



The University of
Nottingham

UNITED KINGDOM • CHINA • MALAYSIA



Annual Energy Report 2012/13

<http://www.nottingham.ac.uk/sustainability>



2012/13 Energy Report

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Executive Summary

The University has published an annual report showing trends in our energy and water usage every year since 1998. With the increasing attention on carbon emissions, some elements of this report have now been subsumed within the University's Carbon Management Plan (CMP). However, we will continue to produce the Energy and Water Report to allow direct comparison on the key areas of utility consumption and costs with earlier years.

External drivers:-

- floor area was up by 7% over the last two years
- Cold weather during 2012/13 would have predicted a rise of 11% in energy consumption

Key statistics:-

- **Energy costs**, excluding taxes, rose 16% to £11.8 million in 2012/13, or £13.7 million including taxes.
- **Energy consumption** rose by 7.3%, largely as a result of increased gas usage caused by the unusually cold weather. Our energy consumption is now 1.6% lower than 2005/6 if new buildings are excluded.
- Overall emissions of **carbon dioxide** from all energy sources were down by 5.6%, aided by the introduction of new emission factors this year. Excluding buildings constructed since 2005/6, our emissions were 57,468 Tonnes.
- **Water usage** decreased by 2% to 823,703 cubic metres; our consumption peaked at 925,520 cubic metres per annum back in 2004/5



Note that most figures relate to the University's financial year of August 1st 2011 to July 31st 2013, with the baseline for comparison being the previous (2011/12) financial year. Utilities continue to be procured via Notice Ltd, which is a wholly owned subsidiary of the University of Nottingham.

Section 1 – Total Energy Report

1.A. - Energy and Water Costs Summary

Expenditure on energy and water was up by 16% to £11.8 million in 20012/13, or £13.7 million including taxes. Some of this was driven by increases in consumption due to the much colder weather – gas usage rose by 11%, but energy prices were up significantly again. Gas prices were up by 13% and electricity typically 9%, with standing charges again rising much faster than inflation. Water costs were up by 4% in the year.

We have managed to minimise our exposure to these rises through our strategy of flexible energy purchasing – this has allowed us to time our energy purchases and obtain relatively good prices compared to fixing prices on annual contracts. Savings of around £0.5million have still been achieved in each of the last two years, despite the energy markets being on a generally upward trend.

Energy and Water Costs				Change
	2010/11	2011/12	2012/13	'11/12 to '12/13
University Park	£ 5,033,602	£ 5,623,953	£ 6,350,320	13%
Sutton Bonington	£ 1,392,711	£ 1,592,272	£ 1,819,106	14%
Jubilee Campus	£ 810,022	£ 944,684	£ 1,094,625	16%
Others	£ 635,438	£ 630,104	£ 694,888	10%
Medical School	£ 1,310,000	£ 1,414,000	£ 1,868,700	32%
Total	£ 9,181,773	£10,205,013	£11,827,640	16%

Figure 1.A.1 Table of energy and water costs for last 3 years split by campus.

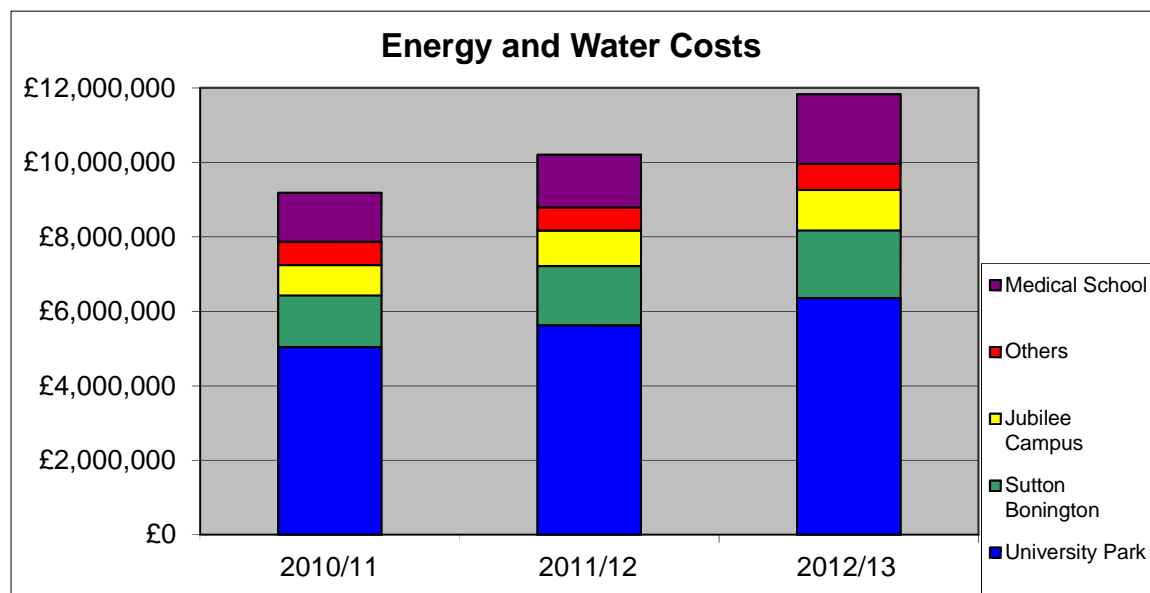


Figure 1.A.2 Graph of net energy and water costs for the last 3 years split by campus.

Note that these figures exclude VAT and Climate Change Levy, which are discussed on page 4.

1.B. – Utility costs per square metre for each Campus

Campus Costs	Floor Area	Cost/sq.m/annum			
		Electricity	Heating	Water	Total
University Park	331,486	£10.55	£5.44	£3.17	£19.16
Sutton Bonington	73,496	£13.94	£7.51	£3.30	£24.75
Jubilee Campus	75,212	£8.14	£3.67	£2.74	£14.55
Others	70,830	£4.70	£4.02	£1.08	£9.81
Medical School	75,536	£8.01	£15.37	£1.37	£24.74
Total	626,560	£9.69	£6.51	£2.68	£18.88

Figure 1.B.1 Table of energy costs per square metre, split by campus.

The overall floor area increased by 3.5% from 2011/12.

Note that if taxes (VAT and CCL, see below) are taken into account, our average utility costs are now £21.80 per square metre per annum.

1.C - Climate Change Levy (CCL) and VAT

VAT costs paid by Notice Ltd on energy bills rose to £1.47 million in 2012/13, and CCL was up to £361,000, meaning that our energy taxes were up by 15% year on year.

The Climate Change Levy (CCL) was introduced in April 2001. On April 1st 2013 the rates rose 2.8% to 0.182p/kWh on gas and 3.0% to 0.524p/kWh on the electricity costs of all non-residential properties.

If the taxes were included in the total expenditure on utilities the totals can be seen below:-

	2012/13				2011/12
	Electricity	Fossil Fuels	Water	Totals	Totals
Utility Costs	£ 6,070,434	£ 4,077,072	£ 1,680,134	£ 11,827,640	£10,205,013
Climate Change Levy	£ 248,779	£ 111,915	-	£ 360,694	£358,842
Value Added Tax	£ 864,447	£ 608,647	-	£ 1,473,094	£1,233,558
Total	£ 7,183,660	£ 4,797,634	£ 1,680,134	£ 13,661,428	£11,797,412

Figure 1.C.1 Table of energy and water costs including Climate Change Levy and Value Added Tax.

1.D - 2012/2013 Net Costs Broken Down by Campus and Utilities

Energy and Water Costs				
2012/13	Electricity	Fossil Fuels	Water	Total
University Park	£ 3,495,825	£ 1,803,024	£ 1,051,472	£ 6,350,320
Sutton Bonington	£ 1,024,801	£ 551,936	£ 242,369	£ 1,819,106
Jubilee Campus	£ 611,983	£ 276,323	£ 206,320	£ 1,094,625
Others	£ 333,025	£ 285,090	£ 76,773	£ 694,888
Medical School	£ 604,800	£ 1,160,700	£ 103,200	£ 1,868,700
Total	£ 6,070,434	£ 4,077,072	£ 1,680,134	£11,827,640

Figure 1.D.1 Table of energy and water costs split by campus and by utility

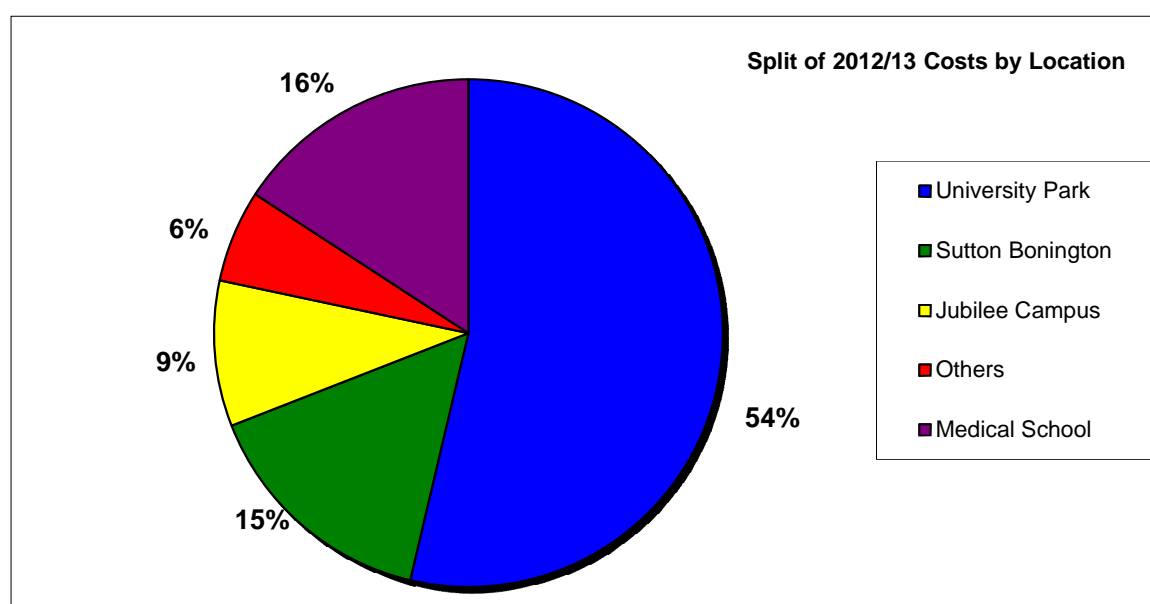


Figure 1.D.2 Chart of energy and water costs split by campus

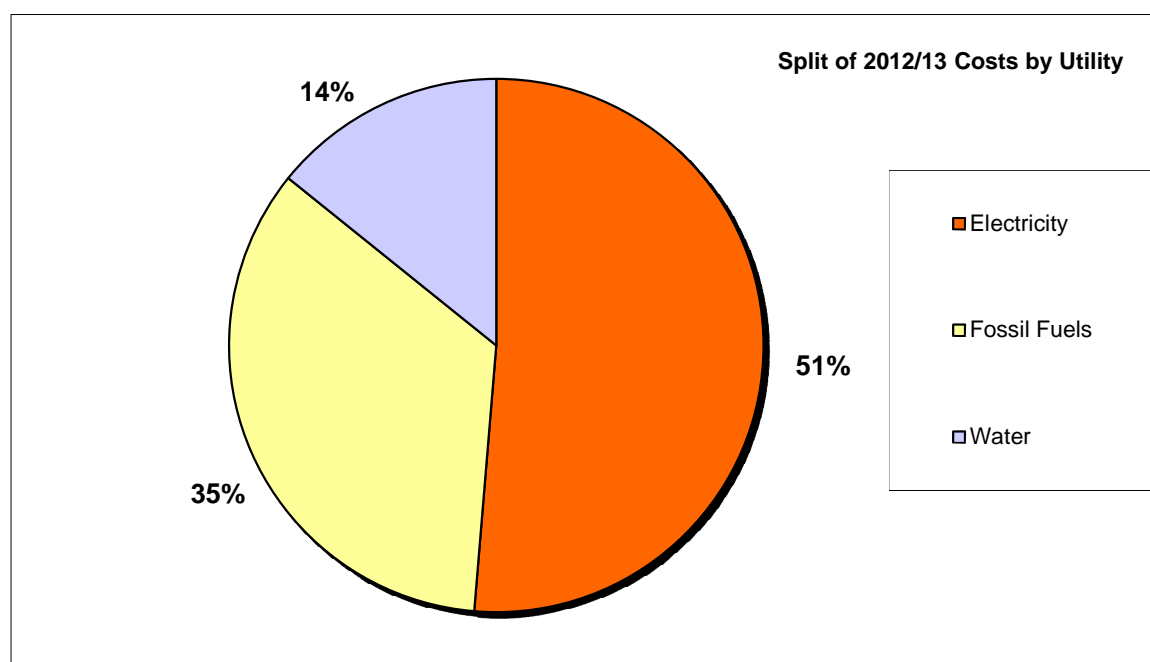


Figure 1.D.3 Chart of energy and water costs split by utility type

1.E - Energy Use Summary

The overall consumption of energy rose by 7.3%, largely as a result of increased gas usage caused by the unusually cold weather. Gas consumption was up by 11%, but this was actually an efficiency improvement as the weather alone would have indicated rise of 18% (see section 3.C). Floor area was also up by 3.5% in the year, on top of a similar rise of 3.5% the previous year.

As reported in section 2.A, electricity usage was up 2.2%, but if new buildings are excluded, a fall of 1.1% was achieved.

Section 3.D shows that new buildings added since 2005/6 are responsible for 9.9% of our energy consumption. Excluding these buildings, our energy consumption would be 195,058MWh compared to 191,905MWh in 2005/6 - a reduction of 1.6% - and 2012/13 was 11% colder than 2005/6.

Energy Consumption	MWh	MWh	MWh	Change
	2010/11	2011/12	2012/13	'11/12 to '12/13
University Park	112,818	109,770	113,056	3.0%
Sutton Bonington	29,032	28,205	33,415	18.5%
Jubilee Campus	13,635	14,547	17,315	19.0%
Others	13,374	12,746	14,201	11.4%
Medical School	32,520	34,508	36,329	5.3%
Total	201,380	199,776	214,315	7.3%

Figure 1.E.1 Table of energy usage for the last 3 years split by campus.

