



The University of  
**Nottingham**

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# Annual Energy Report 2011/12

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

# **2011/12 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.

Energy costs, including taxes, rose by £1.2 million to £11.8 million in 2011/12 due to high and rising European energy costs pushing up our costs. However, we continue to see a falling trend in energy consumption, which fell by 0.8%, despite floor area increasing and student numbers rising. Consumption of fossil fuels – primarily gas – was also down 2.0%, but electricity usage increased by 1.2%. As a result of new energy-efficient buildings and continuing investment in energy efficiency projects, energy consumption per square metre has fallen steadily from 425 kWh/m<sup>2</sup> in 2004/5 to 330 kWh/m<sup>2</sup> in 2011/12. This represents an energy efficiency improvement of 22% across the whole University in seven years.

Other headline performance indicators from this year's report show that overall emissions of carbon dioxide from all energy sources were basically unchanged for the year, at 67,422 Tonnes. The analysis of new buildings constructed since the base year of 2005/6 shows that they were responsible for 4,600 Tonnes of CO<sub>2</sub> in 2011/12, which is a 7.3% increase on the base. In addition, water usage increased by 3% to 839,258 cubic metres, exactly in line with increased student numbers.

The University continues to work hard to reduce energy consumption and increase efficiencies. I hope you find this report both informative and a useful resource in this area.

Professor Karen Cox

Pro-Vice, Chancellor



Note that most figures relate to the University's financial year of August 1st 2011 to July 31st 2012, with the baseline for comparison being the previous (2010/11) 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

Energy and water costs rose again to £10.2 million in 20011/12, or £11.8 million including taxes. Whilst our energy consumption has remained stable or even showed small reductions, high and rising European energy prices have again pushed up our costs. 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.

Although electricity costs rose again – by 9% on top of last year's increase of 4%, the bulk of the increase was caused by the consistently high gas costs, which were up 19% on top of last year's 20% rise. Water costs went up 6% compared to 17% in 2010/11.

Energy and Water Costs				Change
	2009/10	2010/11	2011/12	'10/11 to '11/12
University Park	£ 4,633,050	£ 5,033,602	£ 5,623,953	12%
Sutton Bonington	£ 1,229,968	£ 1,392,711	£ 1,592,272	14%
Jubilee Campus	£ 713,875	£ 810,022	£ 944,684	17%
Others	£ 585,856	£ 635,438	£ 630,104	-1%
Medical School	£ 1,180,000	£ 1,310,000	£ 1,414,000	8%
<b>Total</b>	<b>£ 8,342,749</b>	<b>£ 9,181,773</b>	<b>£10,205,013</b>	<b>11%</b>

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

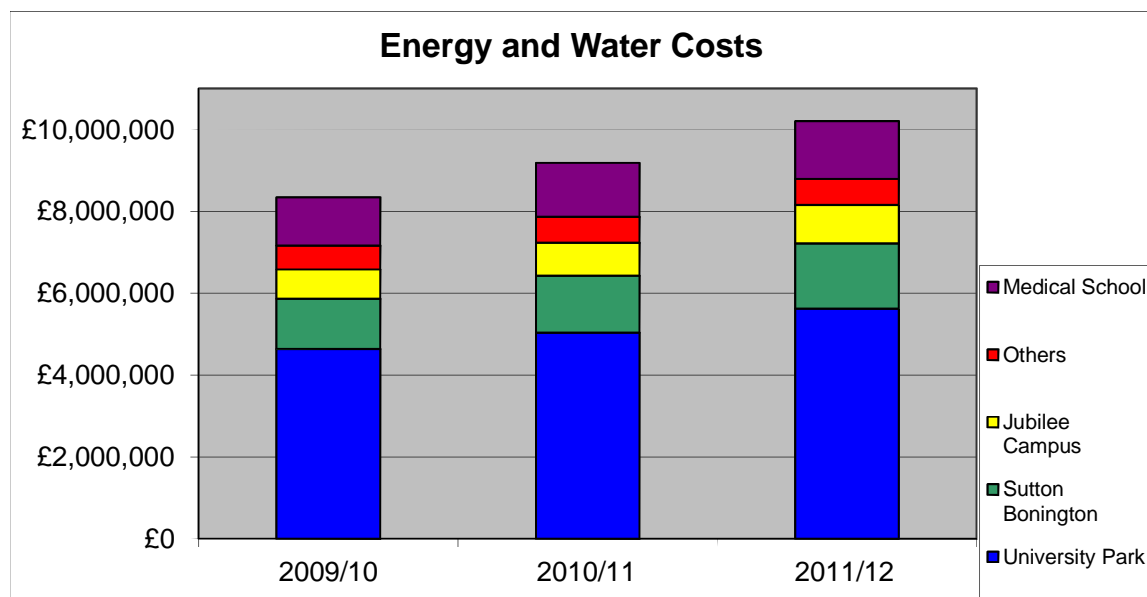


Figure 1.A.2 Graph of net energy and water costs for the last 3 years split by campus.

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	321,977	£9.79	£4.78	£2.90	£17.47
Sutton Bonington	73,096	£12.39	£5.49	£3.91	£21.78
Jubilee Campus	68,023	£7.97	£2.69	£3.23	£13.89
Others	66,696	£5.33	£3.17	£0.95	£9.45
Medical School	75,536	£8.47	£8.74	£1.51	£18.72
<b>Total</b>	<b>605,328</b>	<b>£9.24</b>	<b>£4.94</b>	<b>£2.67</b>	<b>£16.86</b>

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

The overall floor area increased by 3.5% from 2010/11.

Note that if taxes (VAT and CCL, see below) are taken into account, our average utility costs are now £17.56 per square metre per annum.

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

VAT costs paid by Notice Ltd on energy bills rose to £1.23 million in 2010/11, and CCL was up to £358,000, meaning that our energy taxes were up by 10.2% year on year.

The rise in VAT was particularly large as the rate increased from 17.5% to 20% on 4<sup>th</sup> January 2011, meaning 2011/12 is the first full year at the higher rate. The rise in CCL was also relatively large as this was the first full year with no purchases of 'green' electricity, which was CCL-free.

The Climate Change Levy (CCL) was introduced in April 2001. On April 1<sup>st</sup> 2011 the rates rose 4.7% to 0.177p/kWh on gas and 4.9% to 0.509p/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:-

	2011/12				2010/11
	Electricity	Fossil Fuels	Water	Totals	Totals
Utility Costs	£ 5,595,124	£ 2,992,912	£ 1,616,976	<b>£10,205,013</b>	£9,181,773
Climate Change Levy	£ 256,438	£ 102,403	-	<b>£ 358,842</b>	£274,471
Value Added Tax	£ 774,053	£ 459,504	-	<b>£ 1,233,558</b>	£1,170,837
<b>Total</b>	<b>£ 6,625,616</b>	<b>£ 3,554,820</b>	<b>£ 1,616,976</b>	<b>£11,797,412</b>	£10,627,081

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

### 1.D - 2011/2012 Net Costs Broken Down by Campus and Utilities

Energy and Water Costs				
2011/12	Electricity	Fossil Fuels	Water	Total
University Park	£ 3,152,484	£ 1,537,595	£ 933,874	£ 5,623,953
Sutton Bonington	£ 905,438	£ 401,121	£ 285,713	£ 1,592,272
Jubilee Campus	£ 542,007	£ 182,951	£ 219,726	£ 944,684
Others	£ 355,195	£ 211,246	£ 63,663	£ 630,104
Medical School	£ 640,000	£ 660,000	£ 114,000	£ 1,414,000
<b>Total</b>	<b>£ 5,595,124</b>	<b>£ 2,992,912</b>	<b>£ 1,616,976</b>	<b>£10,205,013</b>

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

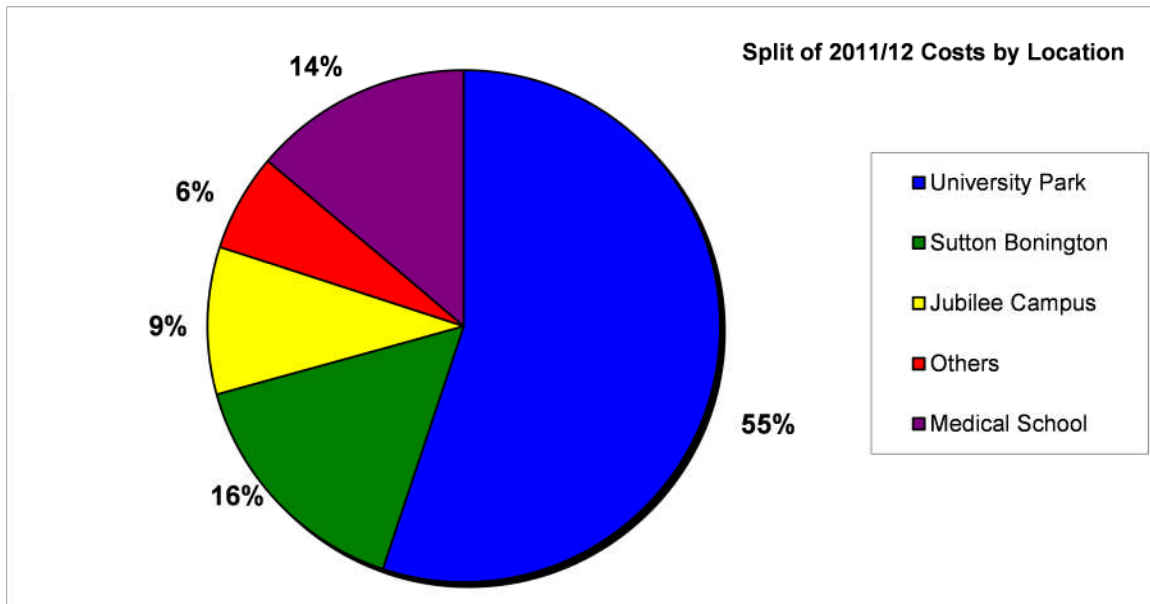


Figure 1.D.2 Chart of energy and water costs split by campus

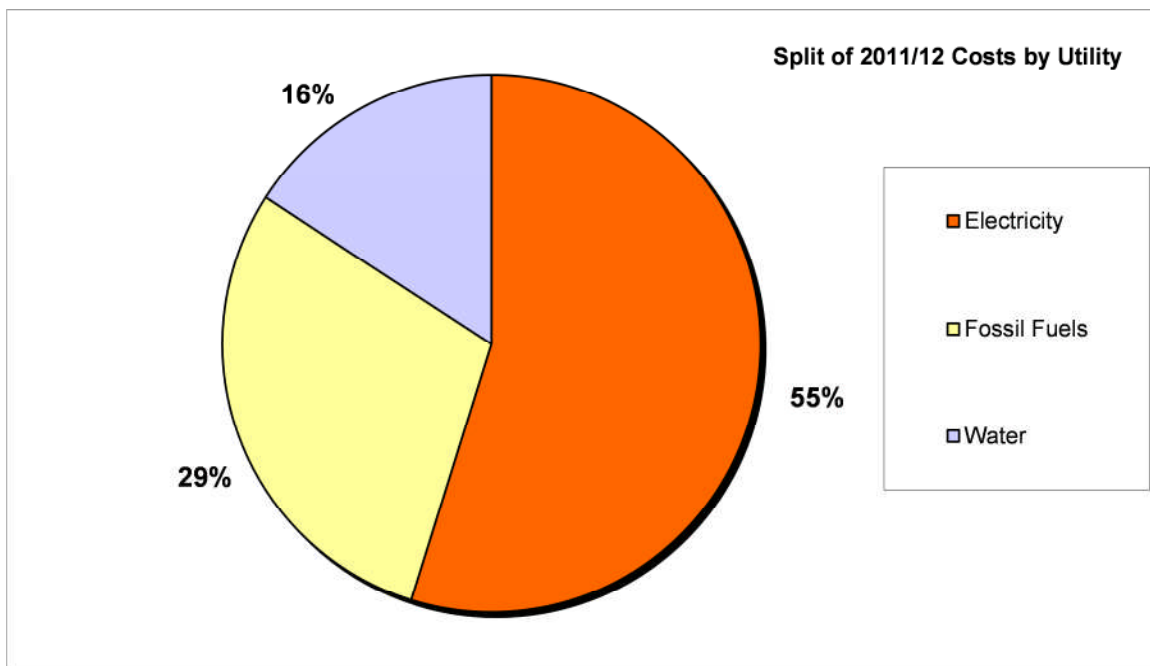


Figure 1.D.3 Chart of energy and water costs split by utility type

## 1.E - Energy Use Summary

The overall consumption of energy fell by 0.8%, despite floor area increasing by 3.5% and student numbers rising by 3.3%. Consumption of fossil fuels – primarily gas – was down 2.0%, but electricity usage increased by 1.2%.

As a result of new energy-efficient buildings and continuing investment in energy efficiency projects, energy consumption per square metre has fallen steadily from 425 kWh/m<sup>2</sup> in 2004/5 to 330 kWh/m<sup>2</sup> in 2011/12. This represents an energy efficiency improvement of 22% across the whole University in seven years. See section 1.G for more details.

During 2011/12, energy consumption per square metre reduced by 4.2% (see section 1.G), and consumption per student was down by 3.9% (section 1.H).

