

Annual Facilities Energy Use 2011/12– Council Snapshot

Executive Summary

Important: Before making operational decisions based on any of the site-level reports in this document, Council staff are advised to consult the Sustainability Planner on the confidence level of the relevant reports.

This snapshot reveals the following key points -

- A. Total Council energy use is similar to what it was in FY2010 and FY2011. The portion of Electricity used is as follows (Figure 1 and Figure 2) -
 - o street lighting 62%, and
 - o Council facilities 38%
- B. The portion of electricity costs is as follows (Figure 4 and Figure 6) -
 - o Street lighting – approximately \$600k (47%)
 - o Council facilities – approximately \$690k (53%)
- C. A new electricity account for Bridge St depot was added in FY2010, and for the Pymble pool in FY2011.
- D. From FY2010 to FY2012 energy use from street lighting reduced by 3%. For the remainder of Council facilities - and excluding the Pymble pool - energy use reduced by 4% (Figure 5). Including the Pymble pool, the total energy use for Council facilities increased by approximately 4%.
- E. Energy use for Chambers in FY2012 was similar to FY2011. As Figure 9 to Figure 11 show, this is up to 20% lower than in previous years. In FY2011 and FY2012 the usage also seems to follow a regular seasonal pattern suggesting improved management of the HVAC.
- F. Energy use in Gordon Library appears to have dropped back to FY2006 levels (Figure 15 to Figure 16). In FY2011 and FY2012 the usage also seems to follow a regular seasonal pattern suggesting improved management of the HVAC. Given that energy use is at 2006 levels, it is possible that significant energy saving opportunities exist at Gordon Library.
- G. During FY2012, energy use in Bridge St depot appears lower (Figure 21) and more stable (Figure 22) than in FY2011. Bridge St depot has just been rated as having 4-star NABERS performance for the period 25/5/11 to 24/5/12 (TRIM: [2012/243325](#), [2012/243346](#)). Relative to the market, 4-stars is considered to be **good**, 5-stars represents **excellent**. The effect of the 20kW solar PV system can be seen with a reduction of the energy usage for the Suite 4, Bridge St account (Figure 22).
- H. The solar panels at the Bridge St depot appear to be saving Council up to \$600 to \$800 per quarter (Figure 25) - a manual reading of the inverters at 28 September 2012 indicates that the average daily output from the panels is 50kWh. Despite these savings, Figure 23 shows a large amount of the solar generated electricity is being sent to the grid (approximately 40%), with only about 60% used by the **Suite 4 - Bridge St** electricity account. Hence, there are still significant savings that could be realised if the connection of panels to the building's electricity meters could be reconfigured so that 100% of the solar generated electricity is consumed by the building. From this perspective, it would make sense to consolidate the six electricity accounts at the depot into one account. This will also save on the extra fixed costs (~\$400/yr/account) associated with having multiple accounts. Such a reconfiguration will probably lift the energy savings, due to solar panels from roughly 7% to 12%, potentially lifting the NABERS rating of the building.

- I. Energy use in Turramurra library has risen by 30% since FY2009 (Figure 26 to Figure 27). The TOU graphs from Energy Australia invoices indicate a large increase in energy use during off peak periods (Figure 29). This increase warrants investigation.
- J. Energy usage at St Ives Community Hall was significantly lower in the 3rd and 4th quarter compared to the same quarters in previous years (Figure 31 and Figure 32). This energy reduction would appear to show the installation of the LED lights are having the desired impact on energy use.
- K. Upgrade to West Pymble Community Hall was completed in 2nd quarter of FY2012 included a new roof with insulation and installation of a reverse cycle AC. Encouragingly, the summer time usage (quarter 3, FY2012) has not risen considerably (Figure 33). Monitoring of quarter 1 FY2013 should confirm if winter time energy use has lowered with the installation of the reverse cycle AC and roof insulation.
- L. The process of compiling the snapshot for FY2012 revealed a high percentage of data errors due to bill reversals not being properly reconciled. This subsequently revealed that Council has a very high number of bill reversals that create a lot of overhead to reconcile and correct – both within the energy usage database and Tech 1 financial records. Energy Australia have indicated that many of the reversal occur because the meter technicians often have problems with old locks that are jammed. They have indicated that Council mostly has older style NMB locks that are known to frequently jam because of their age. They have suggested Council upgrade all locks to newer Abloy locks which can be purchased through Integrity Locks (ph 1300 366 488).
- M. Operations and outdoor staff moved from Carlotta depot to the new Suakin St depot in August of 2012. The new depot features a lot of energy efficiency features such as automated lighting and LED/T5 lights. A comparison of energy use between the Suakin St depot and Carlotta Ave can be done to see if the new site yields a lower energy use. New energy account details will need to be added to the energy database. Solar panel monitoring functions should also be noted for recording in the energy database.
- N. The non-optimal configuration of electricity accounts and solar panels discussed in the previous point H highlights the importance of analysing the size of the solar panels against the patterns of electricity use in the building. For future installations it is advised that the contractor be asked to provide an evaluation of the expected half hourly solar panel output against expected half hourly electricity use for the facility. Historical half hourly electricity use can be obtained from Ausgrid if a time-of-use meter is in place. Where a TOU meter is not in place, a temporary meter could be installed to sample the energy use. This will ensure that the panel sizing is appropriate for the patterns of electricity usage at the facility.
- O. Note that Council currently has an emissions reduction target of 20% by 2020, relative to 2000 emissions. While Council's total energy use for the facilities has slightly dropped between FY2011 and FY2012, Council's actual emissions and energy use due to electricity, is up by at least 10% relative to FY2000. This suggests that a review of the emissions reduction target would be worthwhile so that a meaningful target can be used to prioritise energy efficiency opportunities between now and 2020.
- P. A summary of energy use for every Council site is shown in Table 2. Sites where energy use has increased significantly should be reviewed by the energy efficiency working group to determine if any corrective action is necessary.
- Q. It is suggested that a 6 month energy snapshot review be carried out in February.

Actions Identified from Executive Summary

	Action	Responsibility	Date
1	AH to review site-itemised table and add comments where 2012 usage is highlighted as having increased by more than 10% (red) or having decreased by more than 10% (green).	AH	Nov 12
2	Opportunities to reduce Houselight usage at Bridge St depot	AH	Feb
3	AH ask contractor to quote on getting data connection from Bridge St solar inverters to Council servers. PV, AH and IT services to work on capturing data on Council systems.	AH / PV	Feb
4	Consolidating accounts and replacing with sub-meter installation for Bridge St Depot. To be done after implementation of the sustainability reporting system. AH recommends doing this as one piece of work.	AH / PV	
5	Investigate Turra library after hours usage. Annual usage has increase by - Figure 26 . And this may be due to 100% increase in off-peak energy usage - Figure 29 .	AH	Feb
6	Prepare 6 monthly snapshot for review and schedule review meeting in February	PV	Feb
7	Request analysis of 0.5hr energy usage profile against expected solar energy generation for Art Centre.	ML	Feb
8	Replace NMB locks with Abloy locks where invoice reversals are occurring. PV to send list of accounts with reversals to AH.	PV / AH	Feb
9	AH and MT to provide preliminary inventory of Council facilities electrical systems to Strategy. Strategy to engage consultant to prioritise energy efficiency opportunities.	AH / MT MK / ML	Feb

Table 1.

Contents

Contents	4
Summary of Total Energy Use	4
Energy Use - Breakdown by Site	7
Energy Use and Costs – 5 Year History – Top 6 sites	8
Energy Breakdown By Site – Usage, Costs, Variance and Potential Anomalies – All Council Facilities (excluding and Street lights) – FY 2011/12	10
Energy Profiles of Councils Top 6 Sites – 2007 to 2012	20

