

Contains Confidential or Exempt Information	NO – PART I
Title	Energy Reduction Manager Update
Responsible Officer(s)	Andrew Elkington, Head of Policy and Performance.
Contact officer, job title	Michael Potter, Energy Reduction Manager, 01628
and phone number	682949
For Consideration By	Sustainability Panel
Member reporting	Cllr Coppinger
Date to be Considered	28 th September 2015
Implementation Date if	Immediately
Not Called In	
Affected Wards	n/a
Keywords/Index	Energy Reduction Manager Update

Report Summary

- 1. This report provides an update from the Energy Reduction Manager and is intended to give the Sustainability Panel an overview of the progress being made to deliver the Panel's energy reduction strategy. The paper also provides detail on the key deliverables over the coming months.
- 2. This paper recommends that members note progress and comment on the proposed work plan.
- 3. Recommendations are being made because it is important that members provide comment and direction on the work being carried out and that the sustainability strategy energy reduction target is met.

If recommendations are adopted, how will residents bene	efit?
Benefits to residents and reasons why they will benefit	Date
By reducing energy and waste costs, the Borough is	March 2016
providing better value for money to its residents.	

1 Details of Recommendations

i. RECOMMENDED: Members are asked to note the progress made and comment on the proposed work plan.

2. Reason for Recommendation(s) and Options Considered

Option	Comments
(a) The Council does not work towards the sustainability strategy.	(a) Failing to work towards the sustainability strategy would mean the Council would not be able to meet its legislative commitments, would not be able to continually drive down energy costs and therefore would not be offering value for money for its residents.
(b) The Council works according to the current and any future sustainability strategy. Recommended	(b) The Council will be able to meet all its legal requirements whilst improving the local environment and providing value for money for its residents.

3. Key Implications

Defined	Unmet	Met	Exceeded	Significantly	Date they
Outcomes				Exceeded	should be
					delivered by
Overall reduction of gas and electricity.	<7%	7-8%	8.1-9%	>9%	31 st March 2016

4. Financial Details

a) Financial impact on the budget (mandatory)

None

5. Legal Implications

There are no direct legal implications arising from this report.

6. Value For Money

The work to reduce the Council's energy usage will provide residents with value for money if the Council continues to reduce energy usage.

7. Sustainability Impact Appraisal

All the work referred to in this update relate to improving the sustainability of the Council.

8. Risk Management

Risks	Uncontrolled Risk	Controls	Controlled Risk
Targets for overall energy and water reduction are not met.	High	By providing updates at each panel meeting, Members are able to keep track of overall progress to ensure the Council meets its annual commitments.	Low
Increasing energy and water costs for the council puts additional pressures on budgets.	High	By providing updates at Panel meetings on progress to reduce energy and water usage and progress on securing the best available energy contracts, Members will be able to assess the work that is taking place to ensure that cost increases are minimised as far as possible.	Low

9. Links to Strategic Objectives

The Energy Manager's Update meets the following strategic priorities of the Council:

Residents First

- Improve the Environment, Economy and Transport
- Work for safer and stronger communities

Value for Money

- Deliver Economic Services
- Improve the use of technology
- Invest in the future

Delivering Together

- Enhanced Customer Services
- Deliver Effective Services
- Strengthen Partnerships

Equipping Ourselves for the Future

- Equipping Our Workforce
- Developing Our systems and Structures
- · Changing Our Culture

10. Equalities, Human Rights and Community Cohesion

There are no direct equalities implications arising from this report.

11. Staffing/Workforce and Accommodation implications:

None

12. Property and Assets

This update contains content relating to the improvement of the Council's buildings and the information we collate about them.

13. Any other implications:

None

14. Consultation

N/A

15. Timetable for Implementation

Current annual plan is due for completion on 31/03/16.

16. Appendices

Appendix 1 - Sustainability Strategy action plan 2014/15

Appendix 2 - A comparison table for both electric and gas consumptions

Appendix 3 – MITIE progress review of sites included in the energy performance contract.

17. Update Report

17.1 Corporate Building LED Lighting Upgrade

The LED lighting project has been awarded to Energy Saving Lighting (UK) Ltd following the recent tender exercise. Energy Saving Lighting (UK) Ltd excelled by offering the most cost effective tender response whilst meeting the required standards.

