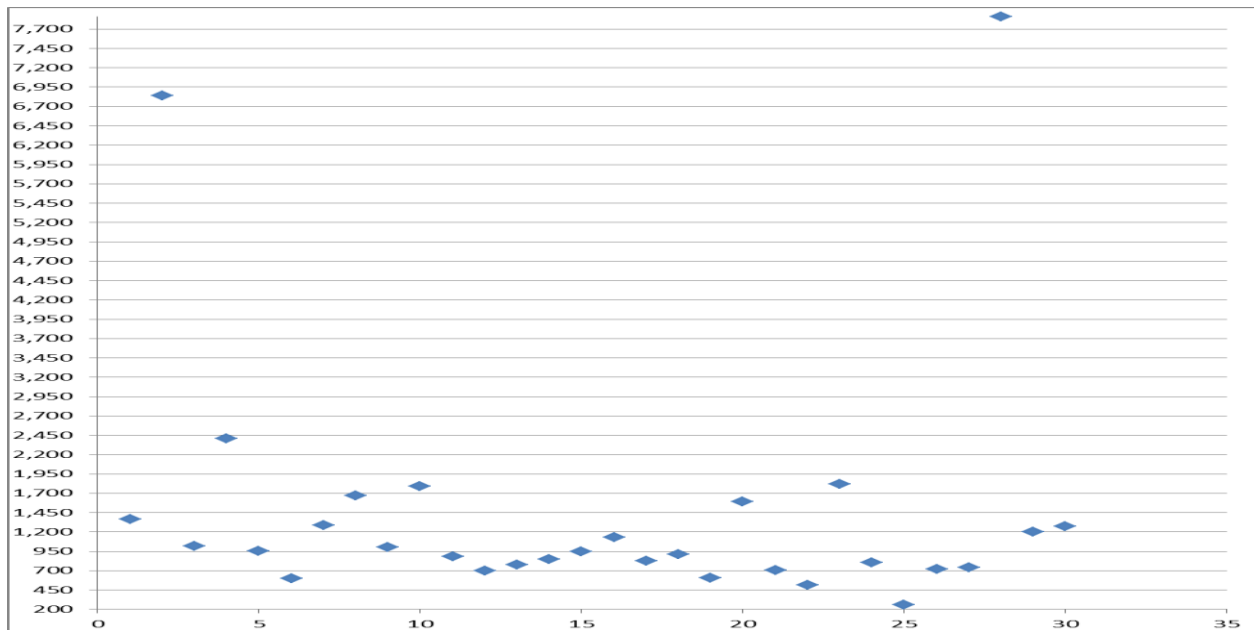


Graph of Gas Consumption per pupil (kWh/pupil) for primary schools.

The fell between

Item	2010/11	2011/12
Most frequently occurring gas consumption per primary pupil range	No data available	550kWh/pupil - 900 kWh/pupil

Gas Consumption per pupil (kWh/pupil just secondary schools)



Graph of Gas Consumption per pupil (kWh/pupil) for secondary schools.

Item	2010/11	2011/12
Most frequently occurring gas consumption per secondary pupil range	No data available	700 kWh/pupil - 950 kWh/pupil

Carbon Reduction Commitment – Energy Efficiency Scheme (CRC)

The Carbon Reduction Commitment Energy Efficiency Scheme (CRC-EES) was introduced by government in 2008, with each reporting phase lasting three years. It is a mandatory scheme aimed at improving energy efficiency, reducing energy bills and cutting carbon emissions. WCC submitted its second annual report by the deadline of July 31st 2012.

Reported Emissions

Annual Reported emissions from WCC's consumption of electricity (for properties) and gas was 37,978 tonnes according to the CRC Annual Report 2012.

Fuel Source	Actual Supply (kWh)	Estimated Supply (kWh)	2012 Calculated emissions (tonnes of CO ₂)
Core Electricity	28,532,141	1,534,244	16,348
Residual Electricity	3,801,725	6,310,117	5,811
		Total Electricity	22,159
Core Gas	74,690,417	10,428,730	15,819
Residual Gas	0	0	0
		Total Gas	15,819
		Total Elec + Gas	37,978

Annual emissions from WCC's consumption of electricity and gas (for properties) according to the CRC Annual Report 2012.

Fuel Source	Actual Supply (kWh)	Estimated Supply (kWh)	2011 Calculated emissions (tonnes of CO ₂)
Core Electricity	52,284,103	2,502,423	29,774
Residual Electricity	3,525,921	6,383,678	5,705
		Total Electricity	35,479
Core Gas	92,472,472	15,280,736	20,063
Residual Gas	0	0	0
		Total Gas	20,063
		Total Elec + Gas	55,541

Annual emissions from WCC's consumption of electricity and gas (for properties) according to the CRC Annual Report 2011.

Fuel	Emission Factor
Core and residual electricity (actual and estimated supply – note estimated supply has a 10% uplift)	0.541 kg/CO ₂
Core gas	0.1836 kg/CO ₂

Emission Factors



valid until 31/12/12

Working for Warwickshire

Reasons for Year on Year Changes in Emissions

There are a number of reasons that emissions are lower in 2012 than they were in 2011. These include:

- The range of re-boiling, re-lighting and building fabric improvement projects undertaken by Maintenance and Minor Works will have reduced carbon emissions of carbon dioxide.
- The disposal of poorly performing assets through the property rationalisation programme.
- Street lighting was excluded in the 2012 CRC report.
- The number of estimated readings was reduced.
- The winter for 2011/12 was milder than 2010/11 resulting in less gas consumption for heating purposes.

Item	2010/11	2011/12
Rolling average emissions per unit of gross revenue turnover	63.01 tonnes of CO ₂ per £million	44.96 tonnes of CO ₂ per £million

Accounting for the removal of street lighting etc., the carbon dioxide emissions this year are around 11% less than for 2010/11.

Costs of Reporting for the CRC

The administration and time costs of reporting for the CRC have been estimated for the Department of Energy and Climate Change (DECC) by KMPG. WCC participated in this survey.

<http://www.decc.gov.uk/assets/decc/11/consultation/CRC/4759-kpmg-assessing-admin-costs-crc-scheme.pdf>

They found that the cost was an average of £30k to £36k per participant (all sectors) to date. The estimated cost for participation in the whole of phase one is estimated as an average of £56,455.

The average estimated cost per local authority to date is £42,627 and for the whole of phase 1 it is £ 80,488 excluding purchase of allowances.

Financial Implications of Failure to Report Accurately for the CRC

The legislation relating to the CRC-EES can be found at this link

<http://www.legislation.gov.uk/ukxi/2010/768/contents/made>

The Implications of Failure to Report on Time are as follows:-

If WCC fail to

- Report details of each settled half hourly meter, there could be a financial penalty of £500 for each meter not reported.
- Produce a Footprint Report, there could be a financial penalty of £5,000. Where the report is provided but no more than 40 days after the due date, there could be a financial penalty of £500 for each day the report is provided after the due date; or if it



valid until 31/12/12

*Working for
Warwickshire*

is more than 40 days after the due date or not at all, there could be a financial penalty of £40,000.

- Produce an Annual Report, there could be a financial penalty of £5,000. Where the report is provided but no more than 40 days after the due date, there could be a financial penalty of £500 for each day the report is provided after the due date; or if it is more than 40 days after the due date or not at all, there could be a financial penalty of £40,000.
- Report anything after the 40 days then additional penalties could apply of
 - (i) double the CRC emissions reported in the annual report of the previous year; or
 - (ii) where no such report exists, double the CRC emissions which the administrator calculates the participant made in the year for which the annual report is not provided. WCC must then also immediately acquire allowances for its CO₂ emissions.
- Report accurately, there could be a financial penalty of £40 per tCO₂

There is more in the Statutory Instrument guidance about penalties for:

- being lowest in the performance league table,
- being made to pay for allowances not purchased the year before as well as those allowances required to be surrendered in the current year,
- achieving a higher position in the performance table than an organisation would have done had it provided the information accurately.

“Inaccurate” means where any of the supplies or emissions reported differ by more than 5% from the supplies or emissions which should have been reported, ignoring any estimation adjustment.

If WCC get served a notice that is not complied with then there could be a financial penalty of £500,000.

Energy Costs 2011 / 12

The total cost associated with the energy consumption collated for the CRC was just over £8million, 24% more than originally budgeted for.

- Electricity costs were 17% more.
- Gas costs were 38% more, and
- Fuel oil costs were 105% more.

Fuel	Budget	Actual	Variance	
Gas	£1,618,373	£2,237,908	-£619,535	38%
Electricity	£ 4,826,017	£5,641,545	-£815,528	17%
Fuel Oil	£123,493	£253,262	-£129,769	105%
	£6,567,883	£8,132,715	-£1,564,832	24%

Energy Costs – approved budget compared to actual

Purchase of CRC Allowances

WCC have to purchase Allowances to cover its carbon dioxide emissions associated with energy consumption. The total CRC Phase 1 Allowance Payment was £12/tonne CO₂ and a total of (37,978 tonnes CO₂ * £12 / tonne) = £455,736.

Who is Involved in the CRC Reporting?

The CRC Working Group and other staff who contributed to ensuring WCC were able to report on time were from a variety of areas: Construction Services, Energy Team, Environmental Management, Finance, Schools, Property Managers and Senior Management for audit and sign off.

CRC Performance League Table (PLT)

WCC will feature in an Environment Agency Performance League Table that ranks participants on their energy efficiency performance. The better an organisation performs in terms of cutting its emissions, the higher it will appear in the annual performance league table. This is expected to be published in the early months of 2013.

The Local Government Information Unit produced a mock PLT, but with only 30 public sector participants compared. The table below shows WCC as being ranked sixth.

	What type of Public Sector Organisation are you?	What was your carbon emission total 2010-2011?	What was your carbon emissions total 2011-2012?	Percentage Reduction	Overall Score
Gloucestershire	Local Authority	51,030	34,064	33.25%	4.1
Poole	Local Authority	15,230	9,274	39.11%	4.6
East Sussex	Local Authority	41,360	28,581	30.90%	6.5
Buckinghamshire	Local Authority	42,469	29,848	29.72%	7.4
	Local Authority	36,283	27,567	24.02%	7.5
Warwickshire	Local Authority	55,541	37,978	31.62%	7.9
Dorset	Local Authority	35,697	23,242	34.89%	9.7
Wrexham	Local Authority	16,202	14,341	11.49%	10.9
Derbyshire	Local Authority	72,710	49,089	32.49%	11.5
Redcar Cleveland	Local Authority	13,704	11,748	14.27%	12.1
Blackburn	Local Authority	25,162	20,073	20.22%	13.5
Wiltshire	Local Authority	43,242	33,177	23.28%	13.5
Southampton	Local Authority	27,604	17,466	36.73%	12.7
Newcastle	Local Authority	46,791	42,560	9.04%	14.5
Calderdale	Local Authority	32,568	24,614	24.42%	14.9
Sutton	Local Authority	20,591	15,764	23.44%	15.2
Reading University	University	23,414	20,998	10.32%	16.0
Cambridgeshire	Local Authority	47,376	37,122	21.64%	16.2
Gloucestershire Police	Police Authority	5,358	4,798	10.45%	16.9
Barts and London Hospital	NHS Trust	32,878	33,300	-1.28%	17.7
West Midlands Police	Police Authority	24,678	23,058	6.56%	18.8
Cambridgeshire	Local Authority	42,240	37,138	12.08%	19.5
Merseyside Police	Police Authority	10,781	9,970	7.52%	20.6
Wirral	Local Authority	39,870	35,374	11.28%	21.9
	Local Authority	45,422	43,588	4.04%	23.1
Tower Hamlets	Local Authority	24,631	24,080	2.24%	24.1
NHS Trust	NHS Trust	11,177	10,286	7.97%	24.0
	Local Authority	29,434	27,984	4.93%	25.4
	NHS Trust	46,549	45,204	2.89%	27.0
	NHS Trust	19,000	18,500	2.63%	27.3
Guildford	Local Authority	7,545	7,777	-3.07%	27.9
Northumberland	Local Authority	34,852	36,765	-5.49%	29.7

Mock CRC Performance League Table

The final PLT will rank hundreds of organisations so the ranking in the above table may be misleading.

CRC Simplification

There will be a new CRC Order put before Parliament in early 2013 and in force by June 2013. Final details will be confirmed at this time, but it seems that:

- Organisations that meet the qualification criteria between 1 April 2012 and 31 March 2013 will have to participate in Phase 2.
- Participants will have to register in the scheme during the year April 2013 to March 2014.
- Dates for registration will be set out in EA guidance on how to register for Phase 2 to be published in early 2013.
- Organisations that register as participants for CRC in Phase 2 will have to monitor and report on their energy use for five compliance years.
- They will also have to purchase allowances to cover their CO₂ emissions.

Street-lighting

Under Phase 2, inventory based street lighting pseudo half hourly supplies (dynamic supply) and pseudo non half hourly supplies (passive supply) will not count for



valid until 31/12/12

Working for Warwickshire

qualification purposes though they will be reportable for compliance if an organisation meets the qualification criteria.

A passive supply allocates the un-metered consumption across the half hourly periods by a mathematical relationship of annual burning hours to the daily time of sunrise and sunset.

A dynamic supply allocates the un-metered consumption across the half hourly periods by reference to the operation of a number of representative Photo Electric Cell Units (PECU) in an 'array' or by making use of actual switching times reported by a Central Management System (CMS). The Central Management System is a system to remotely control street lighting where an operator can choose exactly when to switch each individual street light on or off and/or by how much to reduce the lamp power.

Water Consumption

At present WCC does not have any recorded water consumption data, only cost data from the ledger. Water costs WCC around £1.3 Million per year.

It is estimated that we could save 10% to 25% if we addressed:

- Water bill validation
- Water audits
- Incorrect tariffs
- Water leak detection and repairs
- Over large meters
- High consumption
- Shared supplies
- Surface water drainage charges
- Reductions in toilet flushing volumes
- Uncontrolled urinals
- Wasteful taps
- Rain water harvesting opportunities
- Grey water recycling opportunities

If maximum potential savings were achieved this would equate to around £130,000 to £325,000 savings per year so it is worth investigating the true potential.

A pilot approach to identifying water savings was undertaken with Waterscan. Following water audits of 27 properties, surface water drainage overcharges were identified for four sites: Wellesbourne Divisional Highways Depot, Myton Sports Ground & Pavillion, Northgate House Conference Centre and Fenny Compton Fire Station.

The total cost of the water audits was £3,750. Total refunds of £5,291.7 were achieved with on-going annual savings amounting to £4,209.68.

Communications

Web

The following energy related web pages have been maintained.

Energy and Water Efficiency Service –

www.warwickshire.gov.uk/energyandwater

Introduces WCC's Energy and Water Efficiency Service and the Carbon reduction Commitment.

Energy and Water Efficiency Performance –

www.warwickshire.gov.uk/energyperformance

Looks at WCC's energy reporting system and what it includes and excludes. The Systemslink database holds energy consumption and invoice data for each site.

The Building Energy Consumption Review 2010 and Appendices are on this web page:
Report:

[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/\\$file/2010+to+2011+Annual+WCC+Building+Energy+Consumption+Review+-+Main+Report.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/$file/2010+to+2011+Annual+WCC+Building+Energy+Consumption+Review+-+Main+Report.pdf)

Appendices:

[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/\\$file/2010+to+2011+Annual+WCC+Building+Energy+Consumption+Review+-+Appendices.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/$file/2010+to+2011+Annual+WCC+Building+Energy+Consumption+Review+-+Appendices.pdf)

There are documents to help schools understand their own energy consumption and impact on the environment:

How can people adapt the natural environment?

[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/\\$file/good+environment+bad+environment.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/$file/good+environment+bad+environment.pdf)

A schools energy and water survey checklist

[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/\\$file/Schools+energy+and+water+checklist.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/$file/Schools+energy+and+water+checklist.pdf)

Finding out if your meter is single or three phase

[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/\\$file/Is+my+meter+single+phase+or+three+phase.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/$file/Is+my+meter+single+phase+or+three+phase.pdf)

There are also a number of documents about installing energy display devices at home:

Installing an Owl: at home

[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/\\$file/Installing+OWL+at+home.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/$file/Installing+OWL+at+home.pdf)



valid until 31/12/12

*Working for
Warwickshire*

Using an owl meter at home to reduce electricity bills and emissions of carbon dioxide
[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/\\$file/OWL+Home+Leaflet.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/$file/OWL+Home+Leaflet.pdf)

Safety and care instructions for an Owl meter
[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/\\$file/OWL+Safety+and+Care+Instructions.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/52373792B2A08DB8802578C3005310C3/$file/OWL+Safety+and+Care+Instructions.pdf)

Energy Policy/Carbon Management Action Plan –

www.warwickshire.gov.uk/energypolicy

Provides links to WCC's energy policy

[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/277865738DFE038C802578C30052C204/\\$file/EnergyPolicyforWCCPhysicalAssetsJan2011.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/277865738DFE038C802578C30052C204/$file/EnergyPolicyforWCCPhysicalAssetsJan2011.pdf)

There is a study which analyses the influence of UK Energy Security and Peak Oil as drivers impacting on Warwickshire County Council (WCC) activities. The questions addressed by the study are what UK Energy Security and Peak Oil are all about, why they matter, how they impact on WCC, and what the authority's next steps should be.
[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/277865738DFE038C802578C30052C204/\\$file/WCC+Energy+Security+Peak+Oil.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/277865738DFE038C802578C30052C204/$file/WCC+Energy+Security+Peak+Oil.pdf)

A report about 'Expensive Energy, UK Energy Security and Peak Oil' went to Corporate Board on the 29th August who agreed that workshops be held at management level to inform and enable a discussion on the likely impacts on service users and service delivery.

[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/277865738DFE038C802578C30052C204/\\$file/WCC+Energy+Security+Peak+Oil.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/277865738DFE038C802578C30052C204/$file/WCC+Energy+Security+Peak+Oil.pdf)

A briefing paper is available.