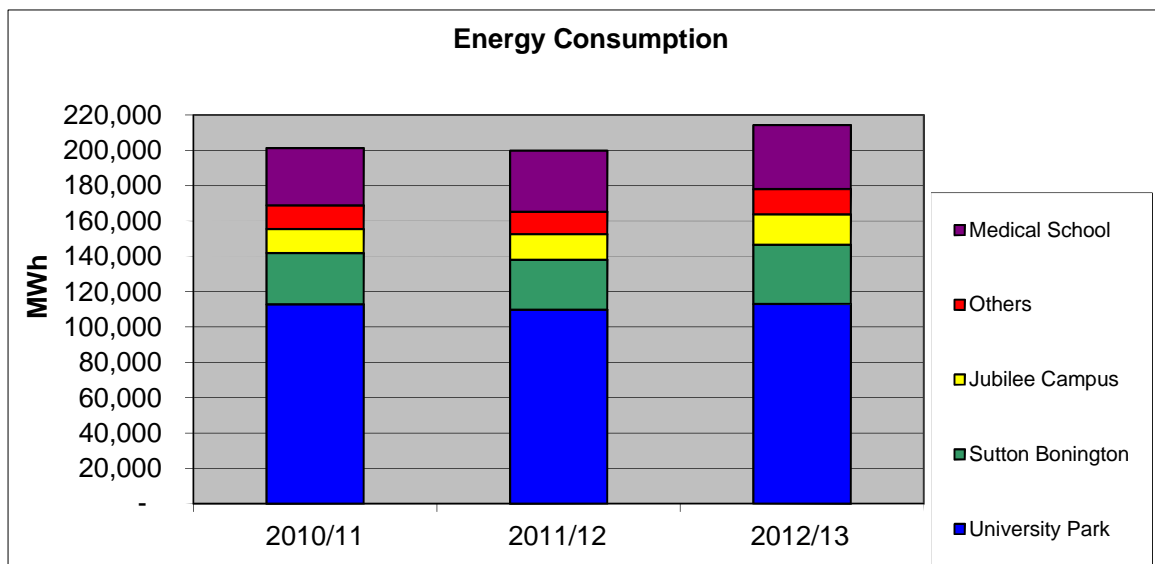


Figure 1.E.2 Graph of energy consumption for the last 3 years split by campus

1.F - Energy Use Breakdown by Campus and Utilities

Energy Consumption	MWh	MWh	MWh
2012/2013	Electricity	Fossil Fuels	Total
University Park	46,022	67,034	113,056
Sutton Bonington	13,277	20,138	33,415
Jubilee Campus	7,605	9,710	17,315
Others	4,537	9,663	14,201
Medical School	9,457	26,872	36,329
Total	80,898	133,417	214,315

Figure 1.F.1 Table of energy consumption split by campus and by utility

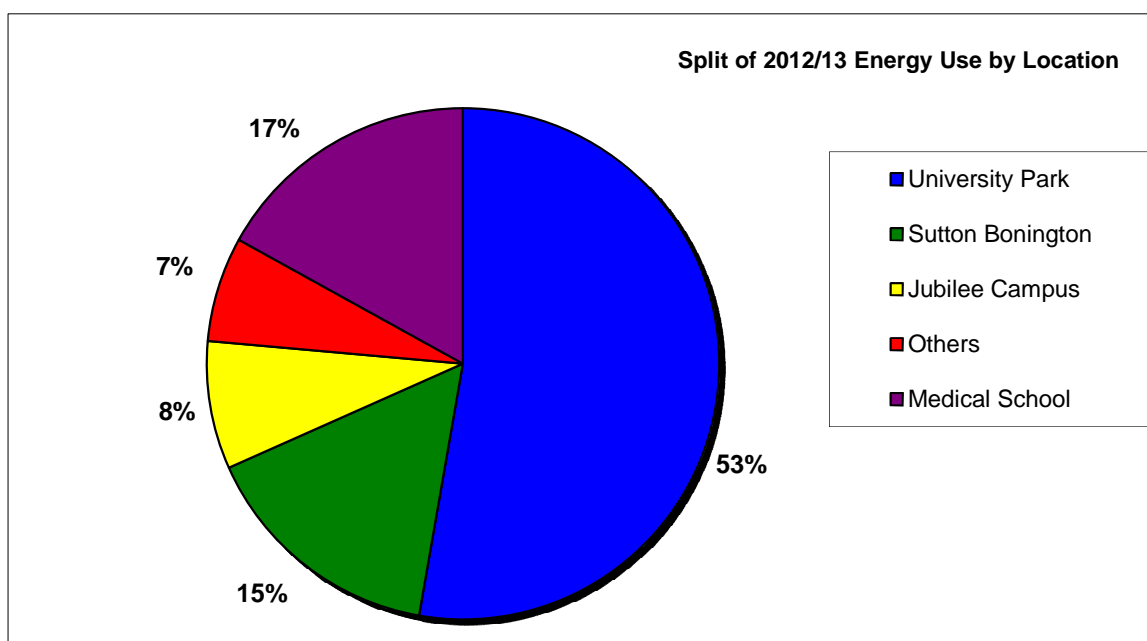


Figure 1.F.2 Pie chart of energy consumption split by campus

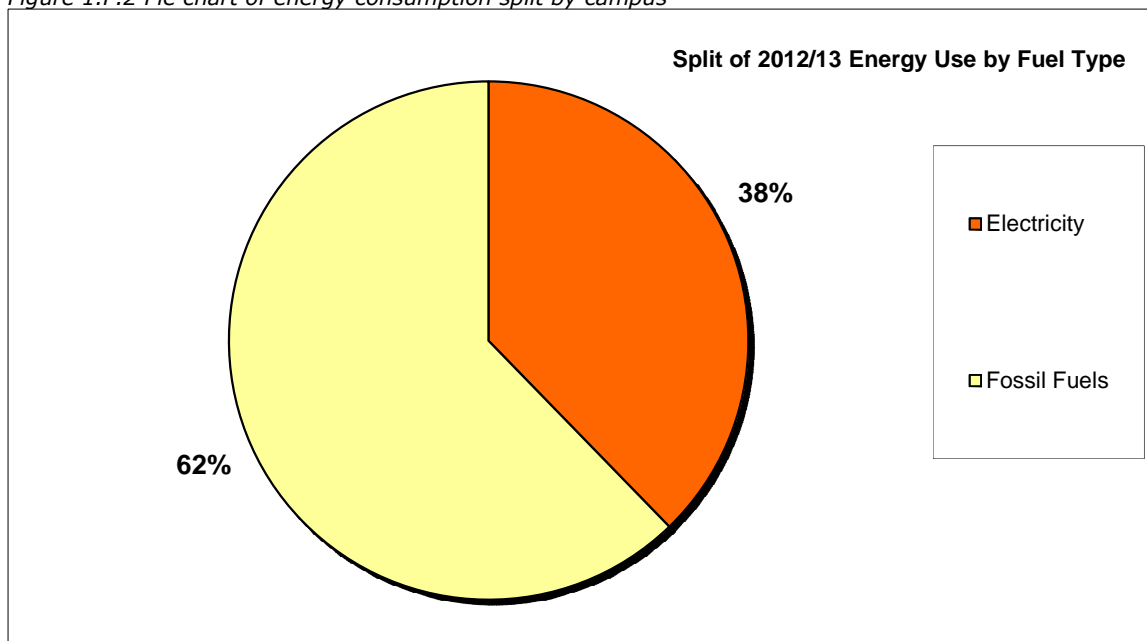


Figure 1.F.3 Pie chart of energy consumption split by utility type.

Note: Our 'fossil fuels' are over 99% gas

1.G - Energy Usage and Cost Comparison with Gross Premises Area

		2009/10	2010/11	2011/12	2012/13	Change
Floor Area (sq.m.)		577,871	584,617	605,328	626,560	3.5%
Annual Energy Usage (MWh)		204,028	201,380	199,776	214,315	7.3%
Energy Usage Per sq. m. (kWh/m²)		353	344	330	342	3.6%

Figure 1.G.1 Table of last four years energy usage and floor area.

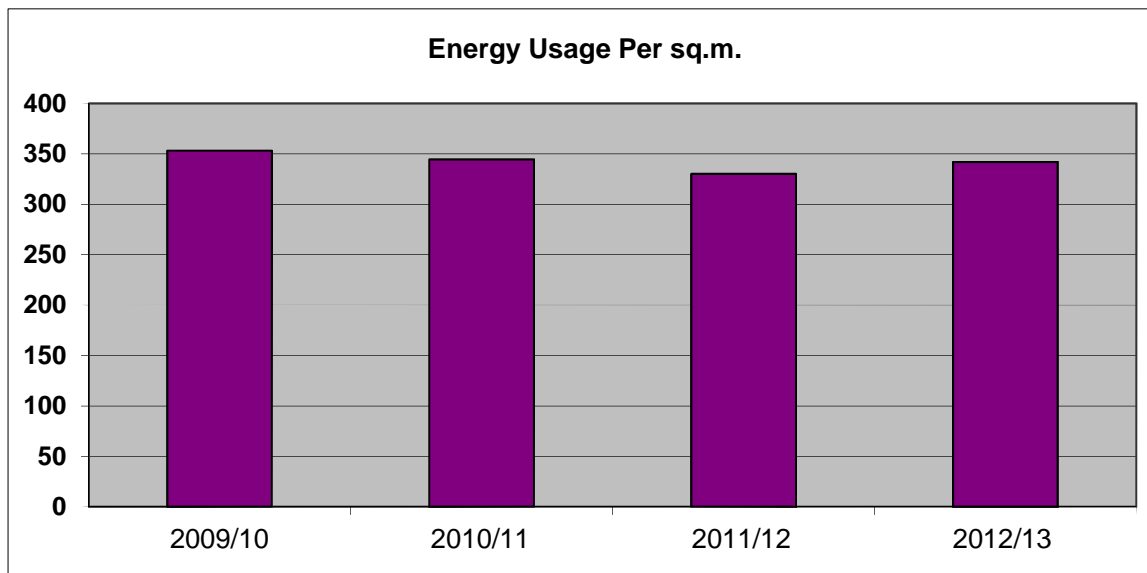


Figure 1.G.2 Graph of last four years energy usage per unit floor area.

Note that energy consumption was 425kWh/ m² back in 2004/5, and still at 396 kWh/m² in 2007/8.

		2009/10	2010/11	2011/12	2012/13	Change
Floor Area (sq.m.)		577,871	584,617	605,328	626,560	3.5%
Gross Energy and Water Costs	£	9,333,000	10,627,000	11,797,000	13,661,428	15.8%
Utility Cost Per sq. m.	£	16.15	18.18	19.49	21.80	11.9%

Figure 1.G.3 Table of last four year gross energy and water costs and floor area (excluding taxes).

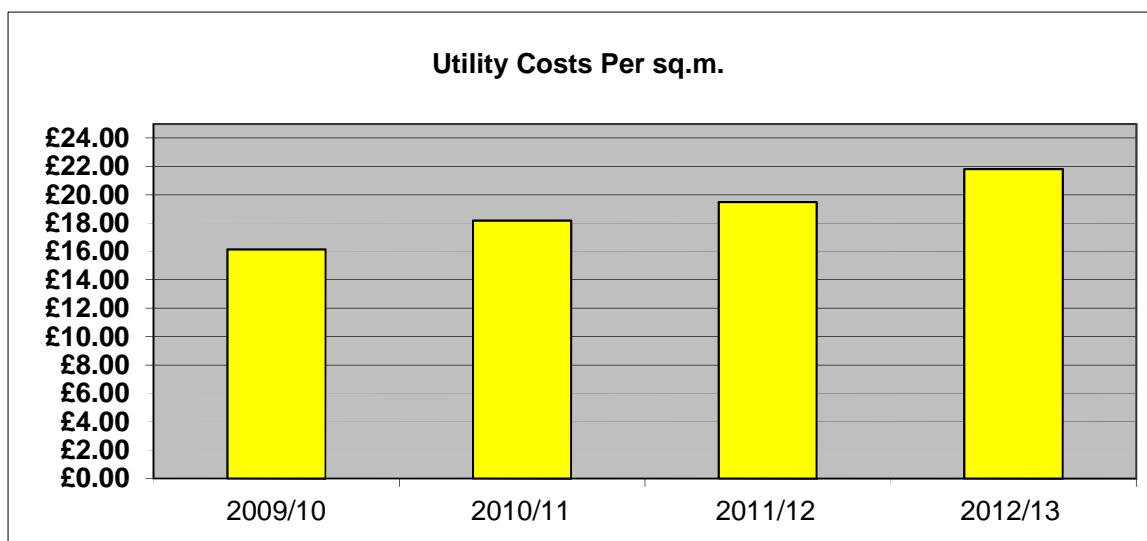


Figure 1.G.4 Graph of last four years energy and water costs normalised by floor area.

1.H - Energy Usage and Cost per UK Student

	2009/10	2010/11	2011/12	2012/13	Change
UK Student Numbers	32,044	32,999	34,076	33,944	-0.4%
Annual Energy (MWh)	204,028	201,380	199,776	214,315	7.3%
Energy / Student (kWh)	6,367	6,103	5,863	6,314	7.7%

Figure 1.H.1 Table of last four years energy usage and all student numbers.

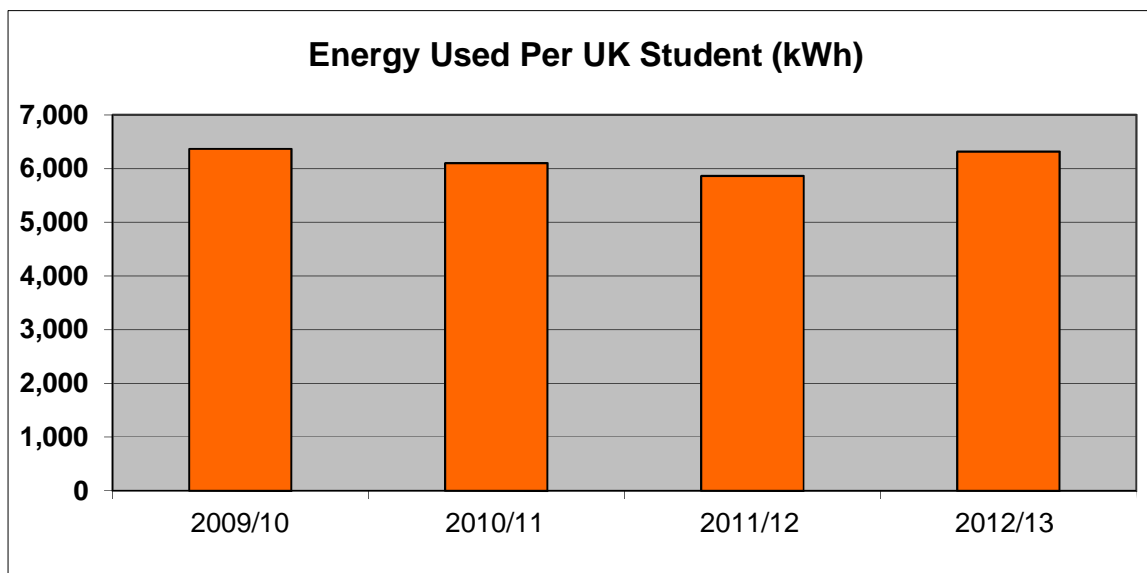


Figure 1.H.2 Graph of last four years energy usage per UK student.