Summary of Total Energy Use

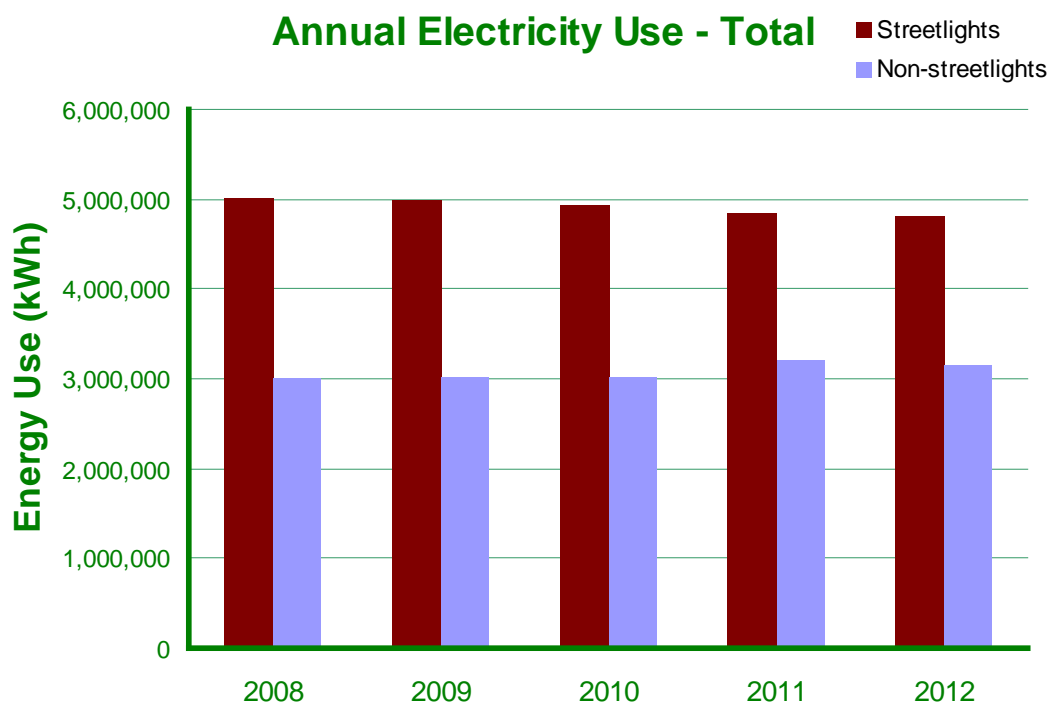


Figure 1

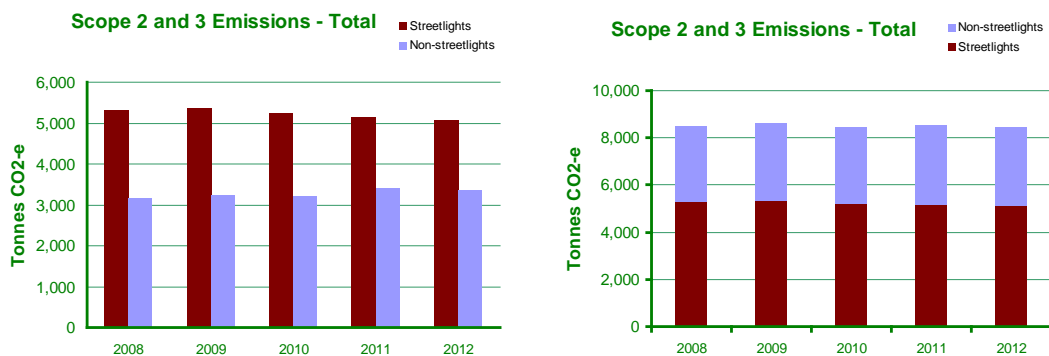


Figure 2

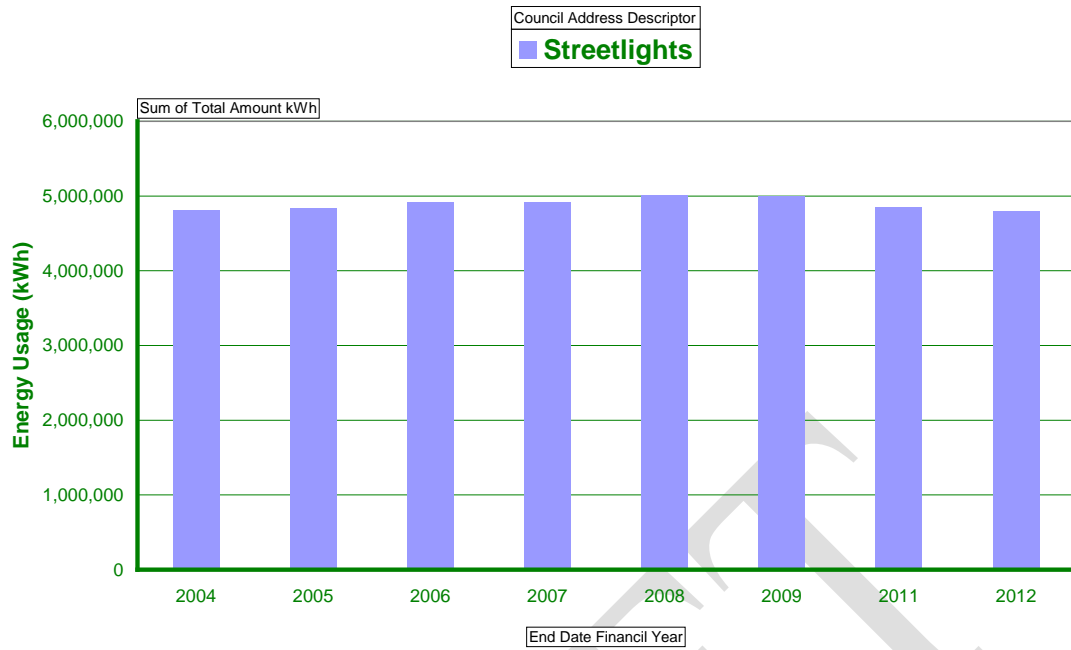


Figure 3

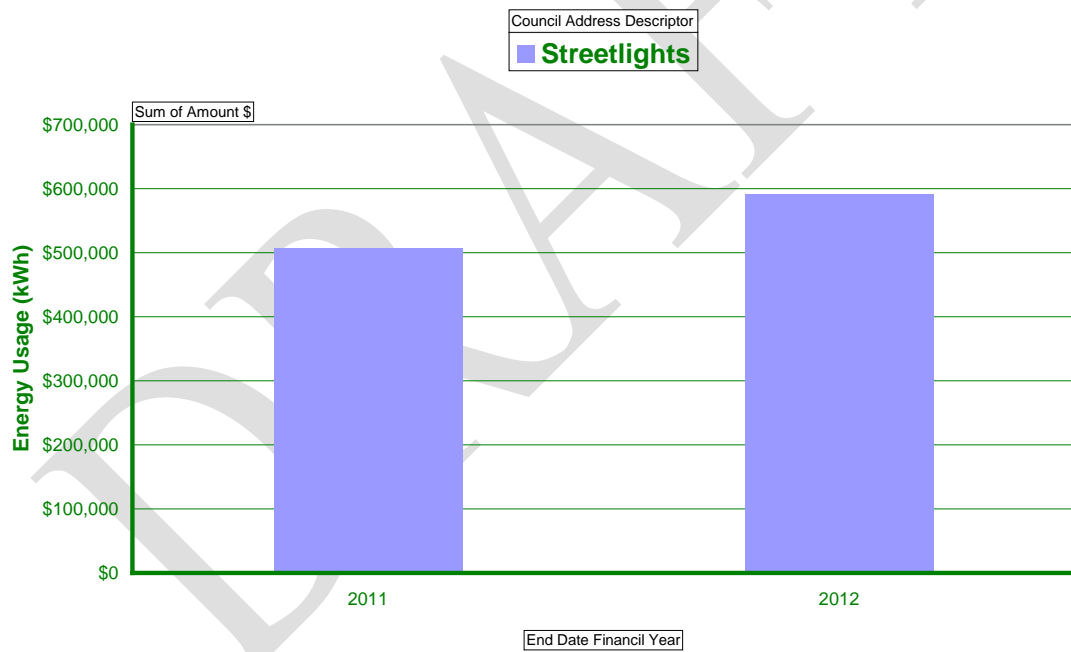


Figure 4

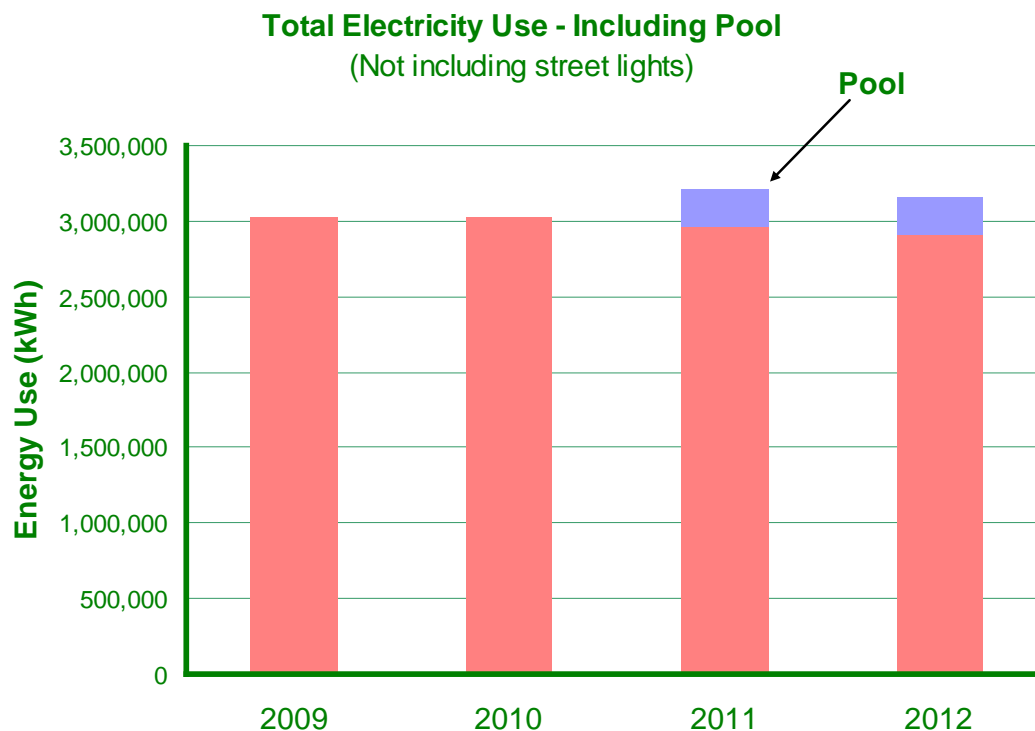


Figure 5. Prior to July 2010, the electricity account for the pool was not paid for by council ("DO NOT PAY - Paid by B Pay - sent to Turrumurra PO Box" is the note in the finance system) [2012/237547](#). From July 2010 the account was transferred from Energy Australia to Momentum and Council began paying for the bill. Hence, from FY2011 the pool energy use is included. X-axis shows financial years

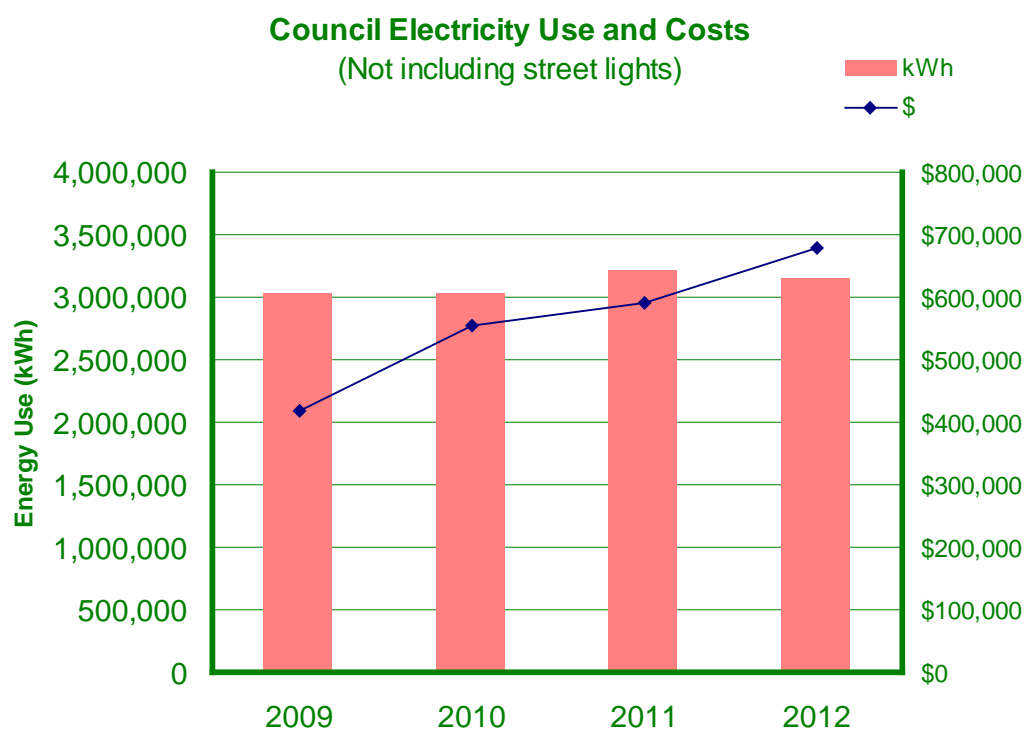


Figure 6. X-axis shows financial years.

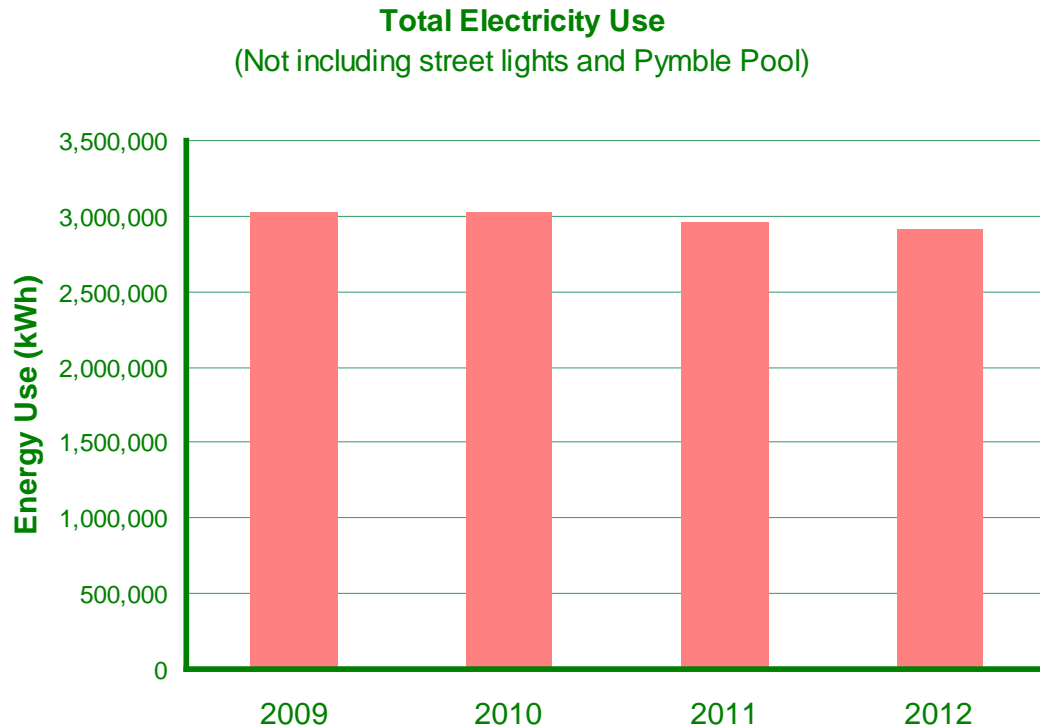


Figure 7. X-axis shows financial years.