[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/277865738DFE038C802578C30052C204/\\$file/Item+9+-+Expensive+Energy.29Aug12.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/277865738DFE038C802578C30052C204/$file/Item+9+-+Expensive+Energy.29Aug12.pdf)

WCC Staff were surveyed over a week in September 2011 about the impact of rising costs of road transport fuels. The poll results can be accessed on this web page.

Building Energy and Water Efficiency

www.warwickshire.gov.uk/energybuilding

Lists the sort of energy saving projects that have been implemented at WCC properties.

Case Studies

Studley High School Dishwasher



valid until 31/12/12

*Working for
Warwickshire*

A Salix funded dishwasher to replace their steriliser sink.

[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/24FD7B900FBDEE30802578C30053144C/\\$file/Dishwasher+and+Salix+Fund+Case+Study.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/24FD7B900FBDEE30802578C30053144C/$file/Dishwasher+and+Salix+Fund+Case+Study.pdf)

Barrack Street Offices, Warwick 47 kW peak photovoltaic array.

[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/24FD7B900FBDEE30802578C30053144C/\\$file/Azure+WCC+-+Flier+03Apr12.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/24FD7B900FBDEE30802578C30053144C/$file/Azure+WCC+-+Flier+03Apr12.pdf)

ERV Kitemark for Energy reduction with BSi

[http://wcc-apps1/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/\\$file/20130+Warwick+Case+Study+AW+V7+LR+11+09+12.pdf](http://wcc-apps1/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/$file/20130+Warwick+Case+Study+AW+V7+LR+11+09+12.pdf)

School Energy Management

<http://www.warwickshire.gov.uk/schoolenergy>

Contains information regarding ESPO's energy contracts and school energy events

[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/43BA111660AC8E1A802578FE003065F7/\\$file/Energy%20roadshow%20posterflyer.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/43BA111660AC8E1A802578FE003065F7/$file/Energy%20roadshow%20posterflyer.pdf)

WCC's energy management system - Systemslink software FAQ's

[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/43BA111660AC8E1A802578FE003065F7/\\$file/SystemsLinkFAQ.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/43BA111660AC8E1A802578FE003065F7/$file/SystemsLinkFAQ.pdf)

Systemslink User Guide

[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/43BA111660AC8E1A802578FE003065F7/\\$file/SystemsLinkUserGuide.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/43BA111660AC8E1A802578FE003065F7/$file/SystemsLinkUserGuide.pdf)

Eco schools The Pod 'Switch off Fortnight guide

[http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/43BA111660AC8E1A802578FE003065F7/\\$file/SOF_Guide_v9.pdf](http://www.warwickshire.gov.uk/Web/corporate/wccweb.nsf/Links/43BA111660AC8E1A802578FE003065F7/$file/SOF_Guide_v9.pdf)

Partnership Working

West Midlands Energy Managers' Forum (WMEMF)

Warwickshire County Council has been working with Improvement and Efficiency West Midlands (IEWM) to develop a Low carbon Delivery Plan for the West Midlands Property Alliance (WMPA).

A West Midlands Energy Managers Forum has been established. WCC host and coordinate quarterly meetings giving delegates from all public sector areas an opportunity to share and learn from best practice in Energy and Carbon Management. Members come from Local Authorities, the NHS and the Police. There are around 60 members on the email address list.



valid until 31/12/12

*Working for
Warwickshire*

The main function of the group is to provide profile, drive, leadership and support to improve energy management activities and maximise efficiency savings through staff engagement and implementation of energy efficiency technology within the region. The programme of activity includes: the use of energy by staff, energy efficiency technologies, data management systems, CRC reporting, maintaining legal compliance and other significant issues affecting the management of energy within the region

Terms of Reference for the WMEMF

[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/\\$file/WM+Energy+Managers+Forum+Terms+of+Reference+June+2012+v1.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/$file/WM+Energy+Managers+Forum+Terms+of+Reference+June+2012+v1.pdf)

A blog site has been set up for members but is not well used as yet.

<https://energymanagersforum.wordpress.com/>

There is also a web page on the Warwickshire Climate Change Partnership pages, but these are expected to be deleted in February 2013.

The WMEMF page contains the following documents:

- November 2011 to November 2012 summary of topics covered by the Forum
[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/\\$file/Feedback+November+2011+to+November+2012.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/$file/Feedback+November+2011+to+November+2012.pdf)
- What is an MPAN?
[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/\\$file/MPAN+-+what+it+looks+like.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/$file/MPAN+-+what+it+looks+like.pdf)
- Energy and Carbon Factsheet
[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/\\$file/Fact+sheet+-+terminology+for+the+Carbon+Reduction+Commitment+ CRC .pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/$file/Fact+sheet+-+terminology+for+the+Carbon+Reduction+Commitment+ CRC .pdf) which explains briefly: what the CRC is, the CRC Performance League Table, what half-hourly metering is and what an un-metered supply is.
[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/\\$file/Fact+sheet+-+terminology+for+the+Carbon+Reduction+Commitment+ CRC .pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/$file/Fact+sheet+-+terminology+for+the+Carbon+Reduction+Commitment+ CRC .pdf)
- A summary of the activities carried out by WCC for the Switch it Off campaign 2006 to 2009 (branded resources, school's art challenge, school poetry competition, school energy check, family challenge, the Town Hall challenge, an anti-idling campaign, staff engagement, street giveaways, universally challenged quiz, sustainability challenge, dine by candlelight, freebies for children and family centres, the SIO interactive house and the big switch off
[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/\\$file/SIO+presentation+2011+hand+outs+2+slides+per+page.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/$file/SIO+presentation+2011+hand+outs+2+slides+per+page.pdf)
- The 'Switch it Off' interactive house.
<http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/60281FB6D6A1CE5080257674005622D0>



valid until 31/12/12

*Working for
Warwickshire*

- How to check for water leaks – The Great Escape
[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/\\$file/The+Great+Escape+-+water+leaks.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/$file/The+Great+Escape+-+water+leaks.pdf)
- Primary and secondary interests questionnaire
- Find out about Display Energy Certificates (DECs)
[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/\\$file/Display+Energy+Certificates.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/$file/Display+Energy+Certificates.pdf)
- Lesson Plan for using school Automatic Meter Reading (AMR) data
[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/\\$file/generic+School+AMR+-+lesson+plan.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/$file/generic+School+AMR+-+lesson+plan.pdf)
- School Energy and Water Management Policy template
[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/\\$file/Schools+Energy+and+Water+Management+Policy.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/$file/Schools+Energy+and+Water+Management+Policy.pdf)
- School Energy Management Matrix
[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/\\$file/School+Matrix.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/$file/School+Matrix.pdf)
- Find out how to access the Systemslink Web Reporting System
[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/\\$file/Web+Energy+Management+System.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/$file/Web+Energy+Management+System.pdf)

WMEMF Energy Behaviour Change Programme / Awareness Pilot

As mentioned in the section on Energy Costs above, the total cost associated with the energy consumption collated for the CRC was just over £8million (£8,132,715).

According to the Carbon Trust around 10% of all energy consumed is consumed unnecessarily. If all staff in every property belonging to WCC reduced the amount of wasted energy and met this Carbon Trust target, WCC could save up to £800,000 per annum. With energy bills on the increase this level of savings would make a valuable contribution to maintaining public services.

WCC is coordinating a working group delivering an action in the WMPA Low Carbon Delivery Plan relating to communications and behaviour change. Members will each pilot a behaviour change programme within their own authority using their own resources – Coventry City Council, Solihull MBC, Warwickshire CC, Worcestershire C, Rugby BC and Nuneaton and Bedworth BC. Members will explore whether the Carbon Trust target is at all feasible. The aim of this working group is to drive behavioural change in order to reduce energy wastage and save money on energy bills. This will be achieved through sharing ideas, materials, messages and information about what works and what doesn't.

So far Coventry City Council have launched their 'Think L♥w Carbon' programme CCC's CEO has nominated himself as the lead 'Green Champion'. Worcestershire CC has also launched their programme featuring 'Sustainability Sam' and are currently developing their marketing material. Rugby BC have also started on their programme.



valid until 31/12/12

*Working for
Warwickshire*

Future work for both the WMEMF and the Behaviour Change Pilot will be in association with Sustainability West Midlands to ensure adequate communications across the whole of the Local Authority Low Carbon Work Programme.

A number of resources have been developed / shared for this:

- Generic three year behaviour change process spread sheet
- Energy Advisors / Energy Champions draft terms of reference
- Energy Advisors / Energy Champions draft 'Energy Code of Good Practice'
[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/\\$file/Energy+code+of+conduct+v6doc.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/$file/Energy+code+of+conduct+v6doc.pdf)
- Energy Advisor / Energy Champion / Energy Explorers art work
[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/\\$file/Energy+Advisor+Art+work.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/1019AEED392D4E84802575190059F9CF/$file/Energy+Advisor+Art+work.pdf)

ESPO Energy Contracts

ESPO procure energy on behalf of at least 55 councils. Contracts for the period from 2012-2016 were awarded to Total Gas & Power (TGP) for gas, Scottish & Southern Energy (SSE) for electricity and PACE Fuel Care for heating oil. TGP had some significant problems initially with providing gas consumption data for invoices when they took over the contract.

Display Energy Certificates (DECs) and Advisory Reports

The UK has passed legislation which introduces the world's first long-term legally binding framework to tackle the dangers of climate change: The Energy Performance of Buildings Directive 2007 (EPBD), Energy Act 2008, Climate Change Act 2008 and the Carbon Reduction Commitment Energy Efficiency Scheme 2010 ensure that legislation underpins the long term delivery of UK energy and climate change strategy.

In order to comply with the EPBD, all public buildings with a useful floor area of over 1,000 m² are required to have a DEC every year and those with a floor area of 500 m² and over every ten years from January 2013. A DEC provides an overview of the energy performance of a building based upon its actual recorded energy consumption. The DEC must be displayed in colour at A3 size in a prominent place, usually the main entrance area. Each DEC must be accompanied by a valid Advisory Report, which lists cost-effective measures for improving the energy rating of the building. An Advisory Report is valid for a period of 7 years for annual DEC's and ten years for DEC's that are valid for ten years.

The penalty for failing to display a valid DEC where one is legally required is £500, and the penalty for not having an Advisory Report available is £1,000.

The voluntary display of a DEC for buildings of less than the legal floor area threshold is good practice and demonstrates commitment to manage energy efficiently and reduce carbon emissions. A voluntary DEC is provided for the largest building for all Schools that subscribe to the WES Energy and Water Efficiency Service.



valid until 31/12/12

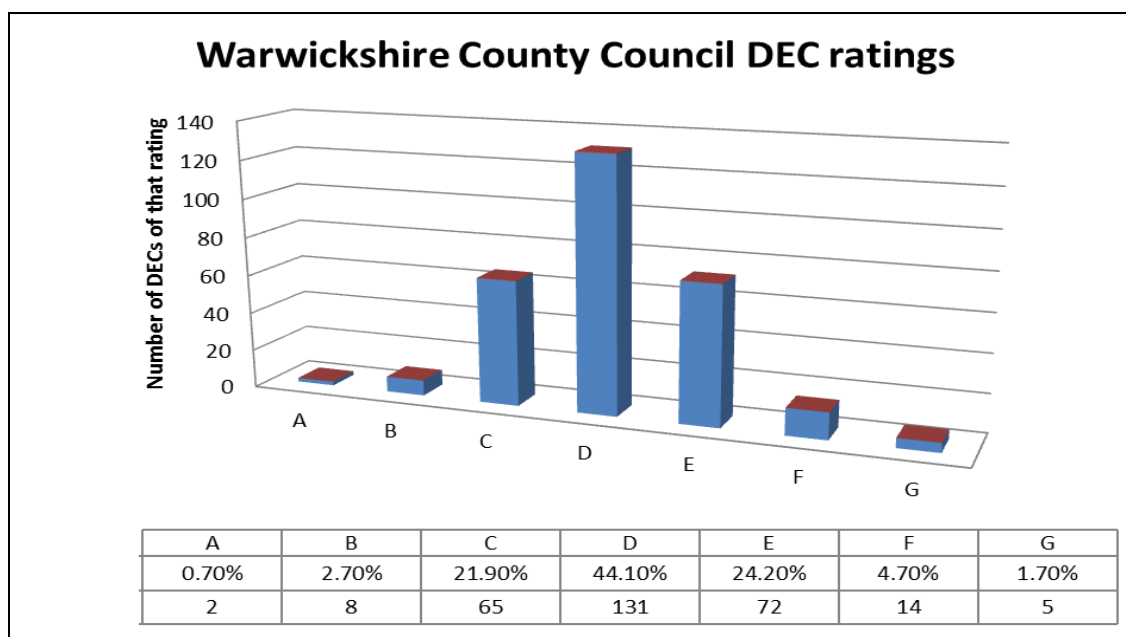
*Working for
Warwickshire*

Between January and November 2012, the Energy Team produced:

- 260 DEC's.
- 23 Advisory Reports
- A Risk Assessment and Method Statement for undertaking DEC site surveys for wet leisure centres belonging to external organisations (Borough / District Councils in Warwickshire).

Of the 297 properties that had a DEC at the end of November 2012, 44% had a DEC with a D rating, 22% had a C rating, 94% had a rating between A to E. The average score was 89.6 (a lower score is better, A is the best).

DEC Rating	Number as at July 2011	%	Number as at November 2012	%
A (0 – 25)	1	0.40%	2	0.70%
B (26 – 50)	7	2.50%	8	2.70%
C (51 – 75)	55	19.40%	65	21.90%
D (76 – 100)	134	47.20%	131	44.10%
E (101 – 125)	65	22.90%	72	24.20%
F (126 – 150)	15	5.30%	14	4.70%
G (Over 150)	7	2.50%	5	1.70%
Total	284	100%	297	100%

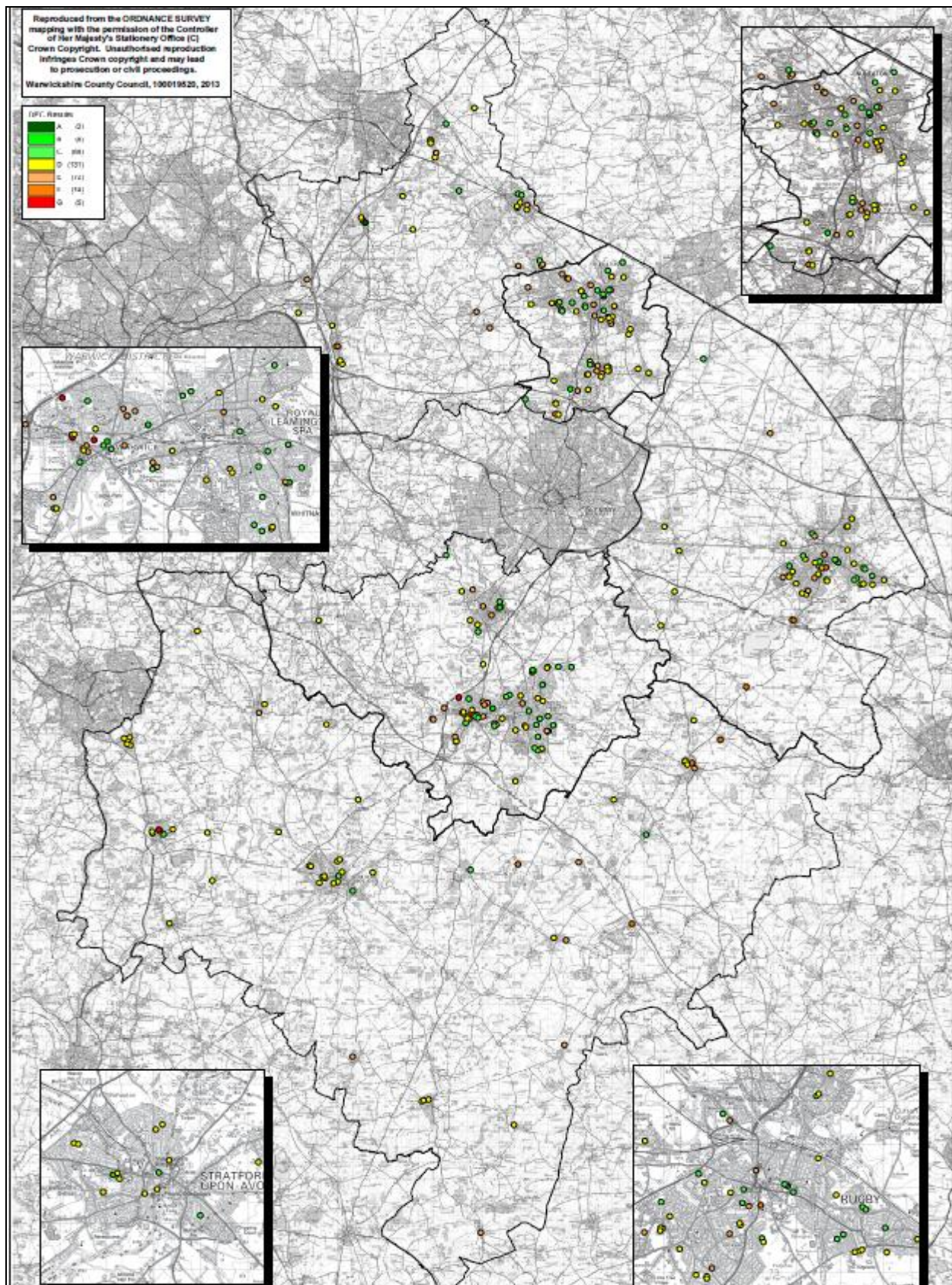


297 DEC's Shown by Rating (for DEC's with a nominated date of between November 2011 and November 2012).

The average DEC rating should improve over time: as the quality of the data improves; as inefficient properties are disposed of through property rationalisation and as more investment is made in energy efficiency in the properties that are kept.

For a previous set of 101 properties with nominated dates of between 2008 and 2010, the average score was 90.6.