	2009/10	2010/11	2011/12	2012/13	Change
UK Student Numbers	32,044	32,999	34,076	33,944	-0.4%
Energy and Water Costs	£ 9,333,000	£10,627,000	£11,797,000	£13,661,428	15.8%
Utility Costs / Student	£ 291.26	£ 322.04	£ 346.20	£ 402.47	16.3%

Figure 1.H.3 Table of last four years gross energy and water costs and full-time student numbers.

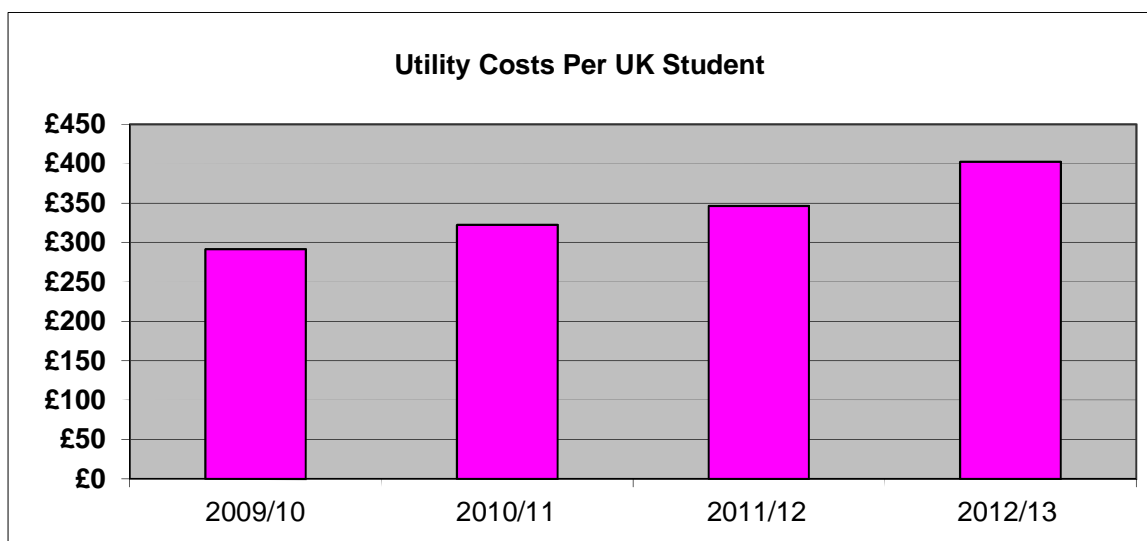


Figure 1.H.4 Graph of last four years gross energy and water costs per UK student.

Note: The statistics on student numbers exclude students not currently studying in Nottingham.

1.I - Utility Costs as a Proportion of University Expenditure

%age of Expenditure (£ 000)	2009/10	2010/11	2011/12	2012/13	Change
Utility Costs inc. taxes	£ 9,333	£ 10,627	£ 11,797	£ 13,661	15.8%
University Expenditure	£ 474,600	£ 479,000	£ 500,300	£ 539,400	7.8%
Percentage	1.97%	2.22%	2.36%	2.53%	7.4%

Figure 1.I.1 Table of last four years gross energy and water costs (including taxes) and total University expenditure.

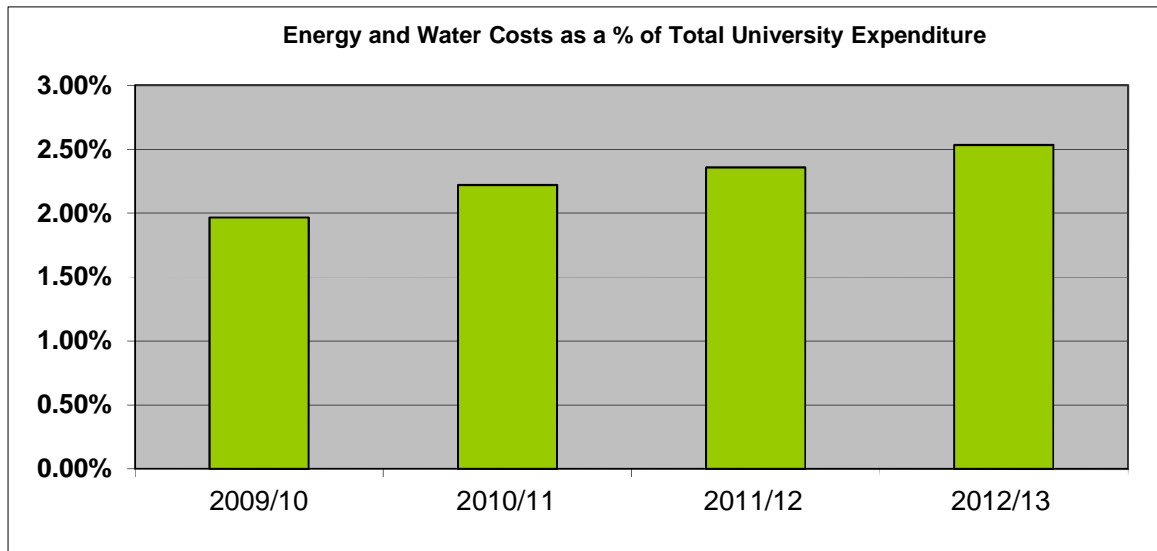


Figure 1.I.2 Graph of last four years gross energy and water costs normalised by total University turnover.

1.J – The Carbon Reduction Commitment Energy Efficiency Scheme

Costs from the CRC Energy Efficiency Scheme are not included in the other figures in this report, because the scheme operates on an April to March year, costs are not levied on utility bills, and the Scheme operates on a slightly different subset of properties. However, the results of the second full year of the scheme (April 2012 to March 2013) are listed below.

Under the Scheme, our emissions were reported as 55,796 Tonnes of CO₂ (up from 51,276 in the previous reference, or 'footprint' year). Each tonne of CO₂ emitted needs to be covered by an 'allowance', which costs £12. The University therefore purchased 55,796 allowances for a cost of £669,552.

Note that this cost, averaged out across our total energy consumption, equates to 0.312p/kWh.

1.K – Energy Costs Comparison to Russell Group Universities – 2011/12

The statistics in the next four tables provide a range of comparators to other major Universities, as reported in the EMS returns for 2011/12. Note that this is the most recent year where data is available for comparison, but runs one year behind the other information presented in this report.

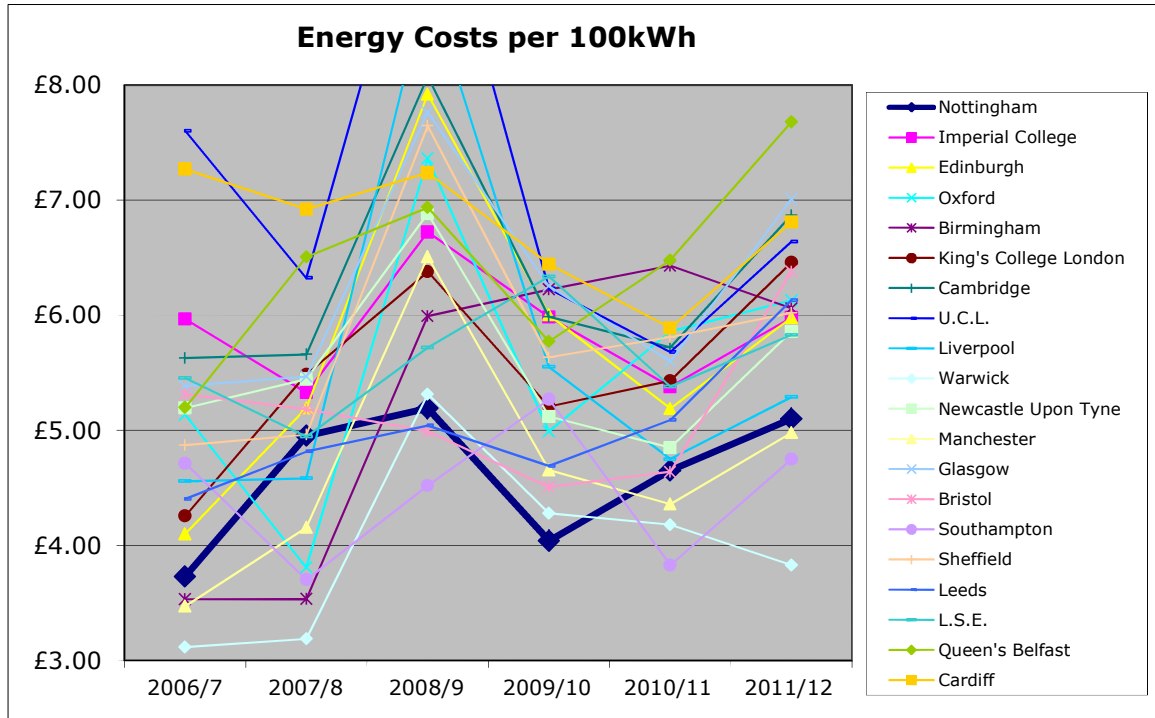


Figure 1.K.1 Graph of Russell Group Energy Costs per 100kWh.

The two graphs on this page indicate that as of last year, the University of Nottingham still enjoyed low energy prices compared to the Russell Group.

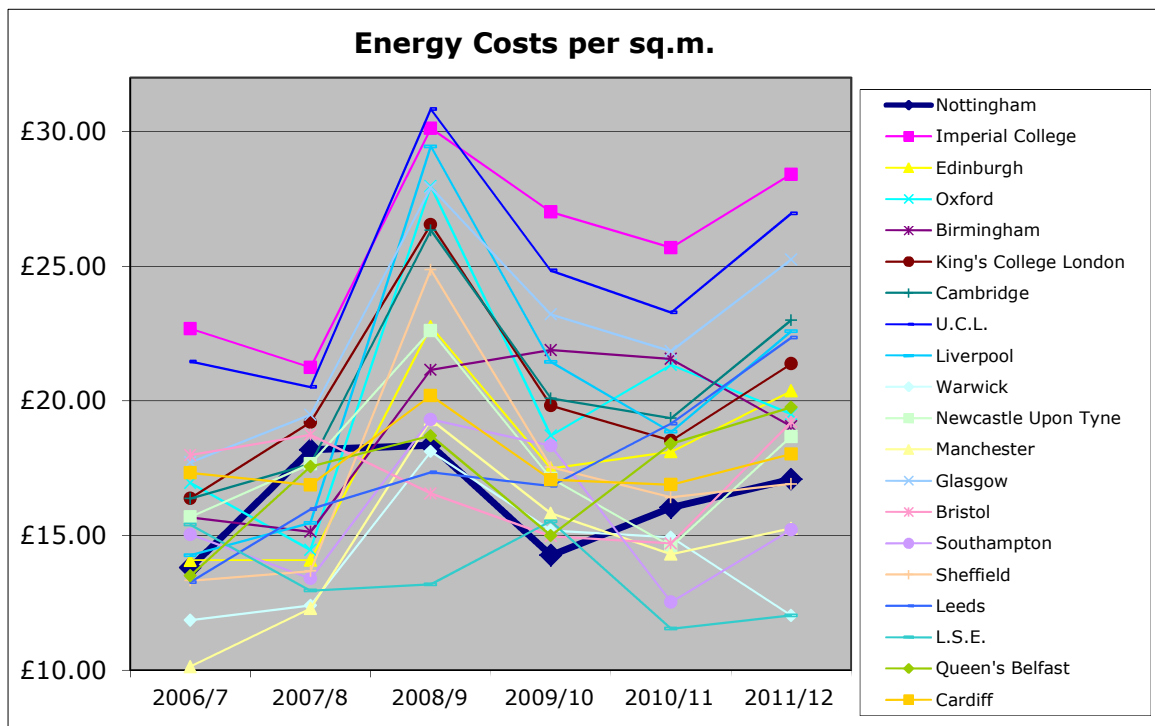


Figure 1.K.2 Graph of Russell Group Energy Costs square metre

1.L – Energy Efficiency Comparison to Russell Group Universities – 2011/12

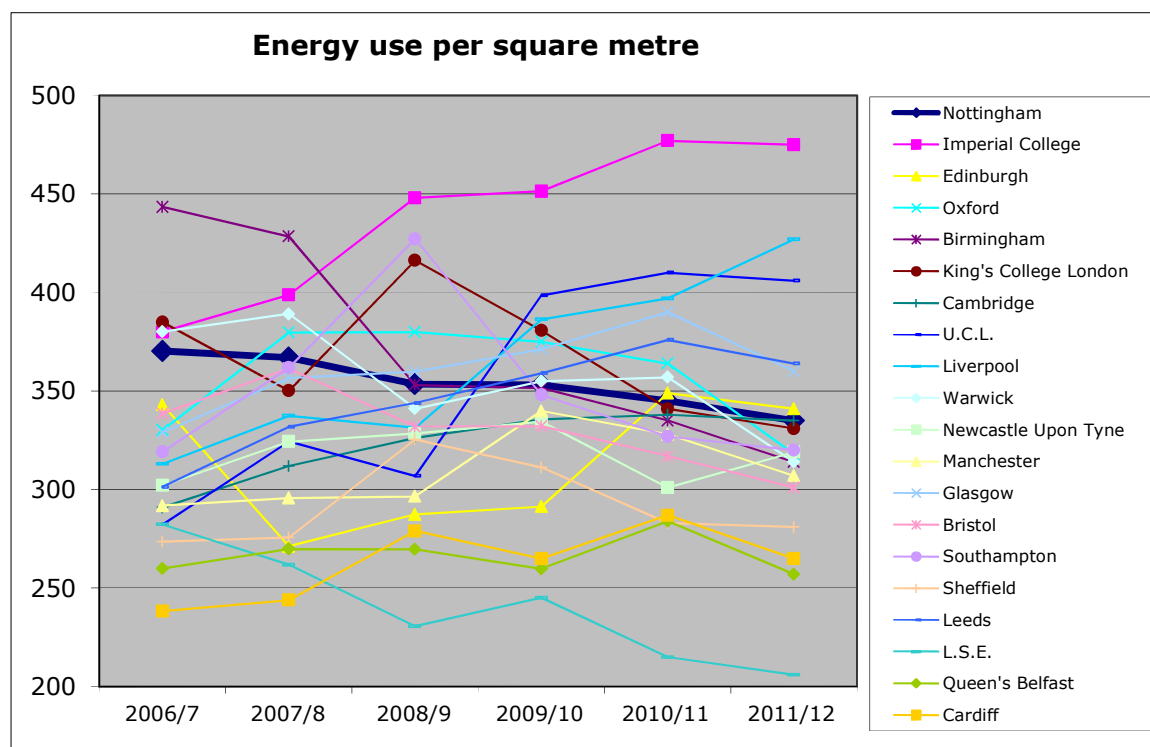


Figure 1.L.1 Graph of Russell Group Energy use per square metre.