Energy Use - Breakdown by Site

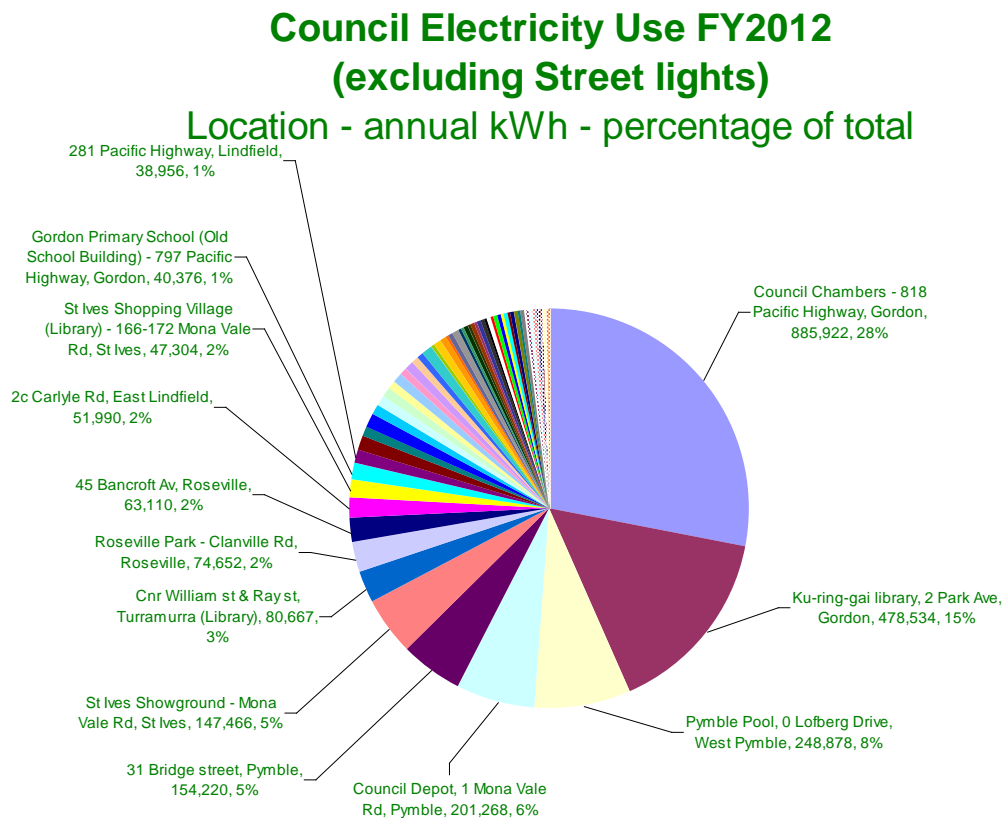


Figure 8

Energy Use and Costs – 5 Year History – Top 6 sites

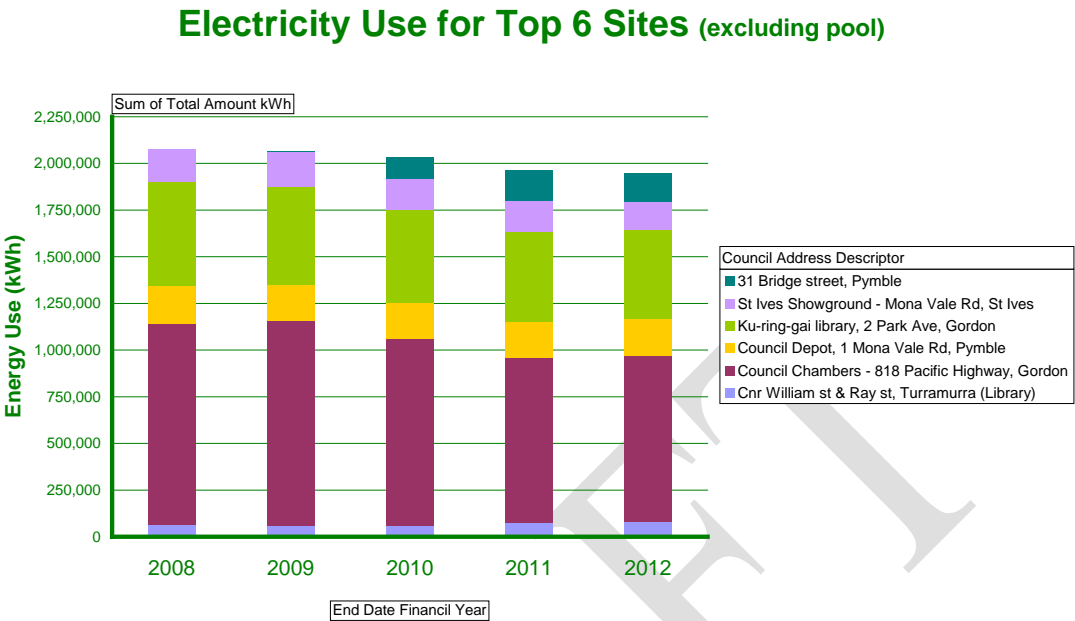


Figure 9

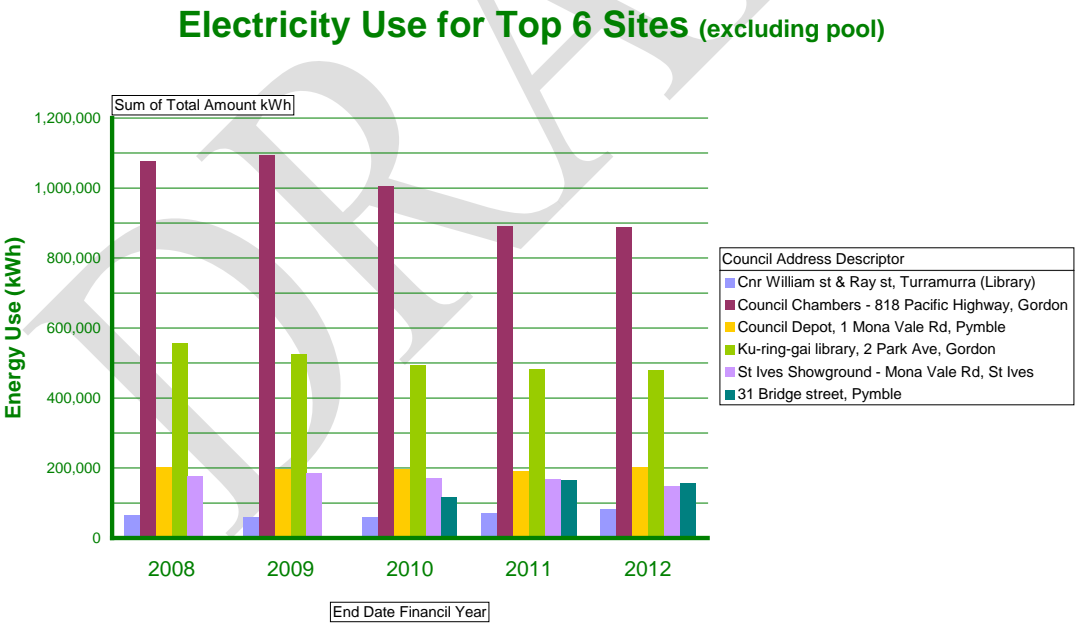


Figure 10

Electricity Costs for Top 6 Sites

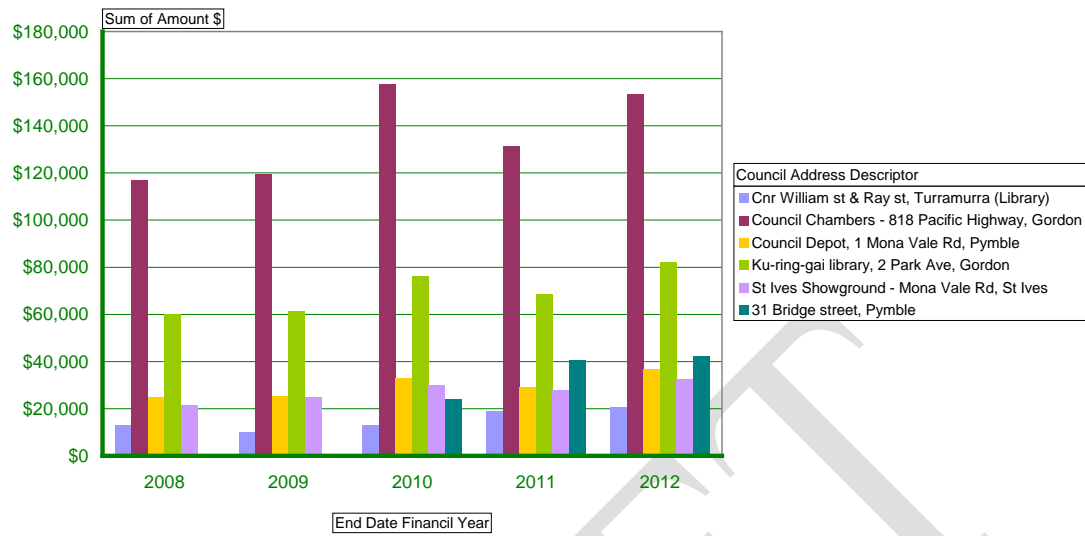


Figure 11

**Energy Breakdown By Site – Usage, Costs, Variance and Potential Anomalies – All Council Facilities
(excluding and Street lights) – FY 2011/12**

	Location	% of Council Total	kWh FY2012	kWh FY2011	% Change between now and previous year. A 10% increase is shown in red	Annual Cost FY2012	Annual Cost FY2011	Actions / Comments
	Totals	100.00%	3,150,991	3,207,289	-1.8%	\$678,321	\$590,228	
	Council Chambers - 818 Pacific Highway, Gordon	28.12%	885,922	889,557	0%	\$153,398	\$131,121	Over the past two years there has been adjustments to chiller systems, air handling units, and timers. In the past 12 months there have been tweaks to the chiller system
Gordon Library & Old School Building	Ku-ring-gai library, 2 Park Ave, Gordon	15.19%	478,534	480,555	0%	\$82,282	\$68,407	Bought on 3 additional AC units to fix pre HVAC problems. NB: opening hrs were changed in June 2011 but the overall hrs remain the same
	Pymble Pool, 0 Lofberg Drive, West Pymble	7.90%	248,878	242,664	3%	\$39,073	\$31,382	Mark Taylor indicated that Council may choose to keep the pool account on its books and create incentives for the operator to reduce energy consumption. This decision is to be confirmed as Mark assesses different business models.
	Council Depot, 1 Mona Vale Rd, Pymble	6.39%	201,268	190,968	5%	\$36,792	\$29,091	
	31 Bridge street, Pymble	4.89%	154,220	165,394	-7%	\$42,193	\$40,565	
	St Ives Showground - Mona Vale Rd, St Ives	4.68%	147,466	167,659	-12%	\$32,438	\$27,649	
Turrumurra Library	Cnr William st & Ray st, Turrumurra (Library)	2.56%	80,667	70,998	14%	\$20,734	\$18,821	See Figure 26 and Figure 29. Andrew Healy noted Youth Services began using the basement 2 years ago for 2-3 days a week
Tennis Courts and Park?	Roseville Park - Clanville Rd, Roseville	2.37%	74,652	79,031	-6%	\$14,129	\$14,533	