The following county map shows locations of WCC properties as circles. Properties with an A to C rating are pictured in shades of green, D's, E's and F's are shades of amber and G rated ones appear as red.



County Map Showing Properties by DEC Rating 2012

Energy Monitoring and Reporting

Automated Meter Reading (AMR)

WCC has been installing AMR in all schools and corporate buildings including both gas (completed) and electricity (mostly completed). The half-hourly data enables more accurate billing, giving us better quality data. This will help in the production of DEC's and bespoke energy reports and can be used as an educational tool.

Systemlink

WCC uses a database to manage utility consumption data across the entire property stock. Systemlink drives the web reporting system through AtlasWeb. This can be used to create various graphs and reports such as year on year comparisons of consumption and costs for budget forecasting and target setting.

A degree day is a single number that quantifies how hot or cold the weather has been for a certain region over a month (or week). The colder the weather in a given month the higher the degree day value. Imported into Systemlink, this number helps us account properly for the effect of weather on energy consumption. This combined with half hourly data from the AMR helps us forecast what should have been used over each month of the year so we can identify the best and worst performing sites, target anomalies in order to save money and raise awareness.

Systemlink is accessible by schools that have signed up to the WES Agreement (Energy and Water Efficiency Service) and internal staff.

Electricity AMR Pilot with Aylesford, Polesworth and Coleshill Schools

A pilot project looking at how schools can use their own AMR data is underway. A variety of information can be obtained from looking at the shape of the half-hourly demand profile, such as:

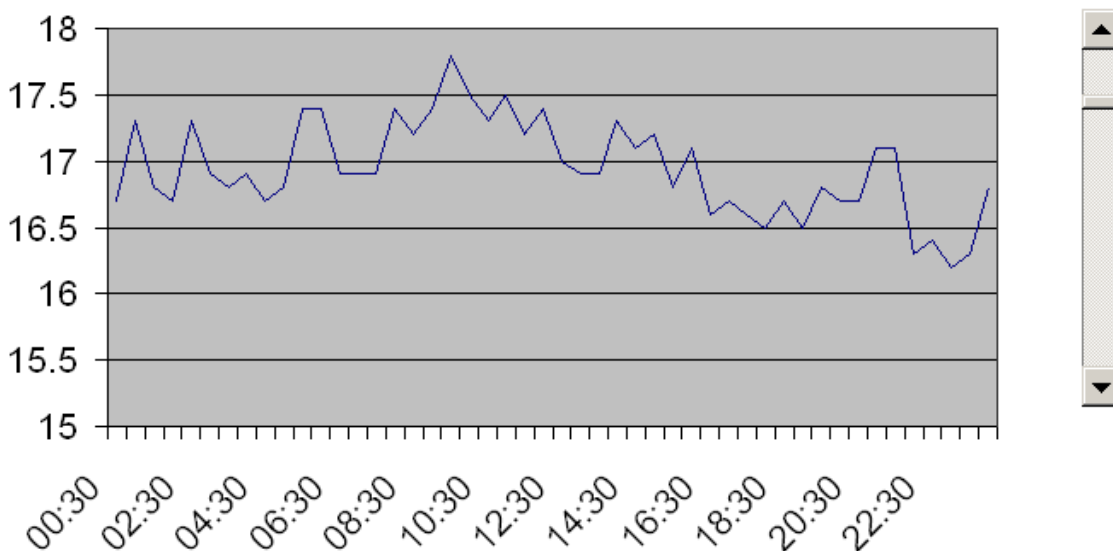
- Peak Demand - the time, magnitude and duration of the peak demand period can be seen at a glance.
- Base load – the demand during unoccupied hours and the cost of this demand can be calculated.
- Start-up – the time electrical equipment begins to be turned on can be identified.
- Shut-down – the time electrical equipment begins to be turned off can be identified.
- Occupancy effects / after hour's consumption – the demand for electricity used by evening clubs can be calculated and costed more accurately.
- Seasonal impacts – the effect of darker nights and colder weather on the demand for electricity can be seen by comparing the demand profiles from each season.
- Control problems – if the occupancy record of the property is not reflected in the demand profile, this could mean you need better controls.
- Unexpected and cycling loads can be seen.

The shape of the demand profile also raises a variety of questions that can relate to any day. The answers to these questions may indicate where the school could save money on electricity bills through managing that demand effectively.

Below is an example from each of the schools. The y axis is consumption in hundred's of kW. The x axis is time.

Aylesford School

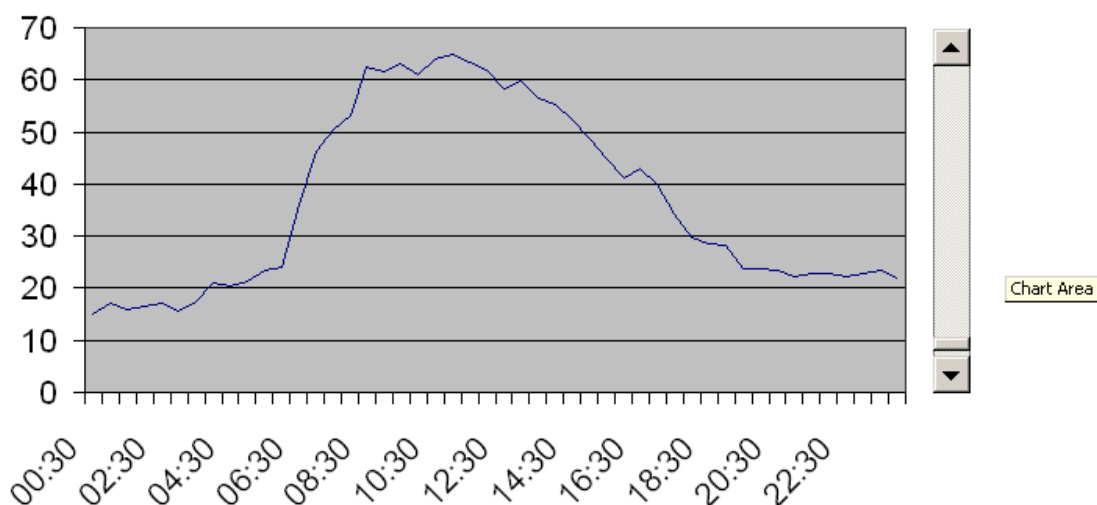
Aylesford School. A Specialist Language & Music Co_Saturday 06 2012



The data is for electricity consumption on a Saturday in June and is relatively erratic. Is something turning on and off a lot (cycling)?

The Coleshill School

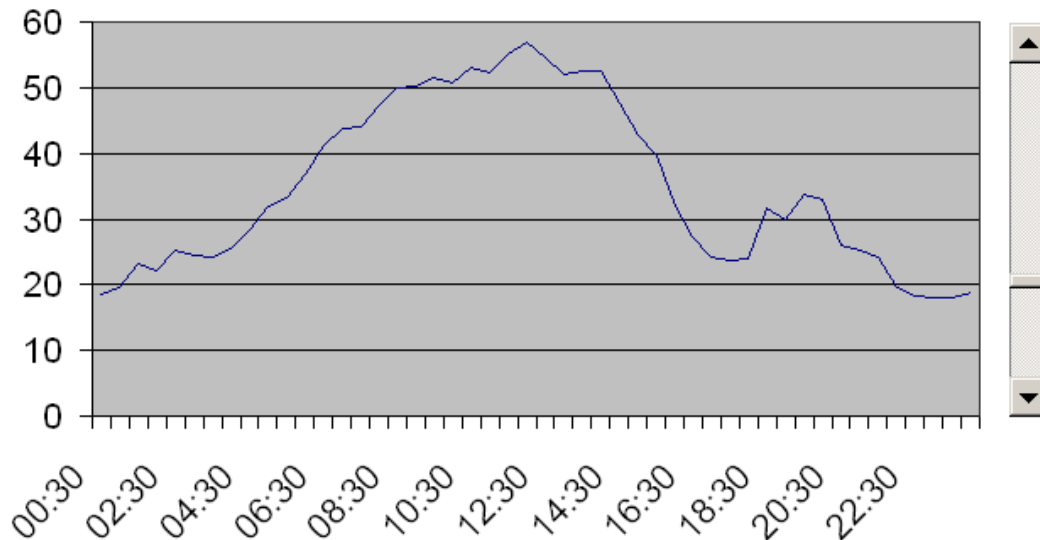
The Coleshill School - a Maths & Computing College_Tuesday 05 2012



The data is for electricity consumption on a Tuesday in May. The demand seems to increase very early – about 4:30 a.m. why is there such an early start? The demand also tails off very slowly - is the school gradually shut down?

Polesworth International Language College

Polesworth International Language College_Thursday 04 2012

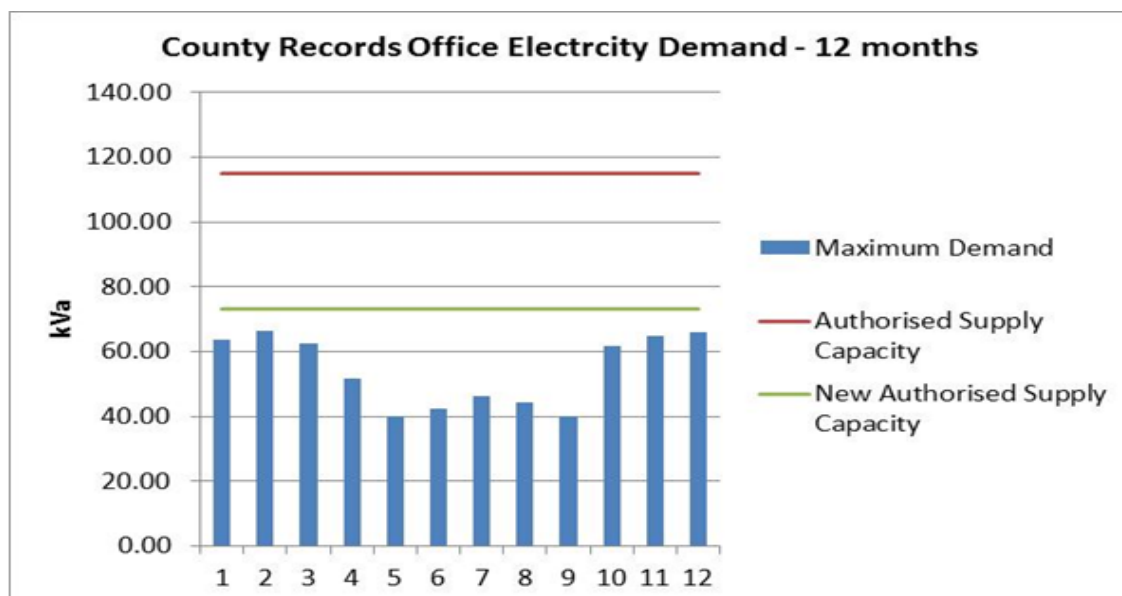


The data is for electricity consumption on a Thursday in April. There is a second peak on the evening. Is there an after school club about 6:30 p.m and if so, how does the school recover its costs?

Implementing Changes to Authorised Supply Capacity and Meter Classification

A project looking at the maximum demand and Authorised Supply Capacity (ASC) of corporate properties and schools has taken place.

Where the maximum demand all year round is consistently less than the ASC, savings on the monthly charge can be achieved by reducing the ASC.



County Records Office Electricity Demand

In the example of the County Records Office, reducing the ASC from 115 kVA to 76 kVA would save around £300 per annum as the monthly charge per kVA of available capacity is £0.58/kVA.

Other savings are possible when the meter can be changed from Half Hourly (HH) to Non Half Hourly (NHH) if demand is below 100kVA. Reducing to NHH metering would save ASC charges and Meter Operating Contract (MOP) costs of around £300 per annum.

30 such sites have been investigated showing a potential £8,000 savings p.a. from corporate properties and £35,000 p.a. savings from schools which are in the process of being implemented. The largest saving identified was £4,000 per annum from one meter alone due to over-specifications in a new build.

Salix Energy Efficiency Projects

The process for delivering a successful Salix project has been mapped showing where the Energy Team, MMW Engineers, Building Surveyors and Finance teams have a role to play. The intention now is to access a Worcestershire County Council mechanical framework in early 2013 to help identify potential projects. There was £269,237 in the Salix Account at the start of the financial year 2012 /13 with a need to commit £239,370 spend to stay within the scheme. Many potential projects investigated, such as dishwashers to replace sterilise sinks in primary schools, have not met the strict Salix criteria.

The Salix Fund can be used only to finance energy efficiency projects that deliver long-term CO₂ savings and financial savings. Projects must comply with either of the following criteria:

- A payback period of 5 years or less which costs no more than £100 per tonne lifetime carbon saved; or

- A payback period of 7.5 years or less with a cost of no more than £50 per tonne lifetime carbon saved.

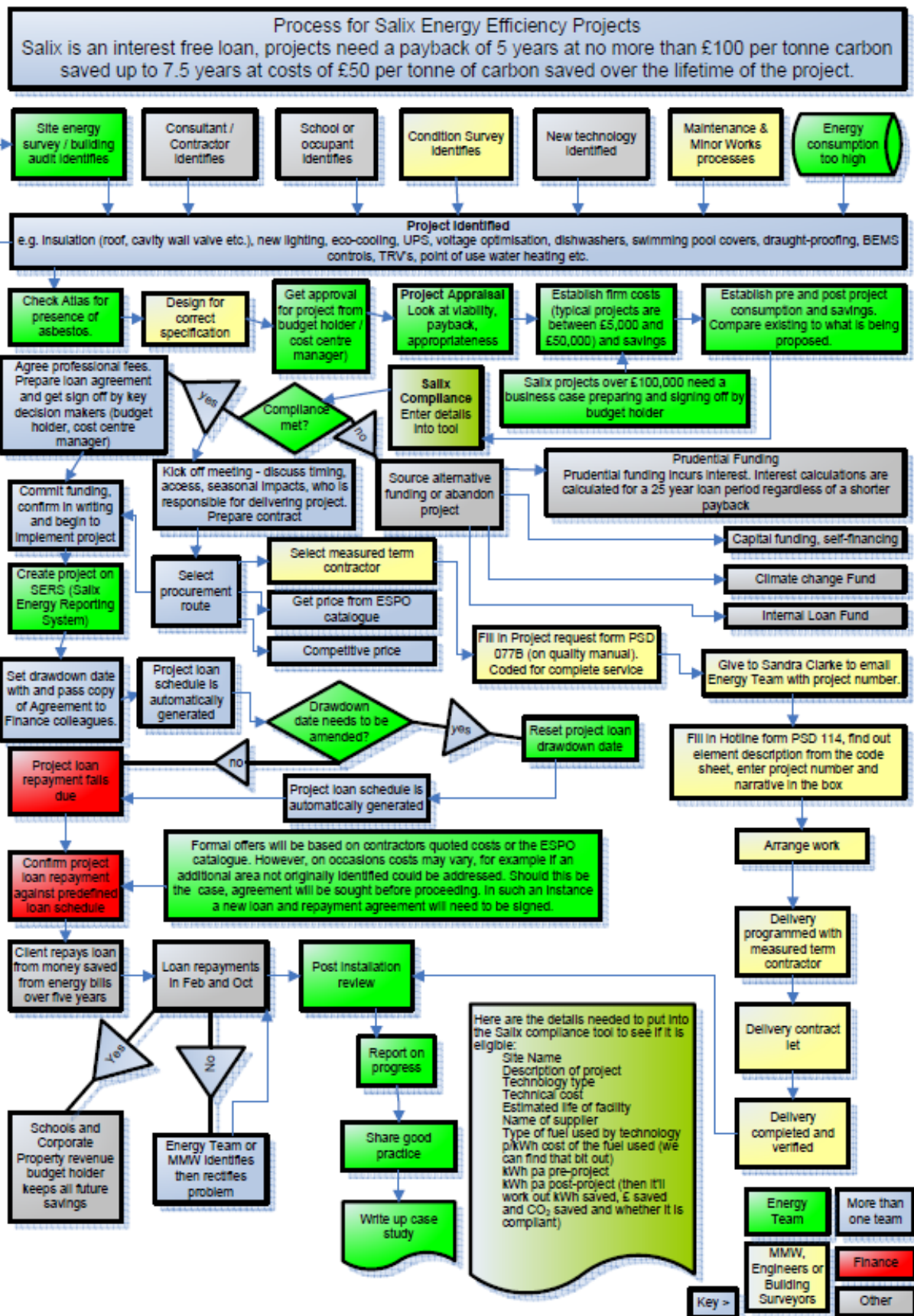
Alternative internal finance mechanisms with new investment criteria are being developed.

In educational properties completed Salix projects with an average simple payback of just less than four years and a total investment cost of £572,264 are estimated to be saving around £153,500 on energy bills p.a., around 1,020 tonnes of CO₂ p.a. with lifetime CO₂ savings of around 12,000 tonnes CO₂.

In all properties completed Salix projects with an average simple payback of just under six years and a total investment cost of £2,243,218 are estimated to be saving around £379,005 on energy bills p.a., around 2,452 tonnes of CO₂ p.a. with lifetime CO₂ savings of around 34,732 tonnes CO₂.

Salix projects	Total invested	Total £saved p.a.	Average payback years	Annual Saving Tonnes CO ₂	Lifetime CO ₂ Savings Tonnes
All WCC properties	£2,243,218	£379,005	5.92	2,452	34,732
Schools and colleges only	£572,264	£153,558	3.73	1,020	12,014

From Energy Projects Carbon Tracker Spreadsheet



Current Process for delivering WCC Salix projects

WES School Energy & Water Efficiency Service

The WES Energy and Water Efficiency Service supports Warwickshire schools to reduce their energy consumption and comply with national energy and climate change related legislation such as the Energy Performance of Buildings Directive (EPBD) and the Carbon reduction Commitment Energy Efficiency Scheme (CRC).