The graphs on this page indicate that Nottingham's energy consumption per square metre and energy use per student are still mid-range within the Russell Group, and are slowly improving.

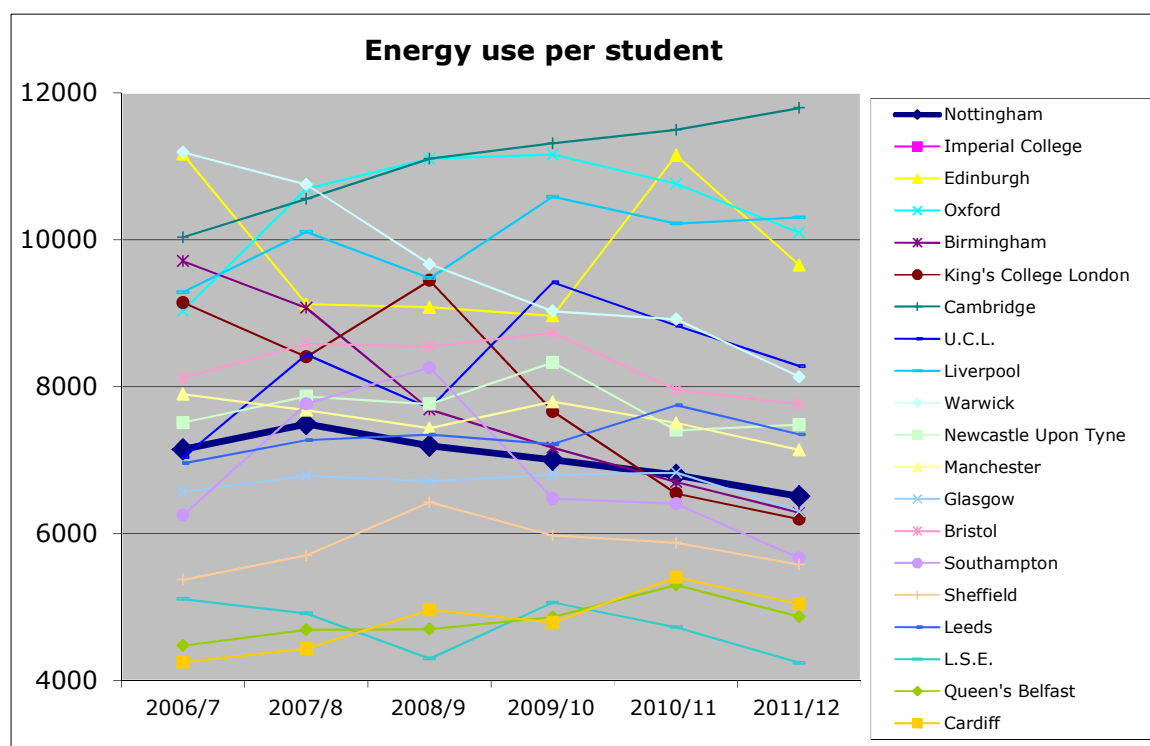


Figure 1.L.1 Graph of Russell Group Energy use per student (note Imperial is off the top of the scale at around 16,000kWh/student).

Section 2 – Electricity, Gas and Water data

2.A - Electricity Consumption

Electricity consumption was up by 1,733MWh, or 2.2%. New buildings added 2,530MWh to the total (see appendix 4.A), meaning that in the older buildings a reduction of 1.1% was achieved (797MWh against a base of 72,741MWh).

Of the new buildings, the Orchard Hotel added 902MWh, the Energy Technologies Building 532MWh, Aerospace 175MWh and the Si Yuan Centre 92MWh – a total of 1,701MWh. Several other buildings completed in 2011/12 showed increases as they reached full occupancy.

Progress is being made in this area as overall electricity consumption was 79,401MWh back in 2008/9, meaning that consumption increases including all new buildings, etc. have been kept to just 1.9% in the last four years.

Electricity Consumption	MWh	MWh	MWh	Change
	2010/11	2011/12	2012/13	'11/12 to '12/13
University Park	44,487	45,058	46,022	2.1%
Sutton Bonington	11,516	12,557	13,277	5.7%
Jubilee Campus	7,153	7,323	7,605	3.9%
Others	5,514	4,585	4,537	-1.0%
Medical School	9,587	9,642	9,457	-1.9%
Total	78,258	79,165	80,898	2.2%

Figure 2.A.1 Table of electricity usage for the last 3 years split by campus.

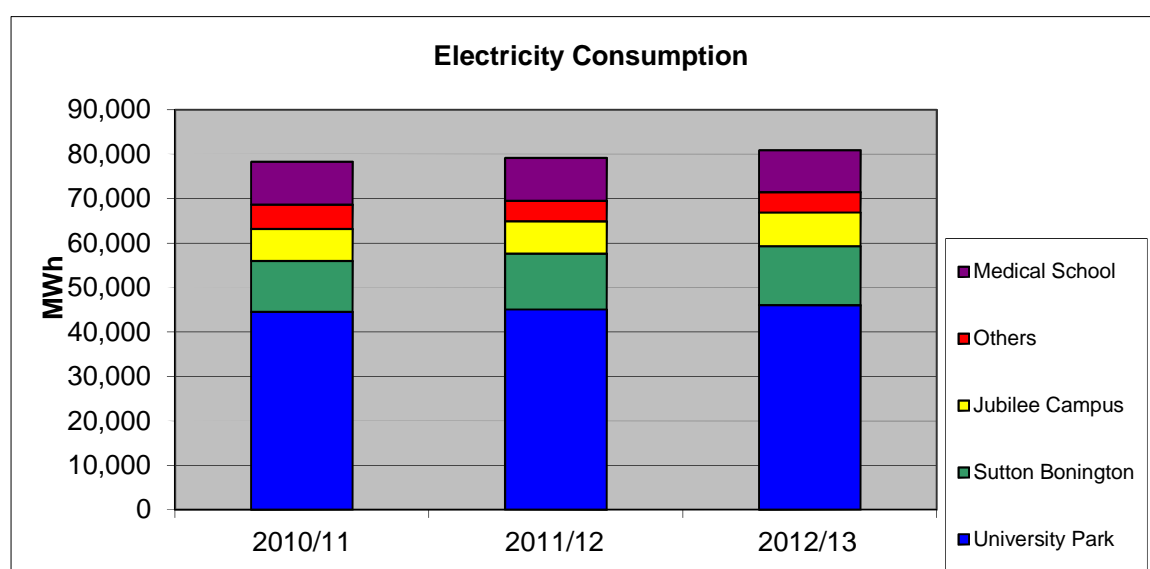


Figure 2.A.2 Graph of electricity usage for the last 3 years split by campus.

See Appendix A for a detailed breakdown of consumption on an account by account basis.

2.B - Electricity Costs

The University continued with the flexible purchasing policy first adopted in October 2005, by renewing our contract with GDF Suez Energy in February 2013. This policy allows us to buy electricity when we feel the market price is good value.

During the period, market electricity prices for large annual contracts (baseload energy only) have been remarkably stable compared to recent years, with just one significant fluctuation, a drop from around 5.4p/kWh to around 5.2p/kWh in April 2013.

At University Park, the average price paid per kWh of electricity across the year including all standing charges, rose from 6.99p/kWh in 2011/12 to 7.59p/kWh, a rise of 8.6%. As the raw energy price we paid fell by 1.6%, this shows that standing charges levied by the electricity industry were up by around 10%. One example of this is the charge to pay for the feed in tariff, which now stands at 0.335p/kWh, or £270,000 in total per annum.

The University's 'sub-100kW' sites (representing 36 smaller properties, such as the sports grounds) was tendered back in February 2012, and the contract was won by Southern Electric with prices reduced by 4%. Unit rates are now typically 10.11p/kWh for day units and 5.81p/kWh for night units and 8.95 p/kWh for evening and weekend units.

Electricity Costs	2010/11	2011/12	2012/13	Change
				'11/12 to '12/13
University Park	£ 2,887,877	£ 3,152,484	£ 3,495,825	11%
Sutton Bonington	£ 765,066	£ 905,438	£ 1,024,801	13%
Jubilee Campus	£ 487,501	£ 542,007	£ 611,983	13%
Others	£ 397,815	£ 355,195	£ 333,025	-6%
Medical School	£ 615,000	£ 640,000	£ 604,800	-6%
Total	£ 5,153,259	£ 5,595,124	£ 6,070,434	8%

Figure 2.B.1 Table of net electricity costs (excluding taxes) for the last 3 years split by campus.

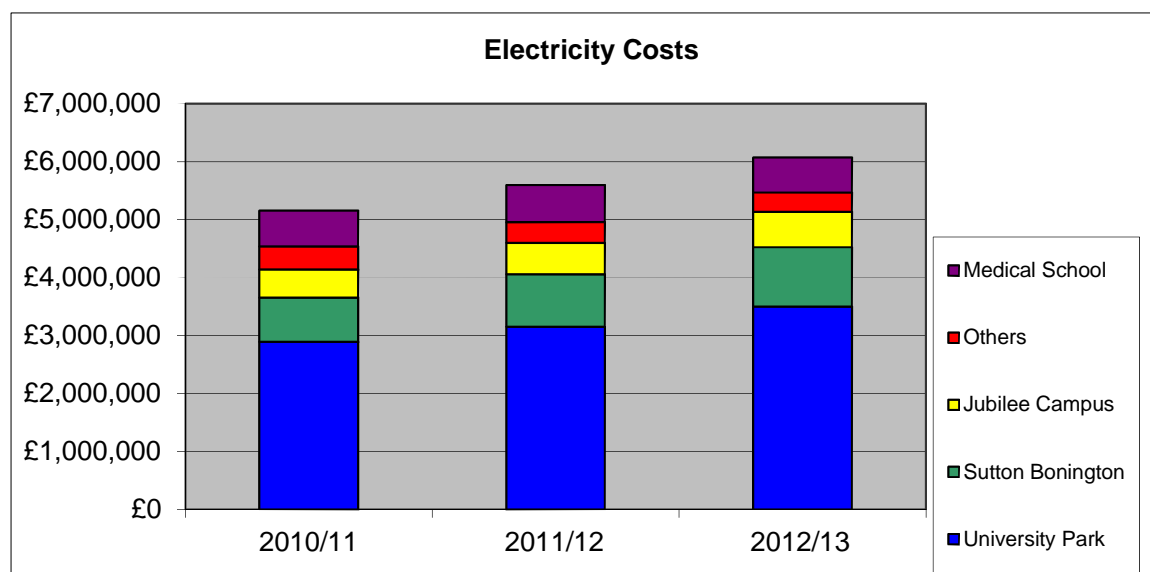


Figure 2.B.2 Graph of net electricity costs for the last 3 years split by campus.

2.C - Fossil Fuel Consumption

Consumption of fossil fuels rose by almost 11%, which was actually an impressive performance given the unusually cold winter. In a like-for like situation, the weather alone would have been responsible for an 18% increase in consumption. Additionally, total floor area increased by 3.5% in the year, so an efficiency gain of 10.7% was achieved overall.

A more detailed analysis of the figures shows a particularly impressive performance at University Park, as a result of a 13% year-on-year reduction at the Central Heating Station. This was achieved in the face of the cold weather as a result of a review of system settings plus work to reduce fume cupboard losses in Chemistry.

The increase at Sutton Bonington was largely down to the Main Boilerhouse figure being artificially low in 2011/12 as a result of the gas meter under-recording. The rise at Jubilee Campus was down to new buildings coming on-line.

Fossil Fuel Consumption	MWh	MWh	MWh	Change
	2010/11	2011/12	2012/13	'11/12 to '12/13
University Park	68,331	64,712	67,034	3.6%
Sutton Bonington	17,516	15,649	20,138	28.7%
Jubilee Campus	6,482	7,223	9,710	34.4%
Others	7,860	8,161	9,663	18.4%
Medical School (Steam)	22,933	24,866	26,872	8.1%
Total	123,122	120,611	133,417	10.6%

Figure 2.C.1 Table of fossil fuel usage for the last 3 years split by campus.

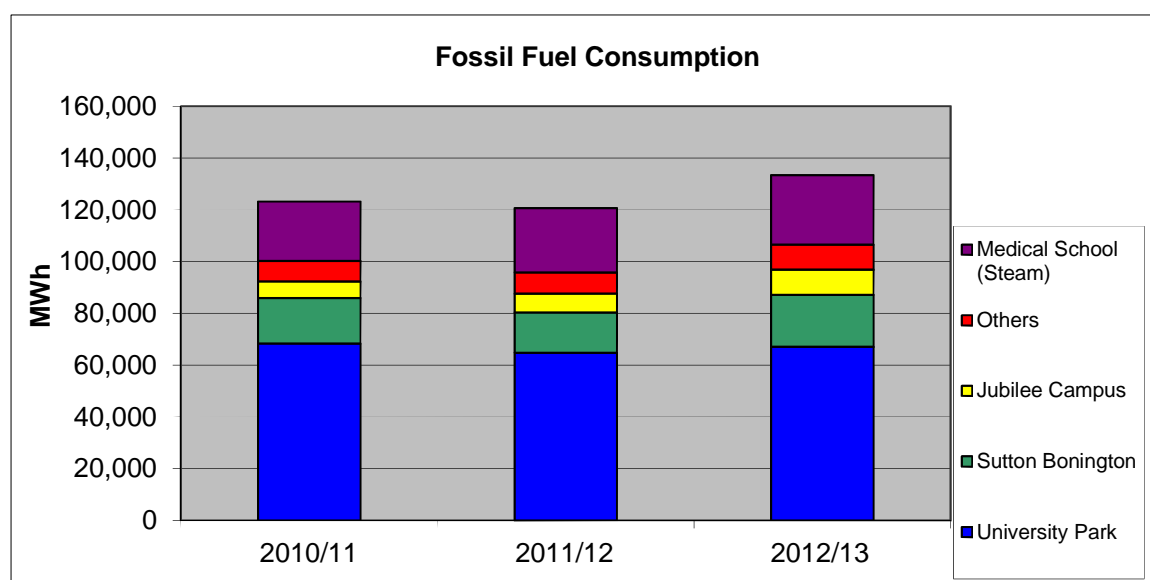


Figure 2.C.2 Graph of fossil fuel usage for the last 3 years split by campus.