Energy Consumption	MWh	MWh	MWh	Change
	2009/10	2010/11	2011/12	'10/11 to '11/12
University Park	115,790	112,818	109,770	-2.7%
Sutton Bonington	29,428	29,032	28,205	-2.8%
Jubilee Campus	12,874	13,635	14,547	6.7%
Others	12,899	13,374	12,746	-4.7%
Medical School	33,037	32,520	34,508	6.1%
<b>Total</b>	<b>204,028</b>	<b>201,380</b>	<b>199,776</b>	<b>-0.8%</b>

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

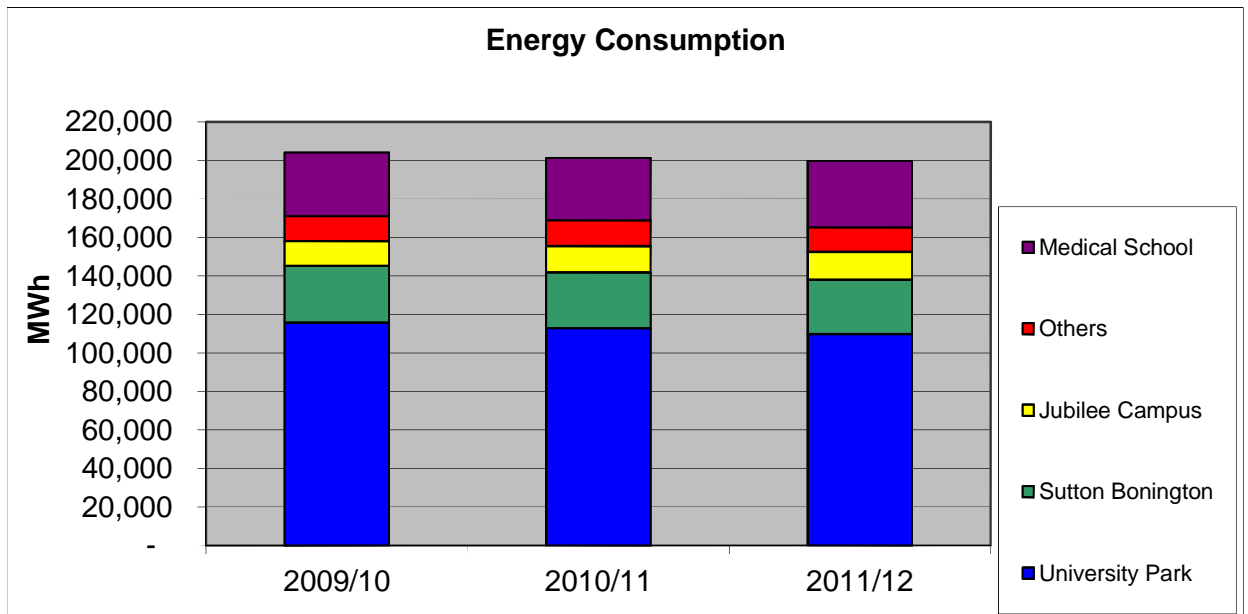


Figure 1.E.2 Graph of energy consumption for the last 3 years split by campus

## 1.F - Energy Use Breakdown by Campus and Utilities

Energy Consumption	MWh	MWh	MWh
2011/2012	Electricity	Fossil Fuels	Total
University Park	45,058	64,712	109,770
Sutton Bonington	12,557	15,649	28,205
Jubilee Campus	7,323	7,223	14,547
Others	4,585	8,161	12,746
Medical School	9,642	24,866	34,508
<b>Total</b>	<b>79,165</b>	<b>120,611</b>	<b>199,776</b>

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

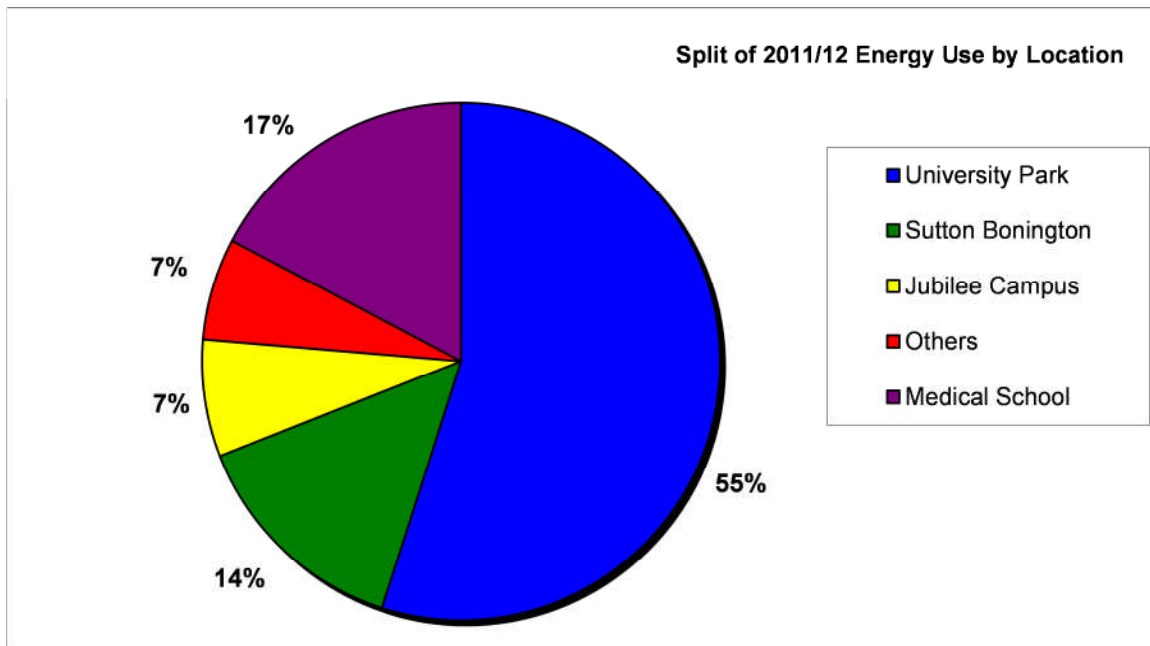


Figure 1.F.2 Pie chart of energy consumption split by campus

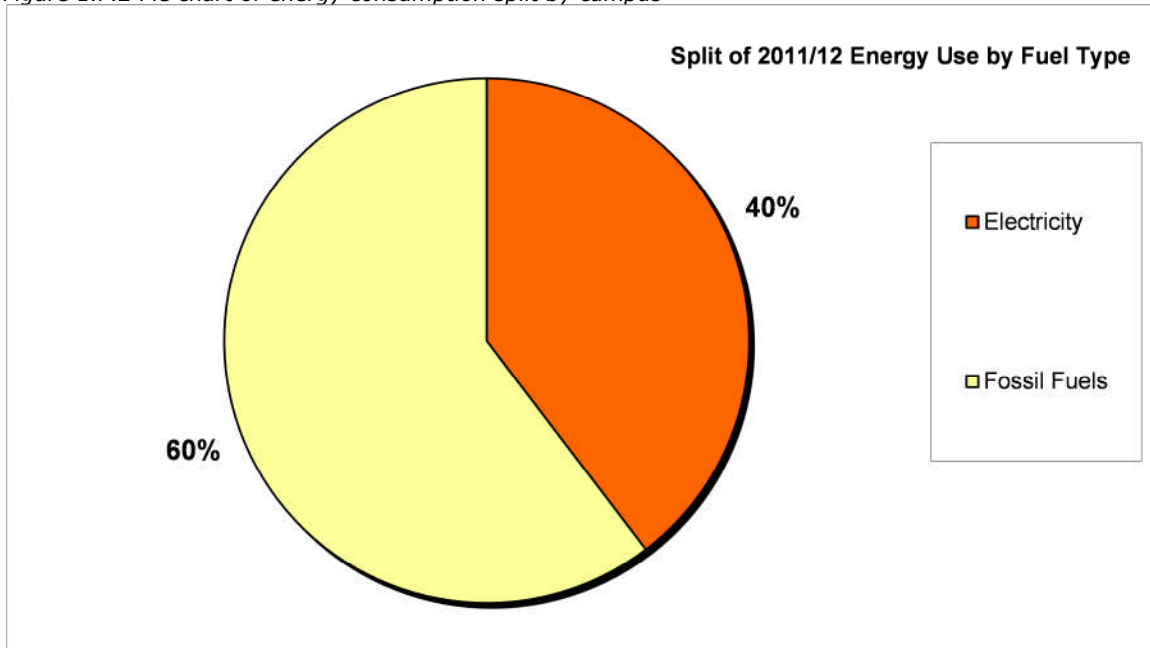


Figure 1.F.3 Pie chart of energy consumption split by utility type.

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

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

		2008/9	2009/10	2010/11	2011/12	Change
Floor Area (sq.m.)		561,189	577,871	584,617	605,328	3.5%
Annual Energy Usage (MWh)		199,279	204,028	201,380	199,776	-0.8%
<b>Energy Usage Per sq. m. (kWh/m<sup>2</sup>)</b>		<b>355</b>	<b>353</b>	<b>344</b>	<b>330</b>	<b>-4.2%</b>

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

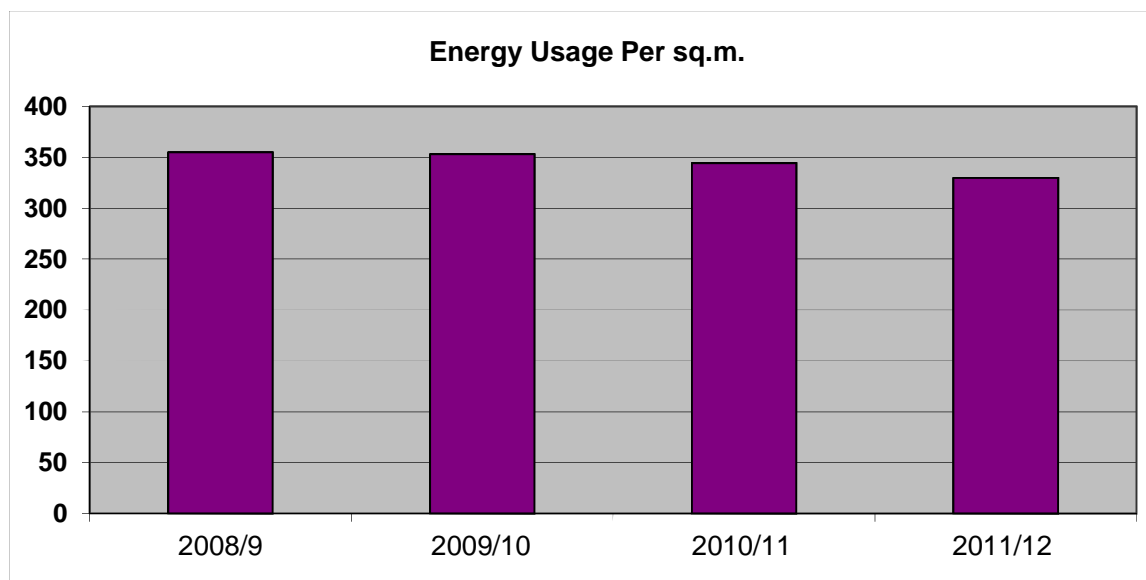


Figure 1.G.2 Graph of last four years energy usage per unit floor area.

The figures for the four years 2004/5 to 2007/8 were 425/398/370 and 396 kWh/m<sup>2</sup>, meaning that other than in one year (2007/8) we have seen falls every year in this metric, and a total improvement of 22%.

		2008/9	2009/10	2010/11	2011/12	Change
Floor Area (sq.m.)		561,189	577,871	584,617	605,328	3.5%
Gross Energy and Water Costs		£11,380,000	£ 9,333,000	£10,627,000	£11,797,412	11.0%
<b>Utility Cost Per sq. m.</b>		<b>£ 20.28</b>	<b>£ 16.15</b>	<b>£ 18.18</b>	<b>£ 19.49</b>	<b>7.2%</b>

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

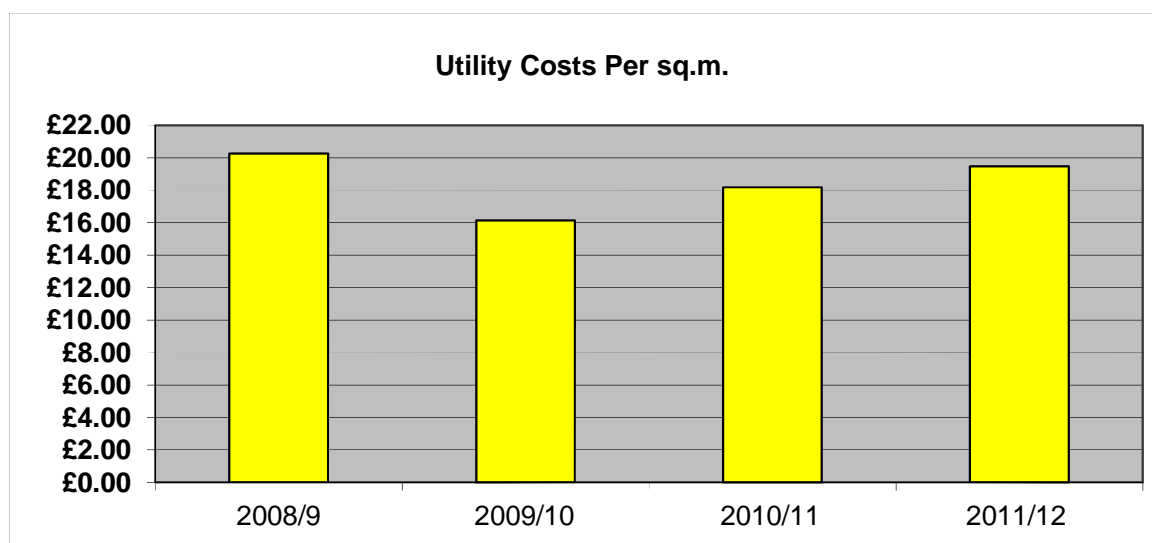


Figure 1.G.4 Graph of last four years energy and water costs normalised by floor area.

## 1.H - Energy Usage and Cost per FT Student

	2008/9	2009/10	2010/11	2011/12	Change
UK Student Numbers	30,457	32,044	32,999	34,076	3.3%
Annual Energy (MWh)	199,279	204,028	201,380	199,776	-0.8%
<b>Energy / Student (kWh)</b>	<b>6,543</b>	<b>6,367</b>	<b>6,103</b>	<b>5,863</b>	<b>-3.9%</b>

Figure 1.H.1 Table of last four years energy usage and full-time student numbers.