	Location	% of Council Total	kWh FY2012	kWh FY2011	% Change between now and previous year. A 10% increase is shown in red	Annual Cost FY2012	Annual Cost FY2011	Actions / Comments
Arts Centre	45 Bancroft Av, Roseville	2.00%	63,110	63,968	-1%	\$17,421	\$16,508	
Thomas Carlyle Centre?	2c Carlyle Rd, East Lindfield	1.65%	51,990	53,331	-3%	\$15,196	\$14,426	
St Ives Library	St Ives Shopping Village (Library) - 166-172 Mona Vale Rd, St Ives	1.50%	47,304	49,474	-4%	\$13,919	\$11,550	
Gordon Library & Old School Building	Gordon Primary School (Old School Building) - 797 Pacific Highway, Gordon	1.28%	40,376	42,273	-4%	\$12,082	\$9,435	
Lindfield library	281 Pacific Highway, Lindfield	1.24%	38,956	40,297	-3%	\$11,405	\$10,194	
Gordon Golf Course?	Cnr Bushlands Av & Lynn Ridge Av, Gordon	1.05%	32,928	30,043	10%	\$9,251	\$7,296	
Ku-ring-gai Town Hall	Town Hall - 1188 Pacific Highway, Pymble	0.99%	31,244	33,876	-8%	\$6,449	\$5,692	
	William Cowan Oval Cowan Road, St Ives	0.89%	28,127	23,363	20%	\$9,264	\$6,746	
	Oval lighting Sir David Martin	0.87%	27,484	39,467	-30%	\$12,861	\$12,757	
St Ives Community Centre	4 Memorial Av, St Ives	0.84%	26,416	28,084	-6%	\$7,483	\$6,947	
East Roseville Community Centre	10 Babbage Rd, Roseville	0.75%	23,786	25,002	-5%	\$5,936	\$5,393	

	Location	% of Council Total	kWh FY2012	kWh FY2011	% Change between now and previous year. A 10% increase is shown in red	Annual Cost FY2012	Annual Cost FY2011	Actions / Comments
	Wade Lane Car Park, Gordon	0.75%	23,665	25,199	-6%	\$6,700	\$6,195	
	Bobbin Head Road, North Turrumurra	0.69%	21,781	23,514	-7%	\$5,133	\$4,630	
	Amenities Block Bushfire Shed - Westbrook Ave, Wahroonga	0.69%	21,764	26,274	-17%	\$4,688	\$3,707	
	Netball Complex - Canoon Rd, Turrumurra	0.69%	21,738	20,595	6%	\$3,744	\$3,624	
West Lindfield Community Centre	Moore Ave, Lindfield	0.68%	21,331	29,682	-28%	\$5,271	\$4,879	
	Lindfield Oval - Tryon Rd, East Lindfield	0.64%	20,308	19,705	3%	\$4,973	\$4,148	
	Bushland Management Shed, Curagul Rd, Turrumurra	0.59%	18,727	18,270	3%	\$4,850	\$4,338	
	Acron Oval - Acron Rd, St Ives	0.47%	14,799	15,817	-6%	\$4,468	\$7,354	
	Leachate Plant, Curagul Road, North Turrumurra	0.47%	14,666	6,391	129%	\$3,806	\$1,504	
	Playing Field Cnr Yanko Rd & Lofberg Rd, West Pymble	0.45%	14,120	7,884	79%	\$3,122	\$1,637	
	Greenkeepers Shed, 361a Bobbin Head Rd, North Turrumurra	0.40%	12,757	15,806	-19%	\$3,243	\$3,588	
	Wildflower Garden Pav - Mona Vale Rd, St Ives	0.36%	11,403	11,372	0%	\$2,925	\$2,431	

	Location	% of Council Total	kWh FY2012	kWh FY2011	% Change between now and previous year. A 10% increase is shown in red	Annual Cost FY2012	Annual Cost FY2011	Actions / Comments
	Pav Canning Oval - Warrimoo Av, St Ives	0.36%	11,398	12,330	-8%	\$2,962	\$2,687	
	Roseville Chase Oval - Cardigan Rd, Roseville	0.33%	10,364	5,735	81%	\$2,429	\$1,321	
	Dressing Sheds - Bannockburn Rd, Pymble	0.32%	9,943	11,375	-13%	\$2,635	\$2,439	
What's the difference between this and Lofberg Rd, West Pymble below	Lofberg Rd, Pymble	0.31%	9,730	10,660	-9%	\$2,406	\$2,460	
	Lofberg Netball Courts, Lofberg Rd, West Pymble	0.31%	9,715	11,061	-12%	\$2,860	\$2,595	
	tennis Shelter - Saiala Rd, East Killara	0.29%	9,291	9,745	-5%	\$3,786	\$2,873	
	Public Hall - Pleasant Ave, East Lindfield	0.29%	9,031	10,765	-16%	\$2,230	\$2,487	
	Dwelling, 430 Mona Vale Rd, St Ives	0.28%	8,904	18,104	-51%	\$1,950	\$3,246	
	Dressing Shed - Cliff Ave, Wahroonga	0.28%	8,808	9,391	-6%	\$2,474	\$2,096	
	40 Mimosa Rd, Turramurra	0.26%	8,346	6,196	35%	\$2,333	\$1,474	

	Location	% of Council Total	kWh FY2012	kWh FY2011	% Change between now and previous year. A 10% increase is shown in red	Annual Cost FY2012	Annual Cost FY2011	Actions / Comments
West Pymble Community Centre Hall Haven't we just done upgrades here?	Lofberg Rd, West Pymble	0.25%	7,926	10,115	-22%	\$2,201	\$2,318	Insulation has been
	Wildflower Gardens - 420 Mona Vale rd, St Ives	0.24%	7,709	8,152	-5%	\$1,973	\$1,804	
	Carpark 9-11 bridge St, Pymble	0.24%	7,635	7,236	6%	\$1,891	\$1,512	
	Gregory Street, Roseville	0.24%	7,461	7,317	2%	\$3,137	\$2,713	
	Bicentennial park - Lofberg Rd, West Pymble	0.21%	6,770	6,895	-2%	\$1,810	\$1,583	
	Oval, Howson Ave, Turramurra	0.21%	6,687	4,461	50%	\$1,866	\$1,151	
Turramurra Senior Citizens Centre	1 Gilroy Road, Turramurra (Seniors Centre)	0.21%	6,630	7,822	-15%	\$1,818	\$1,788	
	Barra Brui Park - Burraneer Av, St Ives	0.20%	6,217	6,122	2%	\$1,655	\$1,550	
	Clubhouse Turramurra Park - Karuah Rd, Turramurra	0.19%	6,118	6,038	1%	\$1,705	\$1,438	
	Tennis Courts - Tryon Rd, East Lindfield	0.18%	5,549	6,051	-8%	\$1,610	\$1,452	

	Location	% of Council Total	kWh FY2012	kWh FY2011	% Change between now and previous year. A 10% increase is shown in red	Annual Cost FY2012	Annual Cost FY2011	Actions / Comments
	Dressing Sheds - 10a Primula St, Lindfield	0.17%	5,254	5,530	-5%	\$1,551	\$1,353	
	910 Pacific Highway, Gordon	0.16%	5,184	9,826	-47%	\$1,522	\$1,635	
	Turramurra Oval, 310b Bobbin Head Rd, North Turramurra	0.15%	4,876	3,997	22%	\$1,526	\$1,046	
	Block Amenity Hassell Park - Mona Vale Rd, St Ives	0.15%	4,598	4,708	-2%	\$1,383	\$1,189	
	Nursery Dwelling - 430 Mona Vale Rd, St Ives	0.14%	4,504	3,492	29%	\$1,201	\$849	
	oval - Wellington Rd, East Lindfield	0.13%	4,209	5,178	-19%	\$1,711	\$1,661	
	265 Pacific highway, Lindfield	0.13%	3,955	4,656	-15%	\$1,154	\$1,193	
	Hamilton Park Reserve - 82 Kissing Point Rd, Turramurra	0.12%	3,860	5,638	-32%	\$1,238	\$1,375	
	Koola Park - Koola Ave, East Killara	0.12%	3,761	5,537	-32%	\$1,530	\$1,623	
	Amenities block - Cnr Kissing Point Rd & Vernon St, South Turramurra	0.12%	3,698	3,334	11%	\$1,204	\$945	
	Irrigation pump. 2nd Service - Spencer Rd, Killara (Gordon Golf Course)	0.11%	3,607	2,073	74%	\$1,193	\$709	
	Roseberry Rd, Killara	0.10%	3,018	3,780	-20%	\$1,056	\$1,069	

	Location	% of Council Total	kWh FY2012	kWh FY2011	% Change between now and previous year. A 10% increase is shown in red	Annual Cost FY2012	Annual Cost FY2011	Actions / Comments
	Family Day Care Centre - Acron Rd, St Ives	0.09%	2,784	4,649	-40%	\$802	\$1,050	
	Cnr Toolang Rd & Warrimo Av, St Ives	0.08%	2,617	2,747	-5%	\$957	\$426	
	Dressing Sheds - Karuah Road, Turramurra	0.08%	2,421	2,598	-7%	\$908	\$798	
	Strickland Ave, Lindfield	0.07%	2,300	1,774	30%	\$617	\$437	
	Culworth Av, Killara	0.06%	1,923	1,895	1%	\$814	\$674	
	Groundsmen shed - William Street, Turramurra	0.06%	1,830	1,781	3%	\$705	\$719	
	92 Kintore St Wahroonga	0.05%	1,496	2,024	-26%	\$713	\$875	
	gardeners Room, Stanhope Rd, Killara	0.05%	1,424	1,414	1%	\$523	\$441	
	The Commenara Parkway, Turramurra	0.04%	1,356	1,283	6%	\$707	\$567	
	Carpark Pacific HWY Pymble (Fitzsimmons)	0.04%	1,343	3,797	-65%	\$681	\$1,021	
	Yanilla Oval - Yanilla Rd, Wahroonga	0.04%	1,246	363	243%	\$744	\$307	
	Shed, Amenity - park Cres, Pymble	0.04%	1,221	1,042	17%	\$462	\$367	

	Location	% of Council Total	kWh FY2012	kWh FY2011	% Change between now and previous year. A 10% increase is shown in red	Annual Cost FY2012	Annual Cost FY2011	Actions / Comments
	G Recreation Grounds - 2 Rosedale Rd, Gordon	0.04%	1,214	662	<u>83%</u>	\$489	\$443	
	Cnr Koola & The Glade, Wahroonga	0.04%	1,116	461	<u>142%</u>	\$640	\$408	
	Commenara Playing Fields - The Commenara parkway, Turramurra	0.03%	1,068	744	<u>44%</u>	\$621	\$458	
	Bryce Av, St Ives	0.03%	1,000	0	<u>no history</u>	\$613	\$330	
	Edenborough Park - Edenborough Rd, Lindfield	0.03%	888	730	<u>22%</u>	\$591	\$458	
	The Glade Tennis Courts - Tanderra St, Wahroonga	0.03%	827	747	<u>11%</u>	\$576	\$504	
	Toilet Block - Redleaf Ave, Wahroonga	0.03%	788	1,170	<u>-33%</u>	\$558	\$533	
	Gardener's Shed (Wildflower Garden), Mona Vale Rd, St Ives	0.02%	755	625	<u>21%</u>	\$556	\$438	
	Oval - Chelmsford Av, Lindfield	0.02%	731	860	<u>-15%</u>	\$559	\$482	
	Oval - end of Old Kent road, Turramurra	0.02%	698	549	<u>27%</u>	\$546	\$423	
	Coonabarra Park - Coonabarra Road, Wahroonga	0.02%	638	624	2%	\$527	\$439	
	Rotunda - Wahroonga Pk, Illoura Av, Wahroonga	0.02%	503	595	<u>-15%</u>	\$500	\$429	

	Location	% of Council Total	kWh FY2012	kWh FY2011	% Change between now and previous year. A 10% increase is shown in red	Annual Cost FY2012	Annual Cost FY2011	Actions / Comments
	Browns Field - 97 Campbell Dr, Wahroonga	0.02%	473	592	-20%	\$496	\$433	
	Meals on wheels - Gordon Golf Course	0.01%	466	10	4560%	\$497	\$322	
	707 Pacific Highway, Gordon (Formerly 917-351-160)	0.01%	456	786	-42%	\$292	\$320	
	Tennis Courts - 27 Kendall St, West Pymble	0.01%	416	702	-41%	\$485	\$389	
	Echo Point Park - babbage Rd, Roseville Chase	0.01%	394	233	69%	\$370	\$250	
	Shop East Grdon Park - Elgin St, Gordon	0.01%	303	312	-3%	\$458	\$379	
	Richmond Park - Rosedale Rd, Gordon	0.01%	292	209	40%	\$456	\$360	
	park, Bradfield Rd, Lindfield (CSIRO Measurement Lab)	0.01%	284	279	2%	\$456	\$375	
	Cnr Peace Ave & Mona Vale Rd, Pymble	0.00%	149	194	-23%	\$430	\$357	
	Tennis Shed East End - Leuna Av, Wahroonga	0.00%	147	130	13%	\$426	\$347	
	Gardeners Shed - 89 Pacific Highway, Roseville	0.00%	110	554	-80%	\$93	\$427	
	Tennis Sheds South end - Thomas Ave, Roseville	0.00%	93	100	-7%	\$414	\$341	

	Location	% of Council Total	kWh FY2012	kWh FY2011	% Change between now and previous year. A 10% increase is shown in red	Annual Cost FY2012	Annual Cost FY2011	Actions / Comments
	septic Pump - 99-101 Babbage Rd, Roseville Chase	0.00%	77	77	0%	\$412	\$340	
	Howson Oval, Turramurra	0.00%	2	147	-99%	\$394	\$378	

Table 2.