See Appendix B for additional information showing a detailed breakdown of consumption on each account.

2.D - Fossil Fuel Costs

The University continued with the flexible purchasing policy first adopted in October 2005, by renewing our contract with GDF Suez Energy in February 2013. This meant that we were able to continue to purchase gas in monthly tranches at opportune times, or use the day-ahead market.

During the period, gas prices for large annual contracts (energy only) have remained within a fairly narrow band of 2.1p/kWh to 2.4p/kWh, but have shown surprising volatility within that band. Generally, prices remained surprisingly high and, unlike electricity, offered little obvious value throughout the period.

Overall, the average price paid per unit across the year (including transportation charges) rose substantially, from 2.42p/kWh to 2.73p/kWh, an increase of 13%. This is on top of a 26% increase in unit costs last year, and 25% the year before that. Costs at the Medical School – actually a pass-through charge for steam rather than gas – disproportionately affected the overall figures below.

Fossil Fuel Costs				Change
	2010/11	2011/12	2012/13	'11/12 to '12/13
University Park	£ 1,269,972	£ 1,537,595	£ 1,803,024	17%
Sutton Bonington	£ 354,493	£ 401,121	£ 551,936	38%
Jubilee Campus	£ 133,947	£ 182,951	£ 276,323	51%
Others	£ 175,178	£ 211,246	£ 285,090	35%
Medical School (Steam)	£ 573,000	£ 660,000	£ 1,160,700	76%
Total	£ 2,506,590	£ 2,992,912	£ 4,077,072	36%

Figure 2.D.1 Table of net fossil fuel costs(excluding VAT and CCL) for the last 3 years split by campus.

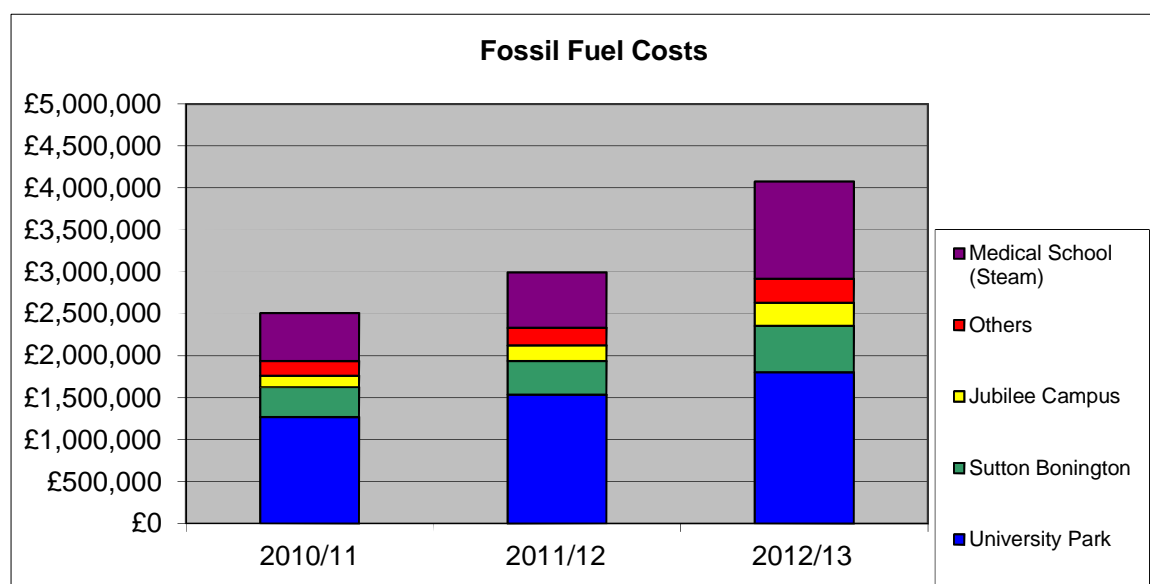


Figure 2.D.2 Graph of net fossil fuel costs for the last 3 years split by campus.

2.E - Water Consumption

An overall reduction of 2% was achieved in water consumption, with significant reductions at Sutton Bonington and Jubilee Campus. The situation at University Park would also have been considerably better but for a large burst of 15,000 cubic metres that occurred on December 21st 2012.

A system of twelve internal water meters was installed at Sutton Bonington on our own water mains network by our building surveyors team in the Spring of 2013. This is linked to our Elcomponent sub-metering system and now provides half-hourly data on water movements within our network. This system will significantly aid in early diagnosis of leaks, and is being replicated at University Park in the Autumn of 2013.

Water Consumption	cubic m. 2010/11	cubic m. 2011/12	cubic m. 2012/13	Change '11/12 to '12/13
University Park	483,105	507,199	539,502	6%
Sutton Bonington	161,700	169,280	138,312	-18%
Jubilee Campus	93,491	98,213	78,425	-20%
Others	18,308	18,557	19,290	4%
Medical School	56,088	46,009	48,175	5%
Total	812,692	839,258	823,703	-2%

Figure 2.E.1 Table of water usage for the last 3 years split by campus.

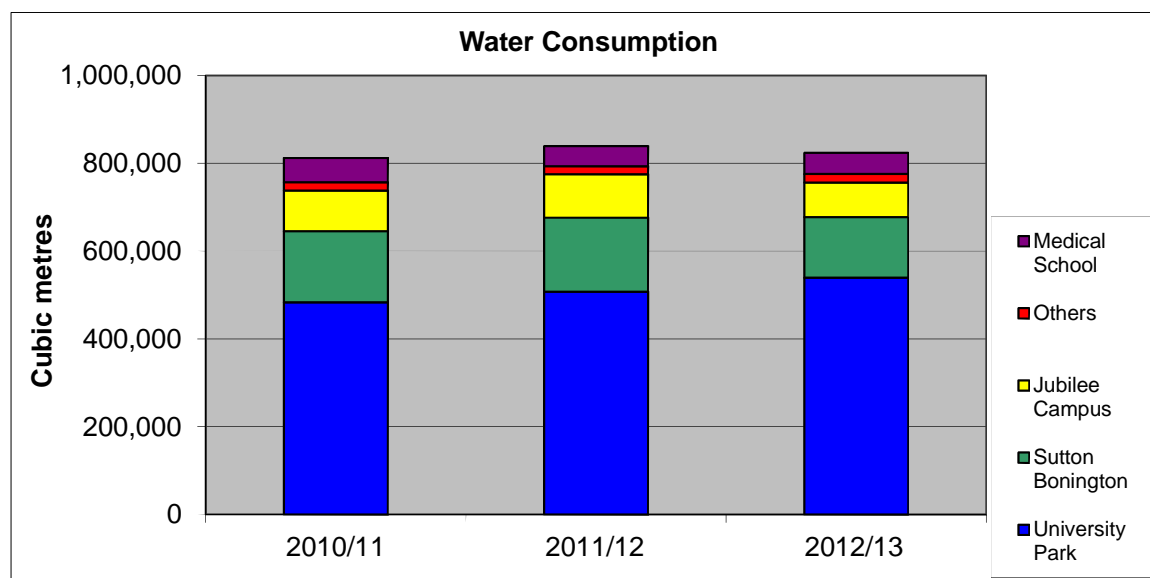


Figure 2.E.2 Graph of water usage for the last 3 years split by campus.

See Appendix C for a detailed breakdown of consumption on an account by account basis.

2.F - Water Costs

Severn Trent Water's annual price rises occur in April of each year, and in 2013 were more modest than recent years, which have averaged around 5%.

The price of water supplied increased by 0.8% in April 2013, up from 101.62 p/m³ to 102.46p/m³ in summer for large sites such as University Park. The winter rate for large sites was up by the same percentage, from 54.44/m³ to 54.89 p/m³. Rates for used water at large sites were up 1.7%, from 89.41p/m³ to 89.41 p/m³. Charges for the surface water drainage element, which is based on site area, were up by 3.0% from £111,691 per annum to £114,996.

Water Costs				Change
	2010/11	2011/12	2012/13	'11/12 to '12/13
University Park	£ 875,753	£ 933,874	£ 1,051,472	13%
Sutton Bonington	£ 273,151	£ 285,713	£ 242,369	-15%
Jubilee Campus	£ 188,573	£ 219,726	£ 206,320	-6%
Others	£ 62,445	£ 63,663	£ 76,773	21%
Medical School	£ 122,000	£ 114,000	£ 103,200	-9%
Total	£ 1,521,922	£ 1,616,976	£ 1,680,134	4%

Figure 2.F.1 Table of water costs for the last 3 years split by campus.

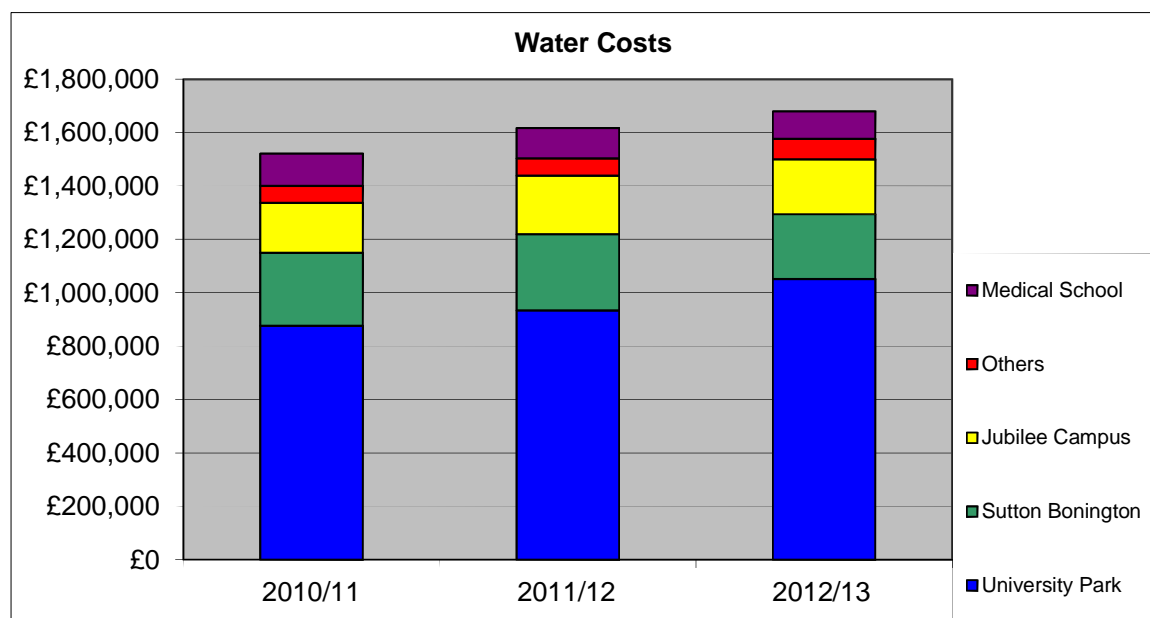


Figure 2.F.2 Graph of water costs for the last 3 years split by campus.

Section 3 – Environmental Considerations

3.A - Carbon Dioxide Emissions

The University's Carbon Management Plan introduced ambitious targets to reduce emissions by 34% by 2020 compared to a 2005/6 baseline. Achieving this will necessitate annual reductions in carbon dioxide emissions of around 1,400 Tonnes per annum over the whole period. The baseline was 62,036 Tonnes, with the target for 2020 being 41,000 Tonnes.

Carbon dioxide emissions for 2012/13 showed a reduction of over 5% as the emission factors were reduced following guidance from DEFRA and Salix. Note that energy consumption rose by 7%, on account of the colder weather, and floor area increased by 3.5%. If new buildings constructed since 2005/6 are removed from the figures, then our emissions were 57,468 Tonnes.

The emission factors used in the report are summarised in the table below:-

CO ₂ Emission Factors	2010/11	2011/12	2012/13
Electricity kg/kWh	0.541	0.541	0.48357
Gas kg/kWh	0.204	0.204	0.18404

Figure 3.A.1 Table of CO₂ emission factors for the last 3 years.

CO ₂ Emissions	Tonnes 2010/11	Tonnes 2011/12	Tonnes 2012/13	Change '11/12 to '12/13
University Park	38,007	37,578	34,592	-7.9%
Sutton Bonington	9,804	9,964	10,103	1.4%
Jubilee Campus	5,192	5,430	5,454	0.4%
Others	4,587	4,161	3,994	-4.0%
Medical School	9,865	10,289	9,519	-7.5%
Total	67,454	67,422	63,660	-5.6%

Figure 3.A.2 Table of CO₂ emissions for the last 3 years split by campus.

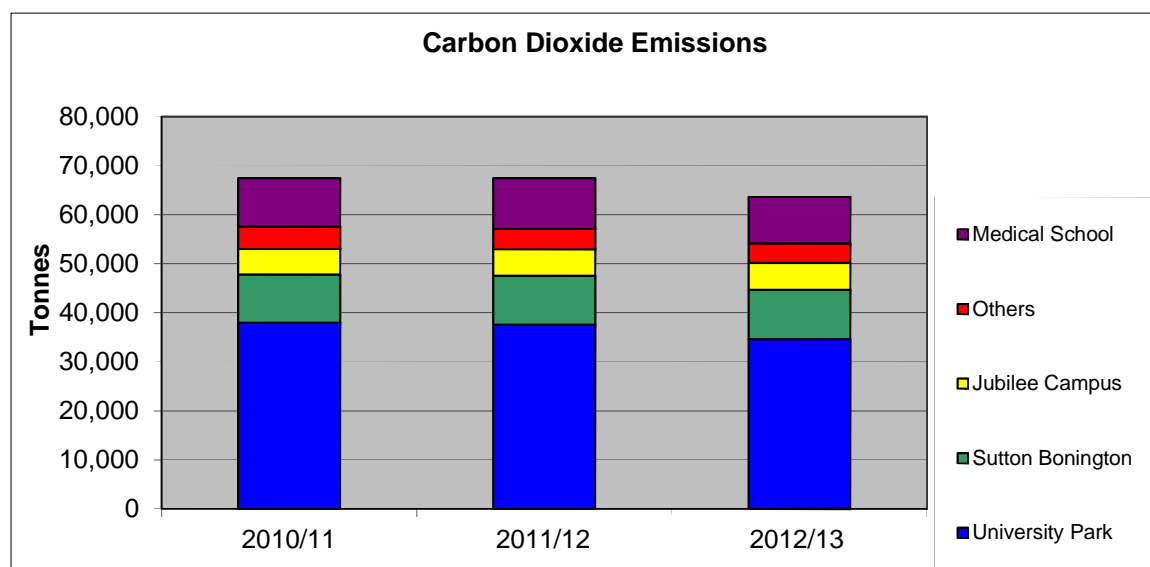


Figure 3.A.3 Graph of CO₂ emissions for the last 3 years split by campus.