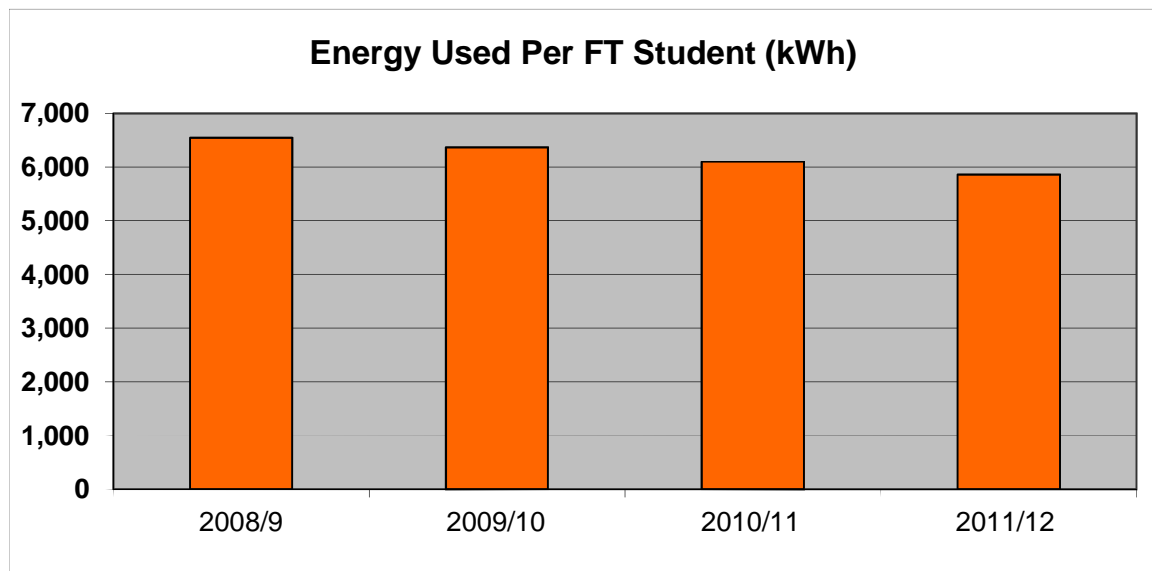


Figure 1.H.2 Graph of last four years energy usage per full-time student.

	2008/9	2009/10	2010/11	2011/12	Change
UK Student Numbers	30,457	32,044	32,999	34,076	3.3%
Energy and Water Costs	£11,380,000	£ 9,333,000	£10,627,000	£11,797,412	11.0%
<b>Utility Costs / Student</b>	<b>£ 373.64</b>	<b>£ 291.26</b>	<b>£ 322.04</b>	<b>£ 346.21</b>	<b>7.5%</b>

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

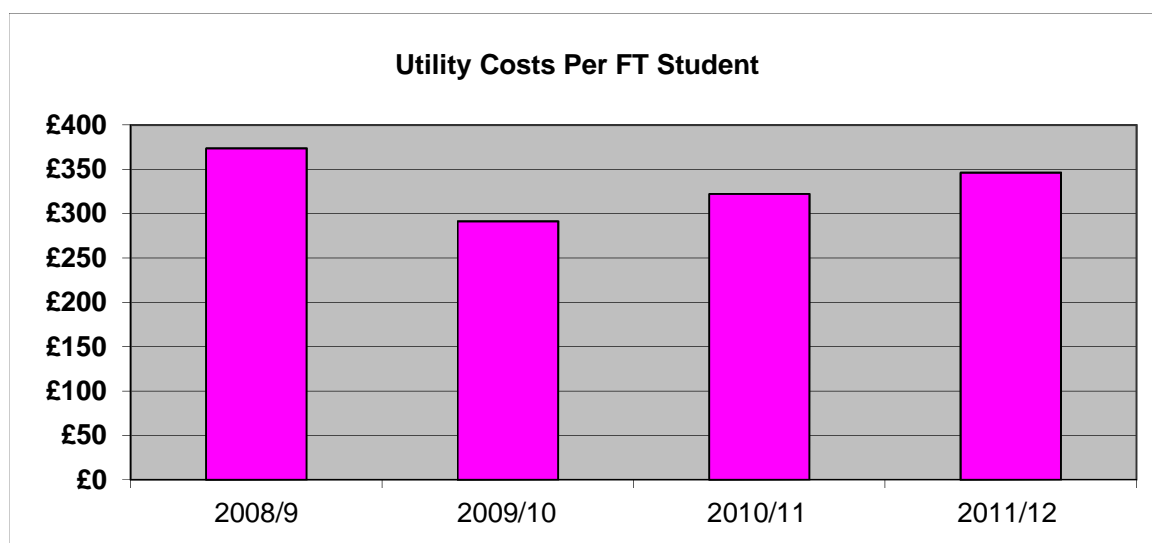


Figure 1.H.4 Graph of last four years gross energy and water costs per full-time student.

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

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

Percentage of Turnover (£ 000)	2008/9	2009/10	2010/11	2011/12	Change
Utility Costs inc. taxes	£ 11,380	£ 9,333	£ 10,627	£ 11,797	11.0%
Total University Turnover	£ 448,700	£ 474,600	£ 479,000	£ 478,000	-0.2%
Percentage	2.54%	1.97%	2.22%	2.47%	11.2%

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

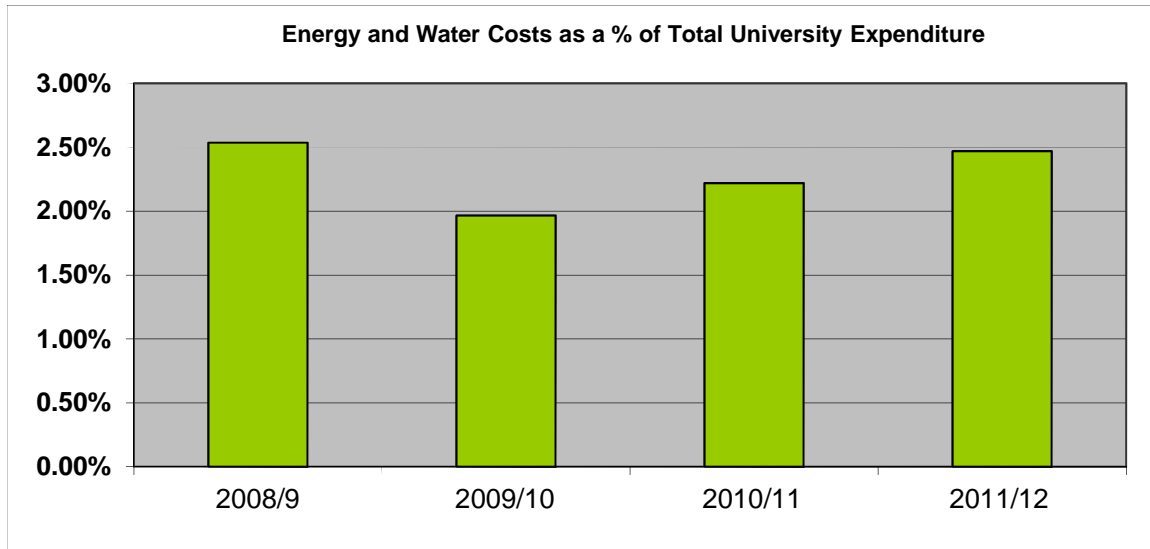


Figure 1.I.2 Graph of last four years gross energy and water costs normalised by total University turnover.

Note that utility costs as a percentage of University expenditure reached as high as 2.67% in 2005/6 and 2.65% in 2007/8.

## 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 first full year of the scheme (April 2011 to March 2012) are listed below.

Under the Scheme, our emissions were reported as 51,276 Tonnes of CO<sub>2</sub> (down from 54,751 in the previous reference, or 'footprint' year). Each tonne of CO<sub>2</sub> emitted needs to be covered by an 'allowance', which costs £12. The University therefore purchased 51,276 allowances for a cost of £615,312 and surrendered them to the Environment Agency on 20<sup>th</sup> July 2012.

Late in 2012, a league table of all participating institutions will be published, with organisations ranked in order of improvements compared to the footprint year.

Note that this cost, averaged out across our total energy consumption, equates to 0.308p/kWh.

## 1.K – Energy Costs Comparison to Russell Group Universities – 2010/11

The statistics in the next four tables provide a range of comparators to other major Universities, as reported in the EMS returns for 2010/11. 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.

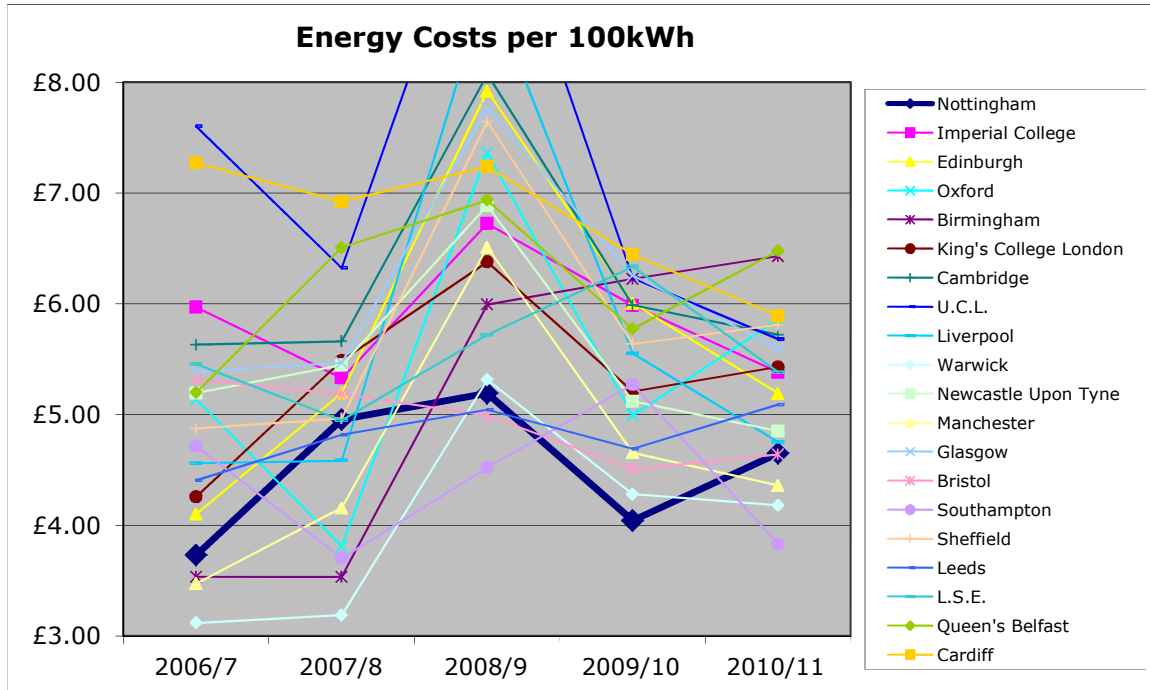


Figure 1.K.1 Graph of Russell Group Energy Costs per 100kWh.

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.

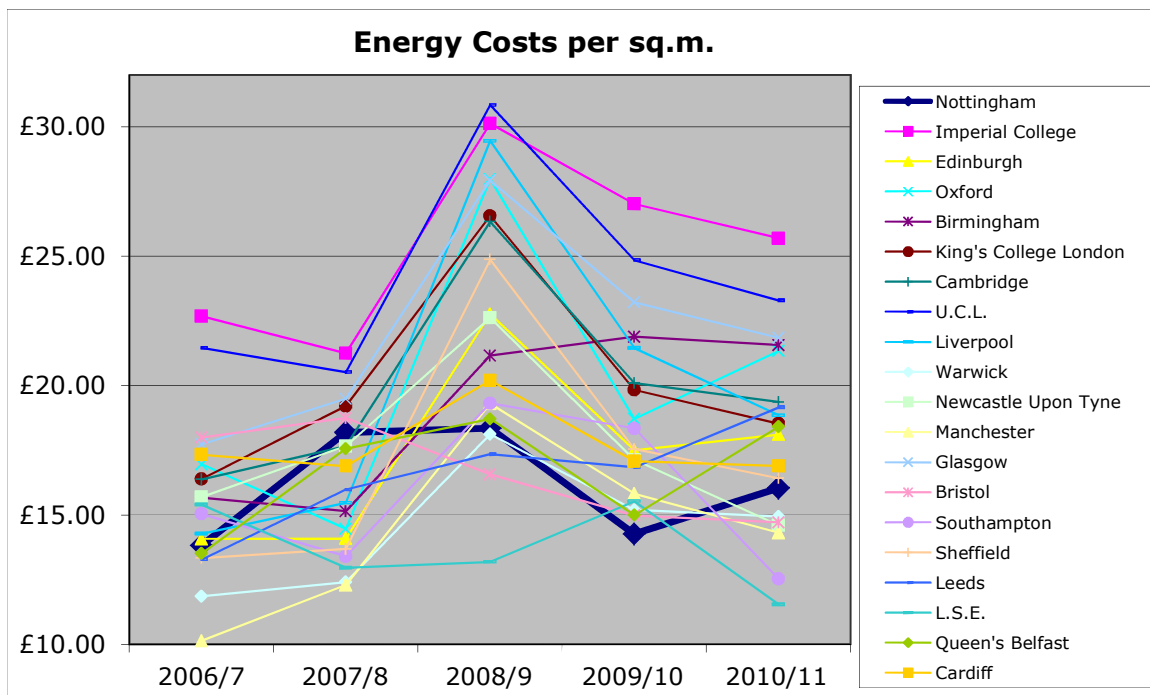


Figure 1.K.2 Graph of Russell Group Energy Costs square metre

## 1.L – Energy Efficiency Comparison to Russell Group Universities – 2010/11

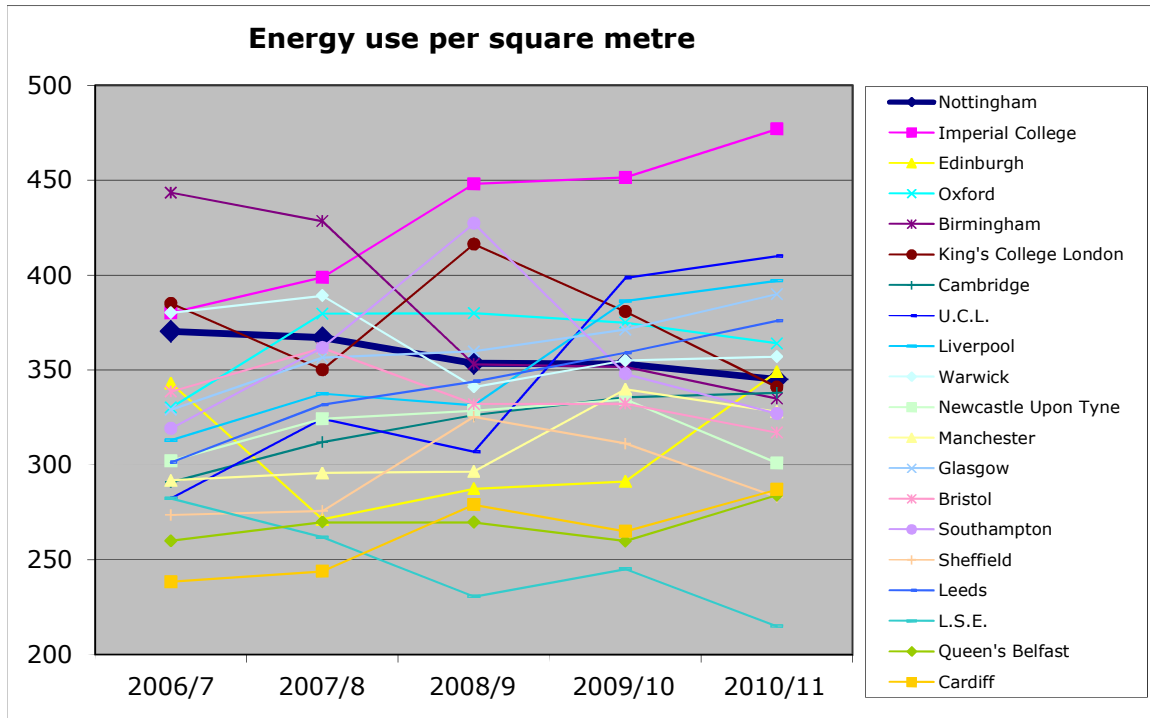


Figure 1.L.1 Graph of Russell Group Energy use per square metre.