The service can be summarised as:

- The Standard Package includes the annual production of one Display Energy Certificate (DEC) per school. DEC's for additional buildings on school sites are charged at £50 each. Every year the Energy Team produce around 240 DEC's for educational properties with a floor area over 1,000 m² and will produce around 54 DEC's / AR's for school properties with a floor area of 500 m² from January 2013. The DEC's for the smaller properties will be valid for a period of ten years.
- The production of Advisory Reports every seven years.
- The provision of training, upon request, in order to access to the web based Energy Monitoring and Reporting System (Systemlink) through the Atlas Web. This provides statistical and graphical analysis of site energy consumption.
- Feedback and annual benchmarking of energy performance that is posted annually on the website. Schools can use Systemlink to compare year on year energy consumption and for budget forecasting and target setting.
- The provision of consumption data upon request to enable participation in energy awareness campaigns and energy saving initiatives.
- The provision of a variety of resources and latest news on the Energy Team Web Site with links to other useful sites.
- Arranging Automated Meter Reading (AMR or Smart metering) upon request to enable more accurate billing and providing better data for producing DEC's and buying CRC allowances.
- Assistance in accessing the Salix loan fund for project delivery. Loans are paid back from 75% of the expected savings over five years, after which all savings are kept by the client.
- Ensuring Carbon Reduction Commitment (CRC) reporting requirements are met.

The Primary standard package is £150 p.a., the Secondary / Academy standard is £200.

The Standard Package can be enhanced through a range of services on a buy as you need basis.

Renewable Energy (2010-11)

During the year, work has particularly focused on the identification, design and procurement of a number of photovoltaic systems on corporate buildings in the Warwick area. The 'invest to save' schemes which will be delivered by the end of 2011-12 should see around 100 kilowatts (peak) of PV modules installed - delivering around



valid until 31/12/12

*Working for
Warwickshire*

80,000 kW hours of electricity a year. The cost will be met from the Climate Change Initiatives Fund and is expected give a return on investment of between 8-12%.

Other projects included further work in relation to identifying potential biomass boiler projects, a study looking at the economics of growing our own wood fuel supply on the council's estate, and a feasibility study for an anaerobic digestion plant on a small holding near Long Compton.

Longer Term Energy Security

Another area explored has involved an assessment of where energy costs (gas, oil, electricity) are going in the medium-long term, and a detailed look by Warwick Business School MSc Students at the implications for service delivery of higher price energy scenarios including oil. This work has been developed further in the current year.

Renewables

As an indication of the potential income streams, the following table gives basic details of photovoltaic (PV) installations delivered using self-funded capital. The Feed-in-Tariff 'Generation' tariff rates vary due to both the system size and when the project was delivered. Capital costs are both size and site specific (the Rugby site had higher install costs).

	kW peak capacity size	FiT Generation Tariff rate – pence/kWh	Gross Capital Cost with fees	Cumulative Generation over 25 yrs (Yr1 x 25) – KW hrs	Calculated Business Case IRR ¹ <i>WCC currently borrows at c.3%</i>	NPV	Cumulative Net Profit after 25 yrs £	
WARWICK							<i>Based on average imported costs of 9p/kWh</i>	<i>Based on average imported costs of 12p/kWh</i>
Barrack St Offices	47.00		£153,813	1,039,300	8.65%	£63,736	£190,856	£222,035
Saltisford Office Park Bldg 1	16.92	15.2p	£36,194	390,850	7.49%	£9,949	£35,737	£47,462
Saltisford Office Park Bldg 2	40.89	13.1p	£71,866	944,550	10.63%	£47,778	£121,877	£150,214
RUGBY								
Sir Frank Whittle Business Centre	15.91	15.2p	£35,758	360,775	3.52%	£1,194	£7,865	£10,328
	120.76		£297,631	2,735,475		£123,327	£356,335	£430,039

Whilst panel efficiency reduces over time – the panels will continue to generate electricity and financial savings long after the 25 years feed in tariff period. It is reasonable to assume that import electricity prices will rise steeply in coming years. If there was just a third increase in costs over the 25 years – 'net profit' would rise from over £350k to around £430k (from £14k to over £17k a year) on just these early schemes.

¹ Internal Rate of Return based on 20 or 25 year lifecycle costs

Appendix 1 - Performance Indicators and Benchmarks

Electricity consumption per unit of floor area (kWh / m²)

The most frequently occurring electricity consumption fell between 25 kWh/m² and 55 kWh/m². The average for all sites was 56 kWh/m².

Electricity consumption per square metre of floor area in WCC properties ranged from 0.72 kWh/m² to 352 kWh/m².

The following properties (highlighted in the table) have high consumption and more than a 30% change in electricity kWh/m² since last year's CRC Report and need further investigation for the reasons for this.

1. Bedworth Heath Nursery & Children's Centre
2. The Ratcliffe Youth & Community Centre
3. Kingsbury Library & Information Centre
4. Polesworth Library & Information Centre
5. Water Orton Library & Information Centre
6. Warwick House - Atherstone
7. Brinklow Fire Station
8. Dunchurch Infant School (Foundation)
9. Ryton Pools Country Park
10. Wolston Library
11. Fenny Compton Fire Station
12. Southam Fire Station
13. Lower Meadow Home For Elderly People (was UPRN 4247 last year) (last year 4249 was Home Care Services)
14. Wellesbourne Divisional Highways Depot (4309 called Wellesbourne Central Workshops last year) (4308 was Wellesbourne Divisional Highways Depot last year)
15. Wolverton Primary School (Foundation)
16. Trading Standards Headquarters
17. Cherry Orchard Household Waste Facility
18. Kenilworth Fire Station
19. Warwick Fire Station
20. Whitnash Branch Library

Some properties will have been disposed of through the Property Rationalisation Programme (PRP).

UPRN	Electricity	kWh per m ²	2011 kWh/m ²	% change since 2011 CRC report
1021	Bedworth Heath Nursery & Children's Centre	106.83	52	51%
1033	Bedworth Library & Information Centre	93.27	90	4%
1186	Caldwell Grange Home For Elderly People	87.84	88	0%
1242	Kings House	125.25	142	-13%
1270	Eliot Park Innovation Centre	122.56	124	-1%
2017	The Ratcliffe Youth & Community Centre	113.11	3	97%
2056	Baddesley Library & Information Centre	143.29	124	13%
2096	Orchard Blythe Home For Elderly People	106.72	102	4%
2107	Dordon Library & Information Centre	97.03	101	-4%
2142	Kingsbury Library & Information Centre	112.29	191	-70%
2143	Kingsbury Water Park	119.51	90	25%
2168	Polesworth Library & Information Centre	113.39	149	-31%
2182	Water Orton Library & Information Centre	109.21	145	-33%
2184	Warwick House - Atherstone	92.14	119	-29%
3014	Brinklow Fire Station	134.07	190	-42%
3033	Dunchurch Infant School (Foundation)	115.89	70	40%
3035	Dunchurch Branch Library	166.85	154	8%
3205	Ryton Pools Country Park	184.08	273	-48%
3225	Wolston Library	153.54	100	35%
4074	Fenny Compton Fire Station	99.94	163	-63%
4094	Henley-In-Arden Branch Library	225.77	235	-4%
4185	Southam Fire Station	167.32	244	-46%
4200	Low Furlong Home For Elderly People	94.60	90	5%
4235	Burton Farm L'dfill Site & House'd Waste Fac	166.28	163	2%
4249	Lower Meadow Home For Elderly People (was UPRN 4247 last year) (last year 4249 was Home Care Services)	352.30	58 + 7	82%
4272	Studley Library & Information Centre	197.97	246	-24%
4276	Four Acres Home For Elderly People	86.89	88	-1%
4309	Wellesbourne Divisional Highways Depot (4309 called Wellesbourne Central Workshops last year) (4308 was Wellesbourne Divisional Highways Depot last year)	115.45	216	-87%
4316	Wolverton Primary School (Foundation)	141.32	226	-60%
5010	Trading Standards Headquarters	217.59	92	58%
5043	Cherry Orchard Household Waste Facility	333.61	1276	-282%
5058	Kenilworth Fire Station	101.17	64	37%
5124	Fire & Rescue Service Headquarters	128.09	147	-15%
5187	Shire Hall & Courts (Market Square)	142.57	147	-3%
5196	Warks CC Staff Club, (Northgate House)	139.75	142	-2%
5252	County Records Office	170.32	179	-5%
5261	Warwick Fire Station	230.05	314	-36%
5293	Whitnash Branch Library	105.45	249	-136%
5384-1	Office Building 1 Saltisford Business Park	180.78	204	-13%
5384-2	Office Building 2 Saltisford Business Park	122.02	120	2%
5384-3	Office Building 3 Saltisford Business Park	119.01	120	-1%

Properties with a 30% or more difference in kWh/m² in 2012 compared to 2011.

Electricity cost per unit of floor area (£ / m²)

The most frequently occurring electricity cost fell between £2.50/m² and £5.50/m². The average for all sites was £5.06.

Electricity cost per square metre of floor area in WCC properties ranged from £0.55/m² up to £31.71/m².

The following properties (highlighted in the table) have high costs and more than a 30% change in electricity cost £/m² since last year's CRC Report and need further investigation for the reasons for this.

UPRN	Electricity	Cost per m ²	2011 £/m ²	% change since 2011 CRC report
1018	Race Leys Infant School	£6.97	1.74	75%
1019	Race Leys Junior School	£6.45	3.65	43%
1021	Bedworth Heath Nursery & Children's Centre	£9.62	4.19	56%
1033	Bedworth Library & Information Centre	£8.39	7.32	13%
1037	Warwickshire Fire & Rescue Service Training Centre	£6.93	9.04	-30%
1050	Bedworth Fire Station	£7.04	6.54	7%
1083	Keresley Newland Library & Information Centre	£5.84	9.79	-68%
1086	Warwick House - Nuneaton	£7.18	7.22	-1%
1119	Middlemarch School (Foundation)	£7.42	4.59	38%
1142	All Saints C. of E. Primary School	£7.64	3.55	54%
1144	Galley Common Infant School	£6.10	6.44	-6%
1186	Caldwell Grange Home For Elderly People	£7.91	7.15	10%
1242	Kings House	£11.27	11.50	-2%
1270	Eliot Park Innovation Centre	£11.03	10.04	9%
1276	Oak Wood Secondary School	£6.69	6.77	-1%
1280	The Hub	£7.14	11.17	-56%
2001	Nursery Hill Primary School	£5.98	4.97	17%
2017	The Ratcliffe Youth & Community Centre	£10.18	0.23	98%
2036	Atherstone Fire Station	£6.08	4.89	20%
2044	North Warwickshire Children & Family Service Team	£5.66	3.72	34%
2047	Bracebridge Court Home For Elderly People	£6.95	7.50	-8%
2056	Baddesley Library & Information Centre	£12.90	10.09	22%
2096	Orchard Blythe Home For Elderly People	£9.60	8.29	14%
2107	Dordon Library & Information Centre	£8.73	8.21	6%
2136	Kingsbury School, a Specialist Science & Maths Col	£6.47	6.18	4%
2142	Kingsbury Library & Information Centre	£10.11	15.54	-54%
2143	Kingsbury Water Park	£10.76	7.31	32%
2160	Polesworth International Language College	£6.28	5.73	9%
2168	Polesworth Library & Information Centre	£10.21	12.07	-18%
2171	Polesworth Fire Station	£6.97	8.12	-16%

2182	Water Orton Library & Information Centre	£9.83	11.82	-20%
2184	Warwick House - Atherstone	£8.29	9.70	-17%
2224	Coleshill Library & Information Centre	£7.30	6.16	16%
3008	Binley Woods Primary School	£7.51	1.21	84%
3009	Binley Woods Library & Information Centre	£6.74	7.57	-12%
3012	The Revel C.E. (Aided) Primary School Annexe	£5.83	5.67	3%
3014	Brinklow Fire Station	£12.07	15.42	-28%
3016	Clifton-Upon-Dunsmore C. of E. Primary School	£6.03	5.14	15%
3033	Dunchurch Infant School (Foundation)	£10.43	5.65	46%
3035	Dunchurch Branch Library	£15.02	12.52	17%
3042	Leamington Hastings CE Infant School	£6.95	6.83	2%
3148	Fawsley House	£6.98	2.81	60%
3204	Provost Williams C.E. Primary School	£5.88	4.80	18%
3205	Ryton Pools Country Park	£16.57	22.19	-34%
3225	Wolston Library	£13.82	8.10	41%
4028	Temple Herdewyke Primary School	£6.18	5.55	10%
4069	Ettington C.E. Primary School	£6.81	5.95	13%
4074	Fenny Compton Fire Station	£8.99	13.23	-47%
4079	Great Alne Primary School	£6.58	5.19	21%
4094	Henley-In-Arden Branch Library	£20.32	19.10	6%
4131	Loxley C.E. Primary School	£6.14	5.11	17%
4135	Moreton Morrell C.E. Primary School (Foundation)	£7.30	7.08	3%
4174	St James (Voluntary Aided) CE Primary School	£6.24	4.39	30%
4185	Southam Fire Station	£15.06	19.81	-32%
4200	Low Furlong Home For Elderly People	£8.51	7.35	14%
4216	Stratford-Upon-Avon High School, A Maths &	£5.76	4.59	20%
4234	Stratford-Upon-Avon Library & Information Centre	£6.20	4.99	20%
4235	Burton Farm L'dfill Site & Househ'd Waste Fac	£14.97	13.28	11%
4245	Stratford-Upon-Avon Fire Station	£6.07	5.62	7%
4248	MIND	£5.68	7.03	-24%
4249	Lower Meadow Home For Elderly People (Home Care Services was 4249 last year) (4247 was UPRN last year)	£31.71	4.68 + 0.54	84%
4272	Studley Library & Information Centre	£17.82	19.97	-12%
4276	Four Acres Home For Elderly People	£7.82	7.16	8%
4309	Wellesbourne Divisional Highways Depot (4309 was Wellesbourne Central Workshop last year) (Wellesbourne Divisional Highways Depot was 4308 last year)	£10.39	17.59	-69%
4314	Wootton Wawen C.E. Primary School	£7.28	14.32	-97%
4316	Wolverton Primary School (Foundation)	£12.72	18.33	-44%
4367	Wellesbourne Fire Station	£6.53	6.76	-4%
5010	Trading Standards Headquarters	£19.58	7.46	62%
5043	Cherry Orchard Household Waste Facility	£30.03	103.64	-245%
5058	Kenilworth Fire Station	£9.10	5.16	43%
5085	Telford Infant School	£5.76	5.30	8%
5087	Kingsway Community Primary School	£5.73	3.37	41%
5124	Fire & Rescue Service Headquarters	£11.53	11.91	-3%
5187	Shire Hall & Courts (Market Square)	£12.83	11.90	7%

5190	Judges House - General	£6.91	8.19	-19%
5196	Warks CC Staff Club, (Northgate House)	£12.58	11.50	9%
5252	County Records Office	£15.33	14.54	5%
5261	Warwick Fire Station	£20.70	25.50	-23%
5265	Park View Home For Elderly People	£6.05	6.15	-2%
5293	Whitnash Branch Library	£9.49	20.24	-113%
5339	Coten End Store (5339 was Coten End Primary School last year) (Coten End Store was 5352)	£7.18	4.71 + 0.72	24%
5377	Orion House, Social Services Offices	£7.26	0	100%
5384-1	Office Building 1 Saltisford Business Park	£16.27	16.57	-2%
5384-2	Office Building 2 Saltisford Business Park	£10.98	9.74	11%
5384-3	Office Building 3 Saltisford Business Park	£10.71	9.71	9%

Electricity cost per pupil (£ / pupil)

The most frequently occurring electricity cost per pupil fell between £20/pupil and £40/pupil. The average for all sites was £38.24/pupil.

Electricity cost per pupil in schools and academies ranged from £1.96/pupil up to £233.25/pupil.

The following properties have high electricity costs per pupil and need further investigation for the reasons for this.

UPRN	Electricity	Cost per pupil
1276	Oak Wood Secondary School	£233.25
1014	Exhall Grange School & Science College	£222.03
5405	Ridgeway School - Deansway	£148.32
5236	Round Oak : School, Support Service and Sports Col	£109.90
3073	Brooke School	£102.05
5087	Kingsway Community Primary School	£95.38
2061	Woodlands School (Formerly Blythe)	£87.24
3042	Leamington Hastings CE Infant School	£87.16
4077	Lighthorne Heath Primary School	£86.16
4316	Wolverton Primary School (Foundation)	£76.60
4226	Welcombe Hills School	£72.61
1119	Middlemarch School (Foundation)	£68.91
3033	Dunchurch Infant School (Foundation)	£66.75
5241	St Mary Immaculate Catholic Primary School Warwick	£64.68
5079	Campion School and Community College	£64.54
2106	Dordon Community Primary School	£64.23
2136	Kingsbury School, a Specialist Science & Maths Col	£58.86
1110	George Eliot Community School	£58.38
4216	Stratford-Upon-Avon High School, A Maths &	£57.72
4158	Salford Priors CE Primary School	£57.46
3008	Binley Woods Primary School	£56.62
5234	Aylesford School. A Specialist Language & Music Co	£55.72
4028	Temple Herdewyke Primary School	£54.69
2060	St Edwards Catholic Primary School	£54.58
1121	Stockingford Junior School	£53.82
2006	Herbert Fowler Junior School	£53.45
4093	St Mary's Catholic Primary School Henley in Arden	£53.41
1018	Race Leys Infant School	£52.78
2059	The Coleshill School - a Maths & Computing College	£52.51

5340	Lillington Primary School	£51.92
5291	Whitnash Primary School	£51.77
2011	Queen Elizabeth School & Sports College, Lower Sch	£51.57
4009	St Benedict's Catholic High School	£50.95
2001	Nursery Hill Primary School	£50.75
4079	Great Alne Primary School	£50.44
1158	Etone Technology Language Vocational College	£49.02
5233	Myton School (Foundation)	£48.21
3090	Bilton School A Maths & Computing College	£48.15
4005	Alcester Grammar School (Foundation)	£48.14
1122	Stockingford Early Years Centre & Library	£47.87
4135	Moreton Morrell C.E. Primary School (Foundation)	£47.09
5094	Trinity Catholic School, A Specialist Arts and	£47.09
1137	Alderman Smith School	£46.47
2005	Gun Hill Infant School	£45.83
1143	Queens CE Junior School	£45.59
2160	Polesworth International Language College	£45.37
4191	Shipston High School, a Specialist Technology Coll	£44.99
4223	Bishopton Primary School	£44.64
4057	Brailes C.E. Primary School	£44.21
3078	St Matthew's Bloxam C.E. Primary School	£44.11
4314	Wootton Wawen C.E. Primary School	£44.08
1019	Race Leys Junior School	£43.95
5239	Westgate Primary School	£43.53
4125	Acorns Primary School	£43.15
2140	Hurley Primary School	£43.06
4007	Our Lady's Catholic Primary School	£42.30
5226	Newburgh Primary School	£42.10
1142	All Saints C. of E. Primary School	£41.93
4294	Tysoe C.E. Primary School	£41.29
4174	St James (Voluntary Aided) CE Primary School	£40.68
4131	Loxley C.E. Primary School	£40.30
2209	Birchwood Primary School	£40.19

Electricity consumption per pupil (kWh / pupil)

The most frequently occurring electricity consumption per pupil fell between 200 kWh/pupil and 400 kWh/pupil. The average across all educational properties was 403 kWh/pupil.