Energy Profiles of Councils Top 6 Sites – 2007 to 2012

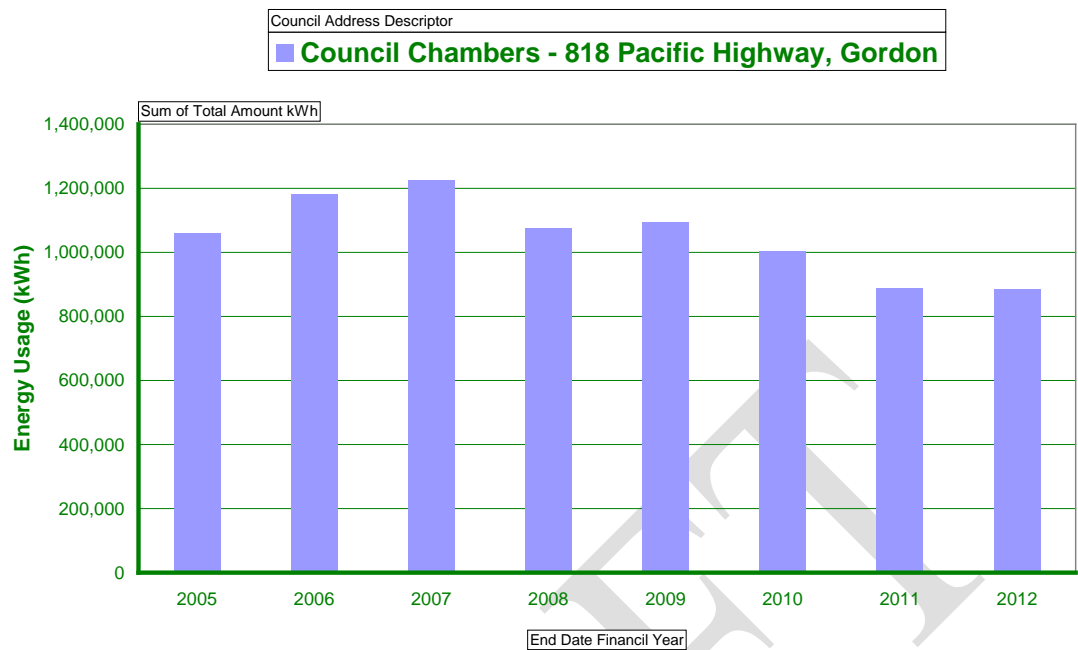


Figure 12

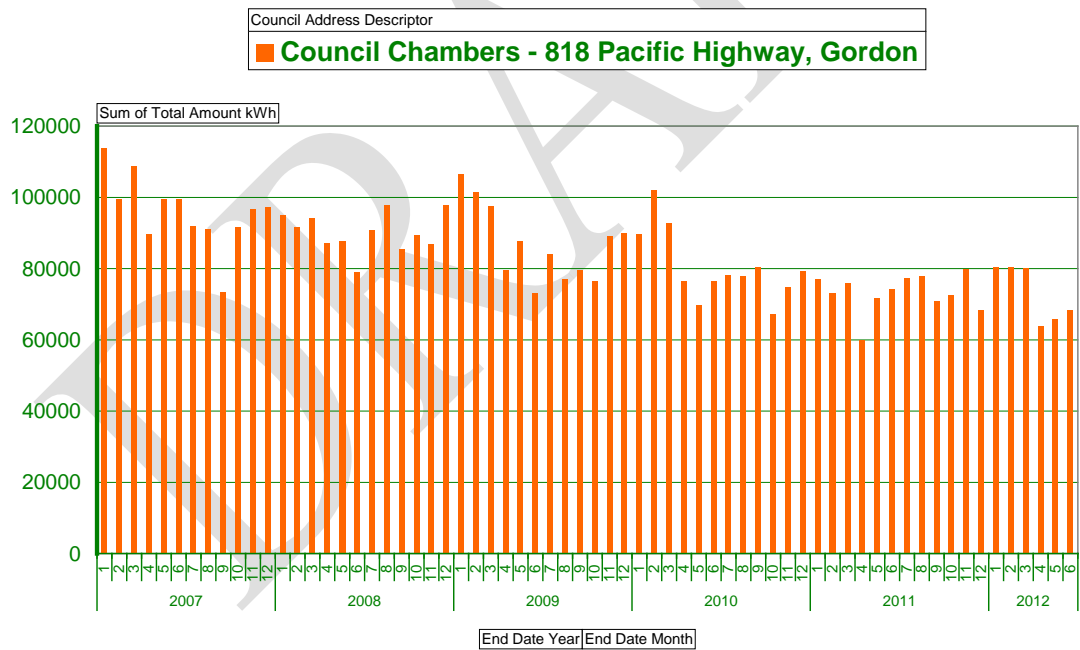


Figure 13

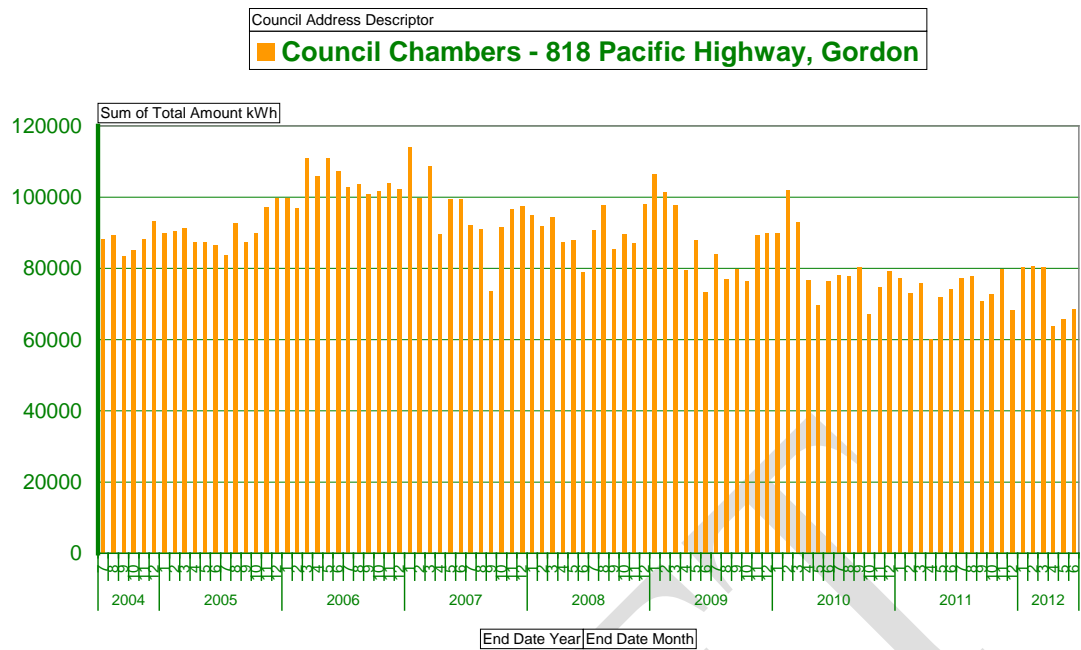


Figure 14

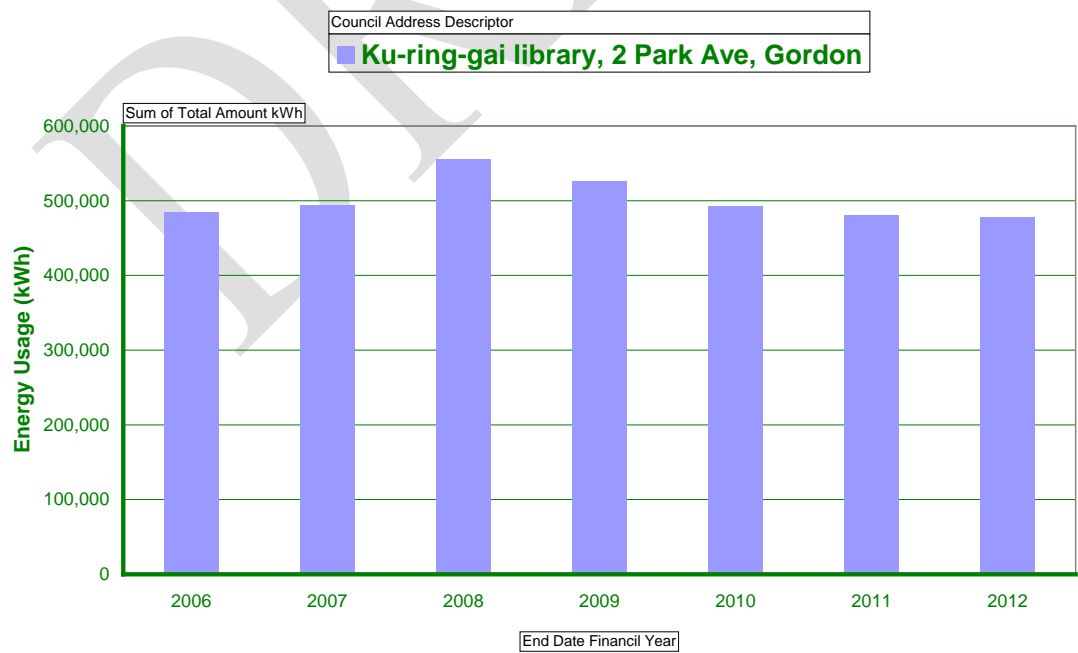


Figure 15

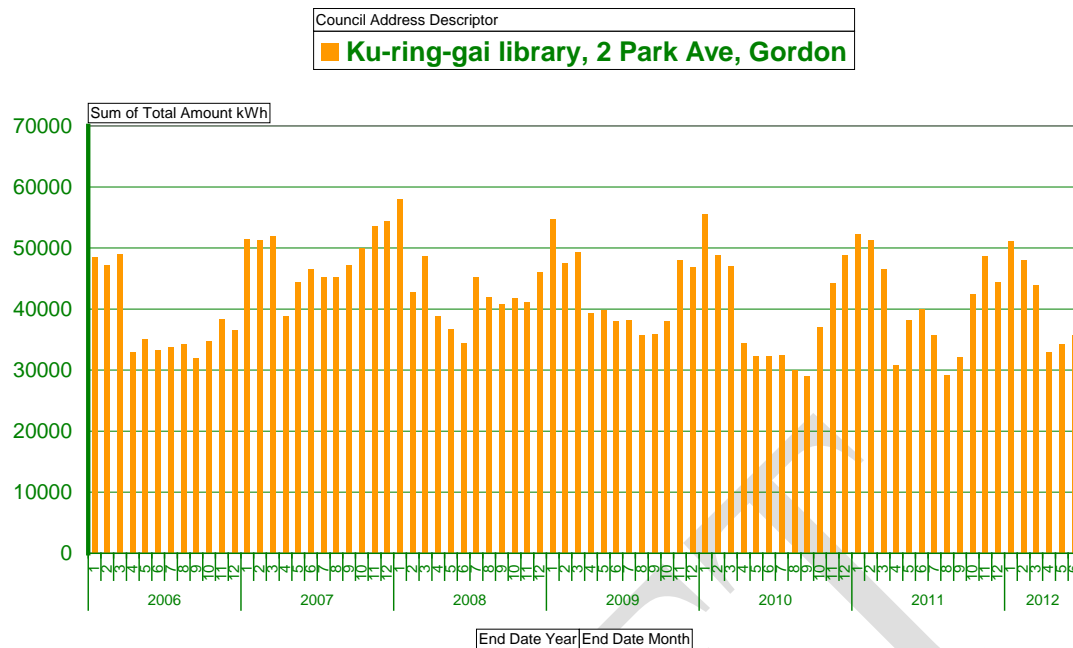


Figure 16

The 2008 Energy Performance Contract promised a drop energy usage of 99167kWh (approximately 20% compared to FY2006). Instead, energy usage went up by 12% and has gradually come back to levels similar to FY2006.