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.

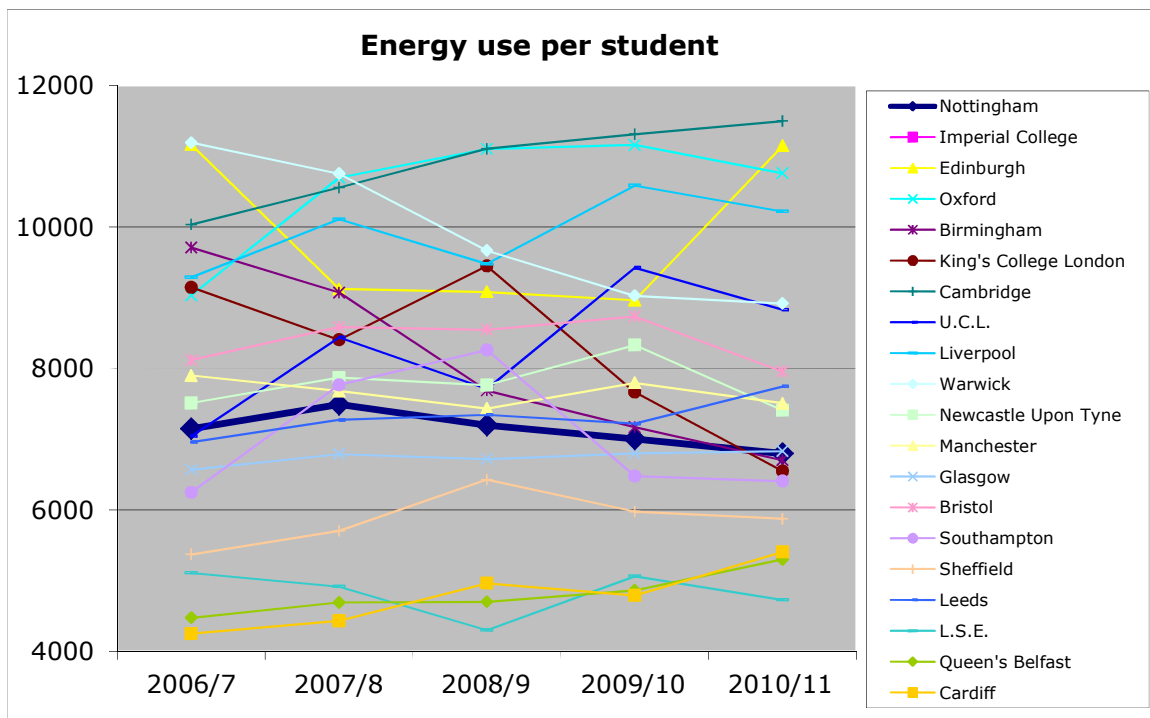


Figure 1.L.1 Graph of Russell Group Energy use per student (note Imperial is off the top of the scale at around 16,000kWh/student).

## **Section 2 – Electricity, Gas and Water data**

### **2.A - Electricity Consumption**

Last year's savings of 2% to 3% month on month at University Park continued through to December 2011, but were then reversed by the cold spring and the new buildings reaching full occupancy. This led to an overall increase of 1.3%.

For the same reasons, electricity consumption at Sutton Bonington jumped 9% as the new Gateway and Bioenergy buildings plus new greenhouses added to the load.

The noticeable reduction of 16.9% in the 'Others' category was down to a 31% decrease in imported electricity at King's Meadow Campus. This was due to the first full year of operation of the CHP plant; this has led to total savings of 1.3 million kWh of electricity per year, or 39% of King's Meadow's requirements.

<b>Electricity Consumption</b>	<b>MWh</b>	<b>MWh</b>	<b>MWh</b>	<b>Change</b>
	<b>2009/10</b>	<b>2010/11</b>	<b>2011/12</b>	<b>'10/11 to '11/12</b>
University Park	45,867	44,487	45,058	1.3%
Sutton Bonington	11,339	11,516	12,557	9.0%
Jubilee Campus	6,854	7,153	7,323	2.4%
Others	5,709	5,514	4,585	-16.9%
Medical School	9,758	9,587	9,642	0.6%
<b>Total</b>	<b>79,527</b>	<b>78,258</b>	<b>79,165</b>	<b>1.2%</b>

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

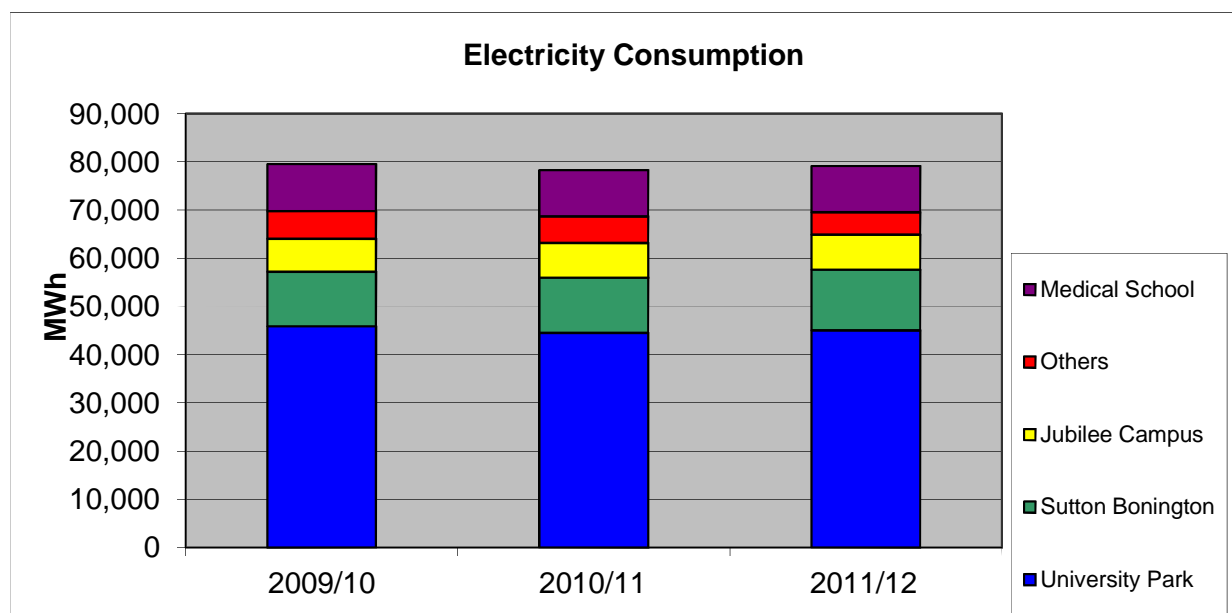


Figure 2.A.2 Graph of electricity usage for the last 3 years split by campus.

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 2012. This policy allows us to buy electricity when the market price is low.

During the period, market electricity prices for large annual contracts (baseload energy only) fell steadily from 5.8p/kWh in August 2011 to 4.8p/kWh in January 2012. Since then, the market has been very unstable, fluctuating between 4.8p/kWh and 5.4p/kWh.

At University Park, the average price paid per kWh of electricity across the year including all standing charges, rose from 6.49p/kWh in 2010/11 to 6.99p/kWh in 2011/12, a rise of 7.7%.

The University's 'sub-100kW' sites (representing 36 smaller properties, such as the sports grounds) was tendered in February 2012, and the contract was won by Southern Electric with prices reduced by 4%. All of the sites are priced individually, but 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				Change
	2009/10	2010/11	2011/12	'10/11 to '11/12
University Park	£ 2,825,400	£ 2,887,877	£ 3,152,484	9%
Sutton Bonington	£ 717,196	£ 765,066	£ 905,438	18%
Jubilee Campus	£ 445,349	£ 487,501	£ 542,007	11%
Others	£ 400,160	£ 397,815	£ 355,195	-11%
Medical School	£ 580,000	£ 615,000	£ 640,000	4%
<b>Total</b>	<b>£ 4,968,105</b>	<b>£ 5,153,259</b>	<b>£ 5,595,124</b>	<b>9%</b>

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

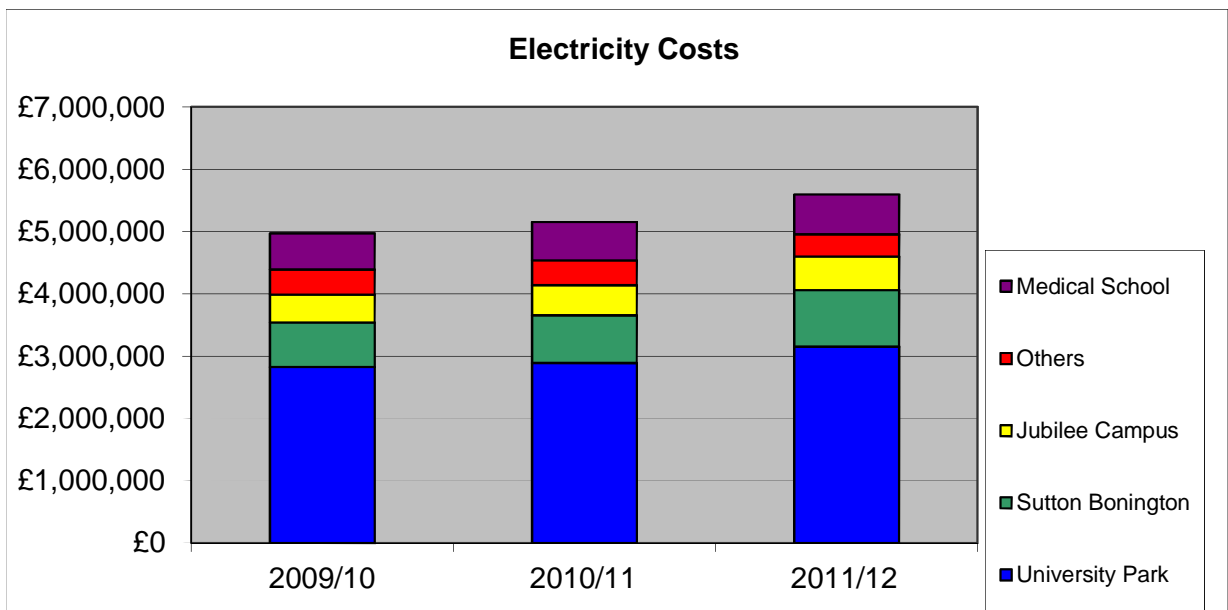


Figure 2.B.2 Graph of net electricity costs for the last 3 years split by campus.

## 2.C - Fossil Fuel Consumption

Consumption of fossil fuels fell by 2.0%, which was actually a rather disappointing performance when the milder weather would have predicted a fall of 8.0% in a like-for-like situation. However, floor area did increase by 3.5% in the year.

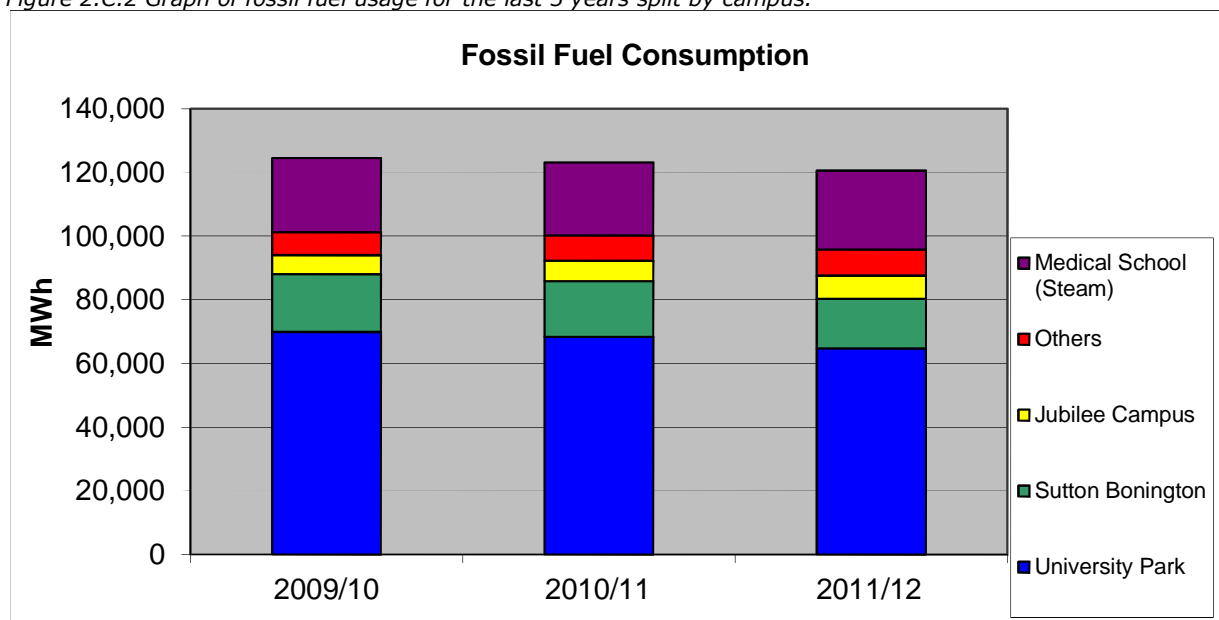
The biggest consumption increase was at Jubilee Campus, where new supplies billing for the first time accounted for 400MWh, i.e. all of the increase at that site.