Based on the figures used in the tender exercise, Energy Saving Lighting believes that 1 GWh per annum can be saved by making the changes to the lighting. This will save the Council roughly £100k per annum in electricity costs and therefore the overall project will return the investment in two years.

Moving forward, contracts will need to be signed and then Energy Saving Lighting will need to survey the 30 sites included in the project. It is necessary at this stage to check the survey information presented to them in the tender documentation. This is because the information was generated by a third party contractor. Once the site information has been agreed the installation phase will commence with Hines Meadow Car Park.

17.2 Final update on 2014/15 action plan

The final achievements against the Sustainability Strategy action plan can be found in appendix 1. Overall the majority of targets were met. However, there were some items that could not be fully completed by the end of the year. These were items where there were unexpected delays caused by metering contractors/ the upgrade of the Council website.

17.3 Energy performance 2015/16

The half hourly data stored in Stark has been compared to the 2013/14 baseline for the first 5 months of 2015/16. So far this year electrical consumption has reduced by 9% in the buildings that are live on Stark's portal. Gas consumption has also reduced by 14%. This is promising news but there are a number of sites that appear to be going in the wrong direction.

A comparison table for both electric and gas consumptions can be found in appendix 2. The consumptions have been compared and the percentage difference between years has been calculated. The buildings were then ranked according to the percentage change in consumption. Overall many sites have reduced their consumption, however, there are a small number of sites that have experienced an increase in consumption.

Some examples, of increasing electrical consumption are Windsor Library, Grenfell Park fountain and Clewer recreation ground. After an investigation it was found that these sites now have a café when they didn't previously.

There are also a number of sites with increasing gas consumption. The two key sites using more gas are Eton Wick Youth Club and Tinkers Lane Depot. After further investigation into Eton Wick Youth Club's consumption patterns the boiler appears to be coming on in the evenings when there is no one there. This issue has been highlighted to the relevant parties to resolve.

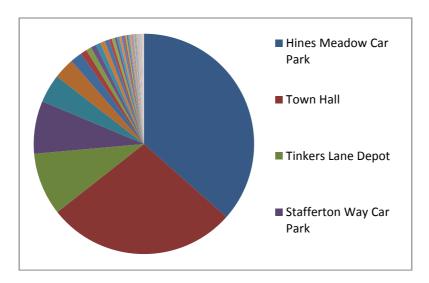
Despite MITIE having altered the control strategy to reduce energy consumption Tinkers Lane Depot is currently consuming more. MITIE are aware of the issue and are investigating how to resolve the problem.

Large consuming sites

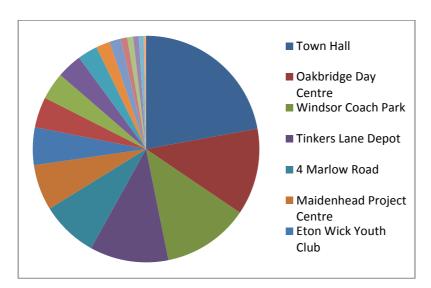
To provide an overview of the relative amounts of consumption by site over the first 5 months of the year, pie charts have been drawn up showing total consumption at each site. Whilst the electrical consumption is dominated by 4 key sites, gas

consumption is slightly more evenly split apart from the Town Hall taking up almost 25%. Knowing where the large consuming sites are can help to make large savings if there are any inefficiencies found at these sites.

Electric:



Gas:



17.4 MITIE EPC 7 month review

MITIE have carried out a progress review of the borough sites included in the energy performance contract. A summary report can be found in appendix 3.

Page 5 of the report shows the 7 month savings compared to the savings targets. In the first column of the table it is positive to see that most sites are achieving savings. However, Magnet Leisure Centre has unfortunately been consuming more electricity than before. This is mainly due to problems with the CHP unit at the centre, which has now been replaced.