3.B - Carbon Dioxide Emissions Breakdown by Campus and Utilities

CO2 Emissions 2012/2013	Tonnes Electricity	Tonnes Fossil Fuels	Tonnes Total	Prop'n Elec	Prop'n Gas
University Park	22,255	12,337	34,592	64%	36%
Sutton Bonington	6,420	3,682	10,103	64%	36%
Jubilee Campus	3,678	1,776	5,454	67%	33%
Others	2,194	1,800	3,994	55%	45%
Medical School	4,573	4,946	9,519	48%	52%
Total	39,120	24,540	63,660	61%	39%

Figure 3.B.1 Table of CO₂ emissions split by campus and by utility

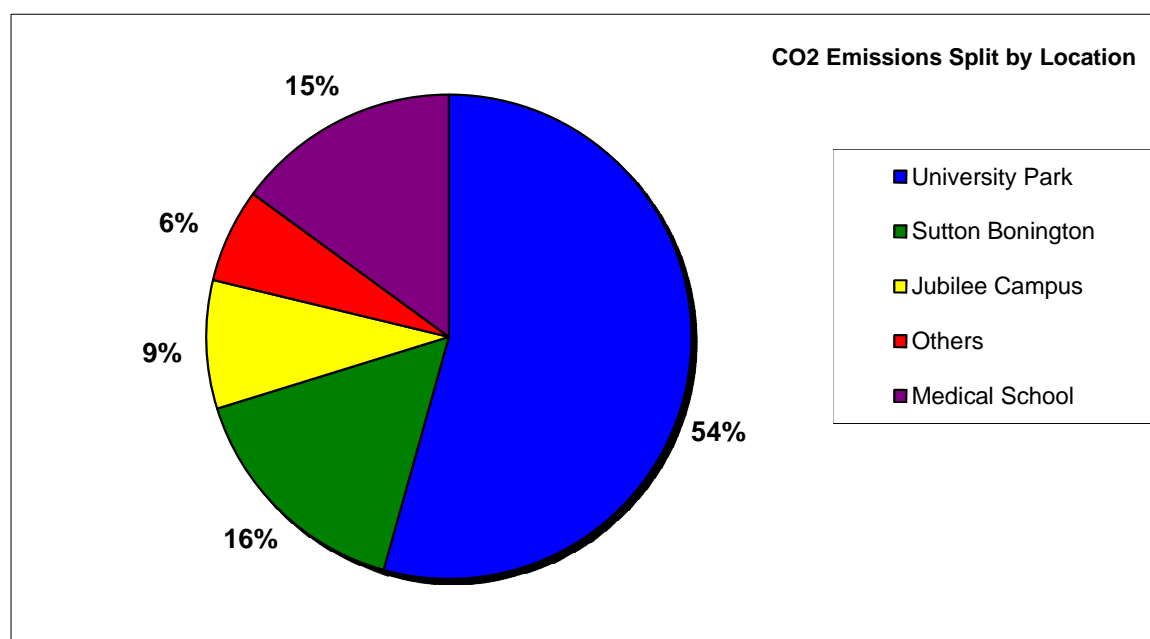


Figure 3.B.2 Chart of CO₂ emissions split by campus

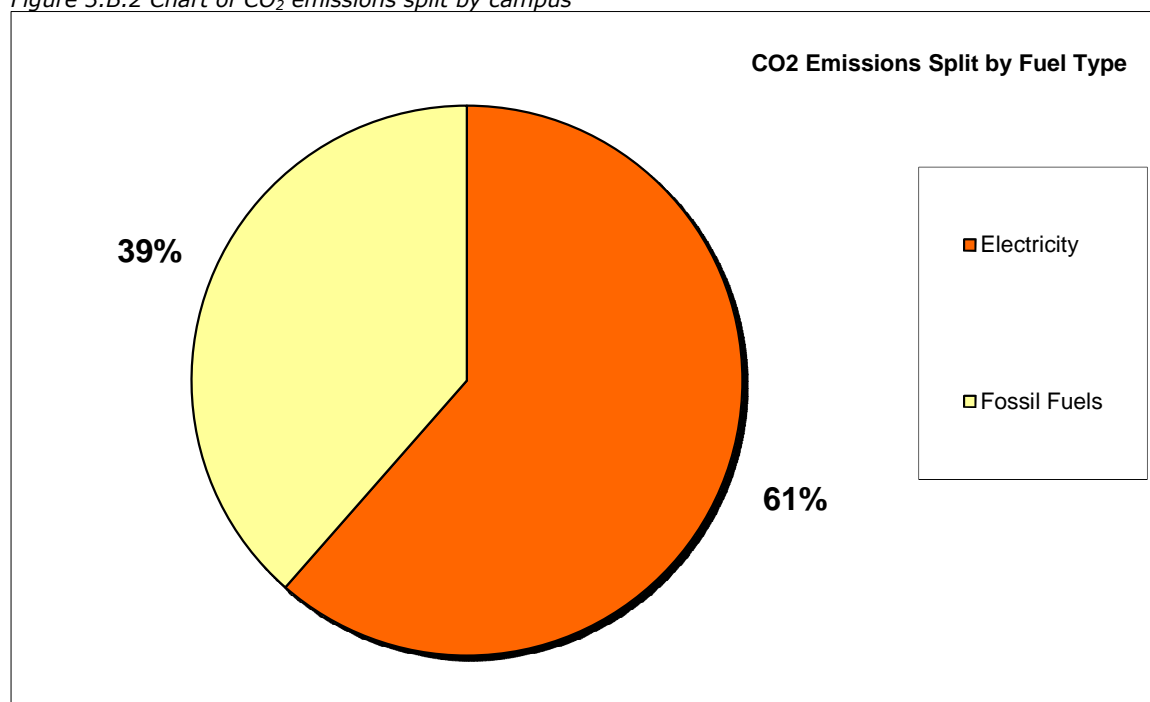


Figure 3.B.3 Chart of CO₂ emissions split by source fuel type

3.C - Weather Data – Degree Days

This financial year was surprisingly cold overall, with a consistently chilly Autumn, and a cold winter that only ended after a particularly freezing March. Overall, the year was about 12% colder than typical, but 24% colder than 2011/12, which had been particularly mild.

Degree days are determined by comparing the mean daily temperature to a set temperature, in this case 15.5 Celsius. For instance, a day where the outside temperature averaged 5.0C would be counted as 10.5 degree days. The values are summated over a calendar month and the total provides a reasonably accurate guide as to the relative heating load that should be required. For the purposes of this report, 75% of the change in degree days has been used, as production of domestic hot water typically accounts for about 25% of usage.

2012/13	Deg. Days	Deg. Days	Deg. Days	Deg. Days	'11/12 to '12/13
	20 Yr Avg	2010/11	2011/12	2012/13	Change
Aug	34	42	38	23	-39.5%
Sep	74	69	39	95	143.6%
Oct	159	165	101	190	88.1%
Nov	266	312	180	267	48.3%
Dec	339	487	297	332	11.8%
Jan	353	360	313	369	17.9%
Feb	304	245	324	353	9.0%
Mar	279	263	235	412	75.3%
Apr	212	124	251	238	-5.2%
May	134	104	143	154	7.7%
Jun	70	64	75	70	-6.7%
Jul	34	42	39	15	-61.5%
Total	2,258	2,277	2,035	2,518	23.7%
Weather modifier (75%)					17.8%

Figure 3.C.1 Table showing last three years monthly degree days and average degree days.

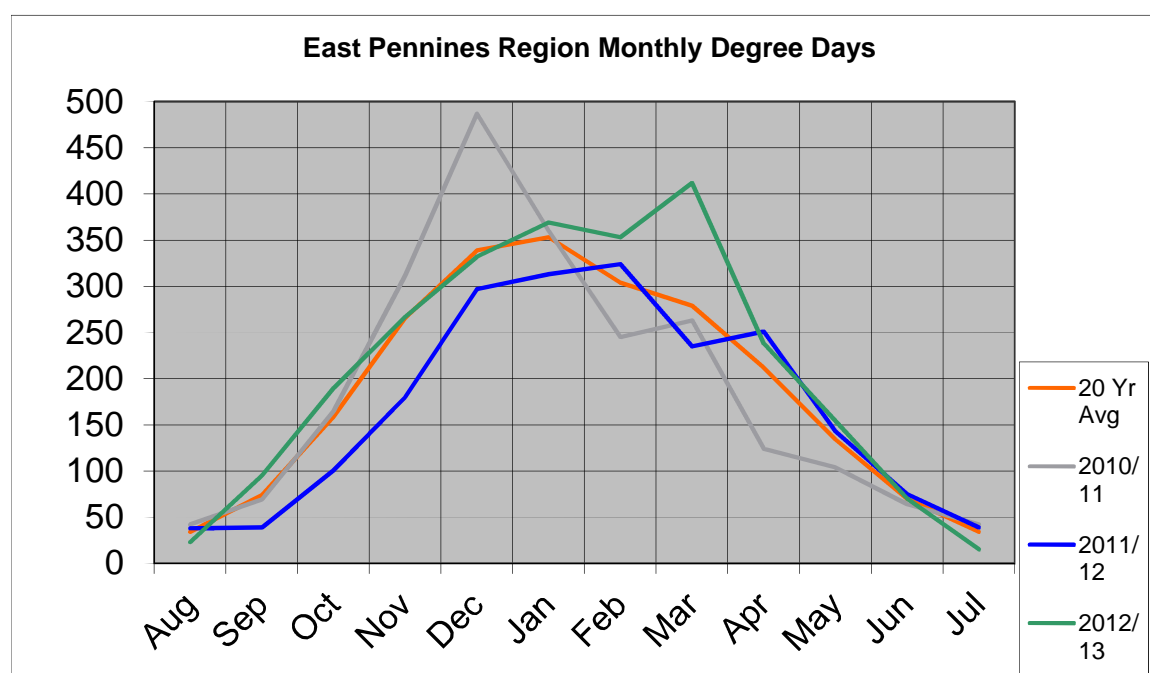


Figure 3.C.2 Graph showing last three years monthly degree days and average degree days

3.D – Changes since Base Year (2005/6)

The table below shows that new buildings have been responsible for 6,900 Tonnes of CO₂ emissions during 2012/13. Our emissions for 2012/13 would have been 10.8% lower without the additions due to new-build.

	Units	University Total '12/13	New Buildings	% due to new build
2.A Electricity Consumption	MWh	80,898	8,954	12.4%
2.C Fossil Fuel Consumption	MWh	133,417	10,303	8.4%
1.E Energy Use Total	MWh	214,315	19,257	9.9%
2.E Water Consumption	cu.m.	823,703	34,288	4.3%
1.A Energy & Water Costs	£	£11,827,640	£384,567	3.4%
1.G Floor Area	m ²	626,560	72,102	13.0%
3.B Carbon emissions from elec.	tonnes	39,120	4,330	12.4%
3.B Carbon emissions from gas	tonnes	24,540	1,862	8.2%
3.A Total Carbon Emissions	tonnes	63,660	6,192	10.8%

Figure 3.D.1 Table showing effect of new buildings on key parameters.

A full breakdown of energy consumption in new buildings on a building-by-building basis is shown on the next page in Appendix 4A.

3.E University Renewable Energy Generation

Building	Type	Annual Production (kWh)
Dearing	PV	8,491
Business Sch North	PV	18,257
Computer Sciences	PV	7,900
Derby Hall	PV	52,544
Lincoln Hall	PV	53,237
Si Yuan Chinese Studies	PV	9,200
Aerospace Technology	PV	12,600
Environmental Education Centre	PV	15,500
Sustainable Research Building	PV	7,600
Total		185,329
Rutland & Sherwood Hall	Solar thermal	15,250
Si Yuan Chinese Studies	Solar thermal	2,225
Geospatial	Biomass	75,000
BioEnergy	Biomass	165,000
Total		257,475

Figure 3.E.1 Table showing University renewable energy generation.

Note that the biomass production is included in the rest of the report as the fuel is ordered in from outside; solar generation is effectively hidden from the rest of the report as it takes place within the relevant buildings. A true figure for energy used in buildings should add back in the solar PV and solar thermal figure.

Section 4 – Appendices

4.A - Appendix A – Buildings constructed since 2005/6

New Sites		2012/13	2012/13	2012/13	2012/13	2012/13	2012/13	Floor Area
Main Campus		Elec kWh	Gas kWh	Water m3	Elec CO2	Gas CO2	Cost £	
Environmental Education Centre	1439	63,757	187,506	600	31	35	£11,457	1,424
Engineering Science Learning Cent	1661	354,741	770,000	820	172	142	£49,889	3,511
Humanities	1671	347,038	102,773	710	168	19	£30,812	4,303
Orchard Hotel	1681	902,315	1,206,256	9,900	436	222	£127,411	9,509
Mathematical Sciences	1561	390,286	771,000	800	189	142	£52,595	4,674
New eco-houses		50,000	2,424	200	24	0	£4,803	526
Totals		2,044,380	2,852,453	12,430	989	525	£265,509	22,523
New Sites		2012/13	2012/13	2012/13	2012/13	2012/13	2012/13	Floor Area
Sutton Bonington		Elec kWh	Gas kWh	Water m3	Elec CO2	Gas CO2	Cost £	
Bio-energy and Brewing Sciences	5781	648,295	493,672	5,113	313	91	£76,736	3,493
Bio-energy BIOMASS	5781	0	165,000	0	0	6	£7,600	0
Veterinary School	5721	1,588,281	2,074,007	6,000	768	382	£191,034	8,334
Gateway Building	5771	844,384	593,718	955	408	109	£83,344	3,253
Gustafson Glasshouse		70,385	243,693	200	34	45	£13,122	400
Sports Centre	5951	352,118	249,271	271	170	46	£37,662	2,450
Future Crop Glasshouses	5445	139,083	285,339	200	67	53	£19,113	312
Totals		3,642,546	4,104,700	12,739	1,761	731	£428,611	18,242
New Sites		2012/13	2012/13	2012/13	2012/13	2012/13	2012/13	Floor Area
Jubilee Campus		Elec kWh	Gas kWh	Water m3	Elec CO2	Gas CO2	Cost £	
6 Triumph Road	7405	66,267	45,332	299	32	8	£8,763	324
9 Triumph Road	7400	41,395	0	1,500	20	0	£18,889	399
Institute of Mental Health	7370	246,622	333,630	500	119	61	£31,497	3,074
Yang Fujia (International House)	7320	570,000	0	1,100	276	0	£45,852	3,400
Starbuck's Café	7305	80,000	20,070	50	39	4	£7,016	151
The Amenities Building	7330	323,178	584,453	2,400	156	108	£45,453	2,365
Nottingham Geospatial Bulding	7350	356,789	120,673	425	173	22	£31,891	2,944
Geospatial BIOMASS	7350	0	75,000	0	0	3	£3,500	0
Sir Colin Campbell Building	7340	570,949	246,802	800	276	45	£52,475	4,534
Energy Technologies Building	7360	532,700	538,915	1,200	258	99	£61,171	3,177
Aerospace Technology Centre	7380	175,000	468,177	80	85	86	£27,729	1,934
Si Yuan Centre for Chinese Studies	7410	92,000	200,000	80	44	37	£13,202	2,078
Totals		3,054,900	2,633,052	8,434	1,477	474	£347,438	24,380
New Sites		2012/13	2012/13	2012/13	2012/13	2012/13	2012/13	Floor Area
Others		Elec kWh	Gas kWh	Water m3	Elec CO2	Gas CO2	Cost £	
Clinical Sciences City Hosp Ph2	3325	86,727	86,727	49	42	16	£7,289	2,000
Derby School of Nursing	3571	84,015	300,000	0	41	55	£10,200	1,996
522 Derby Road	7420	3,000	95,705	0	1	18	£5,578	950
Unit 4 Easter Park	6931	0	84,805	236	0	16	£5,171	1,188
Vaughan Parry Williams Pav.	6314	38,741	145,506	400	19	27	£8,891	823
Totals		212,483	712,743	685	103	131	£37,129	6,957
New Sites		2012/13	2012/13	2012/13	2012/13	2012/13	2012/13	Floor Area
Main Campus		Elec kWh	Gas kWh	Water m3	Elec CO2	Gas CO2	Cost £	
Sutton Bonington		2,044,380	2,852,453	12,430	989	525	265,509	22,523
Jubilee Campus		3,642,546	4,104,700	12,739	1,761	731	428,611	18,242
Others		212,483	712,743	685	103	131	37,129	6,957
Total of 12 accounts		8,954,309	10,302,948	34,288	4,330	1,861	£384,567	72,102

Note that some of the buildings listed above have not yet been operational for a full year.