- DDC controls were added to the HVAC system and were meant to improve timing HVAC services
- Timers were put on water heaters and coolers
- Lightsave installed on Level 3
- Lighting presence detectors installed on level 4 in meeting rooms, toilets, open office areas

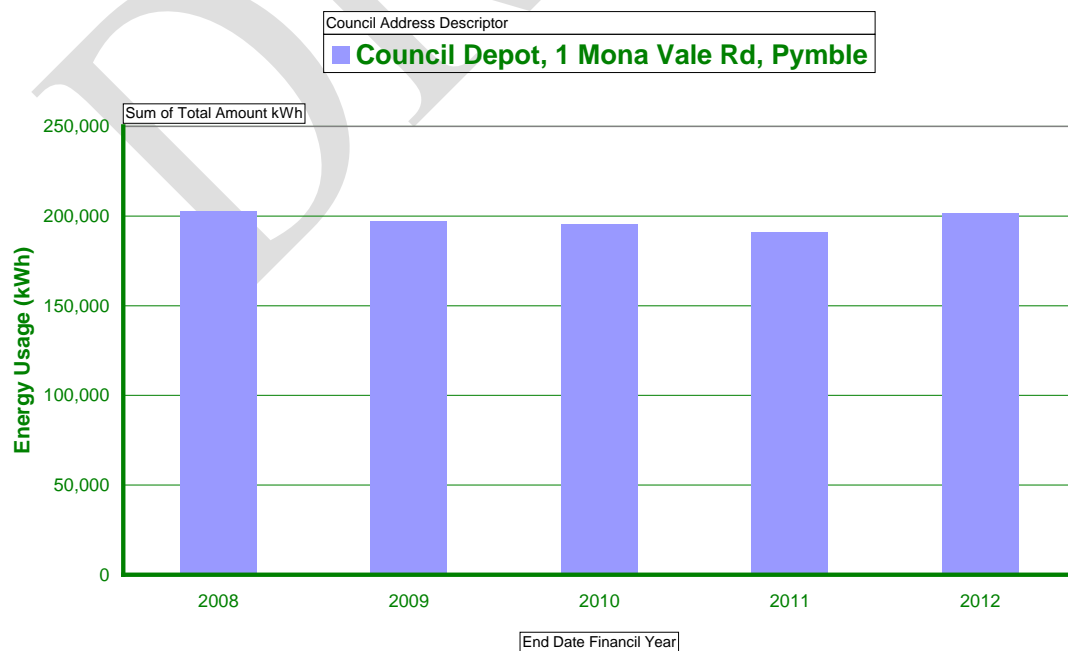


Figure 17

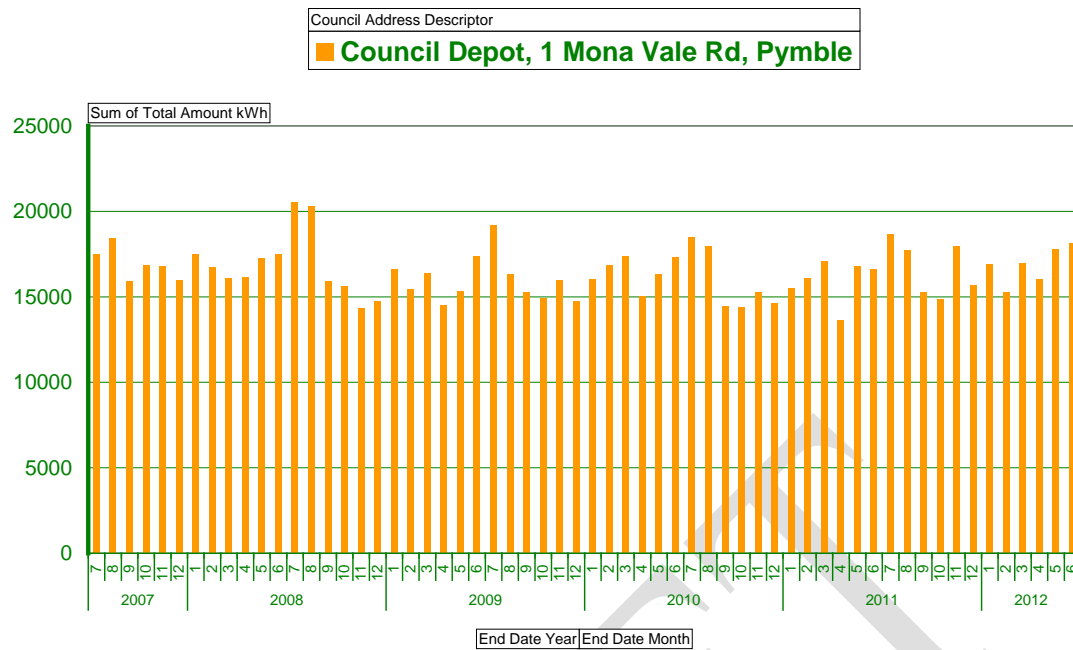


Figure 18

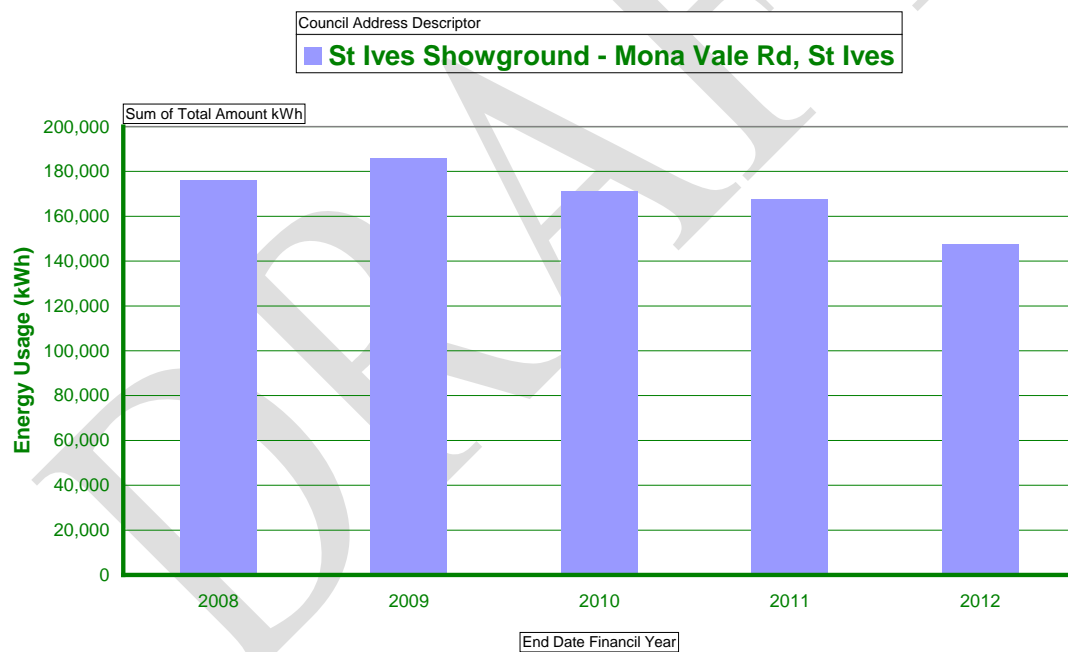