Looking at the rest of the table which projects the savings to the end of the year it is unfortunately clear that most sites are not achieving the expected levels of savings. Only Windsor and Maidenhead Libraries at this stage are projected to make the agreed savings. Although this does not sound positive it must be kept in mind that changes may have occurred at some of the sites since 2012/13 (the baseline year) meaning that they might be consuming more energy for legitimate reasons. These factors have not been taken into account in these calculations. For example, Windsor Library now has a café or the leisure centres have increased the numbers of members and gym sizes. This all has to be taken into account in the end of year calculations.

The reasons why there are some large discrepancies are being investigated by MITIE though. For example, Stafferton Way Car Park is nowhere near to its expected target. After some investigation MITIE have now identified that there is a voltage optimisation unit at the car park that was reducing the consumption of the previously installed fluorescent lighting. Since voltage optimisation does not help to reduce the consumption of LED lighting this has meant that the difference between load profiles is not as large as predicted.

The Energy Manager is meeting with MITIE to review the findings of the review and propose an action plan on the 1st October.

17.5 Thames Valley Athletics Centre – potential new solar PV site

Following the disappointing news that it will not be possible to install a solar panel system at Tinkers Lane Depot without replacing the roof covering, an alternative site has been sought.

Thames Valley Athletics Centre has been keen to install solar panels for some time and would like to get them installed as soon as possible. The centre is part owned by the Council being one of the trustees of the site. The other trustees are Eton College and Slough Borough Council. Management fees are paid to Datchet & Eton Leisure who runs the centre. The fees are split 50/50 between the Royal Borough and Slough Borough Council. Any savings that can be made through installing solar panels will help to reduce the management fees that the Council currently pays.

Since Datchet & Eton Leisure or the Thames Valley Athletics Centre Trust do not have any money to spend on the solar panels they were considering seeking private finance. The Energy Reduction Manager has suggested that the Council could potentially invest in the project if the system was installed before the end of the year when the feed in tariffs are likely to dramatically change. This way the Council will keep the feed in tariff returns and reduce the Council's management fees.

The Council is currently in discussions with the Trust to determine whether this project is viable. An update will be provided as soon as possible.

17.6 Work planned over the next period

This includes:

- Ensuring the LED lighting project commences smoothly.
- Arranging site visits for Adopt a building.
- Creating a water consumption baseline.

18. Consultation (Mandatory)

Name of consultee	Post held and Department	Date sent	Date received	See comments in paragraph:
Internal				
Andrew Scott	Civic Team	11/09/15	15/09/15	Throughout
	Manager			document
Andrew Elkington	Head of Policy &	16/09/15	16/09/15	Throughout
	Performance			document
Cllr Sharp	Sustainability			
-	Panel Chairman			

Report History

Decision type:	Urgency item?
Non-Key	No

Full name of report author	Job title	Full contact no:
Michael Potter	Energy Reduction	01628 682949
	Manager	