On these data tables, the following notes apply:-

- (1) University of Nottingham Innovation Park assets
- (2) East Midland Conference Centre Ltd assets

4.B - Appendix B – Electricity Data

Electricity Invoices		2012/13	2011/12	% change	2012/13	2011/12	% change	
Main Campus		kWh	kWh	kWh	£	£	£	
Main Campus HV Supply	1000	45,982,913	45,016,152	2%	£3,491,940	£3,148,334	11%	
Lenton Lodge	2251	22,200	25,300	-12%	£2,050	£2,300	-11%	Jul 13 estd
Lenton Eaves (UNSSC) (2)	1461	15,000	15,000	0%	£1,500	£1,500	0%	Jul 13 estd
Lenton Eaves (UNSSC) (1)	1461	1,000	1,000	0%	£200	£200	0%	Jul 13 estd
Redcourt Lodge	2222	400	600	-33%	£135	£150	-10%	Jul 13 estd
(2) East Midlands Conference Centre	1481	1,603,466	1,456,251	10%				Inc. in 'Main Campus HV'
(2) Orchard Hotel	1681	902,315	0	-				Inc. in 'Main Campus HV'
(2) Conference Centre Cottage	1482	5,400	14,568	-63%				Inc. in 'Main Campus HV'
Total of 5 accounts	Totals	46,021,513	45,058,052	2%	£3,495,825	£3,152,484	11%	
Electricity Invoices		2012/13	2011/12	% change	2012/13	2011/12	% change	
Sutton Bonington		kWh	kWh	kWh	£	£	£	
Sutton Bonington Campus	6800	12,535,759	11,927,318	5%	958,370	846,773	13%	
New Dairy	6500	630,000	500,000	26%	54,000	44,000	23%	Jul 13 estd
Melton Lane Building A	5433	37,000	31,000	19%	3,400	2,900	17%	Jun & Jul 13 estd
St.Michael's House (Flats 1-5)	6841	17,000	18,491	-8%	1,803	2,116	-15%	
Bunny Park Farm	6860	13,200	10,970	20%	1,350	1,121	20%	
St.Michael's Flats Nos 8&9	6843	9,776	8,829	11%	1,186	1,384	-14%	
40 College Road	6811	6,600	7,112	-7%	700	748	-6%	Jul 13 estd
24 College Road	6805	5,800	5,212	11%	560	572	-2%	Apr-Jul 13 estd
50 College Road	6819	5,700	430	1226%	650	130	400%	Jul 13 estd
St.Michael's Close (Flats 10-15)	6840	5,600	5,700	-2%	800	700	14%	Jun & Jul 13 estd
New Dairy Herdsman's House	6500	4,200	6,900	-39%	500	780	-36%	Jul 13 estd
St.Michael's Flats Nos 6&7	6842	3,800	3,987	-5%	690	929	-26%	Jul 13 estd
44 College Road	6814	2,000	5,428	-63%	300	615	-51%	Apr-Jul 13 estd
Eviton House (68 College Road)	5891	650	19,112	-97%	170	1,794	-91%	Jul 13 estd
45 College Road	6815	105	112	-7%	110	97	13%	
Manor Farm NU Press 2	6910	0	2,884	-100%	0	279	-100%	Closed
Manor Farm NU Press 1	6910	0	3,117	-100%	0	282	-100%	Closed
Manor Farm Pump House Kingst	6910	0	0	-	109	110	-1%	
Manor Farm Soar Irrigation Pump	6910	0	0	-	103	107	-4%	
Total of 19 accounts	Totals	13,277,190	12,556,602	6%	£1,024,801	£905,438	13%	
Electricity Invoices		2012/13	2011/12	% change	2012/13	2011/12	% change	
Jubilee Campus		kWh	kWh	kWh	£	£	£	
Jubilee Campus Main HV Supply	7000	5,817,989	6,074,288	-4%	£448,189	£433,019	4%	
New HV Supply 2012 E. of Tri.Rd	7000	686,327	76,161	801%	£63,668	£9,669	558%	New buildings
Newark & Southwell Halls	7000	658,680	686,688	-4%	£54,976	£53,077	4%	
Jubilee Sports Centre + Starbuck's	7301	328,567	329,669	0%	£30,510	£28,575	7%	
(1) 6 Triumph Road		66,267	92,000	-28%	£6,081	£8,700	-30%	
(1) 9 Triumph Road		41,398	58,565	-29%	£7,889	£8,297	-5%	
Charnock Ave Sports Pavilion	7201	6,000	6,000	0%	£670	£670	0%	Jul '13 estd
(1) Sir Colin Campbell Building	7340	570,949	604,499	-6%				Inc. in 'J.C. Main Supply'
(1) Institute of Mental Health	7370	246,622	76,161	-				Inc. in 'New supply 2012'
Total of 7 accounts	Totals	7,605,227	7,323,371	4%	£611,983	£542,007	13%	
Electricity Invoices		2012/13	2011/12	% change	2012/13	2011/12	% change	
Others		kWh	kWh	kWh	£	£	£	
King's Meadow Campus	6901	2,141,983	2,057,312	4%	£160,215	£144,812	11%	
Derby Medical School	3561	1,177,478	1,131,458	4%	£92,478	£82,375	12%	
Clinical Sciences (City Hospital)	3325	1,015,796	1,094,324	-7%	£64,210	£100,000	-36%	
Clinical Sciences Ph. 2 (City Hospit	3325	86,727	87,612	-1%	£5,089	£8,000	-36%	
Sports Ground - Highfields	6311	46,722	61,224	-24%	£4,497	£5,549	-19%	
Boat House	6321	34,000	82,071	-59%	£3,000	£7,277	-59%	Jul '13 estd
Grove Farm - Changing Rooms	6122	19,000	15,421	23%	£1,750	£1,434	22%	Jul '13 estd
14-22 Shakespeare Street	6101	6,826	24,643	-72%	£729	£2,636	-72%	Sold
Grove Farm - Old Farmhouse	6121	4,800	23,636	-80%	£530	£2,141	-75%	Jul '13 estd
Grove Farm	6123	3,900	4,811	-19%	£450	£550	-18%	Jul '13 estd
8 Peachey Street	6102	0	2,373	-100%	£77	£420	-82%	Sold
Total of 11 accounts	Totals	4,537,232	4,584,884	-1%	£333,025	£355,195	-6%	
Electricity Invoices		2012/13	2011/12	% change	2012/13	2011/12	% change	
Medical School		kWh	kWh	kWh	£	£	£	
Medical School		7,525,324	7,542,181	0%	£481,300	£500,000	-4%	Costs Estd
Embedded units (Q.M.C.)		1,931,414	2,100,000	-8%	£123,500	£140,000	-12%	Estd
Totals	Totals	9,456,738	9,642,181	-2%	£604,800	£640,000	-6%	

4.C - Appendix C – Fossil Fuel Data

	Gas Invoices		2012/13	2011/12	% change	2012/13	2011/12	% change	
	Main Campus		kWh	kWh	kWh	£	£	£	
	Central Heating Station	1000	25,283,282	29,172,417	-13%	£669,076	£675,524	-1%	
	Rutland Hall & Sherwood Hall	2191	3,002,263	2,632,344	14%	£117,150	£85,407	37%	
	Hugh Stewart Hall	2181	2,605,070	2,489,149	5%	£76,377	£65,067	17%	
	Cripps Hall	2171	2,407,750	2,032,763	18%	£58,412	£50,561	16%	
	Bio-Molecular Sciences Phase 1	1353	2,131,731	1,887,695	13%	£59,215	£46,977	26%	
	Swimming Pool	1571	2,129,544	1,772,688	20%	£52,919	£59,928	-12%	
	Derby Hall	2121	2,101,164	1,894,641	11%	£53,069	£43,426	22%	
	Bio-Molecular Sciences Phase 2	1353	2,017,024	1,867,312	8%	£53,439	£42,823	25%	
(2)	Jesse Boot Conference Centre	1481	1,802,341	1,118,195	61%	£46,190	£23,362	98%	Operated by De Vere
	Lenton & Wortley Hall	2141	1,551,516	1,587,467	-2%	£39,017	£33,010	18%	
	Lincoln Hall	2150	1,525,686	1,566,531	-3%	£38,130	£32,586	17%	
	Willoughby Hall	2211	1,510,459	1,403,571	8%	£37,924	£37,045	2%	
	Nightingale Hall	2161	1,456,264	1,428,197	2%	£36,601	£30,019	22%	
	Florence Boot Hall	2131	1,428,089	1,162,343	23%	£43,412	£24,234	79%	
	Science Area, MRI etc.	1271	1,314,823	1,139,890	15%	£33,044	£23,541	40%	
(2)	Orchard Hotel	1681	1,206,156	0	-	£34,379	£0	-	Operated by De Vere
	Cavendish Hall	2111	1,116,558	954,327	17%	£27,802	£28,091	-1%	
	Ancaster Hall	2101	1,082,939	1,129,708	-4%	£27,013	£23,476	15%	
	Boots Science Building	1581	874,905	896,560	-2%	£28,157	£22,720	24%	
	Institute of Hearing Research	1401	801,767	688,974	16%	£20,244	£14,321	41%	
	Trent Building	1101	787,518	493,577	60%	£19,531	£10,528	86%	
	Arts Centre & School of Music	1501	710,226	636,030	12%	£17,724	£13,238	34%	
	Sports Centre, Main Campus	1221	680,767	473,148	44%	£17,326	£9,910	75%	
	D.H.Lawrence Lakeside Pavilion	1631	616,055	519,777	19%	£16,614	£12,902	29%	
	Staff Club Lenton Mount, Hemsley	1181	532,137	448,571	19%	£13,380	£9,320	44%	
	Wolfson Building	1421	495,487	597,765	-17%	£12,512	£12,478	0%	
	Portland Building kitchens	1111	494,814	216,046	129%	£12,642	£4,579	176%	
	Lenton Firs - Built Environment	1431	481,013	431,490	11%	£11,831	£9,080	30%	
	Innovative Technology Research C	1641	419,187	333,560	26%	£11,588	£8,392	38%	
	Lenton Hurst	2411	354,979	327,312	8%	£8,830	£6,757	31%	
	Cripps Health Centre	1231	341,079	268,289	27%	£8,582	£5,657	52%	
	Portland Building new extn.	1111	324,985	220,159	48%	£8,138	£4,588	77%	
	Redcourt	2221	313,290	240,021	31%	£7,855	£4,992	57%	
	MMEM (Production Engineering)	1371	239,303	229,153	4%	£5,905	£4,807	23%	
	Lenton Grove (History)	1211	235,273	182,563	29%	£5,896	£3,893	51%	
	Sports Centre, Main Campus	1221	214,160	140,516	52%	£6,033	£3,651	65%	
	Environmental Education Centre (I	1439	187,506	183,790	2%	£5,355	£4,728	13%	
	Orchards	1161	178,352	85,448	109%	£4,502	£1,801	150%	
	Lenton Eaves (UNSSC)	1461	145,333	126,665	15%	£4,276	£3,432	25%	
	Centre for 3D Design	1223	131,122	6,757	1841%	£3,502	£493	611%	
	Lincoln Hall	2150	130,005	95,713	36%	£3,238	£2,001	62%	
	Paton House (Built Env.)	1441	123,783	143,905	-14%	£3,124	£2,989	5%	
	Sherwood Hall	2200	119,106	126,158	-6%	£3,014	£2,648	14%	
	Cavendish Hall Extension 1994 (H	2115	114,402	102,896	11%	£2,917	£2,142	36%	
	Rutland Hall Extension	2195	107,310	135,693	-21%	£2,724	£2,758	-1%	
	Lenton Fields (China House)	2163	106,497	82,118	30%	£3,082	£2,737	13%	
	Sustainable Research Building	1436	105,880	84,381	25%	£3,170	£2,361	34%	
	Humanities	1671	102,773	60,666	69%	£4,579	£3,012	52%	
	Lenton Close Annexe (Cripps Hall)	2175	101,071	99,493	2%	£2,538	£2,075	22%	
	Cripps Hall	2171	97,732	111,949	-13%	£2,478	£2,327	6%	
	Lenton Lodge	2251	91,453	50,284	82%	£2,271	£1,051	116%	
	Rutland Hall	2191	73,369	89,230	-18%	£1,854	£1,861	0%	
	Lenton & Wortley Hall	2141	72,179	73,017	-1%	£1,844	£1,520	21%	
	Warden's House Sherwood Hall	2207	52,578	44,002	19%	£1,311	£916	43%	
(2)	J.Boot C.C. Annexe (Cottage)	1482	49,968	43,293	15%	£1,246	£907	37%	
	Lenton Firs Lodge West	2241	46,295	47,774	-3%	£1,159	£994	17%	
	Cavendish Hall	2111	44,418	47,404	-6%	£1,107	£967	15%	
	Former Warden's House, Cavendish	2113	42,487	37,440	13%	£1,068	£789	35%	
	Warden's House Rutland Hall	2194	39,775	30,352	31%	£1,007	£643	57%	
	Paton Cottage (Stables Annx, Pat	1442	35,736	33,649	6%	£902	£702	28%	
	Warden's House Florence Boot Ha	2133	33,596	23,021	46%	£846	£485	74%	
	1 Nightingale Close (Nigh.Hall War	2321	25,606	18,064	42%	£644	£385	67%	
	Warden's House Ancaster Hall	2105	23,341	24,227	-4%	£578	£506	14%	
	5A Wortley Hall Close (Eco-House	2296	22,792	24,377	-7%	£894	£840	6%	
	Playgroup	1411	19,457	85,435	-77%	£427	£1,789	-76%	Closed
	Redcourt Lodge	2222	9,298	1,362	583%	£616	£108	470%	
	Sherwood Hall	2200	8,913	7,948	12%	£224	£171	31%	
	New Eco-houses		2,424	2,445	-1%	£570	£569	0%	
	Total of 68 accounts	Totals	67,034,158	64,711,706	4%	£1,803,024	£1,537,595	17%	