Electricity consumption per pupil educational properties ranged from 22 kWh/pupil up to 2,592 kWh/pupil.

The following properties have high electricity consumption per pupil and need further investigation for the reasons for this.

UPRN	Electricity	kWh per pupil
1276	Oak Wood Secondary School	2,592
1014	Exhall Grange School & Science College	2,467
5405	Ridgeway School - Deansway	1,648
5236	Round Oak : School, Support Service and Sports Col	1,221
3073	Brooke School	1,134
5087	Kingsway Community Primary School	1,060
2061	Woodlands School (Formerly Blythe)	969
3042	Leamington Hastings CE Infant School	968
4077	Lighthorne Heath Primary School	957
4316	Wolverton Primary School (Foundation)	851
4226	Welcombe Hills School	807
1119	Middlemarch School (Foundation)	766
3033	Dunchurch Infant School (Foundation)	742
5241	St Mary Immaculate Catholic Primary School Warwick	719
5079	Campion School and Community College	717
2106	Dordon Community Primary School	714
2136	Kingsbury School, a Specialist Science & Maths Col	654
1110	George Eliot Community School	649
4216	Stratford-Upon-Avon High School, A Maths &	641
4158	Salford Priors CE Primary School	638
3008	Binley Woods Primary School	629
5234	Aylesford School. A Specialist Language & Music Co	619
4028	Temple Herdewyke Primary School	608
2060	St Edwards Catholic Primary School	606
1121	Stockingford Junior School	598
2006	Herbert Fowler Junior School	594
4093	St Mary's Catholic Primary School Henley in Arden	593
1018	Race Leys Infant School	586
2059	The Coleshill School - a Maths & Computing College	583
5340	Lillington Primary School	577
5291	Whitnash Primary School	575

2011	Queen Elizabeth School & Sports College, Lower Sch	573
4009	St Benedict's Catholic High School	566
2001	Nursery Hill Primary School	564
4079	Great Alne Primary School	560
4227	King Edward VI School	548
1158	Etone Technology Language Vocational College	545
5233	Myton School (Foundation)	536
3090	Bilton School A Maths & Computing College	535
4005	Alcester Grammar School (Foundation)	535
4135	Moreton Morrell C.E. Primary School (Foundation)	523
5094	Trinity Catholic School, A Specialist Arts and	523
1137	Alderman Smith School	516
2005	Gun Hill Infant School	509
1143	Queens CE Junior School	507
2160	Polesworth International Language College	504
4191	Shipston High School, a Specialist Technology Coll	500
4223	Bishopton Primary School	496
4057	Brailes C.E. Primary School	491
3078	St Matthew's Bloxam C.E. Primary School	490
4314	Wootton Wawen C.E. Primary School	490
1019	Race Leys Junior School	488
5239	Westgate Primary School	484
4125	Acorns Primary School	479
2140	Hurley Primary School	478
4007	Our Lady's Catholic Primary School	470
5226	Newburgh Primary School	468
1142	All Saints C. of E. Primary School	466
4294	Tysoe C.E. Primary School	459
3091	Hillmorton Primary School	452
4174	St James (Voluntary Aided) CE Primary School	452
4131	Loxley C.E. Primary School	448
2209	Birchwood Primary School	447
4173	Southam College	442
4069	Ettington C.E. Primary School	437
4206	Stockton Primary School	437
1029	St Giles Junior School	436
3074	Harris School	434
4168	Snitterfield Primary School	433
4221	Stratford-upon-Avon Grammar School For Girls	430
3085	Oakfield Primary School	427
2104	Curdworth Primary School	425
1007	Nicholas Chamberlaine Technology College	425
1249	Newdigate Primary School	423

4086	Haselor School (Foundation)	423
4089	Henley-In-Arden High School	423
2050	Austrey CE Primary School	420
4178	St Mary's Catholic Primary School Southam	419
1012	St Francis Catholic Primary School	419
1017	Ash Green School & Arts College	419
5230	All Saints C. of E. Junior School	403

Gas consumption per unit of floor area (kWh / m²)

The most frequently occurring gas consumption fell between 75 kWh/m² and 125 kWh/m². The average across all sites was 142 kWh/m².

Gas consumption per square metre of floor area in WCC properties ranged from 6.28 kWh/m² to 2,522 kWh/m².

The following properties (highlighted in the table) have high consumption and more than a 30% change in gas consumption kWh/m² since last year's CRC Report and need further investigation for the reasons for this.

UPRN	Gas	kWh per m ²	2011 kWh / m ²	% difference
2228	Old Bank House	2,522	3831	-52%
4175	Southam Youth Centre	1,323	1589	-20%
5287	Pageant House	861	175	80%
2096	Orchard Blythe Home For Elderly People	529	554	-5%
5058	Kenilworth Fire Station	418	492	-18%
2027	Atherstone Library & Information Centre	413	452	-9%
5254	Priory Bungalow	412	486	-18%
4247	Home Care Services (last year 4247 was Lower Meadow Home for Elderly People)	343	425	-24%
4249	Lower Meadow Home For Elderly People (last year 4249 was Home Care Services)	342	0	100%
3261	Registrars Office	335	408	-22%
4200	Low Furlong Home For Elderly People	334	321	4%
3144	Rugby Fire Station	331	381	-15%
1184	Nuneaton Fire Station	323	327	-1%
4382	Brookbank S.E.C.	322	459	-43%
2109	Dordon Shortwoods Social Education Centre	320	267	17%
3109	The Benn Education Centre	315	226	28%
4276	Four Acres Home For Elderly People	287	328	-14%
4008	St Nicholas C.E. (controlled) Primary School Alces	267	301	-13%
3146	Abbotsbury Home For Elderly People	258	357	-38%
4303	Wellesbourne C.E. Primary School Annexe	257	369	-44%
5242	Warwick Youth Centre	253	237	6%
1186	Caldwell Grange Home For Elderly People	251	309	-23%
5265	Park View Home For Elderly People	246	260	-6%
3108	St Andrew's Benn CE (VA) Primary School	246	276	-12%
4263	Studley Community Infant School	243	152	37%
4084	Harbury Branch Library	237	122	49%
5295	The Lawns Home For Elderly People	231	272	-18%

3087	The Merttens Centre	229	519	-127%
4255	The Saltway Centre & Stratford Family Centre	224	256	-14%
5191	Children & Family Services (16 Old Square)	223	300	-35%
2080	Coleshill Fire Station	222	265	-19%
2184	Warwick House - Atherstone	221	269	-22%
2047	Bracebridge Court Home For Elderly People	219	251	-15%
2171	Polesworth Fire Station	209	603	-189%
4188	Southam and Shipston Adult Team	207	221	-7%
1198	Ramsden Resource Centre	204	233	-14%
2006	Herbert Fowler Junior School	202	218	-8%
5124	Fire & Rescue Service Headquarters	202	220	-9%
5248	County Museum (Market Hall)	201	276	-37%
5341	Evergreen Home Care Day Centre	199	0	100%
2136	Kingsbury School, a Specialist Science & Maths Col	197	257	-30%
2036	Atherstone Fire Station	195	269	-38%
5029	Kenilworth School and Sports College - Upper	195	0	100%
5264	The Emscote Social Education Centre	192	237	-23%
3073	Brooke School	187	208	-11%
1061	Bedworth The Bridgeway Social Education Centre	182	114	37%
1132	Park House Youth Centre	180	211	-17%
4012	Alcester Library & Information Centre	180	379	-111%
1080	The Kersley Teaching & Learning Centre	179	213	-19%
4389	Winton House	173	246	-42%
2224	Coleshill Library & Information Centre	171	226	-32%
4245	Stratford-Upon-Avon Fire Station	171	189	-11%
5190	Judges House - General	170	224	-32%
4367	Wellesbourne Fire Station	166	256	-54%
3107	St Marie's Catholic Infant School Rugby	164	214	-30%
1121	Stockingford Junior School	160	194	-21%
5033	Thorns Community Infant School	159	209	-31%
1127	Manor Park Community School	159	183	-15%
1029	St Giles Junior School	158	188	-19%
1014	Exhall Grange School & Science College	157	104	34%
2059	The Coleshill School - a Maths & Computing College	157	159	-1%
4230	St Gregory's Catholic Primary School	156	204	-31%
5268	Myton Park Centre	156	176	-13%
5252	County Records Office	155	171	-10%
4174	St James (Voluntary Aided) CE Primary School	155	195	-26%
1062	Mayfield Home For Elderly People	153	284	-86%
4178	St Mary's Catholic Primary School Southam	150	200	-33%
2005	Gun Hill Infant School	148	177	-20%

2061	Woodlands School (Formerly Blythe)	148	148	0%
5034	Kenilworth Nursery School	147	221	-50%
2209	Birchwood Primary School	144	109	24%

Gas cost per unit of floor area (£ / m²)

The most frequently occurring gas cost fell between £2/m² and £4/m². The average across all sites was £3.97 / m².

Gas cost per square metre of floor area in WCC properties ranged from £0.18/m² up to £70.61/m².

The following properties (highlighted in the table) have high costs and more than a 30% change in gas cost £/m² since last year's CRC Report and need further investigation for the reasons for this.

UPRN	Gas	Cost per m ²	2011 £ cost per m ²	% difference
2228	Old Bank House	£70.61	106	-33%
4175	Southam Youth Centre	£37.03	44	-16%
5287	Pageant House	£24.10	5	382%
2096	Orchard Blythe Home For Elderly People	£14.81	15	-1%
5058	Kenilworth Fire Station	£11.71	14	-16%
2027	Atherstone Library & Information Centre	£11.55	12	-4%
5254	Priory Bungalow	£11.55	13	-11%
4247	Home Care Services (4247 was Lower Meadow HEP last year) (4249 was Home Care Services last year)	£9.62	12	-20%
4249	Lower Meadow Home For Elderly People (4249 was Home Care Services last year)	£9.58	0	#DIV/0!
3261	Registrars Office	£9.37	11	-15%
4200	Low Furlong Home For Elderly People	£9.35	9	4%
3144	Rugby Fire Station	£9.28	11	-16%
1184	Nuneaton Fire Station	£9.04	9	0%
4382	Brookbank S.E.C.	£9.03	13	-31%
2109	Dordon Shortwoods Social Education Centre	£8.95	7	28%
3109	The Benn Education Centre	£8.81	6	47%
4276	Four Acres Home For Elderly People	£8.02	9	-11%
4008	St Nicholas C.E. (controlled) Primary School Alces	£7.47	8	-7%
3146	Abbotsbury Home For Elderly People	£7.23	10	-28%
4303	Wellesbourne C.E. Primary School Annexe	£7.19	10	-28%
5242	Warwick Youth Centre	£7.08	7	1%
1186	Caldwell Grange Home For Elderly People	£7.02	9	-22%

5265	Park View Home For Elderly People	£6.90	7	-1%
3108	St Andrew's Benn CE (VA) Primary School	£6.88	8	-14%
4263	Studley Community Infant School	£6.81	4	70%
4084	Harbury Branch Library	£6.62	3	121%
5295	The Lawns Home For Elderly People	£6.48	8	-19%
3087	The Merttens Centre	£6.41	14	-54%
4255	The Saltway Centre & Stratford Family Centre	£6.28	7	-10%
5191	Children & Family Services (16 Old Square)	£6.25	8	-22%
2080	Coleshill Fire Station	£6.23	7	-11%
2184	Warwick House - Atherstone	£6.18	7	-12%
2047	Bracebridge Court Home For Elderly People	£6.13	7	-12%
2171	Polesworth Fire Station	£5.85	17	-66%
4188	Southam and Shipston Adult Team	£5.79	6	-4%
1198	Ramsden Resource Centre	£5.71	6	-5%
2006	Herbert Fowler Junior School	£5.67	6	-6%
5124	Fire & Rescue Service Headquarters	£5.66	6	-6%
5248	County Museum (Market Hall)	£5.63	8	-30%
5341	Evergreen Home Care Day Centre	£5.57	0	#DIV/0!
2136	Kingsbury School, a Specialist Science & Maths Col	£5.51	7	-21%
2036	Atherstone Fire Station	£5.47	7	-22%
5029	Kenilworth School and Sports College - Upper (last year - 5029 was Kenilworth School and Sports College - Lower and 5026 was Kenilworth School and Sports College 6th Form = 3	£5.47	0	#DIV/0!
5264	The Emscote Social Education Centre	£5.39	7	-23%
3073	Brooke School	£5.23	6	-13%
1061	Bedworth The Bridgeway Social Education Centre	£5.10	3	70%
1132	Park House Youth Centre	£5.05	6	-16%
4012	Alcester Library & Information Centre	£5.03	10	-50%
1080	The Kersley Teaching & Learning Centre	£5.01	6	-17%
4389	Winton House	£4.84	7	-31%
2224	Coleshill Library & Information Centre	£4.79	6	-20%
4245	Stratford-Upon-Avon Fire Station	£4.78	5	-4%
5190	Judges House - General	£4.77	6	-21%
4367	Wellesbourne Fire Station	£4.64	7	-34%
3107	St Marie's Catholic Infant School Rugby	£4.59	6	-24%
1121	Stockingford Junior School	£4.48	5	-10%

5033	Thorns Community Infant School	£4.46	6	-26%
1127	Manor Park Community School	£4.44	5	-11%
1029	St Giles Junior School	£4.43	5	-11%
1014	Exhall Grange School & Science College	£4.40	3	47%
2059	The Coleshill School - a Maths & Computing College	£4.40	4	10%
4230	St Gregory's Catholic Primary School	£4.37	6	-27%
5268	Myton Park Centre	£4.36	5	-13%
5252	County Records Office	£4.35	5	-13%
4174	St James (Voluntary Aided) CE Primary School	£4.33	5	-13%
1062	Mayfield Home For Elderly People	£4.29	8	-46%
4178	St Mary's Catholic Primary School Southam	£4.19	6	-30%
2005	Gun Hill Infant School	£4.15	5	-17%
2061	Woodlands School (Formerly Blythe)	£4.14	4	3%
5034	Kenilworth Nursery School	£4.12	6	-31%
2209	Birchwood Primary School	£4.05	3	35%

Gas cost per pupil (£ / pupil)

The most frequently occurring gas cost per pupil fell between £15/pupil and £25/pupil. The average across just educational properties was £26.84/pupil.

Gas cost per pupil ranged from £1.33/pupil up to £191.57/pupil.

The following properties have high gas costs per pupil and need further investigation for the reasons for this.

UPRN	Gas	Cost per pupil / staff
1014	Exhall Grange School & Science College	£191.57
3073	Brooke School	£128.09
2006	Herbert Fowler Junior School	£103.70
2061	Woodlands School (Formerly Blythe)	£101.75
1276	Oak Wood Secondary School	£88.44
4008	St Nicholas C.E. (controlled) Primary School Alces	£68.24
1127	Manor Park Community School	£67.36
2106	Dordon Community Primary School	£66.05
5087	Kingsway Community Primary School	£64.21
4090	River House School	£64.08
4226	Welcombe Hills School	£61.29
1121	Stockingford Junior School	£54.02
5340	Lillington Primary School	£53.07
4227	King Edward VI School	£50.97
2136	Kingsbury School, a Specialist Science & Maths Col	£50.15
3108	St Andrew's Benn CE (VA) Primary School	£48.40
5236	Round Oak : School, Support Service and Sports Col	£47.30
2059	The Coleshill School - a Maths & Computing College	£46.80
1143	Queens CE Junior School	£46.48
4178	St Mary's Catholic Primary School Southam	£45.23
4191	Shipston High School, a Specialist Technology Coll	£44.50
4263	Studley Community Infant School	£43.23
3078	St Matthew's Bloxam C.E. Primary School	£42.42
5079	Campion School and Community College	£42.36
2005	Gun Hill Infant School	£41.51
5241	St Mary Immaculate Catholic Primary School Warwick	£40.41
1029	St Giles Junior School	£38.25
1007	Nicholas Chamberlaine Technology College	£38.20
3090	Bilton School A Maths & Computing College	£36.87
1119	Middlemarch School (Foundation)	£36.36

5033	Thorns Community Infant School	£36.14
1158	Etone Technology Language Vocational College	£36.02
5234	Aylesford School. A Specialist Language & Music Co	£35.66
1249	Newdigate Primary School	£35.49
1153	Chilvers Coton Community Infant School	£35.21
4230	St Gregory's Catholic Primary School	£35.17
5039	St John's Primary School	£34.41
5233	Myton School (Foundation)	£33.63
5003	Barford St Peters C. of E. Primary School	£33.46
2014	Racemeadow Primary School	£32.90
1110	George Eliot Community School	£32.55
3112	Lawrence Sheriff School	£31.75
2065	High Meadow Infant School	£31.03
4089	Henley-In-Arden High School	£30.97
5074	North Leamington School - New Aug 09	£30.62
2209	Birchwood Primary School	£30.48
5034	Kenilworth Nursery School	£30.42
3262	Paddox Primary School	£30.01
5239	Westgate Primary School	£29.74
2139	Wood End Primary School	£29.24
5226	Newburgh Primary School	£29.23
1012	St Francis Catholic Primary School	£28.59
1112	Higham Lane School A Business & Enterprise College	£28.41
1076	Arden Forest Infant School	£28.40
4223	Bishopton Primary School	£28.30
4174	St James (Voluntary Aided) CE Primary School	£28.18
2124	Hartshill School (Foundation)	£28.04
2225	Kingsbury Primary School	£28.02
1016	Wheelwright Lane Primary School	£27.86
2001	Nursery Hill Primary School	£27.75
2208	Water Orton Primary School	£27.66
5016	Our Lady & St Teresa's Catholic Primary School	£27.52

Gas consumption per pupil (kWh / pupil)

The most frequently occurring gas consumption per primary pupil fell between 550kWh/pupil and 900 kWh/pupil.