Appendix 1

Code	Work theme	Action	Result	Responsibility	Target Completion Date	Progress at 31st March 2015	Target met/ missed?
E1	Energy Reduction in Council buildings	Ensure completion and full handover of RE:FIT project.	RE:FIT building works are completed and signed off	Divisional Head of Engineering, Energy Reduction Manager	31/03/2015	Works completed and signed off 31/10/14. Contract payments made. 2.5% retention to pay in mid October 2015.	Met target
E1	Energy Reduction in Council buildings	Benchmark energy usage by site	An energy performance list for the whole Council building portfolio	Energy Reduction Manager	15/08/2014	Benchmarked buildings where possible and reported to Sustainability Panel 16th September 2014	Met target
E1	Energy Reduction in Council buildings	Monitor buildings set up with HH data	Highlight energy wastage and act to eliminate 5% of wastage in one building.	Energy Reduction Manager	31/03/2015	Works were carried out in March to rectify the issue. The 2015 calendar year so far is showing a 13% reduction in gas consumption.	Met target
E1	Energy Reduction in Council buildings	Monitor RE:FIT performance and report back to the Sustainability Panel on a regular basis	5% energy reduction in RE:FIT buildings compared with baseline	Energy Reduction Manager	31/03/2015	6% reduction overall achieved.	Met target
E1	Energy Reduction in Council buildings	Reduce total gas and electric usage by 2.5% compared to a 13/14 baseline	2.5% reduction on 3/14 baseline	Energy Reduction Manager	31/03/2015	2.6% reduction made compared to baseline year.	Met target
E2	Streetlighting Energy Efficiency	Reduce energy usage by upgrading luminaires to LED	Install 225 LED lanterns	Principal Officer, Street lighting & electrical	31/03/2015	70 LED lanterns installed	Target missed
E3	Residents Energy Reduction	Ensure website is up to date and provides adequate support and sign postings for residents	Website is fully up to date and mirrors the strategy/ HECA	Community Protection & Enforcement Service Lead	31/12/2014	Webpages updated Aug 2014	Met target
M1	Council automatic meter reading and sub metering	Set up 34 BG smart meters on Stark's SaveEnergyOnline	HH data is available on SaveEnergyOnline for 34 BG smart meters	Energy Reduction Manager	31/08/2014	17 meters online by 31/03/15. Remaining 17 went online in April/May 2015. Delay caused by errors on the meter operator databases.	Target missed
M1	Council automatic meter reading and sub metering	Install 8 new gas AMR and set them up on SaveEnergyOnline	8 new gas AMR installed at operational Council buildings	Energy Reduction Manager	31/12/2014	3 installed by 31/12/14. 10 installed by 31/03/15. Delay caused by backlog of units to install by contractors.	Target missed
M2	Council automatic meter reading and sub metering	Revisit water AMR provider proposals. Determine provider and progress with installations.	Water AMR provider is determined for the Council estate and at least 10 AMR are installed	Energy Reduction Manager	31/03/2015	Water AMR contractor appointed. 6 meters installed. Delays caused by the need to replace old meters before AMR can be installed.	Target missed
R1	Council Renewable Energy	Provide a business case for installing Solar PV on the Town Hall roof. Pursue course of action determined by business case.	Business case provided. Pursue course of action determined by business case.	Energy Reduction Manager	31/03/2015	Business case presented and installation completed before 31/03/2015.	Met target
R2	Residents Renewable Energy	Ensure that the website is up to date, provides relevant information and provides appropriate signposting	Website is fully up to date and mirrors the strategy	Energy Reduction Manager	31/12/2014	Webpages written and provided to comms for comment by target date. Wider website upgrade meant that pages were not updated by 31/03/15	Target missed
R3	Schools Renewable Energy	Write up information pack comparing potential solar schemes	Complete information pack	Energy Reduction Manager	31/11/2014	Solar info pack written and sent to communication team. Not uploaded to website due to website upgrades.	Met target

S1	Staff sustainability awareness	Ensure up to date information is available to staff on the website	Website is fully up to date and mirrors the strategy	Energy Reduction Manager	31/12/2014	Webpages written and provided to comms for comment by target date. Wider website upgrade meant that pages were not updated by	Target missed
S2	Schools sustainability awareness	Ensure up to date information is available for schools on the website	Website is fully up to date and mirrors the strategy	Energy Reduction Manager	31/12/2014	31/03/15 Webpages written and provided to comms for comment by target date. Wider website upgrade meant that pages were not updated by 31/03/15	Target missed
S2	Schools sustainability awareness	Put together proposal for schools energy advice service	Finalise schools energy advice proposal	Energy Reduction Manager	31/01/2015	Options paper written for internal review.	Met target
T1	Council low emissions travel	Install signage to direct public to electric vehicle charging points in Hines Meadow Car Park	Signage is installed and usage is compared with usage prior to installation	Principal Transport Policy Officer	31/03/2015	Signage not installed due to recurring fault on one of the charging points.	Target missed
T1	Council low emissions travel	Implement a Council employee car share scheme	That scheme has been implemented and that at least 5 cars are being shared	Principal Transport Policy Officer	31/03/2015	Employee car share scheme not implemented.	Target missed
T1	Council low emissions travel	Launch and promote Easit scheme to Council employees	That scheme has been implemented and that the scheme is advertised to all Council employees	Principal Transport Policy Officer	31/03/2015	Scheme has been implemented and has been advertised to employees. 97 people have taken up the scheme.	Met target
W1	Borough wide recycling	Increase household waste that is sent for reuse, recycling or composting	50% of household waste is sent for reuse, recycling or composting	Contracts & Commissioning Service Lead	31/03/2015	51.71% at end Nov 2014	Met target
W2	Borough wide organic waste	Increase household waste that is sent for reuse, recycling or composting	50% of household waste is sent for reuse, recycling or composting	Contracts & Commissioning Service Lead	31/03/2015	51.71% at end Nov 2014	Met target
WAT1	Water reduction in Council buildings	Engage water suppliers to seek advice and support	All water suppliers have been contacted and services have been assessed and presented to the panel	Energy Reduction Manager	28/02/2015	Both Thames Water and South East Water engaged. Neither provide free surveys. They both provide some free measures that could be installed by RBWM. South East Water provided documentation to aid surveys. Presented to Sustainability Panel 3rd February 2015. Thames Water presented to the Sustainability Panel in March.	Met target