Figure 19

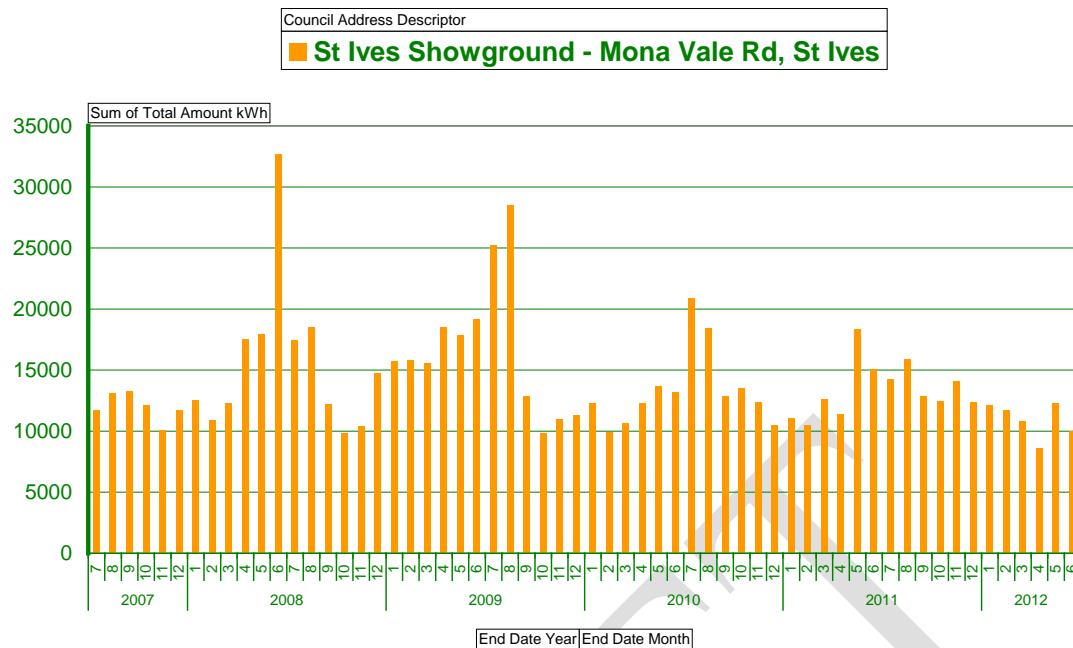


Figure 20

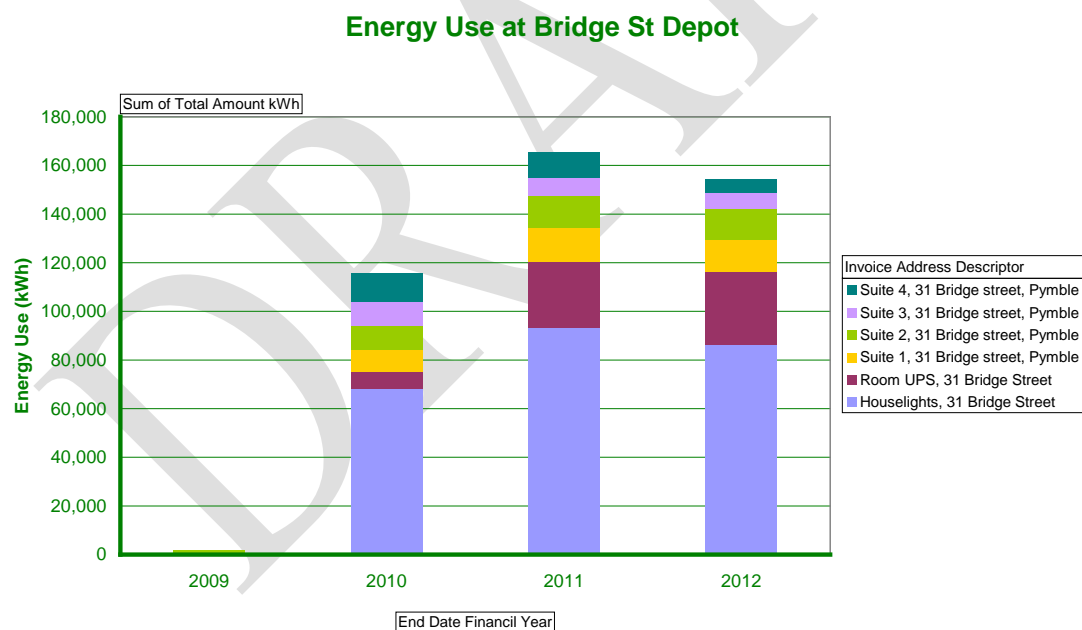


Figure 21

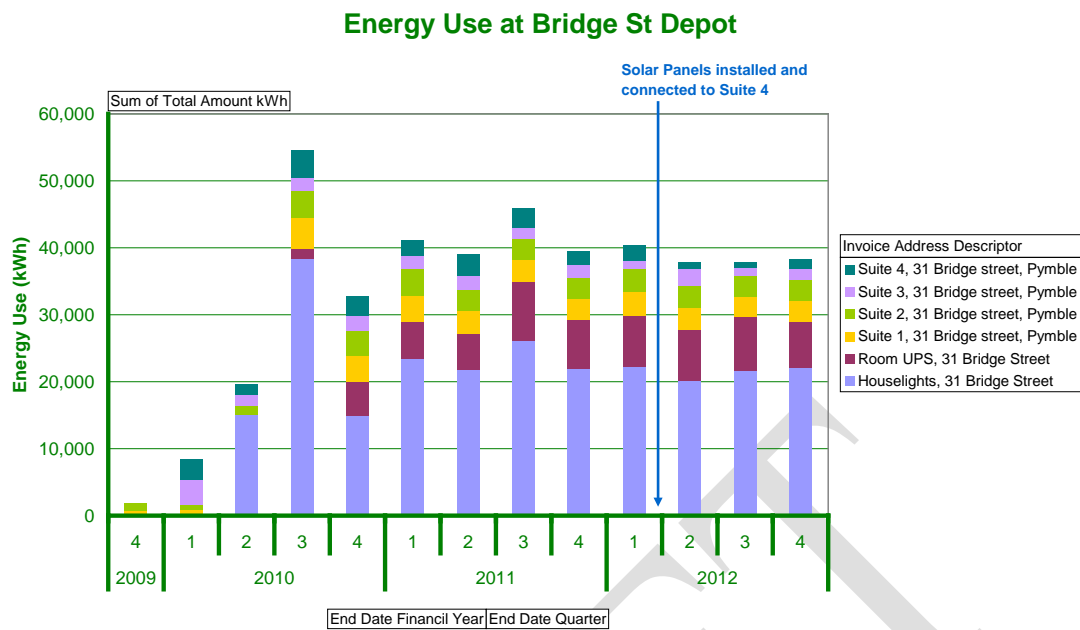


Figure 22

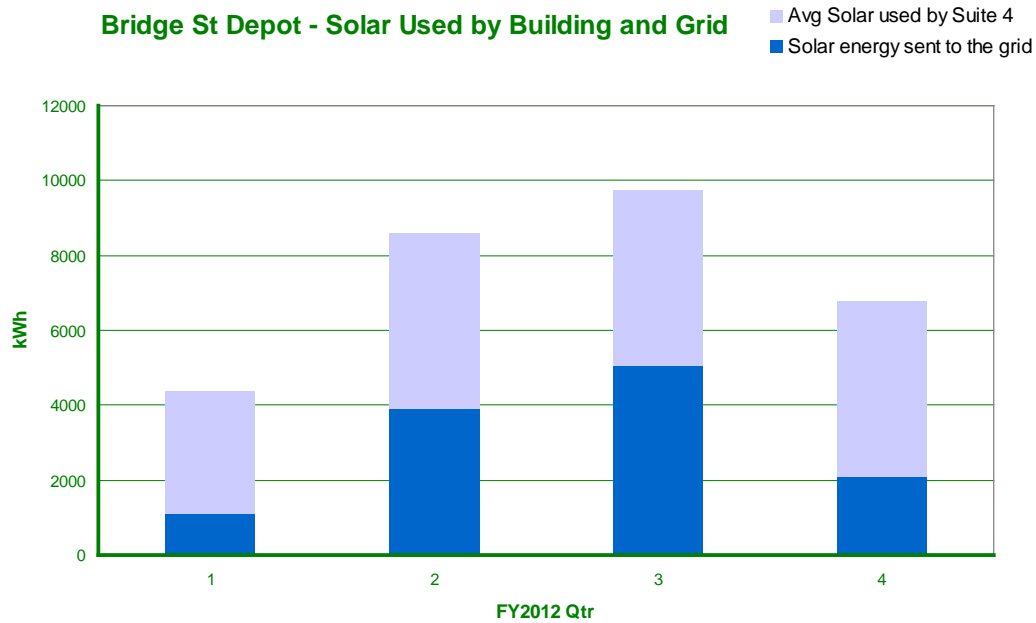


Figure 23

Bridge St Depot - Energy Use and Solar Generated

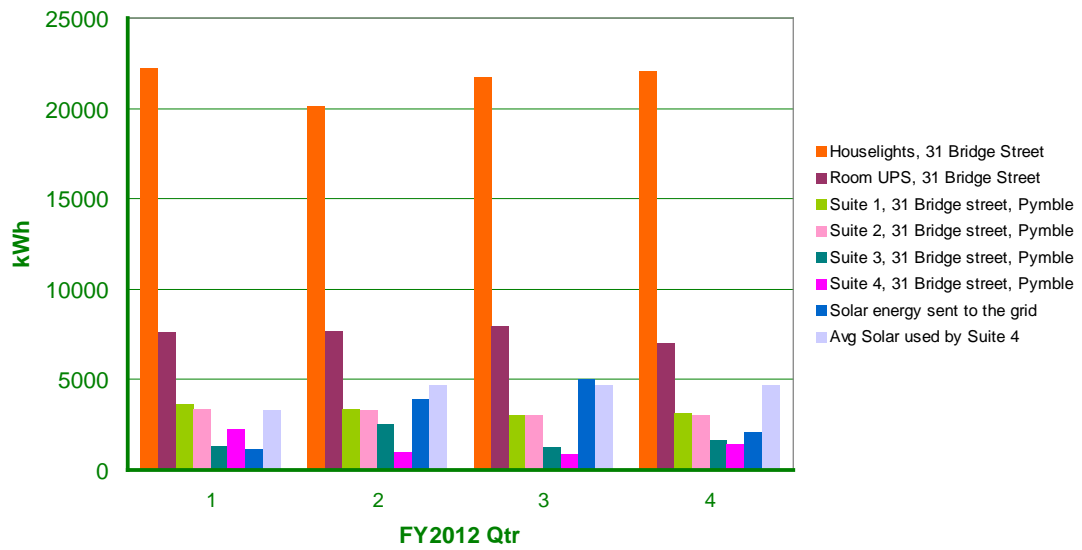


Figure 24

Bridge St Depot - Energy Use and Solar Generated