The most frequently occurring gas consumption per secondary pupil fell between 700 kWh/pupil and 950 kWh/pupil.

The average across all educational properties was £959 kWh/pupil

The following properties have high gas consumption per pupil and need further investigation for the reasons for this.

UPRN	Gas	kWh per pupil / staff
1014	Exhall Grange School & Science College	6,841.96
3073	Brooke School	4,574.62
2006	Herbert Fowler Junior School	3,703.49
2061	Woodlands School (Formerly Blythe)	3,633.79
1276	Oak Wood Secondary School	3,158.40
4008	St Nicholas C.E. (controlled) Primary School Alces	2,437.32
1127	Manor Park Community School	2,405.64
2106	Dordon Community Primary School	2,358.95
5087	Kingsway Community Primary School	2,293.21
4090	River House School	2,288.41
4226	Welcombe Hills School	2,189.07
1121	Stockingford Junior School	1,929.35
5340	Lillington Primary School	1,895.23
4227	King Edward VI School	1,820.27
2136	Kingsbury School, a Specialist Science & Maths Col	1,790.91
3108	St Andrew's Benn CE (VA) Primary School	1,728.68
5236	Round Oak : School, Support Service and Sports Col	1,689.33
2059	The Coleshill School - a Maths & Computing College	1,671.26
1143	Queens CE Junior School	1,659.89
4178	St Mary's Catholic Primary School Southam	1,615.47
4191	Shipston High School, a Specialist Technology Coll	1,589.29
4263	Studley Community Infant School	1,543.83
3078	St Matthew's Bloxam C.E. Primary School	1,515.13
5079	Campion School and Community College	1,512.76
2005	Gun Hill Infant School	1,482.38
5241	St Mary Immaculate Catholic Primary School Warwick	1,443.33
1029	St Giles Junior School	1,366.17
1007	Nicholas Chamberlaine Technology College	1,364.18

3090	Bilton School A Maths & Computing College	1,316.94
1119	Middlemarch School (Foundation)	1,298.61
5033	Thorns Community Infant School	1,290.66
1158	Etone Technology Language Vocational College	1,286.47
5234	Aylesford School. A Specialist Language & Music Co	1,273.53
1249	Newdigate Primary School	1,267.56
1153	Chilvers Coton Community Infant School	1,257.62
4230	St Gregory's Catholic Primary School	1,256.06
5039	St John's Primary School	1,229.11
5233	Myton School (Foundation)	1,201.07
5003	Barford St Peters C. of E. Primary School	1,195.05
2014	Racemeadow Primary School	1,174.86
1110	George Eliot Community School	1,162.64
3112	Lawrence Sheriff School	1,133.87
2065	High Meadow Infant School	1,108.12
4089	Henley-In-Arden High School	1,106.02
5074	North Leamington School - New Aug 09	1,093.66
2209	Birchwood Primary School	1,088.56
5034	Kenilworth Nursery School	1,086.51
3262	Paddox Primary School	1,071.82
5239	Westgate Primary School	1,061.97
2139	Wood End Primary School	1,044.27
5226	Newburgh Primary School	1,043.90
1012	St Francis Catholic Primary School	1,020.92
1112	Higham Lane School A Business & Enterprise College	1,014.75
1076	Arden Forest Infant School	1,014.15
4223	Bishopton Primary School	1,010.79
4174	St James (Voluntary Aided) CE Primary School	1,006.56
2124	Hartshill School (Foundation)	1,001.36
2225	Kingsbury Primary School	1,000.66
1016	Wheelwright Lane Primary School	994.84
2001	Nursery Hill Primary School	991.15
2208	Water Orton Primary School	987.99
5016	Our Lady & St Teresa's Catholic Primary School	982.84

Potential Savings cf. Benchmarks

Carbon Trust Benchmarks

Benchmarks for local authority buildings are published in the Carbon Trust 'Energy Consumption Guide'. The benchmarks cover a range of local authority building uses and are based on national data.

Comparison of Site Energy Consumption with Benchmark Information			
Utility	Benchmarks for Primary School Building's		This Site's Performance kWh/m ² /yr
	Good practice Value kWh/m ² /yr	Typical Value kWh/m ² /yr	
Electricity	20	28	56
Fossil Fuel (mains gas & Oil)	126	173	171
Utility	Benchmarks for Secondary School Building's		This Site's Performance kWh/m ² /yr
	Lower Value kWh/m ² /yr	Upper Value kWh/m ² /yr	
Electricity	24	30	49
Fossil Fuel (gas)	136	174	143

Potential Gas Savings in Primary Schools (if benchmark was achieved)

The following table shows estimated potential total annual cost savings (£30,000) if these primary schools were able to reduce their fossil fuel consumption to the good practice benchmark of 126 kWh/m²/year. Many other primary schools appear to be performing better than the good practice benchmark.

UPRN	Gas	Good practice benchmark kWh / m2	Total Est Possible Annual Cost Savings £
1012	St Francis Catholic Primary School	126	£31
1016	Wheelwright Lane Primary School	126	£844
2106	Dordon Community Primary School	126	£798
2209	Birchwood Primary School	126	£1,569
3057	Our Lady's Catholic Primary School	126	£235
3078	St Matthew's Bloxam C.E. Primary School	126	£22
3108	St Andrew's Benn CE (VA) Primary School	126	£6,937
4008	St Nicholas C.E. (controlled) Primary School Alces	126	£11,704
4100	Hampton Lucy C.E. Primary School	126	£281
4174	St James (Voluntary Aided) CE Primary School	126	£832
4178	St Mary's Catholic Primary School Southam	126	£984
4229	Stratford-Upon-Avon Primary School	126	£81
4230	St Gregory's Catholic Primary School	126	£1,463
4303	Wellesbourne C.E. Primary School Annexe	126	£2,923
5003	Barford St Peters C. of E. Primary School	126	£235
5039	St John's Primary School	126	£670
5087	Kingsway Community Primary School	126	£700
		Total	£30,307

Potential Electricity Savings in Primary Schools (if benchmark was achieved)

The following table shows estimated potential total annual cost savings (£462,000) if these primary schools were able to reduce their electricity consumption to the good practice benchmark of 20 kWh/m²/year.

UPRN	Electricity	Good practice benchmark kWh / m2	Total Est Possible Annual Cost Savings £
1009	St Michael's C.E. Primary School	20	£2,679
1012	St Francis Catholic Primary School	20	£4,802
1016	Wheelwright Lane Primary School	20	£816.16
1081	Keresley Newland Primary School	20	£1,021.54
1108	St Paul's CE Primary School, Nuneaton	20	£6,600.11
1116	St Anne's Catholic Primary School	20	£2,282.51
1124	St Nicolas CE (Voluntary Aided) Primary School Nun	20	£4,857.44
1131	Wembrook Primary School	20	£5,729.29
1142	All Saints C. of E. Primary School	20	£7,242.91
1145	Park Lane Primary School	20	£3,278.21
1247	Goodyers End Primary School	20	£6,521.89
1248	Milby Primary School	20	£3,109.95
1249	Newdigate Primary School	20	£4,601.57
1250	Weddington Primary School	20	£2,278.93
2001	Nursery Hill Primary School	20	£4,754.83
2012	Outwoods Primary School (formerly Oakfield Junior)	20	£3,243.40
2013	Outwoods Primary School (formerly Arden Hill Inf)	20	£4,434.39
2014	Racemeadow Primary School	20	£1,572.64
2021	St Benedict's Catholic Primary School	20	£2,487.47
2050	Austrey CE Primary School	20	£2,173.41
2053	Woodside C.E. Primary School	20	£2,628.18
2060	St Edwards Catholic Primary School	20	£7,636
2064	Coleshill C. of E. Primary School	20	£5,634.45
2104	Curdworth Primary School	20	£2,895.88
2106	Dordon Community Primary School	20	£3,765.87
2115	Bournebrook C.E. Primary School	20	£2,818.91
2139	Wood End Primary School	20	£2,113.49
2140	Hurley Primary School	20	£4,240.94

2157	Newton Regis CE Primary School	20	£1,908
2164	The Nethersole School CE Primary	20	£1,871.87
2166	Warton Nethersole C.E. Primary School	20	£1,821.17
2177	Shustoke CE Primary School	20	£3,197.75
2208	Water Orton Primary School	20	£5,270.29
2209	Birchwood Primary School	20	£10,705.41
2225	Kingsbury Primary School	20	£4,285.01
3008	Binley Woods Primary School	20	£8,741
3012	The Revel C.E. (Aided) Primary School Annexe	20	£1,162.96
3016	Clifton-Upon-Dunsmore C. of E. Primary School	20	£4,563.18
3044	Long Lawford Primary School	20	£1,340
3047	The Revel C.E. (Aided) Primary School	20	£5,308.87
3052	Newbold Riverside Primary School	20	£3,844.85
3057	Our Lady's Catholic Primary School	20	£1,647.34
3068	Eastlands Primary School	20	£2,369.27
3075	Rokeby Primary (Former Infant) School	20	£2,733
3078	St Matthew's Bloxam C.E. Primary School	20	£5,694.61
3085	Oakfield Primary School	20	£5,482.13
3091	Hillmorton Primary School	20	£5,418.76
3092	English Martyrs Catholic Primary School	20	£2,671.58
3094	St Oswald's C.E. Primary School	20	£3,818.70
3105	Northlands Primary School	20	£2,301
3108	St Andrew's Benn CE (VA) Primary School	20	£1,180.21
3204	Provost Williams C.E. Primary School	20	£4,688.03
3210	Knightlow C.E. Primary School	20	£4,483.10
3223	St Margaret's CE Primary School	20	£3,901.23
3229	Wolvey CE Primary School	20	£2,494
3262	Paddox Primary School	20	£1,003.95
3276	Cawston Grange Primary School	20	£5,049.23
4007	Our Lady's Catholic Primary School	20	£2,661
4008	St Nicholas C.E. (controlled) Primary School Alces	20	£5,955.10
4025	Wilmcote C.E. (Voluntary Aided) Primary School	20	£1,100
4028	Temple Herdewyke Primary School	20	£3,101.47
4035	Bishops Itchington Primary School	20	£1,264.34
4057	Brailes C.E. Primary School	20	£1,998.11
4064	Claverdon Primary School	20	£3,042.68
4067	Coughton C.E. Primary School	20	£1,480.48

4069	Ettington C.E. Primary School	20	£4,576.18
4073	The Dasset C.E. Primary School	20	£3,315.29
4077	Lighthorne Heath Primary School	20	£3,859
4079	Great Alne Primary School	20	£3,444
4083	Harbury CE Primary School	20	£4,108.91
4092	Henley-in-Arden Voluntary Aided CE Primary School	20	£2,239.51
4093	St Mary's Catholic Primary School Henley in Arden	20	£1,576.04
4100	Hampton Lucy C.E. Primary School	20	£789
4110	Kineton C. of E. (Voluntary Aided) Primary School	20	£931.28
4125	Acorns Primary School	20	£2,130.12
4129	Long Itchington C.E. Primary School	20	£3,085
4131	Loxley C.E. Primary School	20	£1,053.97
4135	Moreton Morrell C.E. Primary School (Foundation)	20	£2,980.67
4144	Quinton Primary School	20	£1,252.71
4158	Salford Priors CE Primary School	20	£3,333.60
4159	Dunnington C.of E. (V.A.) Primary School	20	£2,307.28
4168	Snitterfield Primary School	20	£2,272.05
4174	St James (Voluntary Aided) CE Primary School	20	£4,632.62
4176	Southam Primary School	20	£3,141.95
4178	St Mary's Catholic Primary School Southam	20	£2,526.57
4193	Shipston Primary School (Foundation)	20	£5,483
4206	Stockton Primary School	20	£2,576.88
4219	The Willows C.E. Primary School	20	£4,223.59
4223	Bishopton Primary School	20	£4,054
4224	Alveston C.of E. Primary School	20	£2,820.29
4225	Thomas Jolyffe Primary School	20	£5,782.88
4228	Bridge Town Primary School	20	£4,649.20
4229	Stratford-Upon-Avon Primary School	20	£2,007.59
4230	St Gregory's Catholic Primary School	20	£84.22
4268	St Mary's Catholic Primary School Studley	20	£3,900.33
4271	Mappleborough Green C. E. Primary School	20	£1,796.81
4284	Temple Grafton C.E. Primary School	20	£1,169.95
4285	Newbold & Tredington Primary School (Tredington)	20	£1,200.83
4286	Newbold & Tredington Primary School (Newbold)	20	£307.04

4294	Tysoe C.E. Primary School	20	£4,422.49
4298	Welford-On-Avon Primary School	20	£2,916.32
4302	Wellesbourne C.E. Primary School	20	£5,015.84
4303	Wellesbourne C.E. Primary School Annex	20	£716.65
4314	Wootton Wawen C.E. Primary School	20	£5,076.05
4316	Wolverton Primary School (Foundation)	20	£6,313.14
4366	St Lawrence C.E. (Voluntary Aided) Primary School	20	£1,055.30
4376	Bidford-on-Avon Primary School / Library	20	£5,449.32
5003	Barford St Peters C. of E. Primary School	20	£1,738.82
5006	Bishop's Tachbrook C. of E. Primary School	20	£2,984.96
5009	Budbrooke Primary School	20	£5,761.64
5015	Cubbington CE Primary School	20	£2,530.31
5016	Our Lady & St Teresa's Catholic Primary School	20	£825.34
5021	The Ferncumbe CE Primary School	20	£3,080.66
5027	Priors Field Primary School	20	£3,906.67
5032	St Nicholas CE Primary School Kenilworth	20	£3,103.25
5036	Burton Green C E Primary School	20	£1,507.21
5037	Clinton Primary School	20	£4,150.96
5039	St John's Primary School	20	£1,375.76
5041	St Augustine's Catholic Primary School	20	£3,389.96
5066	Lapworth CE Primary School	20	£2,575.24
5073	Milverton Primary School	20	£2,506.70
5087	Kingsway Community Primary School	20	£8,372.86
5088	St Patrick's Catholic Primary School	20	£4,228.99
5089	Sydenham Primary School	20	£2,449.82
5090	St Paul's CE Primary School, Leamington Spa	20	£4,970.41
5096	Shrubland Street Community Primary School	20	£1,072.12
5098	St Anthony's Catholic Primary School	20	£1,251.02
5100	Brookhurst Primary School	20	£4,617.49
5101	Clapham Terrace Community Primary School	20	£1,840.16
5104	St Peter's Catholic Primary School	20	£1,840.32
5226	Newburgh Primary School	20	£5,729.74
5228	Woodloes Primary School	20	£6,641.73
5239	Westgate Primary School	20	£3,333.76
5241	St Mary Immaculate Catholic Primary School Warwick	20	£3,889.80

5291	Whitnash Primary School	20	£3,652.25
5292	St Joseph's Catholic Primary School	20	£2,094.26
5340	Lillington Primary School	20	£4,178.59
5348	All Saints C.of E. Community Primary School	20	£2,047.27
		Total	£462,005

Energy Efficiency Best Practice Benchmarks

Category	Electricity kWh/m ²	Fossil Fuel kWh/m ²	
Town Hall	111	205	Typical
Town Hall	84	138	Good practice
Air conditioned civic offices *	203	160	Typical
Air conditioned civic offices *	115	87	Good practice
Naturally ventilated civic offices *	81	143	Typical
Naturally ventilated civic offices *	51	75	Good practice
Libraries	46	210	Typical
Libraries	32	133	Good practice
Museums	70	142	Typical
Museums	57	96	Good practice
Care homes - residential	75	555	Typical
Care homes - residential	59	492	Good practice
Sheltered housing	68	432	Typical
Sheltered housing	46	314	Good practice
Community centres	33	187	Typical
Community centres	22	125	Good practice
Day centres	68	349	Typical
Day centres	51	203	Good practice
Depots	39	311	Typical
Depots	37	283	Good practice
<div> <div>ECG087</div> <div>Energy Consumption Guide</div> <div>Energy use in Local Authority Buildings</div> </div>			

The Energy Consumption Tables in Energy Consumption Guide ECG087 do not contain benchmarks for all the types of WCC property and the document was published in October 2001 so is somewhat out of date.

WCC Electricity Benchmarks

The average kWh/m² for WCC Social Education Centres was 45 kWh/m².
 The average kWh/m² for WCC Homes for Elderly People was 52 kWh/m².
 The average kWh/m² for WCC Business Centres was 59 kWh/m².
 The average kWh/m² for WCC Fire Stations was 66 kWh/m².