The bulk of the increase in the 'Others' category was down to King's Meadow Campus, where operation of the site's 300kW CHP unit increased gas usage by 47%. This is an increase of 2,200MWh per annum from two years ago, but the electricity generated results in net carbon dioxide savings of 295 Tonnes per annum.

Fossil Fuel Consumption	MWh	MWh	MWh	Change
	2009/10	2010/11	2011/12	'10/11 to '11/12
University Park	69,923	68,331	64,712	-5.3%
Sutton Bonington	18,089	17,516	15,649	-10.7%
Jubilee Campus	6,020	6,482	7,223	11.4%
Others	7,190	7,860	8,161	3.8%
Medical School (Steam)	23,279	22,933	24,866	8.4%
<b>Total</b>	<b>124,501</b>	<b>123,122</b>	<b>120,611</b>	<b>-2.0%</b>

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 2012. This meant that we were able to continue to purchase gas in monthly tranches at opportune times, rather than annually.

During the period, gas prices for large annual contracts (energy only) initially fell steadily, from 2.49p/kWh in August 2011 to 2.08p/kWh in January 2012. Since then, the market has been very unstable, fluctuating between 2.05p/kWh and 2.39p/kWh, but remaining relatively high compared to electricity prices.

Overall, the average price paid per unit across the year (including transportation charges) rose substantially, from 1.92p/kWh to 2.42p/kWh, an increase of 26%. This is on top of a 25% increase in unit costs last year. Note however that the total gas bill was £2.97million back in in 2005/6, and £2.66million in 2007/8.

<b>Fossil Fuel Costs</b>				<b>Change</b>
	<b>2009/10</b>	<b>2010/11</b>	<b>2011/12</b>	<b>'10/11 to '11/12</b>
University Park	£ 1,051,195	£ 1,269,972	£ 1,537,595	21%
Sutton Bonington	£ 276,305	£ 354,493	£ 401,121	13%
Jubilee Campus	£ 97,113	£ 133,947	£ 182,951	37%
Others	£ 134,786	£ 175,178	£ 211,246	21%
Medical School (Steam)	£ 522,000	£ 573,000	£ 660,000	15%
<b>Total</b>	<b>£ 2,081,399</b>	<b>£ 2,506,590</b>	<b>£ 2,992,912</b>	<b>19%</b>

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

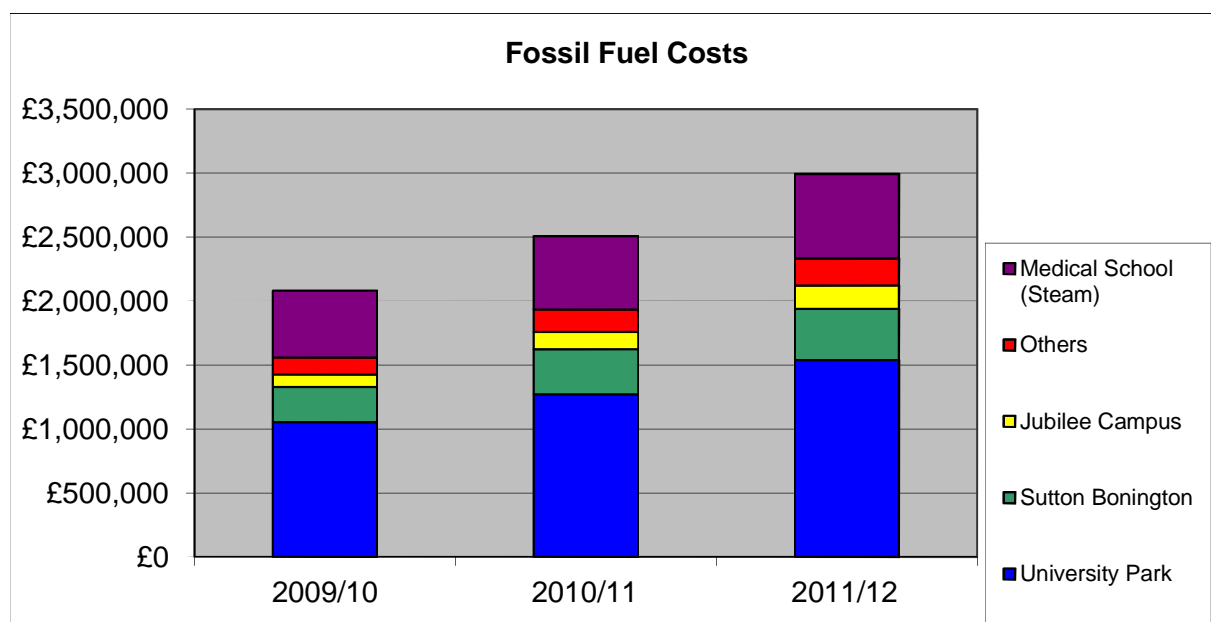


Figure 2.D.2 Graph of net fossil fuel costs for the last 3 years split by campus.

## 2.E - Water Consumption

Water consumption increased by 3.3% overall compared to 2010/11, exactly in line with the increase in student numbers of 3.3%. We are conscious, however, that we can improve this performance, particularly by reducing our own leakage rates. With this in mind, we are replacing elderly mains and developing a network metering scheme to detect leaks more quickly in 2013. Note that our consumption peaked at 925,520 cubic metres per annum back in 2004/5.

Water Consumption	cubic m.	cubic m.	cubic m.	Change
	2009/10	2010/11	2011/12	'10/11 to '11/12
University Park	489,239	483,105	507,199	5%
Sutton Bonington	136,755	161,700	169,280	5%
Jubilee Campus	84,248	93,491	98,213	5%
Others	13,190	18,308	18,557	1%
Medical School	43,705	56,088	46,009	-18%
<b>Total</b>	<b>767,138</b>	<b>812,692</b>	<b>839,258</b>	<b>3%</b>

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

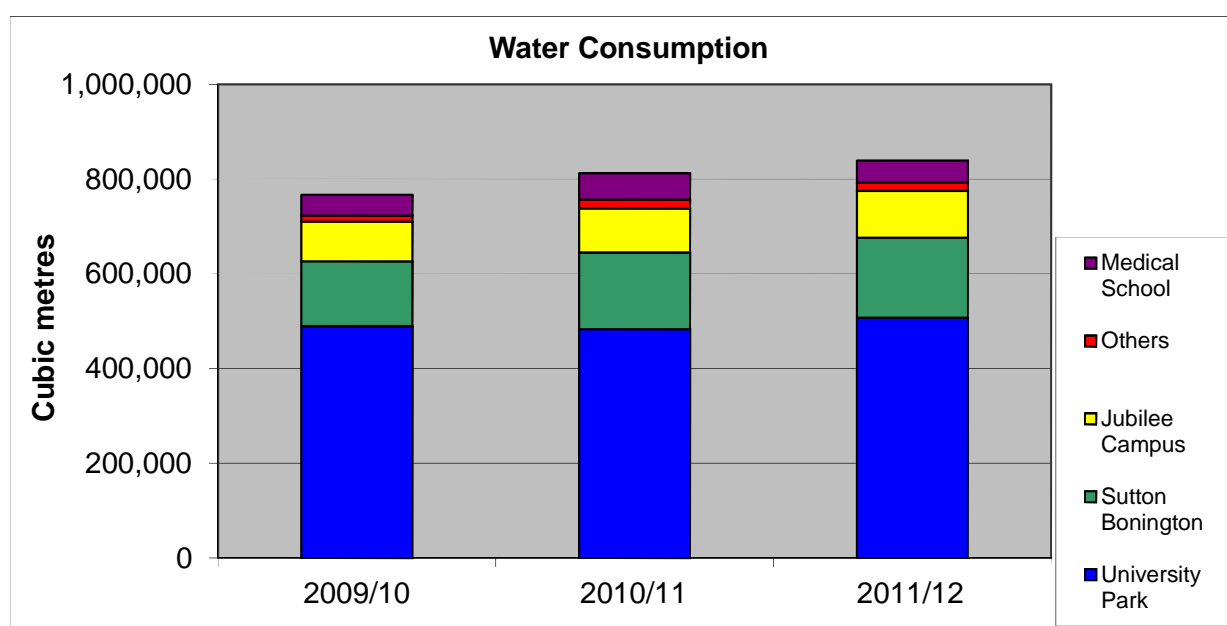


Figure 2.E.2 Graph of water usage for the last 3 years split by campus.

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

## 2.F - Water Costs

Severn Trent Water once again increased charges by more than inflation. The price of water supplied increased by 4.2% in April 2012, up from 97.52 p/m<sup>3</sup> to 101.62p/m<sup>3</sup> in summer for large sites such as University Park. The winter rate for large sites was up by the same percentage, from 52.25/m<sup>3</sup> to 54.44 p/m<sup>3</sup>. Rates for used water at large sites were up 0.9%, from 88.6p/m<sup>3</sup> to 89.41 p/m<sup>3</sup>. Charges for the surface water drainage element, which is based on site area, were up by 6.1% from £105,259 per annum to £111,691.

In order to minimise water charges, new supplies at Jubilee campus have been amalgamated with existing accounts for billing purposes to take advantage of large user tariffs.

Water Costs				Change
	2009/10	2010/11	2011/12	'10/11 to '11/12
University Park	£ 756,455	£ 875,753	£ 933,874	7%
Sutton Bonington	£ 236,468	£ 273,151	£ 285,713	5%
Jubilee Campus	£ 171,413	£ 188,573	£ 219,726	17%
Others	£ 50,911	£ 62,445	£ 63,663	2%
Medical School	£ 84,000	£ 122,000	£ 114,000	-7%
<b>Total</b>	<b>£ 1,299,246</b>	<b>£ 1,521,922</b>	<b>£ 1,616,976</b>	<b>6%</b>

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

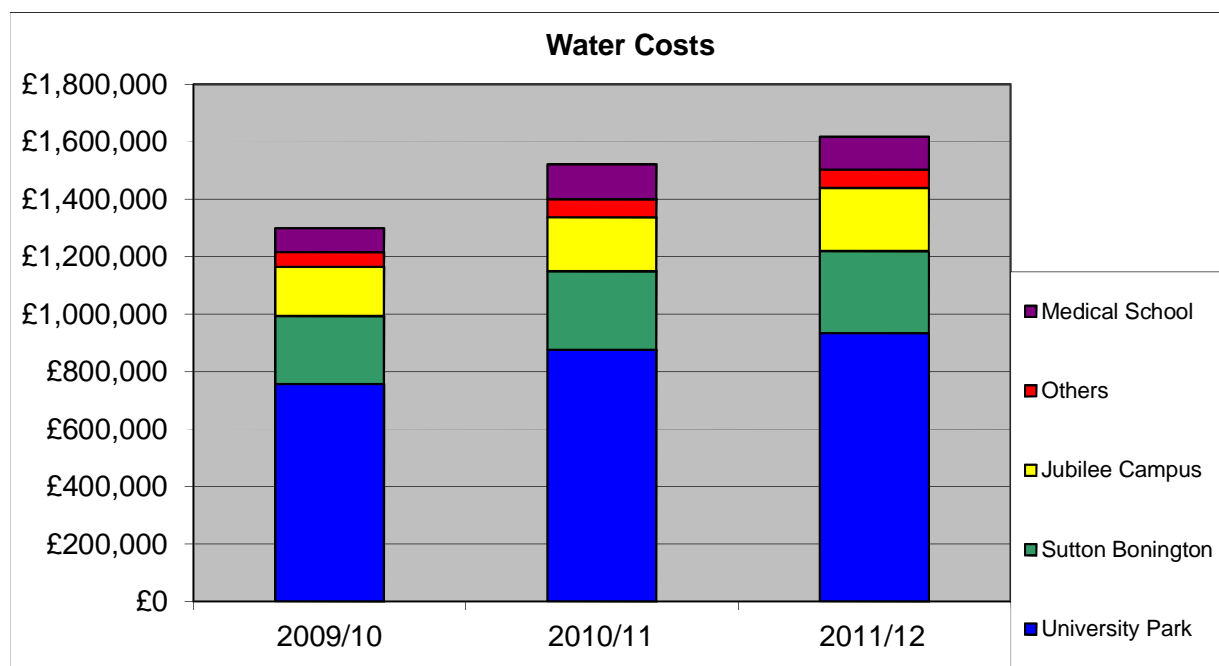


Figure 2.F.2 Graph of water costs for the last 3 years split by campus.

## Section 3 – Environmental Considerations

### 3.A - Carbon Dioxide Emissions

The University's Carbon Management Plan has ambitious targets in place 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 2,500 Tonnes per annum.

In 2011/12 Carbon dioxide emissions were basically unchanged (a fall of 32 Tonnes), despite a rise in floor area of 3.5%, and a 3.3% increase in student numbers.

Note that 'green' electricity was purchased up until 31<sup>st</sup> August 2010, although no credit is shown in the attached data for this.