Suite 4, 31 Bridge street, Pymble



Figure 25

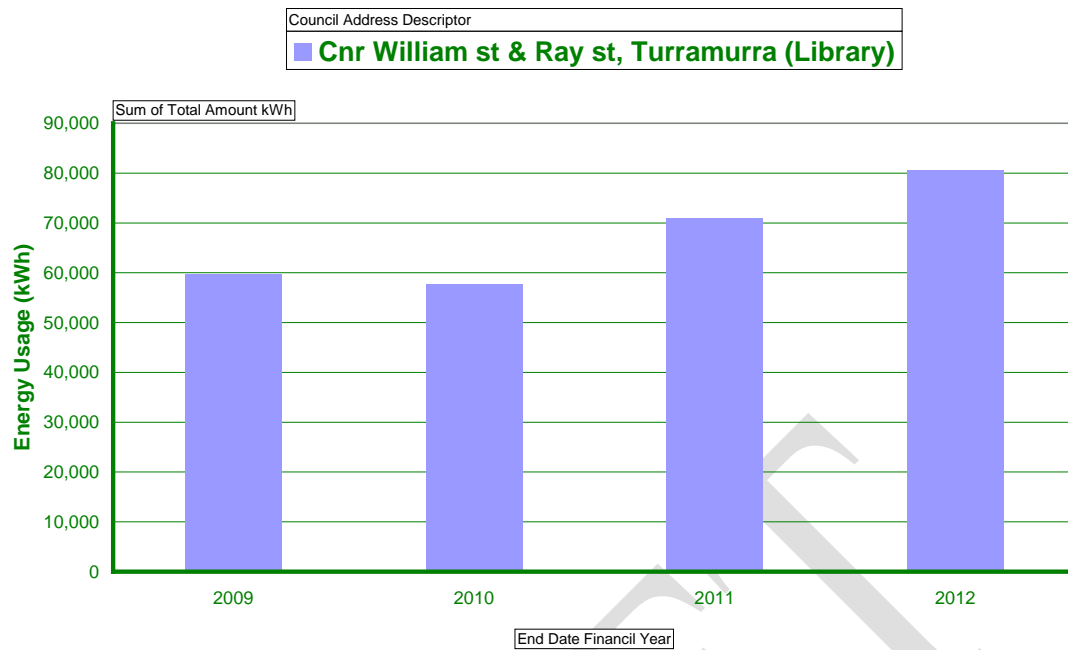


Figure 26

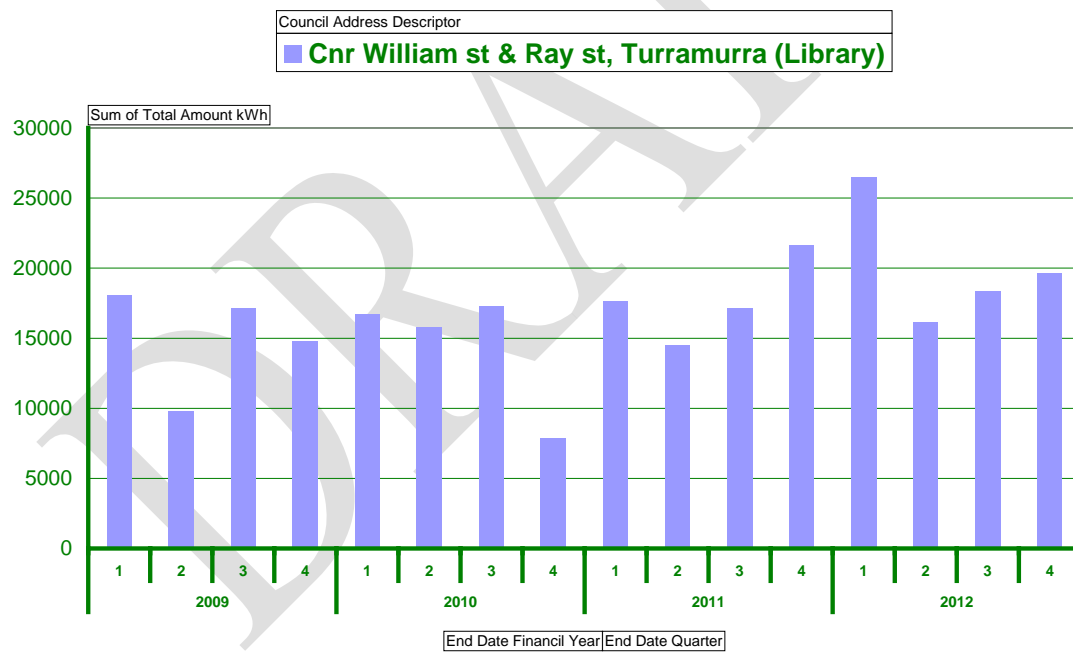


Figure 27

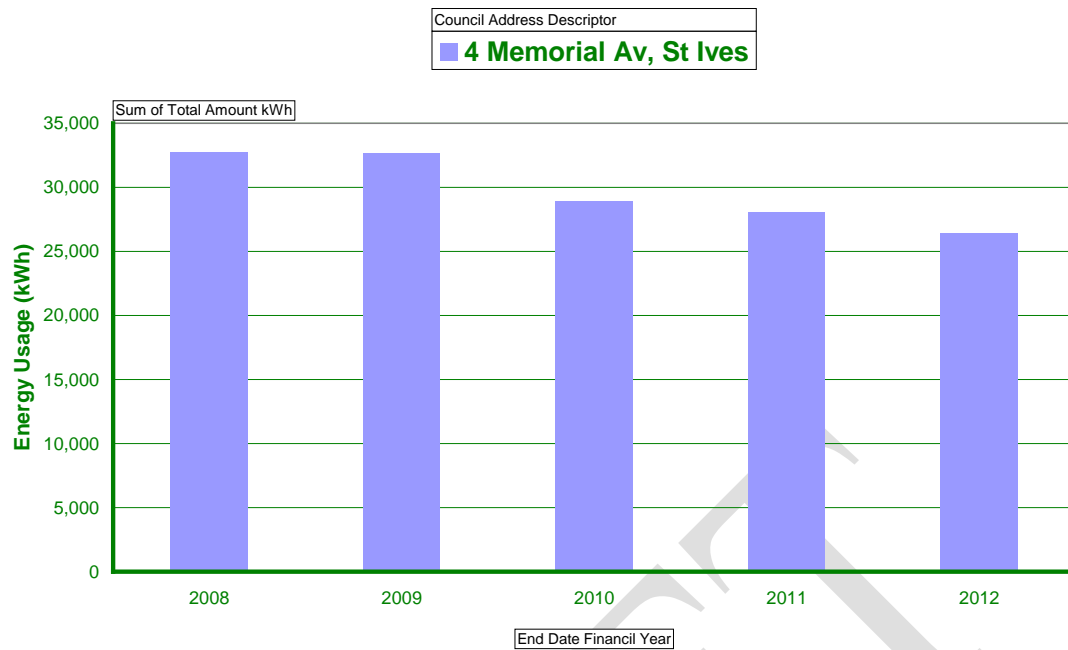


Figure 30

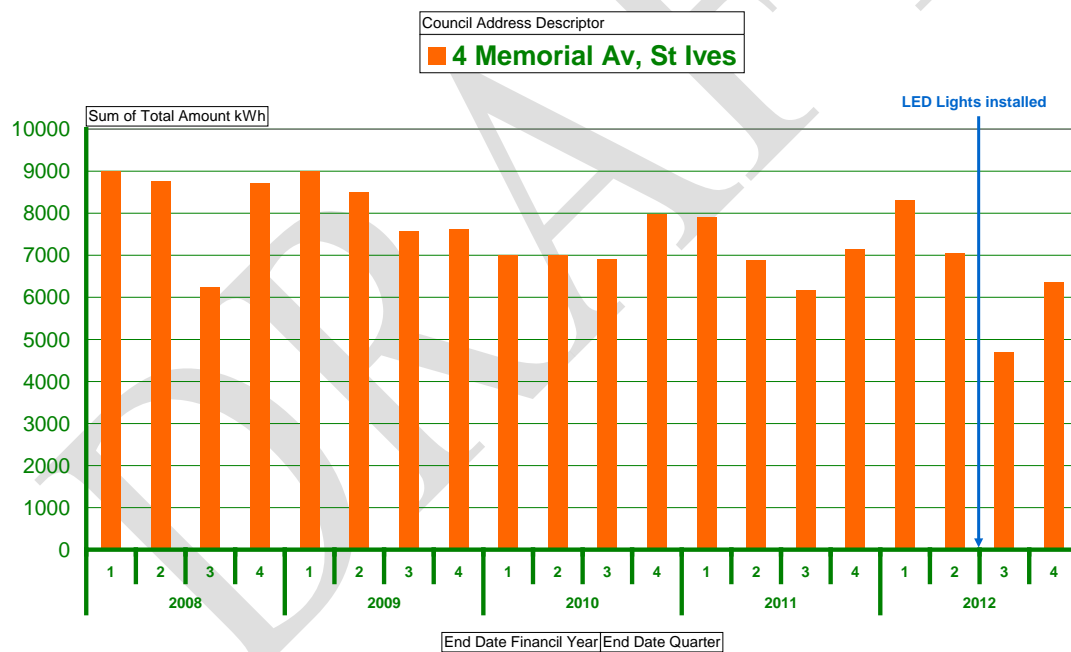


Figure 31

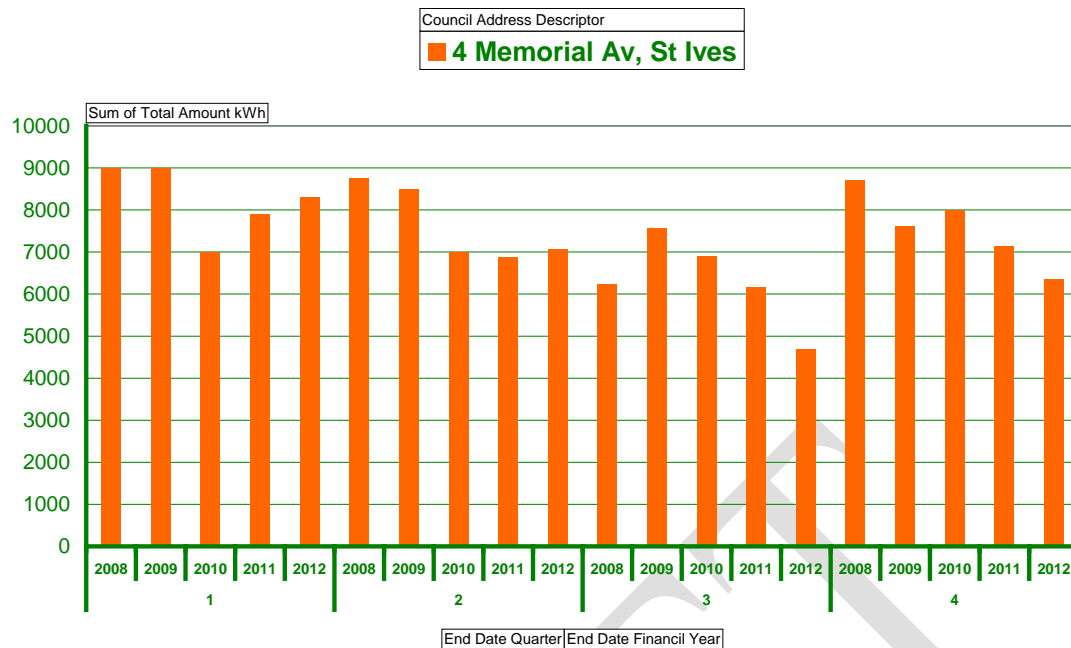
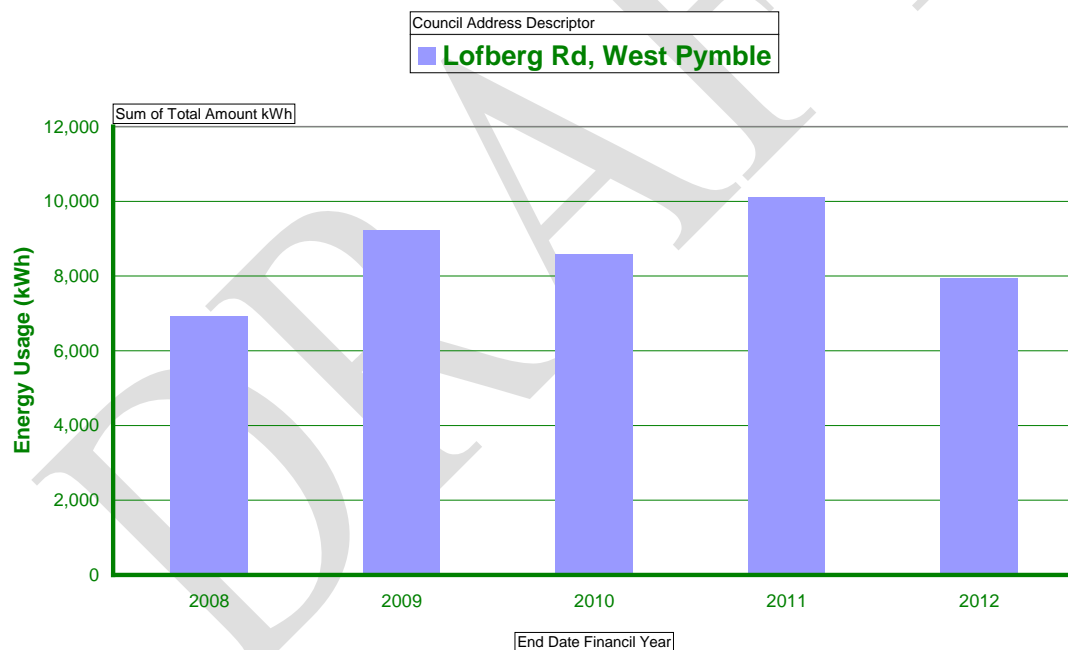


Figure 32



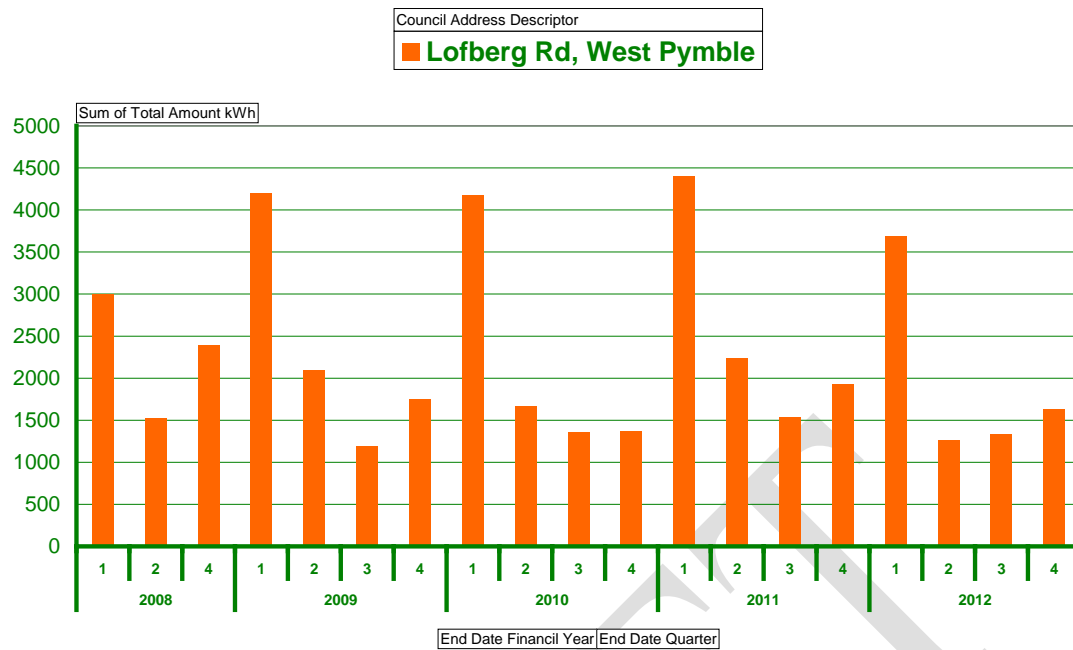


Figure 33