The average kWh/m² for WCC Youth and Community Centres was 68 kWh/m².
 The average kWh/m² for WCC Early Years and Nursery Centres was 70 kWh/m².
 The average kWh/m² for WCC Library & Information Centres was 74 kWh/m².
 The average kWh/m² for WCC Depots was 72 kWh/m².
 The average kWh/m² for WCC Offices was 84 kWh/m².
 The average kWh/m² for WCC Waste Facilities was 84 kWh/m².
 The average kWh/m² for WCC Country Parks was 93 kWh/m².
 The average kWh/m² for WCC Day Centres was 111 kWh/m².
 The average kWh/m² for WCC Museums was 155 kWh/m².

Potential Electricity Savings (if benchmark was achieved)

The following table shows estimated potential total annual cost savings (£131,000) if these properties were able to reduce their electricity consumption to the WCC average benchmark.

UPRN	Electricity	WCC average benchmark kWh / m2	Total Est Possible Annual Cost Savings £
UPRN	Electricity		£3,381
1013	Bedworth Youth Centre	68	£1,296.40
1021	Bedworth Heath Nursery & Children's Centre	70	£1,552.53
1034	Bedworth Heath Library & Information Centre	74	£175.20
1037	Warwickshire Fire & Rescue Service Training Centre	66	£571.08
1083	Keresley Newland Library & Information Centre	74	£934.46
1097	Centenary Business Centre	59	£192.59
1184	Nuneaton Fire Station	66	£2,806.76
1198	Ramsden Resource Centre	111	£3,716.98
1259	Vehicle Depot, Units D2 & D3 Greenwood Court	72	£19,142.32
1270	Eliot Park Innovation Centre	59	£1,020.55
1301	Willow Road Social Education Centre	45	£1,423
2044	North Warwickshire Children & Family Service Team	68	£1,275.67
2055	Baddesley Ensor Youth Club	68	£899.08

2080	Coleshill Fire Station	66	£5,028.28
2096	Orchard Blythe Home For Elderly People	52	£550.90
2141	Kingsbury Youth & Community Centre	68	£544.05
2142	Kingsbury Library & Information Centre	74	£3,557.54
2143	Kingsbury Water Park	89	£458
2168	Polesworth Library & Information Centre	74	£79.87
2171	Polesworth Fire Station	66	£516.74
2182	Water Orton Library & Information Centre	74	£1,041.89
2210	Vehicle depot, unit 4g	72	£172
3009	Binley Woods Library & Information Centre	74	£827.19
3014	Brinklow Fire Station	66	£1,205
3146	Abbotsbury Home For Elderly People	52	£3,052.86
3152	Children & Family Service	84	£2,413.04
3205	Ryton Pools Country Park	89	£906.89
4055	Bidford On Avon Fire Station	66	£431.17
4091	Henley Youth and Community Centre	68	£1,164.33
4180	Southam Library	74	£1,412.77
4199	Shipston-On-Stour Fire Station	66	£3,418.82
4232	Tyler House Youth & Community Centre	68	£91
4234	Stratford-Upon-Avon Library & Information Centre	74	£1,546.37
4248	MIND	111	£5,669.23
4255	The Saltway Centre & Stratford Family Centre	111	£1,056.61
4272	Studley Library & Information Centre	74	£1,591.98
4305	Wellesbourne Library & Community Centre	74	£2,900.66
4309	Wellesbourne Divisional Highways Depot	72	£15.94
4390	Suite 1, Arden Court	84	£16,374.30
5010	Trading Standards Headquarters	84	£322.82
5043	Cherry Orchard Household Waste Facility	84	£414.88
5110	Lillington Library & Information Centre	74	£18,032.49
5248	County Museum (Market Hall)	155	£2,157.73
5254	Priory Bungalow	84	£3,248.38
5264	The Emscote Social Education Centre	45	£3,040.51
5295	The Lawns Home For Elderly People	52	£7,104.11
5362	Warks Youth Offending Team	68	£2,097.18
		Total	£130,833

WCC Gas Benchmarks

The average kWh/m² for WCC Social Education Centres was 191 kWh/m².

The average kWh/m² for WCC Homes for Elderly People was 285 kWh/m².

The average kWh/m² for WCC Fire Stations was 237 kWh/m².

The average kWh/m² for WCC Youth and Community Centres was 120 kWh/m².

The average kWh/m² for WCC Early Years and Nursery Centres was 101 kWh/m².

The average kWh/m² for WCC Museums was 147 kWh/m².

The average kWh/m² for WCC Offices was 107 kWh/m².

The average kWh/m² for WCC Library & Information Centres was 150 kWh/m².

WCC System Build Gas Consumption Benchmarks

Gas consumption in 291 System Build properties was looked at to see if it was possible to come up with benchmark figures for each different building system type. By looking at the suite of energy efficiency measures at each construction type it was hoped that we could produce a list of preferred options to guide future investment in improving the thermal efficiency of WCC property.

Property	Building	Phase	Floor Area (sq.m)	% of Total
▶ Aluminium - British Aeroplane Company			1,312	0.13%
▶ Anderson Construction			1,668	0.16%
▶ Block Walled			1,753	0.17%
▶ Brick (shed)			525	0.05%
▶ Carwood Wharton Timber			1,171	0.12%
▶ Clasp Type 1			1,547	0.15%
▶ Clasp Type 3			10,535	1.03%
▶ Clasp Type 4			21,141	2.08%
▶ Clasp Type 5			26,511	2.60%
▶ Clasp Type 6			8,988	0.88%
▶ Clasp Type 6b			5,125	0.50%
▶ Condor Kingsworth - Sectional Concrete			1,589	0.16%
▶ Corrugated Iron			9	0.00%
▶ Green Houses			165	0.02%
▶ Horsa Huts			1,278	0.13%
▶ Intergrid			18,874	1.85%
▶ Metal (shed)			385	0.04%
▶ Rc Framed			23,311	2.29%
▶ Sectional Concrete			1,972	0.19%
▶ Steel Framed			92,757	9.11%
▶ Stone Walled			2,677	0.26%
▶ Temporary Classroom			235	0.02%
▶ Timber			3,931	0.39%
▶ Timber Framed			16,835	1.65%
▶ Timber (shed)			2,051	0.20%
▶ Traditional			689,146	67.69%
▶ Traditional Brick And Tile			2,768	0.27%
▶ Traditional Metal Clad			3,367	0.33%
▶ Traditional Thatched Roof			224	0.02%
▶ Vic Hallam			76,192	7.48%
▶ (Not Categorized)			58	0.01%
			1,018,100	100.00%

The investigations revealed a wide variety of energy consumption in each category of system build properties which meant that no accurate benchmark could be assumed.

The average annual gas consumption per unit of floor area for all WCC system builds was 153 kWh/m² within the range of 9 to 601 kWh/m².

CLASP

The Consortium of Local Authorities Special Programme (CLASP) system was in continual development from 1957 (Mark 2) until June 2005 (Mark 6b). CLASP was popular in coal mining areas partly because the system permitted fairly straightforward replacement of subsidence damaged sections of building. The system utilised prefabricated light gauge steel frames which could be built economically up to a maximum of 4 storeys. The frames were finished in a variety of claddings and their modular nature could be employed to produce architecturally satisfying buildings. Initially developed solely for schools, the system was also used to provide offices and housing. Each time there was a significant change in the System's development a new Mark was introduced. The system had a design life of 60 years.

The average annual gas consumption per unit of floor area for WCC CLASP buildings was 142 kWh/m² within the range of 79 to 195 kWh/m².

Location	UPRN	Building Usage	Principal building type	Sub types	Building age (year main element constructed)	Gas KWh / M ² / year
Southam Youth Centre	4175	Community Centre	CL4		1966	
Race Leys Junior School	1019	Primary School	CL		1985	140.41
Croft Junior School	1107	Primary School	CL		1977	130.64
Binley Woods Primary School	3008	Primary School	CL	CL5,CL6	1972	78.71
Woodloes Primary School	5228	Primary School	CL5		1976	195.17
Polesworth International Language College	2160	School	CL	TRAD, CL5, CL1, CL4, CL6, CL1, SF	1953	151.83
Alcester High School Technology College	4006	School	CL3	TRA, SF, CL6	1964	132.66
Brownsover Community School	3233	School	CL6		1989	165.38

Reinforced Concrete (RC) Framed

Reinforced concrete is a composite material in which concrete's relatively low tensile strength and ductility are counteracted by the inclusion of reinforcement having higher tensile strength and/or ductility. The reinforcement is usually though steel reinforcing bars (rebar) and embedded in the concrete before it sets. Reinforcing schemes are designed to resist tensile stresses in regions of the concrete that might cause unacceptable cracking and/or structural failure.

The average annual gas consumption per unit of floor area for WCC Reinforced Concrete buildings was 148 kWh/m² within the range of 135 to 162 kWh/m² but from only two buildings.

Location	UPRN	Building Usage	Principal building type	Sub types	Building age (year main element constructed)	Gas KWh / M ² / year
Barrack Street Block	5197	Office	RC Framed		1974	162.04
George Eliot Community School	1110	School	RC	TRA	1952	135.02

Sectional Concrete

Only one property identified.

Location	UPRN	Building Usage	Principal building type	Sub types	Building age (year main element constructed)	Gas KWh / M ² / year
Former Round Oak School And Support Service	5097	Office	Sectional Concrete	VH, TRA	1969	63.14

Steel Framed

The average annual gas consumption per unit of floor area for WCC Steel Framed buildings was 64 kWh/m² within the range of 29 to 93 kWh/m².

Location	UPRN	Building Usage	Principal building type	Sub types	Building age (year main element constructed)	Gas KWh / M ² / year
Kenilworth Youth & Community Centre	5394	Community Centre	Steel Framed		2007	70.84
Specialist Transport, Unit 5	3288	Office	SF		197X	
Centenary Business Centre	1097	Office	Steel Framed		1987	28.73
The Avon Valley School & Performing Arts College	3051	School	SF	TRA	1969	92.78

Traditional

The term 'traditional build' is most often used to describe a structure where the internal load bearing leaf of the walling is of masonry construction and tied with stainless steel ties to an outer leaf of either block or brick.

For 239 properties, the average annual gas consumption per unit of floor area for WCC Traditionally Constructed buildings was 159 kWh/m² within the range of 9 to 601 kWh/m².

Location	UPRN	Building Usage	Principal building type	Sub types	Building age (year main element constructed)	Gas KWh / M ² / year
Orchard Blythe Home For Elderly People	2096	Care Home	Traditional		1987	554.23
Lower Meadow Home For Elderly People	4247	Care Home	Traditional	SC	1972	425.39
Abbotsbury Home For Elderly People	3146	Care Home	Traditional		1960	357.68
Four Acres Home For Elderly People	4276	Care Home	Traditional		1973	327.50

Low Furlong Home For Elderly People	4200	Care Home	Traditional		1070	321.08
Caldwell Grange Home For Elderly People	1186	Care Home	Traditional		1954	309.57
Mayfield Home For Elderly People	1062	Care Home	Traditional		1972	284.70
The Lawns Home For Elderly People	5295	Care Home	Traditional		1966	272.54
Park View Home For Elderly People	5265	Care Home	Traditional		1969	260.66
Bracebridge Court Home For Elderly People	2047	Care Home	Traditional		1963	251.81
Evergreen Home Care Day Centre	5341	Care Home	Traditional		1968	210.48
Lillington Community and Children's Centre	5389	Community Centre	Traditional		1960	#DIV/0!
The Merttens Centre	3087	Community Centre	Traditional		1963	519.60
Dordon Shortwoods Social Education Centre	2109	Community Centre	Traditional		1981	269.42
Warwick Youth Centre	5242	Community Centre	Traditional		1910	236.73
Bedworth Youth Centre	1013	Community Centre	Traditional		1890	219.28
Park House Youth Centre	1132	Community Centre	Traditional		1913	211.56
Lillington Youth Club	5105	Community Centre	Traditional		1960	175.21
Freeway, Nuneaton Social Education Centre	1147	Community Centre	Traditional		1907	156.49
Bloxham Social Education Centre	3150	Community Centre	Traditional		1967	145.99
The Hilary Road Centre	1188	Community Centre	Traditional		1969	124.11
Hill Street Youth & Community Centre	3111	Community Centre	Traditional		1975	98.93
Wembrook Youth & Community Centre	1111	Community Centre	Traditional		1972	93.35
Kingsbury Youth & Community Centre	2141	Community Centre	Traditional		1969	66.30
Warks CC Staff Club, (Northgate House)	5196	Community	Traditional		1898	45.96

		Centre				
Polesworth Fire Station	2171	Fire Station	Traditional		199X	601.82
Kenilworth Fire Station	5058	Fire Station	Traditional		1979	497.47
Alcester Fire Station	4016	Fire Station	Traditional		1966	489.39
Rugby Fire Station	3144	Fire Station	Traditional	CL3, SF	1964	381.16
Nuneaton Fire Station	1184	Fire Station	Traditional	SC	1963	326.70
Atherstone Fire Station	2036	Fire Station	Traditional	SF	1966	270.96
Coleshill Fire Station	2080	Fire Station	Traditional	SF	1973	265.54
Wellesbourne Fire Station	4367	Fire Station	Traditional		1998	255.81
Bedworth Fire Station	1050	Fire Station	Traditional	SF	1958	202.97
Stratford-Upon-Avon Fire Station	4245	Fire Station	Traditional		1952	189.67
Shipston Branch Library	4194	Library	Traditional		1995	#DIV/0!
Atherstone Library & Information Centre	2027	Library	Traditional		1965	432.05
County Museum (Market Hall)	5248	Library	Traditional		1972	276.91
Coleshill Library & Information Centre	2224	Library	Traditional		2005	226.50
Southam Library	4180	Library	Traditional		1968	170.20
Stratford-Upon-Avon Library & Information Centre	4234	Library	Traditional		1927	164.33
Bulkington Library & Information Centre	1077	Library	Traditional		1975	136.83
Bedworth Library & Information Centre	1033	Library	Traditional		1986	130.88
Harbury Branch Library	4084	Library	Traditional		1877	121.83
Field Archaeology Office & Museum Stores	5195	Library	Traditional		1781	118.79
Stockingford Early Years Centre & Library	1122	Library	Traditional		2004	108.01
Bedworth Heath Library & Information Centre	1034	Library	Traditional		1963	91.28
Leamington Library	5361	Library	Traditional		180X	0.00
Hunters Lane Household Water Recycling Centre	3119	Miscellaneous	Traditional		2008	17.27
Warwick House - Atherstone	2184	Office	Traditional		1989	#DIV/0!
Old Bank House	2228	Office	Traditional		106X	#DIV/0!
Winton House	4389	Office	Traditional		185X	#DIV/0!
Orion House, Social Services Offices	5377	Office	Traditional		198X	#DIV/0!
Home Care Services	4249	Office	Traditional		1972	427.29
Registrars Office	3261	Office	Traditional		196X	423.89

Children & Family Services (16 Old Square)	5191	Office	Traditional		1880	300.17
Ramsden Resource Centre	1198	Office	Traditional	CL6	1984	233.32
Judges House - General	5190	Office	Traditional		1814	223.83
Southam and Shipston Adult Team	4188	Office	Traditional		1955	221.66
Fire & Rescue Service Headquarters	5124	Office	Traditional		1960	219.89
Children & Family Service	3152	Office	Traditional		190X	192.38
Premises At Montague Road	5199	Office	Traditional		1950	188.27
20 Northgate Street (Former County Education Dept)	5193-3	Office	Traditional		1750	176.24
Myton Park Centre	5268	Office	Traditional		1965	176.09
Pageant House	5287	Office	Traditional		1700	175.83
County Records Office	5252	Office	Traditional		1972	171.34
North Warwickshire Children & Family Service Team	2044	Office	Traditional		190X	164.64
Trading Standards Headquarters	5010	Office	Traditional		1973	154.53
Leamington Spa Social Services Sub-Office	5136	Office	Traditional		187X	133.69
The Old Clink	5245	Office	Traditional		1850	133.61
Kings House	1242	Office	Traditional		1970	117.83
Beda House	1063	Office	Traditional		1996	112.76
St John's House	5247	Office	Traditional		1605	111.13
Oakfield Park	3243	Office	Traditional		1991	81.60
Suite 1, Arden Court	4390	Office	Traditional		2000	74.82
Office Building 1 Saltisford Business Park	5384-1	Office	Traditional		2006	74.64
The Branch Community Support Service	2231	Office	Traditional		197X	67.85
Eliot Park Innovation Centre	1270	Office	Traditional		2005	65.79
Shire Hall & Courts (Market Square)	5187	Office	Traditional	RC, TIM	1850	57.27
Office Building 2 Saltisford Business Park	5384-2	Office	Traditional		2006	57.01
Office Building 3 Saltisford Business Park	5384-3	Office	Traditional		2006	36.93
Wellesbourne C.E. Primary School Annexe	4303	Primary School	Traditional	VH	1971	368.75
St Nicholas C.E. (controlled) Primary School Alces	4008	Primary School	Traditional	VH	1957	301.32
Kenilworth Nursery School	5034	Primary School	Traditional		1958	221.42
Herbert Fowler Junior School	2006	Primary School	Traditional		1912	218.02
St Marie's Catholic Infant School Rugby	3107	Primary School	Traditional		1984	214.43