In the table and graph below, the Estates Management Statistics (EMS) emission factors have been used as shown:-

CO <sub>2</sub> Emission Factors	2009/10	2010/11	2011/12
Electricity kg/kWh	0.542	0.541	0.541
Gas kg/kWh	0.205	0.204	0.204

Figure 3.A.1 Table of CO<sub>2</sub> emission factors for the last 3 years.

CO <sub>2</sub> Emissions	Tonnes	Tonnes	Tonnes	Change
	2009/10	2010/11	2011/12	'10/11 to '11/12
University Park	39,194	38,007	37,578	-1.1%
Sutton Bonington	9,854	9,804	9,964	1.6%
Jubilee Campus	4,949	5,192	5,430	4.6%
Others	4,568	4,587	4,161	-9.3%
Medical School	10,061	9,865	10,289	4.3%
<b>Total</b>	<b>68,626</b>	<b>67,454</b>	<b>67,422</b>	<b>0.0%</b>

Figure 3.A.2 Table of CO<sub>2</sub> emissions for the last 3 years split by campus.

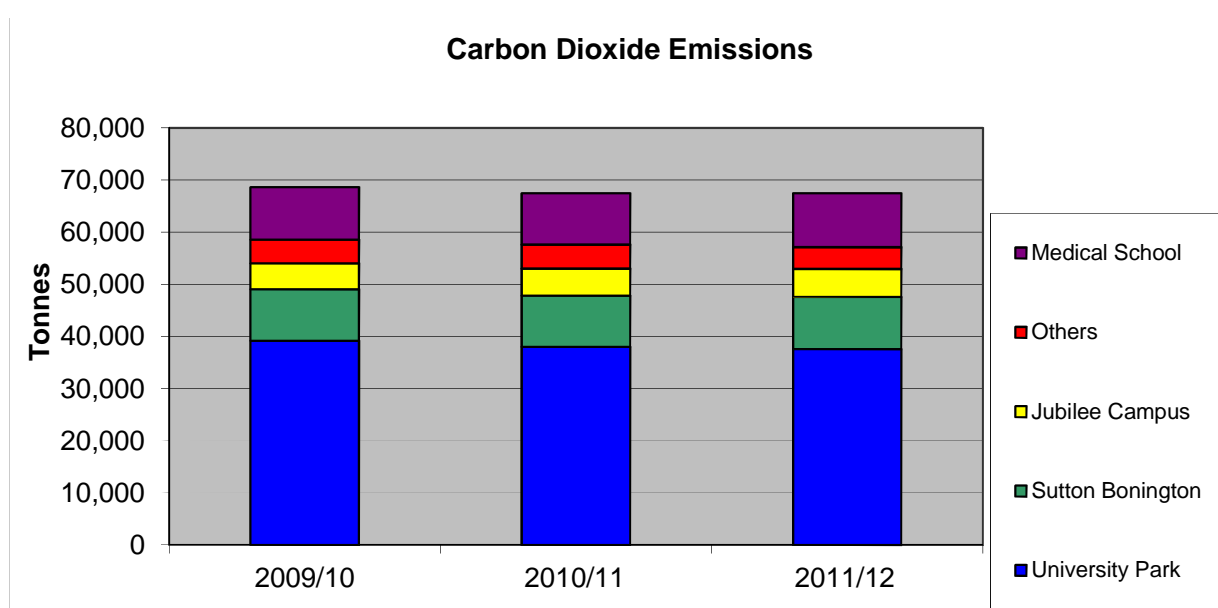


Figure 3.A.3 Graph of CO<sub>2</sub> emissions for the last 3 years split by campus.

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

CO2 Emissions 2011/2012	Tonnes Electricity	Tonnes Fossil Fuels	Tonnes Total	Prop'n Elec	Prop'n Gas
University Park	24,376	13,201	37,578	65%	35%
Sutton Bonington	6,793	3,171	9,964	68%	32%
Jubilee Campus	3,962	1,468	5,430	73%	27%
Others	2,480	1,681	4,161	60%	40%
Medical School	5,216	5,073	10,289	51%	49%
<b>Total</b>	<b>42,828</b>	<b>24,594</b>	<b>67,422</b>	<b>64%</b>	<b>36%</b>

Figure 3.B.1 Table of CO<sub>2</sub> emissions split by campus and by utility

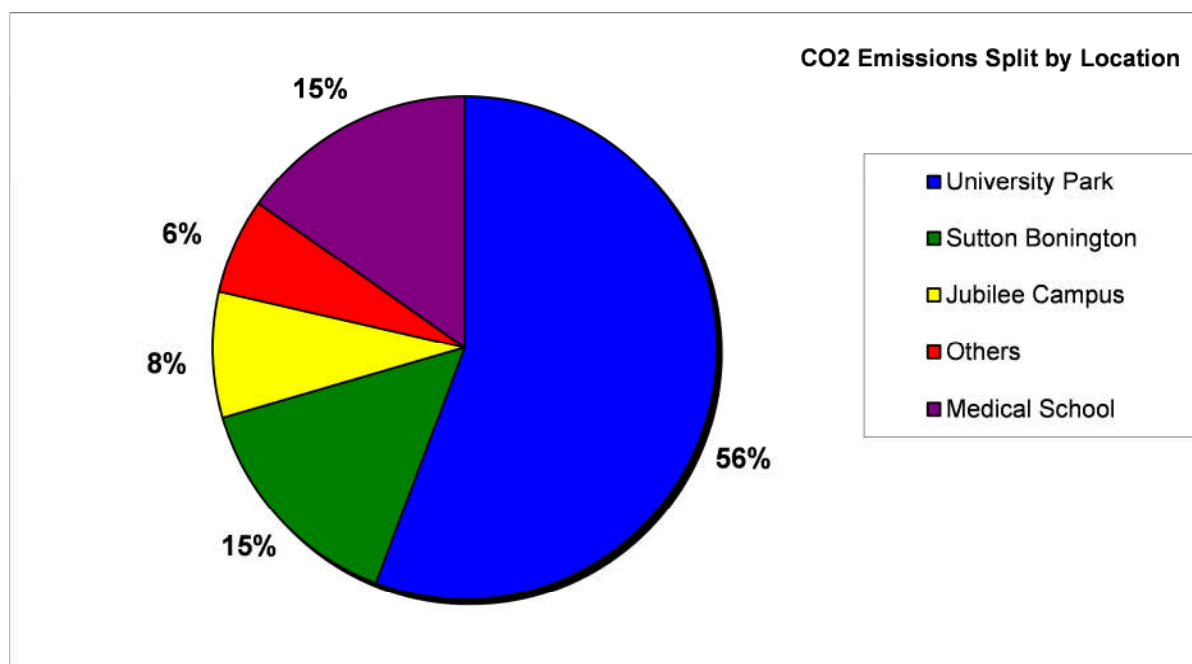


Figure 3.B.2 Chart of CO<sub>2</sub> emissions split by campus

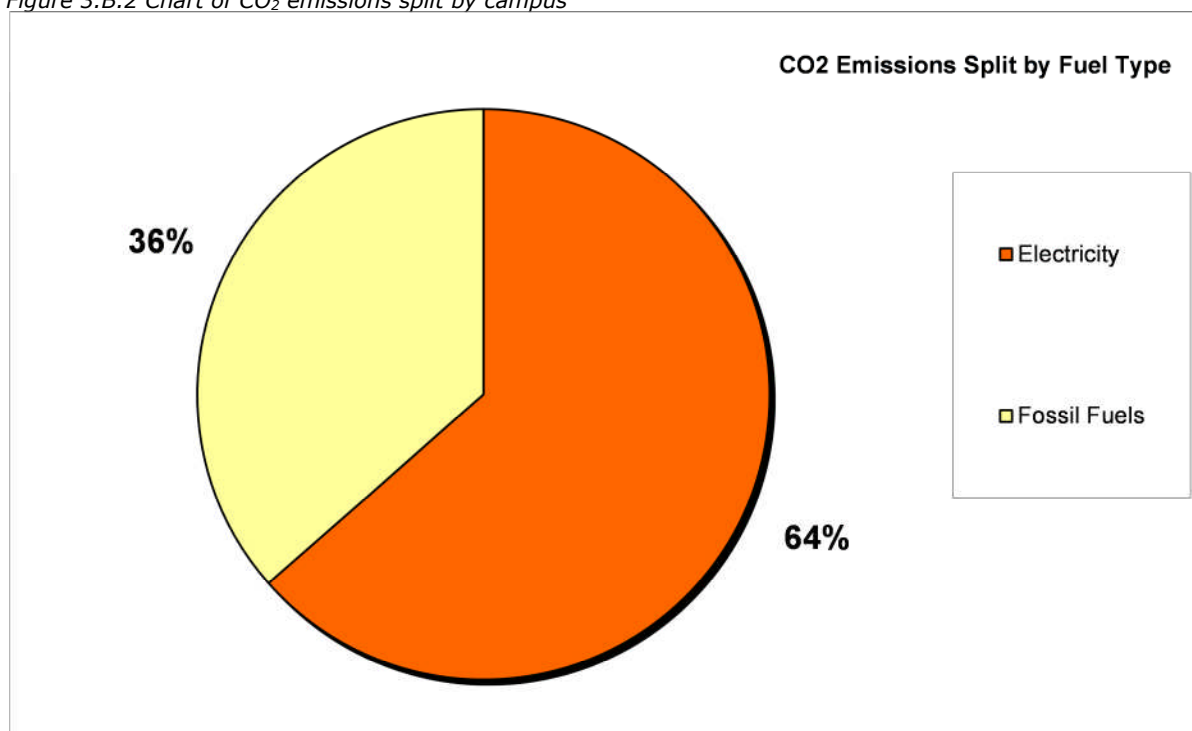


Figure 3.B.3 Chart of CO<sub>2</sub> emissions split by source fuel type

### 3.C - Weather Data – Degree Days

This year was considerably milder overall than the previous three years, with the Autumn and early part of the winter being exceptionally mild. Overall, we would expect heating usage to be down by 8% compared to 2010/11 based on the temperature alone.

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.

2011/12	Deg. Days 20 Yr Avg	Deg. Days 2009/10	Deg. Days 2010/11	Deg. Days 2011/12	'10/11 to '11/12 Change
Aug	34	23	42	38	-9.5%
Sep	74	62	69	39	-43.5%
Oct	159	126	165	101	-38.8%
Nov	266	211	312	180	-42.3%
Dec	339	387	487	297	-39.0%
Jan	353	441	360	313	-13.1%
Feb	304	362	245	324	32.2%
Mar	279	296	263	235	-10.6%
Apr	212	198	124	251	102.4%
May	134	161	104	143	37.5%
Jun	70	54	64	75	17.2%
Jul	34	21	42	39	-7.1%
<b>Total</b>	<b>2,258</b>	<b>2,342</b>	<b>2,277</b>	<b>2,035</b>	<b>-10.6%</b>
				<b>Weather modifier (75%)</b>	<b>-8.0%</b>

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

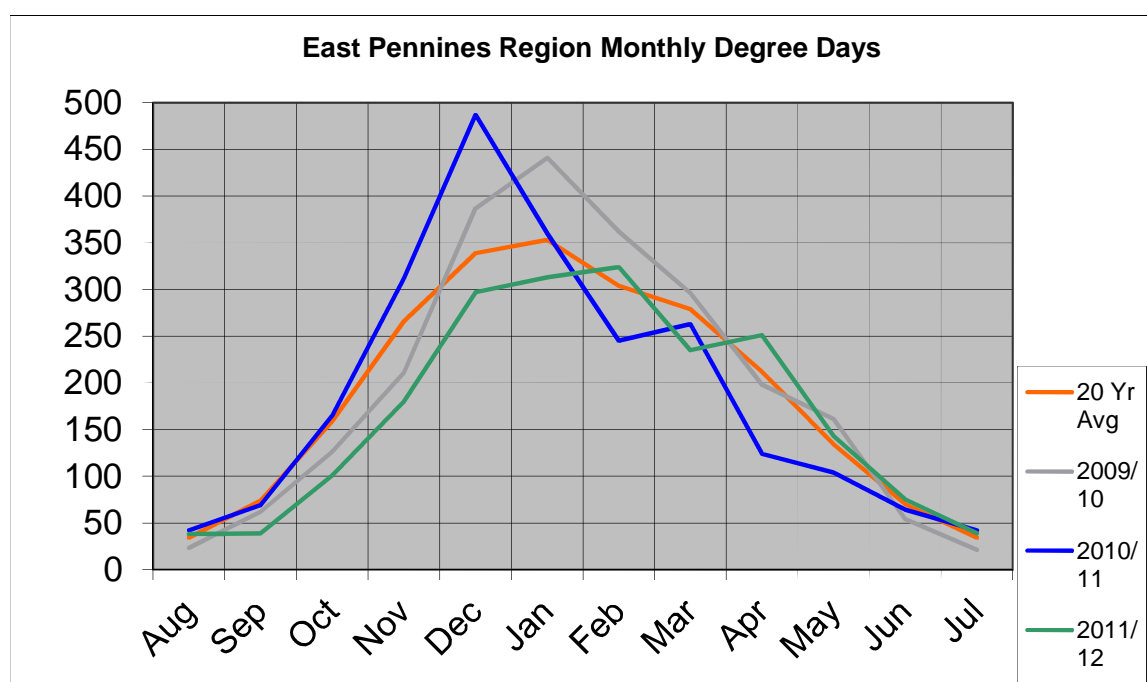


Figure 3.C.2 Graph showing last three years monthly degree days and average degree days

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

The table below shows that new buildings have been responsible for 4,600 Tonnes of CO<sub>2</sub> emissions during 2011/12. Our emissions for 2011/12 would have been 7.3% lower without the additions due to new-build.