4.C - Appendix C – Fossil Fuel Data continued

Gas Invoices		2012/13	2011/12	% change	2012/13	2011/12	% change	
Sutton Bonington		kWh	kWh	kWh	£	£	£	
Main Boilerhouse	6800	9,921,416	6,725,699	48%	£262,099	£176,285	49%	Meter under-rec.d in 11/12
Animal Houses Boilerhouse	6800	3,002,686	2,832,167	6%	£73,249	£61,998	18%	
Plant Sciences	5711	2,250,303	2,070,236	9%	£63,508	£53,419	19%	
Veterinary School	5721	2,074,007	1,797,277	15%	£57,284	£44,475	29%	
Gateway Building (Bio-Sciences)	5771	593,718	500,999	19%	£16,796	£12,641	33%	
Bio-Energy and Brewing Science	5781	493,672	454,806	9%	£16,709	£16,443	2%	
Sports Centre SB (New)	5951	352,118	249,271	41%	£10,170	£7,259	40%	
TCRU Future Crop Glasshouses		285,339	218,771	30%	£8,064	£5,771	40%	
Gustafson Glasshouse		243,693	0	-	£7,737	£0	-	New supply
Bio-Energy BIOMASS	5781	165,000	130,489	26%	£7,600	£6,379	19%	Jun & Jul '13
The Elms (Environmental Science)	5161	163,473	135,204	21%	£5,041	£4,030	25%	
The Firs (Surgery No.2)	5233	131,920	93,341	41%	£10,619	£1,993	433%	
Main Building (Sutton Bonington)	5011	65,384	70,498	-7%	£1,619	£1,509	7%	
Food Hall	5081	60,606	-4	-	£1,467	£0	-	
Food Science Building	5701	53,014	52,501	1%	£1,310	£1,096	20%	
Bonington Hall Laundry & Gym	5881	44,756	40,267	11%	£1,106	£864	28%	
Bonington Hall Warden's House	5842	37,609	28,311	33%	£927	£607	53%	
St.Michael's Flats Nos 6&7	6842	36,585	12,252	199%	£1,625	£1,181	38%	
St.Michael's House Flat 1	6841	33,521	29,626	13%	£870	£730	19%	
St.Michael's House Flat 2	6841	33,119	36,345	-9%	£951	£863	10%	
24 College Road	6805	33,047	22,677	46%	£858	£486	77%	
52 College Road	6820	25,474	24,267	5%	£623	£523	19%	
St.Michael's House Flat 3	6841	12,485	11,394	10%	£347	£246	41%	
St.Michael's House Flat 5	6841	11,375	-12,380	-192%	£295	-£222	-233%	
St.Michael's House Flat 4	6841	6,746	3,390	99%	£160	£71	124%	
St.Michael's Flats Nos 8&9	6843	5,124	10,652	-52%	£525	£558	-6%	
North Laboratory	5091	822	760	8%	£21	£16	30%	
Eviton House (68 College Road)	5891	536	110,000	-100%	£356	£1,900	-81%	
South Laboratory	5051	32	0	-	£1	£0	-	
Hathern House, Bon. Hall (4)	5831	0	0	-	£0	£0	-	
Total of 30 accounts	Totals	20,137,581	15,648,816	29%	£551,936	£401,121	38%	
Gas Invoices		2012/13	2011/12	% change	2012/13	2011/12	% change	
Jubilee Campus		kWh	kWh	kWh	£	£	£	
Newark Hall	7130	1,328,513	1,241,396	7%	£42,046	£38,951	8%	
Computer Sciences (DCS) & The A	7040	978,607	775,604	26%	£26,396	£16,361	61%	
The Exchange (CTF)	7030	769,653	536,838	43%	£19,571	£11,581	69%	
Melton Hall	7110	681,911	652,437	5%	£18,957	£13,815	37%	
Southwell Hall	7120	680,278	679,302	0%	£18,931	£18,441	3%	
Business School South (New)	7080	609,657	821,021	-26%	£15,529	£20,872	-26%	
The Amenties Building	7330	584,453	253,030	131%	£15,833	£7,206	120%	
Jubilee Sports Centre	7301	552,582	429,373	29%	£15,470	£11,398	36%	
Energy Technologies Building	7360	538,915	0	-	£17,969	£0	-	New Supply
Business School North (SMF)	7020	536,933	606,755	-12%	£13,180	£13,573	-3%	
Dearing Building (FOE)	7050	530,217	598,911	-11%	£13,217	£12,780	3%	
Aerospace Technologies Building	7380	468,177	0	-	£14,177	£0	-	New Supply
Computer Sciences (DCS) & The A	7040	408,497	252,346	62%	£10,757	£5,360	101%	
(1) Institute of Mental Health	7370	333,630	58,256	473%	£11,609	£2,414	381%	First full year
(1) Sir Colin Campbell Building (Gatew	7340	246,802	85,987	187%	£7,163	£3,148	128%	
Si Yuan Centre for Chinese Studies	7410	200,000	0	-	£6,000	£0	-	Estimated, new supply
The Nottingham Geospatial Buildin	7350	120,673	155,946	-23%	£3,728	£4,429	-16%	
Geospatial BIOMASS	7350	75,000	31,353	139%	£3,500	£1,200	192%	Apr-Jul13 estd.
(1) 6 Triumph Rd		45,332	43,081	5%	£1,495	£1,328	13%	
Starbucks Cafe Jubilee		20,070	1,564	-	£794	£93	-	First full year
Total of 19 items		9,709,900	7,223,200	34%	£276,323	£182,951	51%	
Gas Invoices		2012/13	2011/12	% change	2012/13	2011/12	% change	
Others		kWh	kWh	kWh	£	£	£	
King's Meadow Campus	6901	5,793,477	5,450,087	6%	£156,265	£125,255	25%	
Derby Medical School	3561	2,017,341	1,401,758	44%	£56,603	£37,241	52%	
Clinical Sciences (City Hospital)	3325	1,015,796	698,916	45%	£31,300	£20,000	57%	
Grove Farm OIL		210,000	210,000	0%	£16,000	£14,000	14%	Estimated
Sports Ground - Highfields	6311	163,922	148,585	10%	£4,893	£4,082	20%	
Vaughan Parry Williams Pavilion	6314	145,506	114,098	28%	£5,111	£3,642	40%	
522 Derby Road (ex. Mansells)		95,705	0	-	£4,978	£0	-	New supply
Clinical Sciences (City Hospital) Ph	3325	86,727	77,817	11%	£2,700	£2,000	35%	
Unit 4, Easter Park		84,805	0	-	£2,663	£0	-	New supply
Boathouse OIL		50,000	50,000	0%	£3,000	£2,800	7%	Estimated
14-22 Shakespeare Street	6101	45	9,672	-100%	£1,276	£2,082	-39%	Closed
8 Peachey Street	6102	0	59	-100%	£301	£144	110%	Closed
Total of 11 accounts		9,663,324	8,160,992	18%	£285,090	£211,246	35%	
Steam Used		2012/13	2011/12	% change	2012/13	2011/12	% change	
Medical School		kWh	kWh	kWh	£	£	£	
Medical School		22,122,493	20,866,202	6%	£955,700	£520,000	84%	Costs estd
Embedded Units (Q.M.C.)		4,750,000	4,000,000	19%	£205,000	£140,000	46%	Costs Estd
		26,872,493	24,866,202	8%	£1,160,700	£660,000	76%	

4.D - Appendix D – Water Data

Water Invoices		2012/13	2011/12	% change	2012/13	2011/12	% change	
Main Campus		cubic m.	cubic m.	cubic m.	£	£	£	
	Main Campus Invoices	1000	505,000	482,095	5%	£0	£0	Jul '13 estd
	Nightingale Hall	2161	10,001	7,925	26%	£0	£0	Jul '13 estd
(2)	Orchard Hotel	1681	9,900	0	-	£24,000	£0	Jun & Jul estd
	Redcourt	2221	4,728	3,491	35%	£0	£0	Jul '13 estd
(2)	JBCC Banqueting	1481	2,700	2,377	14%	£0	£0	Jul '13 estd
(2)	Jesse Boot Conference Centre	1481	2,300	1,847	25%	£0	£0	Jul '13 estd
	Lenton Eaves (UNSSC)	1461	1,600	1,788	-11%	£0	£0	Jul '13 estd
	Paton House (Built Env.)	1441	1,150	977	18%	£0	£0	Jul '13 estd
	Lenton Grove (History)	1211	750	1,538	-51%	£0	£0	Jul '13 estd
	Lenton Hurst	2411	700	776	-	£0	£0	Jul '13 estd
	Lenton Firs - Built Environment	1431	400	917	-56%	£0	£0	Jul '13 estd
	Lenton Lodge	2251	200	234	-14%	£0	£0	Jul '13 estd
	5A Wortley Hall Close (Eco-House)	2296	70	26	169%	£0	£0	Jul '13 estd
	Playgroup	1411	3	234	-99%	£0	£0	Supply closed
	Science Area	1000	0	2,590	-100%	£0	£0	Supply closed
	Beeston Lane Gardeners' Compou	1511	0	384	-100%	£0	£0	Supply closed
	Water & SWD invoice	1000	0	0	-	£520,000	£493,874	9%
	TE & sewerage invoice	1000	0	0	-	£507,472	£440,000	4%
Total of 18 accounts		Total:	539,502	507,199	6%	£1,051,472	£933,874	13%
Water Invoices		2012/13	2011/12	% change	2012/13	2011/12	% change	
Sutton Bonington		cubic m.	cubic m.	cubic m.	£	£	£	
	Landcroft Lane meter	6800	122,200	154,250	-21%	£0	£0	Jul '13 estd
	College Road meter	6800	14,500	14,099	3%	£0	£0	Jul '13 estd
	St.Michael's House (Flats 1-5)	6841	1,252	754	66%	£3,133	£1,856	69%
	Bunny Park Farm	6860	360	177	103%	£580	£283	105%
	Trough, Kegworth Road	6910	0	0	-	£22	£22	0%
	SB Water Costs	6800	0	0	-	£131,000	£143,555	-9%
	SB TE Costs	6800	0	0	-	£107,634	£161,406	-33%
Total of 7 items			138,312	169,281	-18%	£242,369	£307,121	-21%
Water Invoices		2012/13	2011/12	% change	2012/13	2011/12	% change	
New Campus		cubic m.	cubic m.	cubic m.	£	£	£	
	Jubilee Campus main meter	7000	45,000	52,359	-14%	£0	£0	Mar-Jul '13 estd
	Newark Hall	7130	18,000	29,231	-38%	£0	£0	Mar-Jul '13 estd
	Southwell Hall	7120	5,300	8,227	-36%	£0	£0	Mar-Jul '13 estd
	The Amenities Building	7330	2,400	2,338	3%	£0	£0	Mar-Jul '13 estd
	Jubilee Sports Centre	7301	2,100	2,249	-7%	£0	£0	Mar-Jul '13 estd
(1)	9 Triumph Road		1,500	1,401	7%	£0	£0	Feb-Jul '13 estd
(1)	Jubilee Campus ETB/IMH/ATC	7000	1,500	0	-	£4,100	£0	Jun & Jul '13 estd
	YANG Fujia Building (International)	7320	1,100	1,045	5%	£0	£0	Mar-Jul '13 estd
(1)	Sir Colin Campbell Building (Gatew	7340	800	770	4%	£0	£0	Mar-Jul '13 estd
	The Nottingham Geospatial Buildin	7350	425	425	0%	£0	£0	Mar-Jul '13 estd
(1)	6 Triumph Road		299	166	80%	£1,187	£784	51%
	Charnock Ave Sports Pavilion	7201	1	2	-36%	£33	£26	26%
(1)	9 Triumph Road costs inc SWD		0	0	-	£11,000	£8,600	28%
	Jubilee Campus costs	7000	0	0	-	£190,000	£210,317	-10%
Total of 14 items			78,425	98,213	-20%	£206,320	£219,726	-6%
Water Invoices		2012/13	2011/12	% change	2012/13	2011/12	% change	
Others		cubic m.	cubic m.	cubic m.	£	£	£	
	King's Meadow Campus	6901	9,179	8,900	3%	£46,486	£40,153	16%
	Clinical Sciences (City Hospital) Ph	3325	4,746	4,408	8%	£16,900	£12,000	41%
	Grove Farm - Changing Rooms	6122	2,055	1,550	33%	£3,181	£2,400	33%
	Boat House	6321	1,565	1,400	12%	£3,835	£3,300	16%
	Sports Ground - Highfields	6311	1,425	2,228	-36%	£3,540	£5,310	-33%
	Unit 4, Easter Park		236	0	-	£2,508	£0	-
	Clinical Sciences (City Hospital) Ph	3325	49	71	-31%	£175	£200	-13%
	8 Peachey Street	6102	35	0	-	£147	£50	195%
14-22 Shakespeare Street		6101	19,290	18,557	4%	£76,773	£63,413	21%
Water Recharges		2012/13	2011/12	% change	2012/13	2011/12	% change	
Medical School		cubic m.	cubic m.	cubic m.	£	£	£	
	Medical School		39,054	35,209	11%	£83,700	£90,000	-7%
	Embedded Units		9,121	10,800	-16%	£19,500	£24,000	-19%
			48,175	46,009	5%	£103,200	£114,000	-9%



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