Wheelwright Lane Primary School	1016	Primary School	Traditional	RC	1936	213.56
St Mary's Catholic Primary School Southam	4178	Primary School	Traditional	VH	1930	200.51
St James (Voluntary Aided) CE Primary School	4174	Primary School	Traditional	CL5	1978	195.65
Barford St Peters C. of E. Primary School	5003	Primary School	Traditional		1060	183.08
Thomas Jolyffe Primary School	4225	Primary School	Traditional	VH	1950	179.30
Alveston C.of E. Primary School	4224	Primary School	Traditional		1959	177.72
Gun Hill Infant School	2005	Primary School	Traditional		1926	177.01
St Anthony's Catholic Primary School	5098	Primary School	Traditional		1966	175.98
St John's Primary School	5039	Primary School	Traditional		1932	173.72
Kingsway Community Primary School	5087	Primary School	Traditional	ALUM, CL5	1974	173.08
Southam Primary School	4176	Primary School	Traditional	CL4, CL5	1971	172.00
Wolvey CE Primary School	3229	Primary School	Traditional		1971	170.08
Stratford-Upon-Avon Primary School	4229	Primary School	Traditional		1883	170.06
St Augustine's Catholic Primary School	5041	Primary School	Traditional		1991	168.66
Bishopton Primary School	4223	Primary School	Traditional	CL5, CL6	1975	167.43
Budbrooke Primary School	5009	Primary School	Traditional	VH	1967	166.26
All Saints C. of E. Junior School	5230	Primary School	Traditional		1960	165.89
Wood End Primary School	2139	Primary School	Traditional		1994	165.58
St Mary Immaculate Catholic Primary School Warwick	5241	Primary School	Traditional		1971	164.58
Bishop's Tachbrook C. of E. Primary School	5006	Primary School	Traditional		1962	164.00
Arden Forest Infant School	1076	Primary School	Traditional		1968	163.42
Coten End Primary School	5339	Primary School	Traditional	VH	1996	155.31
Henry Hinde Infant School	3079	Primary School	Traditional		1967	154.51
St Matthew's Bloxam C.E. Primary School	3078	Primary School	Traditional		1992	153.85
Milverton Primary School	5073	Primary School	Traditional		1887	153.81
All Saints C. of E. Infant School	1028	Primary School	Traditional	SC	1975	153.33
Nursery Hill Primary School	2001	Primary School	Traditional	CL6	1905	152.41
Studley Community Infant School	4263	Primary School	Traditional		1850	152.16
Newburgh Primary School	5226	Primary School	Traditional		1960	152.02
Water Orton Primary School	2208	Primary School	Traditional		1878	151.00
The Revel C.E. (Aided) Primary School Annexe	3012	Primary School	Traditional		1964	150.37

Bilton Infant School	3095	Primary School	Traditional	TIM	1961	148.82
Lillington Primary School	5340	Primary School	Traditional		1954	148.06
St Nicholas CE Primary School Kenilworth	5032	Primary School	Traditional		1912	146.80
Snitterfield Primary School	4168	Primary School	Traditional	CL6	187X	146.17
Canon Evans CE Infant School	1022	Primary School	Traditional		1967	145.33
The Nethersole School CE Primary	2164	Primary School	Traditional		1971	145.15
Bedworth Early Years Centre & Nursery	1010	Primary School	Traditional		1950	143.44
The Ferncumbe CE Primary School	5021	Primary School	Traditional		1886	142.70
The Revel C.E. (Aided) Primary School	3047	Primary School	Traditional		1972	140.59
Studley St. Mary's CE (VA) Junior School	4267	Primary School	Traditional		1961	139.65
Chilvers Coton Community Infant School	1153	Primary School	Traditional	SC	1909	137.06
Long Itchington C.E. Primary School	4129	Primary School	Traditional		1978	136.92
St Francis Catholic Primary School	1012	Primary School	Traditional		1971	136.21
Cubbington CE Primary School	5015	Primary School	Traditional		1847	135.87
Newdigate Primary School	1249	Primary School	Traditional	CL5, VH, CL3	1973	134.99
St Patrick's Catholic Primary School	5088	Primary School	Traditional		1954	134.92
Bawnmore Infant School	3104	Primary School	Traditional		1967	134.78
Bidford-on-Avon Primary School / Library	4376	Primary School	Traditional		2002	132.77
Bilton CE Junior School	3083	Primary School	Traditional	VH, SC	1965	132.49
Canon Maggs CE Junior School	1023	Primary School	Traditional		1966	131.57
St Paul's CE Primary School, Leamington Spa	5090	Primary School	Traditional		1964	131.20
Henley-in-Arden Voluntary Aided CE Primary School	4092	Primary School	Traditional	CL6	1976	130.96
Race Leys Infant School	1018	Primary School	Traditional		1910	130.54
St Marie's Catholic Junior School Rugby	3086	Primary School	Traditional		1968	130.20
Our Lady & St Teresa's Catholic Primary School	5016	Primary School	Traditional		1960	129.84
St Nicolas CE (Voluntary Aided) Primary School Nun	1124	Primary School	Traditional	VH	1966	129.54
Galley Common Infant School	1144	Primary School	Traditional		1896	128.84
Shrubland Street Community Primary School	5096	Primary School	Traditional		1884	128.82
St Mary's Catholic Primary School Studley	4268	Primary School	Traditional		1973	128.59
Burton Green C E Primary School	5036	Primary School	Traditional		1905	126.82
St Benedict's Catholic Primary School	2021	Primary School	Traditional		1962	125.94

Queens CE Junior School	1143	Primary School	Traditional		1907	125.14
Paddox Primary School	3262	Primary School	Traditional	CL3	1937	124.98
Dunchurch Boughton C. of E. (V.A.) Junior School	3032	Primary School	Traditional		1972	124.71
Cawston Grange Primary School	3276	Primary School	Traditional		2003	123.42
Outwoods Primary School (formerly Arden Hill Inf)	2013	Primary School	Traditional	VH	1952	122.14
Outwoods Primary School (formerly Oakfield Junior)	2012	Primary School	Traditional		1971	121.72
The Willows C.E. Primary School	4219	Primary School	Traditional	SC, CL4	1966	120.99
St Joseph's Catholic Primary School	5292	Primary School	Traditional		1965	119.75
English Martyrs Catholic Primary School	3092	Primary School	Traditional	VH, SC	1959	117.96
Newbold Riverside Primary School	3052	Primary School	Traditional	VH	1951	117.72
Wembrook Primary School	1131	Primary School	Traditional		1930	116.51
Wilmcote C.E. (Voluntary Aided) Primary School	4025	Primary School	Traditional		1845	116.50
Priors Field Primary School	5027	Primary School	Traditional	CL5	1975	116.07
Clapham Terrace Community Primary School	5101	Primary School	Traditional		1900	115.67
All Saints C. of E. Primary School	1142	Primary School	Traditional		1971	114.57
Boughton Leigh Junior School	3070	Primary School	Traditional	VH	1972	113.85
St Peter's Catholic Primary School	5104	Primary School	Traditional		1879	113.77
Atherstone Early Years Centre	2016	Primary School	Traditional		2005	111.33
St James C E Junior School	1075	Primary School	Traditional	SC	1958	110.96
St Edwards Catholic Primary School	2060	Primary School	Traditional		1958	109.28
Hillmorton Primary School	3091	Primary School	Traditional		1965	107.95
Westgate Primary School	5239	Primary School	Traditional		1884	102.80
St Anne's Catholic Primary School	1116	Primary School	Traditional		1966	101.69
Tanworth-In-Arden C.E. Primary School	4279	Primary School	Traditional		187X	101.61
St Oswald's C.E. Primary School	3094	Primary School	Traditional		1971	101.59
Park Lane Primary School	1145	Primary School	Traditional		1973	100.94
Park Hill Junior School	5030	Primary School	Traditional	VH	1966	99.43
Harbury CE Primary School	4083	Primary School	Traditional		1967	98.50
Shipston Primary School (Foundation)	4193	Primary School	Traditional		1971	97.23
Henry Hinde Junior School	3114	Primary School	Traditional	VH	1973	96.68
Warton Nethersole C.E. Primary School	2166	Primary School	Traditional	VH	1974	95.56

St Lawrence C.E. (Voluntary Aided) Primary School	4366	Primary School	Traditional		1996	95.48
Dunchurch Infant School (Foundation)	3033	Primary School	Traditional	SC	1928	95.45
Knightlow C.E. Primary School	3210	Primary School	Traditional	SC	1973	93.59
St Margaret's CE Primary School	3223	Primary School	Traditional	VH	1969	89.37
Michael Drayton Junior School	2125	Primary School	Traditional	VH	1972	88.98
Bridge Town Primary School	4228	Primary School	Traditional		1963	80.81
Emscote Infant School	5229	Primary School	Traditional		1967	79.68
Stockingford Infant School	1120	Primary School	Traditional		1911	28.87
Warwick Nursery School	5231	Primary School	Traditional		1958	28.32
Stockton Primary School	4206	Primary School	Traditional		1907	27.55
St Andrew's Benn CE (VA) Primary School	3108	Primary School	Traditional	CL4	1972	19.56
Oakfield Primary School	3085	Primary School	Traditional		1996	9.17
Abbey C E Infant School	1141	Primary School	Traditional	SC	1896	0.00
Coleshill C. of E. Primary School	2064	Primary School	Traditional	VH, A75	1956	0.00
Nathaniel Newton Infant School	2128	Primary School	Traditional		1938	0.00
Our Lady's Catholic Primary School	3057	Primary School	Traditional		1966	0.00
Northlands Primary School	3105	Primary School	Traditional		1931	0.00
Our Lady's Catholic Primary School	4007	Primary School	Traditional		1965	0.00
Hampton Lucy C.E. Primary School	4100	Primary School	Traditional	VH, CL6	187X	0.00
St Gregory's Catholic Primary School	4230	Primary School	Traditional		1958	0.00
Shottery St Andrew's C.E. Primary School	4231	Primary School	Traditional		1870	0.00
King Edward VI College	1138	School	Traditional	TIM	1960	#DIV/0!
North Leamington School - New Aug 09	5074	School	Traditional		1945	#DIV/0!
Brookbank S.E.C.	4382	School	Traditional		2001	459.00
Kenilworth School and Sports College - Upper	5028	School	Traditional	TBT	1959	296.50
Kingsbury School, a Specialist Science & Maths Col	2136	School	Traditional	SC	1957	256.88
The Saltway Centre & Stratford Family Centre	4255	School	Traditional		1989	255.76
Nuneaton Academy (formerly Alderman Smith School)	1137	School	Traditional	SC, SF	1966	246.90
The Emscote Social Education Centre	5264	School	Traditional	CL3	1963	237.69
The Benn Education Centre	3109	School	Traditional		1896	228.90
The Kersley Teaching & Learning Centre	1080	School	Traditional	VH	1932	213.60

Brooke School	3073	School	Traditional		1966	208.54
Middlemarch School (Foundation)	1119	School	Traditional	SC	1951	193.88
Manor Park Community School	1127	School	Traditional	SF	1927	183.05
Henley-In-Arden High School	4089	School	Traditional		1957	178.41
Etone Technology Language Vocational College	1158	School	Traditional	CL5, SF, SC	1910	174.10
The Newbold Social Education Centre	5132	School	Traditional		1979	168.03
Myton School (Foundation)	5233	School	Traditional		1955	162.32
Shipston High School, a Specialist Technology Coll	4191	School	Traditional	VH	1958	162.31
The Coleshill School - a Maths & Computing College	2059	School	Traditional	SF	1954	158.67
Nicholas Chamberlaine Technology College	1007	School	Traditional	SF	1950	157.77
Hartshill School (Foundation)	2124	School	Traditional	TIM, INT	1955	151.60
Ashlawn School	3089	School	Traditional	CLB, SC	1950	149.67
Woodlands School (Formerly Blythe)	2061	School	Traditional		1961	147.78
Campion School and Community College	5079	School	Traditional	CL5, SF	1972	145.99
River House School	4090	School	Traditional		1961	144.88
King Edward VI School	4227	School	Traditional	SF	1994	144.74
Lawrence Sheriff School	3112	School	Traditional	VH, CL6, TIM	1900	143.68
Bilton School A Maths & Computing College	3090	School	Traditional		1961	143.50
Welcombe Hills School	4226	School	Traditional	SC	1994	132.35
Stour Bank S.E.C.	4383	School	Traditional		2002	128.64
Aylesford School. A Specialist Language & Music Co	5234	School	Traditional	SF, CLB	1965	120.86
Rugby High School (Foundation)	3082	School	Traditional	SC	1958	116.29
Bedworth The Bridgeway Social Education Centre	1061	School	Traditional		1974	114.02
Harris School	3074	School	Traditional		1953	112.32
Kenilworth School and Sports College 6th Form	5026	School	Traditional	INT	1957	108.37
Oak Wood Secondary School	1276	School	Traditional		2005	106.90
Exhall Grange School & Science College	1014	School	Traditional		1963	104.19
St Benedict's Catholic High School	4009	School	Traditional		1962	103.67
Southam College	4173	School	Traditional	INT, SF	1955	101.57
St Thomas More Catholic School	1140	School	Traditional	SC	1955	99.16
Higham Lane School A Business & Enterprise College	1112	School	Traditional		1938	94.97

Stratford-upon-Avon Grammar School For Girls	4221	School	Traditional		1851	91.78
Stratford-Upon-Avon High School, A Maths &	4216	School	Traditional		2002	89.63
Alcester Grammar School (Foundation)	4005	School	Traditional	SF	1910	89.11
Round Oak : School, Support Service and Sports Col	5236	School	Traditional		2007	84.76
Trinity Catholic School, A Specialist Arts and	5094	School	Traditional		1965	79.45
Ridgeway School	5232	School	Traditional		1964	33.77

Various

The average annual gas consumption per unit of floor area for WCC variously constructed buildings was 132 kWh/m² within the range of 32 to 447 kWh/m².

Location	UPRN	Building Usage	Principal building type	Sub types	Building age (year main element constructed)	Gas KWh / M ² / year
Lillington Library & Information Centre	5110	Library	Various	RC, TRA	1960	158.42
Priory Bungalow	5254	Office	Various	TRA, SC	1550	447.48
Priory House	5253	Office	Various	TRA, SC	196X	115.26
Thorns Community Infant School	5033	Primary School	Various	VH, TRA	1956	208.94
St Giles Junior School	1029	Primary School	Various	SF, CL4, CL5, TRA	1970	188.41
Stockingford Junior School	1121	Primary School	Various	TRA, TIM	1905	172.93
Telford Infant School	5085	Primary School	Various	VH, TRA	1960	144.83
Abbots Farm Junior School	3100	Primary School	Various	TRA, VH, TIM	1960	143.48
Eastlands Primary School	3068	Primary School	Various	CL5, TRA	1975	143.42
Briar Hill Infant School	5290	Primary School	Various	CL4, TRA	1969	141.60
Racemeadow Primary School	2014	Primary School	Various	VH, CL4, TRA	1972	139.95
Long Lawford Primary School	3044	Primary School	Various	VH, TRA	1960	132.83

Milby Primary School	1248	Primary School	Various	VH, TRA	1972	126.94
Curdworth Primary School	2104	Primary School	Various	VH, TRA	1966	125.24
Goodyers End Primary School	1247	Primary School	Various	VH, TRA, SC	1956	123.79
Boughton Leigh Infant School	3071	Primary School	Various	VH, TRA	1975	115.32
St Margaret's CE Junior School	5289	Primary School	Various	TRA, CL3, VH	1962	113.29
Telford Junior School	5086	Primary School	Various	AND, TRA, VH	1955	109.99
Birchwood Primary School	2209	Primary School	Various	CL4, VH, TRA	1966	108.77
Radford Semele CE Primary School	5169	Primary School	Various	VH, TRA	1960	104.32
Clinton Primary School	5037	Primary School	Various	CL4, TRA, SF, VH	1962	102.92
Woodside C.E. Primary School	2053	Primary School	Various	VH, SF	1972	90.47
Rokeby Primary (Former Infant) School	3075	Primary School	Various	RC, SF, TRA	1958	77.33
Wellesbourne C.E. Primary School	4302	Primary School	Various	TRA, VH	1959	68.90
Glendale Infant School	1152	Primary School	Various	TRA, VH	1971	31.90
Abbots Farm Infant School	3099	Primary School	Various	VH, TRA	1958	0.00

Vic Hallam

Vic Hallam was a company who specialised in modular, timber-framed buildings. The “Derwent System” comprises of permanent buildings that are one or two storeys high based on a timber post and plywood box beam framing construction. The buildings are braced by tongue-and-groove roof boards and framed external wall panels. Later forms of the system used different types of cladding such as brick work and tile hanging, although the same principle of structure remained. Deterioration in the external walls and in certain internal structural members is common in Derwent buildings. When adjacent to rainwater outlets or exposed to water leaks outlets, other common faults are: rotting of the timber columns between window sill and floor level, rotting of timber internal columns between floor level and lower ceiling level at the point at which a change of room height occurs and rotting of external columns over their entire height.

The average annual gas consumption per unit of floor area for WCC Vic Hallam constructed buildings was 116 kWh/m² within the range of 33 to 181 kWh/m².

Location	UPRN	Building Usage	Principal building type	Sub types	Building age (year main element constructed)	Gas KWh / M ² / year
Kingsbury Primary School	2225	Primary School	VH	A75, CL5, TRAD	1957	145.28
Weddington Primary School	1250	Primary School	VH		1970	117.97
Dordon Community Primary School	2106	Primary School	Vic Hallam	SC	1972	180.78
High Meadow Infant School	2065	Primary School	Vic Hallam		1968	173.63
Shustoke CE Primary School	2177	Primary School	Vic Hallam	TRA	1958	128.62
Exhall Cedars Infant School	1015	Primary School	Vic Hallam	TRA	1973	124.94
Keresley Newland Primary School	1081	Primary School	Vic Hallam		1954	115.68

Hurley Primary School	2140	Primary School	Vic Hallam	TRA	1995	104.84
Bishops Itchington Primary School	4035	Primary School	Vic Hallam		1903	102.45
Brookhurst Primary School	5100	Primary School	Vic Hallam	TRA	1969	96.33
Sydenham Primary School	5089	Primary School	Vic Hallam		1975	94.37
Whitestone Infant School	1125	Primary School	Vic Hallam	TRA	1969	94.25
St Paul's CE Primary School, Nuneaton	1108	Primary School	Vic Hallam	TRA	1962	33.72

If you have any general questions about this report, please get in touch with WCC's Energy Team on Tel: 01926 47 6623

If you have any detailed questions about the data, please get in touch with WCC's Energy team on Tel: 01926 41 2263 or 01926 47 6620.