	Units	University Total '11/12	New Buildings	% due to new build
<b>2.A Electricity Consumption</b>	MWh	79,165	6,424	8.8%
<b>2.C Fossil Fuel Consumption</b>	MWh	120,611	5,639	4.9%
<b>1.E Energy Use Total</b>	MWh	199,776	12,064	6.4%
<b>2.E Water Consumption</b>	cu.m.	839,258	22,675	2.8%
<b>1.A Energy &amp; Water Costs</b>	£	£10,205,013	£258,992	2.6%
<b>1.G Floor Area</b>	m <sup>2</sup>	605,328	50,870	9.2%
<b>3.B Carbon emissions from elec.</b>	tonnes	42,828	3,476	8.8%
<b>3.B Carbon emissions from gas</b>	tonnes	24,594	1,124	4.8%
<b>3.A Total Carbon Emissions</b>	tonnes	67,422	4,600	7.3%

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	6,500
Business Sch North	PV	14,500
Computer Sciences	PV	6,300
Derby Hall	PV	52,900
Lincoln Hall	PV	52,000
Environmental Education Centre	PV	14,400
Sustainable Research Building	PV	7,100
Total		153,700
Rutland & Sherwood Hall	Solar thermal	11,300
Geospatial	Biomass	31,400
BioEnergy	Biomass	130,500
Total		173,200

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		2011/12	2011/12	2011/12	2011/12	2011/12	2011/12	Floor Area	
Main Campus		Elec kWh	Gas kWh	Water m3	Elec CO2	Gas CO2	Cost £		
	Environmental Education Centre	1439	66,977	183,790	600	36	37	£11,566	1,424
	Engineering Science Learning Cent	1661	283,415	702,200	820	153	143	£46,542	3,511
	Humanities	1671	267,762	60,666	624	145	12	£25,718	4,303
	Mathematical Sciences	1561	303,881	701,100	800	164	143	£48,206	4,674
	New eco-houses		40,000	2,445	200	22	0	£4,347	526
	Totals		895,058	1,466,411	2,444	484	299	£124,813	13,014
New Sites		2011/12	2011/12	2011/12	2011/12	2011/12	2011/12	Floor Area	
Sutton Bonington		Elec kWh	Gas kWh	Water m3	Elec CO2	Gas CO2	Cost £		
	Bio-energy and Brewing Sciences	5781	600,000	454,806	4,176	325	93	£75,383	3,493
	Bio-energy BIOMASS	5781	0	130,489	0	0	5	£6,379	0
	Veterinary School	5721	1,436,972	1,797,277	6,000	777	367	£177,910	8,334
	Gateway Building	5771	769,558	500,999	4,000	416	102	£85,620	3,253
	Sports Centre	5951	193,032	249,271	190	104	51	£23,995	2,450
	Future Crop Glasshouses	5445	100,000	218,771	500	54	45	£15,216	312
	Totals		3,099,562	3,351,613	14,866	1,677	662	£384,502	17,842
New Sites		2011/12	2011/12	2011/12	2011/12	2011/12	2011/12	Floor Area	
Jubilee Campus		Elec kWh	Gas kWh	Water m3	Elec CO2	Gas CO2	Cost £		
(1)	6 Triumph Road	7405	92,000	43,081	166	50	9	£10,812	324
(1)	9 Triumph Road	7400	58,565	0	0	32	0	£16,897	399
(1)	Institute of Mental Health	7370	0	58,256	100	0	12	£2,607	3,074
	International House	7320	573,824	0	1,045	310	0	£50,677	3,400
	Starbuck's Café	7305	106,000	1,564	50	57	0	£9,178	151
	The Amenities Building	7330	404,275	253,030	2,338	219	52	£46,001	2,365
	Nottingham Geospatial Bulding	7350	364,058	155,946	425	197	32	£36,121	2,944
	Geospatial BIOMASS	7350	0	31,353	0	0	1	£1,200	0
(1)	Sir Colin Campbell Building	7340	604,499	85,987	770	327	18	£55,896	4,534
	New Supply, east of Tri. Rd		76,161	0	0	41	0	£9,669	0
	Totals		2,279,382	629,217	4,894	1,233	123	£239,058	17,191
New Sites		2011/12	2011/12	2011/12	2011/12	2011/12	2011/12	Floor Area	
Others		Elec kWh	Gas kWh	Water m3	Elec CO2	Gas CO2	Cost £		
	Clinical Sciences City Hosp Ph2	3325	87,612	77,817	71	47	16	£10,200	2,000
	Vaughan Parry Williams Pav.	6314	62,732	114,098	400	34	23	£9,734	823
	Totals		150,344	191,915	471	81	39	£19,934	2,823
New Sites		2011/12	2011/12	2011/12	2011/12	2011/12	2011/12	Floor Area	
Main Campus		Elec kWh	Gas kWh	Water m3	Elec CO2	Gas CO2	Cost £		
			895,058	1,466,411	2,444	484	299	124,813	13,014
	Sutton Bonington		3,099,562	3,351,613	14,866	1,677	662	384,502	17,842
	Jubilee Campus		2,279,382	629,217	4,894	1,233	123	239,058	17,191
	Others		150,344	191,915	471	81	39	19,934	2,823
	Total of 12 accounts		6,424,346	5,639,156	22,675	3,476	1,124	£258,992	50,870

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		2011/12	2010/11	% change	2011/12	2010/11	% change	
Main Campus		kWh	kWh	kWh	£	£	£	
	Main Campus Invoices	1000	45,016,152	44,447,070	1%	£3,148,334	£2,884,122	9%
	Lenton Lodge	2251	25,300	22,900	10%	£2,300	£1,900	21%
	Lenton Eaves (UNSSC)	1461	15,000	15,000	0%	£1,500	£1,400	7%
	Lenton Eaves (UNSSC)	1461	1,000	1,000	0%	£200	£235	-15%
	Redcourt Lodge	2222	600	1,400	-57%	£150	£220	-32%
(2)	East Midlands Conference Centre		1,456,251	1,397,678	4%			Inc. in 'Main Camp. invoices'
(2)	Conference Centre Cottage		14,568	12,805	14%			Inc. in 'Main Camp. invoices'
Total of 5 accounts		Totals	45,058,052	44,487,370	1%	£3,152,484	£2,887,877	9%
Electricity Invoices		2011/12	2010/11	% change	2011/12	2010/11	% change	
Sutton Bonington		kWh	kWh	kWh	£	£	£	
	Sutton Bonington Campus	6800	11,927,318	10,872,988	10%	846,773	710,347	19%
	New Dairy	6500	500,000	490,000	2%	44,000	38,500	14%
	Melton Lane Building A	5433	31,000	30,910	0%	2,900	2,558	13%
	Eviton House (68 College Road)	5891	19,112	26,414	-28%	1,794	2,169	-17%
	St.Michael's House (Flats 1-5)	6841	18,491	12,744	45%	2,116	1,696	25%
	Bunny Park Farm	6860	10,970	10,730	2%	1,121	1,016	10%
	St.Michael's Flats Nos 8&9	6843	8,829	11,790	-25%	1,384	1,782	-22%
	40 College Road	6811	7,112	5,585	27%	748	544	37%
	New Dairy Herdsman's house	6500	6,900	5,500	25%	780	550	42%
	St.Michael's Close (Flats 10-15)	6840	5,700	5,828	-2%	700	650	8%
	44 College Road	6814	5,428	4,876	11%	615	506	22%
	24 College Road	6805	5,212	5,200	0%	572	540	6%
	St.Michael's Flats Nos 6&7	6842	3,987	2,700	48%	929	900	3%
	Manor Farm NU Press 1	6910	3,117	10,499	-70%	282	1,026	-72%
	Manor Farm NU Press 2	6910	2,884	17,325	-83%	279	1,521	-82%
	50 College Road	6819	430	3,079	-86%	130	346	-62%
	45 College Road	6815	112	100	12%	97	120	-19%
	Manor Farm Pump House Kingstons	6910	0	0	-	110	144	-24%
	Manor Farm Soar Irrigation Pump	6910	0	0	-	107	152	-30%
Total of 19 accounts		Totals	12,556,602	11,516,268	9%	£905,438	£765,066	18%
Electricity Invoices		2011/12	2010/11	% change	2011/12	2010/11	% change	
Jubilee Campus		kWh	kWh	kWh	£	£	£	
	Jubilee Campus Main Supply	7000	6,074,288	5,993,242	1%	£433,019	£396,850	9%
	Newark & Southwell Halls	7000	686,688	728,019	-6%	£53,077	£51,199	4%
	Jubilee Sports Centre plus Starbuck	7301	329,669	223,411	48%	£28,575	£18,380	55%
	New Supply 2012 East of Triumph	7000	76,161	0	-	£9,669	£0	-
(1)	9 Triumph Road (Dairy Crest Site)		58,565	57,913	1%	£8,297	£7,826	6%
(1)	6 Triumph Road (Dairy Crest Site)		92,000	146,860	-37%	£8,700	£12,734	-32%
	Charnock Ave Lighting	7201	6,000	3,890	54%	£670	£512	31%
(1)	Sir Colin Campbell Building	7340	604,499	591,422	2%			Inc. in 'J.C. Main Supply'
(1)	Institute of Mental Health	7370	76,161	0	-			Inc. in 'New supply 2012'
Total of 6 accounts		Totals	7,323,371	7,153,335	2%	£542,007	£487,501	11%
Electricity Invoices		2011/12	2010/11	% change	2011/12	2010/11	% change	
Others		kWh	kWh	kWh	£	£	£	
	King's Meadow Campus	6901	2,057,312	2,973,913	-31%	£144,812	£194,262	-25%
	Derby Medical School	3561	1,131,458	1,072,343	6%	£82,375	£72,832	13%
	Clinical Sciences (City Hospital)		1,094,324	1,070,000	2%	£100,000	£97,000	3%
	Clinical Sciences Ph.2 (City Hospital)	3325	87,612	77,201	13%	£8,000	£7,000	14%
	Boat House	6321	82,071	101,941	-19%	£7,277	£8,000	-9%
	Sports Ground - Highfields	6311	61,224	59,159	3%	£5,549	£5,246	6%
	14-22 Shakespeare Street	6101	24,643	29,297	-16%	£2,636	£2,995	-12%
	Grove Farm - Old Farmhouse	6121	23,636	64,879	-64%	£2,141	£4,881	-56%
	Grove Farm - Changing Rooms	6122	15,421	11,075	39%	£1,434	£950	51%
	Grove Farm	6123	4,811	45,836	-90%	£550	£3,787	-85%
	8 Peachey Street	6102	2,373	8,300	-71%	£420	£860	-51%
Total of 15 accounts			4,584,884	5,513,944	-17%	£355,195	£397,814	-11%
Electricity Invoices		2011/12	2010/11	% change	2011/12	2010/11	% change	
Medical School		kWh	kWh	kWh	£	£	£	
	Medical School		7,542,181	7,487,081	1%	£500,000	£480,000	4%
	Embedded units (Q.M.C.)		2,100,000	2,100,000	0%	£140,000	£135,000	4%
Totals			9,642,181	9,587,081	1%	£640,000	£615,000	4%

## 4.C - Appendix C – Fossil Fuel Data

Gas Invoices		2011/12	2010/11	% change	2011/12	2010/11	% change	
Main Campus		kWh	kWh	kWh	£	£	£	
	Central Heating Station	1000	29,172,417	30,734,821	-5%	£675,524	£526,340	28%
	Rutland Hall & Sherwood Hall	2191	2,632,344	2,905,380	-9%	£85,407	£54,335	57%
	Hugh Stewart Hall	2181	2,489,149	2,608,716	-5%	£65,067	£57,165	14%
	Cripps Hall	2171	2,032,764	2,163,776	-6%	£50,561	£40,585	25%
	Derby Hall	2121	1,894,641	2,198,294	-14%	£43,426	£56,846	-24%
	Bio-Molecular Sciences Phase 1	1353	1,887,695	2,133,560	-12%	£46,977	£42,869	10%
	Bio-Molecular Sciences Phase 2	1353	1,867,312	1,809,836	3%	£42,823	£35,290	21%
	Swimming Pool	1571	1,772,688	1,589,582	12%	£59,928	£29,473	103%
	Lenton & Wortley Hall	2141	1,587,467	1,713,374	-7%	£33,010	£32,107	3%
	Lincoln Hall	2150	1,566,531	1,616,037	-3%	£32,586	£30,423	7%
	Nightingale Hall	2161	1,428,197	1,523,900	-6%	£30,019	£28,534	5%
	Willoughby Hall	2211	1,403,571	1,690,855	-17%	£37,045	£31,963	16%
	Florence Boot Hall	2131	1,162,343	1,284,581	-10%	£24,234	£24,078	1%
	Science Area, MRI etc	1271	1,139,890	1,179,800	-3%	£23,541	£22,166	6%
	Ancaster Hall	2101	1,129,708	999,778	13%	£23,476	£18,867	24%
(2)	Jesse Boot Conference Centre	1481	1,118,195	1,191,590	-6%	£23,362	£22,636	3%
	Cavendish Hall	2111	954,327	1,042,877	-8%	£28,091	£19,491	44%
	Boots Science Building	1581	896,560	1,148,752	-22%	£22,720	£23,718	-4%
	Institute of Hearing Research	1401	688,974	785,965	-12%	£14,321	£14,737	-3%
	Arts Centre & School of Music	1501	636,030	578,476	10%	£13,238	£10,952	21%
	Wolfson Building	1421	597,765	488,361	22%	£12,478	£9,302	34%
	D.H.Lawrence Lakeside Pavilion	1631	519,777	572,663	-9%	£12,902	£11,270	14%
	Trent Building	1101	493,577	769,171	-36%	£10,528	£15,162	-31%
	Sports Centre, Main Campus	1221	473,148	461,925	2%	£9,910	£8,844	12%
	Staff Club Lenton Mount, Hemsley	1181	448,571	517,370	-13%	£9,320	£9,782	-5%
	Lenton Firs - Built Environment	1431	431,490	485,531	-11%	£9,080	£9,201	-1%
	Innovative Technology Research C	1641	333,560	357,261	-7%	£8,392	£8,852	-5%
	Lenton Hurst	2411	327,312	339,121	-3%	£6,757	£6,571	3%
	Cripps Health Centre	1231	268,289	233,615	15%	£5,657	£4,447	27%
	Redcourt	2221	240,021	252,499	-5%	£4,992	£4,819	4%
	MMMEM (Production Engineering)	1371	229,153	131,068	75%	£4,807	£2,501	92%
	Portland Building New Extn	1111	220,159	233,677	-6%	£4,588	£4,436	3%
	Portland Building Kitchens	1111	216,046	66,964	223%	£4,579	£1,296	253%
	Environmental Education Centre (E	1439	183,790	150,723	22%	£4,728	£2,732	73%
	Lenton Grove (History)	1211	182,563	179,881	1%	£3,893	£3,534	10%
	Paton House (Built Env.)	1441	143,905	135,914	6%	£2,989	£2,618	14%
	Fitness Centre	1221	140,516	144,174	-3%	£3,651	£3,102	18%
	Rutland Hall Extension HWS	2195	135,693	96,480	41%	£2,758	£1,820	52%
	Lenton Eaves (UNSSC)	1461	126,665	137,319	-8%	£3,432	£3,264	5%
	Sherwood Hall Kitchen	2200	126,158	143,049	-12%	£2,648	£2,685	-1%
	Cripps Hall Kitchen	2171	111,949	166,864	-33%	£2,327	£3,108	-25%
	Cavendish Hall Extension 1994 (H	2115	102,896	94,715	9%	£2,142	£1,789	20%
	Lenton Close Annexe (Cripps Hall)	2175	99,493	92,638	7%	£2,075	£1,798	15%
	Lincoln Hall Kitchen	2150	95,713	100,757	-5%	£2,001	£1,931	4%
	Rutland Hall Kitchen	2191	89,230	108,455	-18%	£1,861	£2,047	-9%
	Orchards	1161	85,448	90,464	-6%	£1,801	£1,744	3%
	Playgroup	1411	85,435	83,707	2%	£1,789	£1,613	11%
	Sustainable Research Building	1436	84,381	99,716	-15%	£2,361	£2,159	9%
	Lenton Fields (China House)	2163	82,118	83,903	-2%	£2,737	£2,899	-6%
	Lenton & Wortley Hall Kitchen	2141	73,017	67,320	8%	£1,520	£1,260	21%
	Humanities	## #	60,666	0	-	£3,012	£0	-
	Lenton Lodge	2251	50,284	52,613	-4%	£1,051	£1,012	4%
	Lenton Firs Lodge West	2241	47,774	37,065	29%	£994	£708	40%
	Cavendish Hall Kitchen	2111	47,404	74,034	-36%	£967	£1,385	-30%
	Warden's House Sherwood Hall	2207	44,002	50,198	-12%	£916	£963	-5%
(2)	J.Boot C.C. Annexe (Cottage)	1482	43,293	45,402	-5%	£907	£889	2%
	Former Warden's House, Cavendis	2113	37,440	61,402	-39%	£789	£1,171	-33%
	Paton Cottage (Stables Annx, Patc	1442	33,649	38,304	-12%	£702	£736	-5%
	Warden's House Rutland Hall	2194	30,352	39,081	-22%	£643	£744	-14%
	5A Wortley Hall Close (Eco-House	2296	24,377	27,753	-12%	£840	£606	39%
	Warden's House Ancaster Hall	2105	24,227	31,348	-23%	£506	£588	-14%
	Warden's House Florence Boot Ha	2133	23,021	34,611	-33%	£485	£658	-26%
	1 Nightingale Close (Nigh.Hall War	2321	18,064	27,871	-35%	£385	£540	-29%
	Sherwood Hall Laundry	2200	7,948	6,164	29%	£171	£126	36%
	Energy Learning Unit (old Squash C	1223	6,757	8,924	-24%	£493	£257	92%
	New Eco-houses		2,445	10,891	-78%	£569	£429	33%
	Redcourt Lodge	2222	1,362	0	-	£108	£0	-
Total of 67 accounts		Totals	64,711,706	68,330,916	-5%	£1,537,595	£1,269,973	21%

Gas Invoices Sutton Bonington		2011/12 kWh	2010/11 kWh	% change kWh	2011/12 £	2010/11 £	% change £	
Main Boilerhouse	6800	6,725,699	9,065,848	-26%	£176,285	£182,732	-4%	meter under-recorded
Animal Houses Boilerhouse	6800	2,832,167	2,908,579	-3%	£61,998	£54,765	13%	
Plant Sciences	5711	2,070,236	2,149,938	-4%	£53,419	£44,441	20%	
Veterinary School	5721	1,797,277	1,863,392	-4%	£44,475	£38,161	17%	
Gateway Building (Bio-Sciences)	5771	500,999	62,200	705%	£12,641	£2,015	527%	First full year
Bio-Energy and Brewing Science	5781	454,806	120,353	278%	£16,443	£5,271	212%	First full year
Sports Centre SB (New)	5951	249,271	290,365	-14%	£7,259	£6,051	20%	
Future Crop Glasshouses		218,771	0	-	£5,771	£0	-	New supply
The Elms (Environmental Science)	5161	135,204	181,053	-25%	£4,030	£3,695	9%	
Bio-Energy BIOMASS	5781	130,489	18,700	598%	£6,379	£865	637%	First full year
Eviton House (68 College Road)	5891	110,000	121,000	-9%	£1,900	£2,000	-5%	Estd
The Firs (Surgery No.2)	5233	93,341	237,153	-61%	£1,993	£4,423	-55%	
Main Building (Sutton Bonington)	5011	70,498	89,465	-21%	£1,509	£1,705	-11%	
Food Science Building	5701	52,501	53,149	-1%	£1,096	£990	11%	
Bonington Hall Laundry & Gym	5881	40,267	33,315	21%	£864	£630	37%	
St.Michael's House (Flats 1-5)	6841	36,345	31,121	17%	£863	£557	55%	
St.Michael's House Flat 1	6841	29,626	22,765	30%	£730	£417	75%	
Bonington Hall Warden's House	5842	28,311	27,026	5%	£607	£521	17%	
52 College Road	6820	24,267	24,218	0%	£523	£464	13%	
24 College Road	6805	22,677	24,627	-8%	£486	£466	4%	
St.Michael's Flats Nos 6&7	6842	12,252	59,804	-80%	£1,181	£1,556	-24%	
St.Michael's House Flat 3	6841	11,394	11,253	1%	£246	£243	1%	
St.Michael's Flats Nos 8&9	6843	10,652	10,723	-1%	£558	£340	64%	
St.Michael's House Flat 4	6841	3,390	6,823	-50%	£71	£130	-45%	
North Laboratory	5091	760	698	9%	£16	£14	14%	
Hathern House, Bon. Hall (4)	5831	0	0	-	£0	£0	-	
South Laboratory	5051	0	32	-100%	£0	£1	-100%	
Old Sports Hall SB (VLA)		0	0	-	£0	£11	-100%	
Food Hall	5081	-4	89,975	-100%	£0	£1,713	-100%	
St.Michael's House Flat 5	6841	-12,380	12,533	-199%	-£222	£315	-171%	
Total of 30 accounts	Totals	15,648,816	17,516,108	-11%	£401,121	£354,493	13%	
Gas Invoices Jubilee Campus		2011/12 kWh	2010/11 kWh	% change kWh	2011/12 £	2010/11 £	% change £	
Newark Hall	7130	1,241,396	1,222,549	2%	£38,951	£28,983	34%	
Business School South (New)	7080	821,021	535,698	53%	£20,872	£10,195	105%	
Computer Sciences (DCS) & The A	7040	775,604	760,442	2%	£16,361	£14,402	14%	
Southwell Hall	7120	679,302	600,820	13%	£18,441	£11,429	61%	
Melton Hall	7110	652,437	647,648	1%	£13,815	£12,260	13%	
Business School North (SMF)	7020	606,755	632,462	-4%	£13,573	£13,781	-2%	
Dearing Building (FOE)	7050	598,911	513,459	17%	£12,780	£9,572	34%	
The Exchange (CTF)	7030	536,838	588,894	-9%	£11,581	£11,230	3%	
Jubilee Sports Centre	7301	429,373	369,861	16%	£11,398	£7,713	48%	
The Amenities Building + Int. Hous	7330	253,030	0	-	£7,206	£0	-	New supply
Catering (CCF) HWS	7040	252,346	368,834	-32%	£5,360	£7,130	-25%	
The Nottingham Geospatial Buildin	7350	155,946	168,971	-8%	£4,429	£4,200	5%	
(1) Sir Colin Campbell Building (Gatew	7340	85,987	0	-	£3,148	£0	-	New supply
(1) Institute of Mental Health	7999	58,256	0	-	£2,414	£0	-	New supply
(1								

## 4.D - Appendix D – Water Data

Water Invoices		2011/12	2010/11	% change	2011/12	2010/11	% change		
Main Campus		cubic m.	cubic m.	cubic m.	£	£	£		
	Main supply, Sth Entrance	1000	482,095	451,548	7%	£0	£0	-	Now includes science area us
	Nightingale Hall	2161	7,925	10,567	-25%	£0	£0	-	
	Redcourt	2221	3,491	1,987	76%	£0	£0	-	grounds usage
	Science Area	1000	2,590	9,566	-73%	£0	£0	-	Off from Dec'11
(2)	JBCC Banqueting	1481	2,377	2,443	-3%	£0	£0	-	
(2)	Jesse Boot Conference Centre	1481	1,847	747	147%	£0	£0	-	Hotel build
	Lenton Eaves (UNSSC)	1461	1,788	1,689	6%	£0	£0	-	
	Lenton Grove (History)	1211	1,538	972	58%	£0	£0	-	
	Paton House (Built Env.)	1441	977	1,055	-7%	£0	£0	-	
	Lenton Firs - Built Environment	1431	917	774	18%	£0	£0	-	
	Lenton Hurst	2411	776	824	-6%	£0	£0	-	
	Beeston Lane Gardeners' Compou	1511	384	404	-5%	£0	£0	-	Account now closed
	Lenton Lodge	2251	234	249	-6%	£0	£0	-	
	Playgroup	1411	234	235	0%	£0	£0	-	
	5A Wortley Hall Close (Eco-House)	2296	26	45	-42%	£0	£0	-	
	Water + SWD invoices	1000	0	0	-	£493,874	£451,259	9%	
	TE & sewerage	1000	0	0	-	£440,000	£424,494	4%	2012 Estd
Total of 17 accounts		Total:	507,199	483,105	5%	£933,874	£875,753	7%	
Water Invoices		2011/12	2010/11	% change	2011/12	2010/11	% change		
Sutton Bonington		cubic m.	cubic m.	cubic m.	£	£	£		
	Landcroft Lane meter	6800	154,250	144,000	7%	£0	£0	-	10/11 actually 150,247
	College Road meter	6800	14,099	8,600	64%	£0	£0	-	10/11 actually 8,791
	St.Michael's House (Flats 1-5)	6841	754	8,960	-92%	£1,856	£20,075	-91%	Leak fixed Jun'11
	Bunny Park Farm	6860	177	140	26%	£283	£230	23%	
	Trough, Kegworth Road	6910	0	0	-	£22	£24	-7%	
	SB Water Costs	6800	0	0	-	£143,552	£125,000	15%	
	SB TE costs	6800	0	0	-	£140,000	£127,822	10%	2012 estd
(1)	Gateway Building	664	71	26%					Inc. in 'Landcroft L. meter'
Total of 7 items		169,280	161,700	5%	£285,713	£273,150	5%		
Water Invoices		2011/12	2010/11	% change	2011/12	2010/11	% change		
New Campus		cubic m.	cubic m.	cubic m.	£	£	£		
	Jubilee Campus main meter	7000	52,359	59,386	-12%	£0	£0	-	
	Newark Hall	7130	29,231	19,662	49%	£0	£0	-	
	Southwell Hall	7120	8,227	7,557	9%	£0	£0	-	
	The Amenities Building	7330	2,338	2,216	6%	£0	£0	-	
	Jubilee Sports Centre	7301	2,249	861	161%	£0	£0	-	Building work
(1)	9 Triumph Road		1,401	1,300	8%	£0	£0	-	
	International House	7320	1,045	1,275	-18%	£0	£0	-	
(1)	Sir Colin Campbell Building (Gatew	7340	770	677	14%	£0	£0	-	
	The Nottingham Geospatial Buildin	7350	425	326	30%	£0	£0	-	
(1)	6 Triumph Road		166	230	-28%	£784	£900	-14%	
	Charnock Ave Sports Pavilion	7201	2	2	0%	£26	£40	-35%	
(1)	9 Triumph Road costs inc. SWD		0	0	-	£8,600	£0	856%	2010/11 was £4,453
	Jubilee Campus costs	7000	0	0	-	£210,317	£187,633	12%	
Total of 13 items		98,213	93,492	5%	£219,726	£188,573	17%		
Water Invoices		2011/12	2010/11	% change	2011/12	2010/11	% change		
Others		cubic m.	cubic m.	cubic m.	£	£	£		
	King's Meadow Campus	6901	8,900	10,200	-13%	£40,153	£44,000	-9%	Jul '12 estd
	Clinical Sciences (City Hospital) Ph	3325	4,408	2,218	99%	£12,000	£6,500	85%	Costs estd
	Sports Ground - Highfields	6311	2,228	2,092	7%	£5,310	£4,890	9%	
	Grove Farm - Changing Rooms	6122	1,550	2,000	-23%	£2,400	£2,800	-14%	Jul '12 estd
	Boat House	6321	1,400	1,200	17%	£3,300	£3,000	10%	Jul '12 estd
	Clinical Sciences (City Hospital) Ph	3325	71	57	25%	£200	£150	33%	Costs estd
	14-22 Shakespeare Street	6101	0	479	-100%	£250	£842	-70%	Jun& Jul '12 estd
	8 Peachey Street	6102	0	62	-100%	£50	£264	-81%	Jun& Jul '12 estd
Total of 12 accounts		18,557	18,308	1%	£63,663	£62,446	2%		
Water Recharges		2011/12	2010/11	% change	2011/12	2010/11	% change		
Medical School		cubic m.	cubic m.	cubic m.	£	£	£		
	Medical School		35,209	45,288	-22%	£90,000	£100,000	-10%	costs estd
	Embedded Units		10,800	10,800	0%	£24,000	£22,000	9%	Estd
		46,009	56,088	-18%	£114,000	£122,000	-7%		



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