Electrical Consumption

Site Name Baseline Data 2013/14 Stark data 15/16 Difference Percentage difference Grenfell Park Fountain 1,295 4,979 3,684 284% Dedworth Road Sports Pav and Rec Grd 5,721 12,472 6,575 1,188 Ockwells Park Pavillion 3,391 5,672 2,281 6,678 Car Park Lighting Stafferton Lodge 2,027 3,249 1,172 5,688 Oakley Green Cemetery 2,282 3,367 1,085 48% Windsor Library 2,283 27,399 3,791 16% Home Park Mess Room 819 892 7,3 9 Eton Wick Youth Club 5,260 5,584 324 6% Public Conveniences Home Park 1,659 1,711 52 38 George V Memorial 2,949 2,551 55 22 38 George V Memorial 3,431 3,171 40 31 1 Male Library 6 1,12 1,12 4 1 1
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Old Windsor Library 1,838 1,619 -219 -12%
Pinkneys Green Y. and C. Centre 4,381 3,744 -637 -15%
Tinkers Lane Depot 172,660 146,555 -26,105 -15%
Public Convenience - Ascot 2,927 2,394 -533 -18%
River Street 1,523 1,254 -269 -18%
Sunninghill Library 2,322 1,898 -424 -18%
Aviary Building 3,117 2,523 -594 -19%
Oaken Grove Sports Pavillion 8,337 6,631 -1,706 -20%
Stafferton Way Car Park 156,530 122,977 -33,553 -21%
4 Marlow Road 62,594 48,876 -13,718 -22%
Public Convenience - Eton Court 2,839 2,219 -620 -22%
Batchelors Acre Fountain 16,387 12,169 -4,218 -26%
Rawcliffe House Industrial Uni 7,213 5,045 -2,168 -30%
Maidenhead Library 100,317 66,752 -33,565 -33%
Braywick Nature Centre 4,272 2,521 -1,751 -41%
Norfolk House 3,852 2,070 -1,782 -46%
SMART Sands Court 4,412 795 -3,617 -82%
1,752,515 1,591,902 -160,613 -9%

Online Meter Name	Baseline 2013/14	Stark data 15/16	Difference	Percentage difference
Eton Wick Youth Club	3675	11843	8168	222%
Tinkers Lane Depot	13544	24701	11157	82%
St Marys House	3910	4388	478	12%
Charters Y and C	1976	2041	65	3%
Sunninghill Library	1798	1837	39	2%
Braywick Nature Centre	6526	6260	-266	-4%
Cookham Library	9104	8587	-517	-6%
Town Hall	54271	48665	-5606	-10%
Windsor Coach Park	33852	27237	-6615	-20%
Oakbridge Day Centre	34046	27252	-6794	-20%
Maidenhead Project Centre	18158	14396	-3762	-21%
Pinkneys Green Y. and C. Cei	n 11756	7868	-3888	-33%
4 Marlow Road	27765	17897	-9868	-36%
Waldeck House	15226	9601	-5625	-37%
Millhouse Family Centre	3285	1776	-1509	-46%
SMART Sands Court	3566	1590	-1976	-55%
Datchet Y. and C. Centre	2100	693	-1407	-67%
Windsor Library	12376	3575	-8801	-71%
	256934	220207	-36727	-14%

Appendix 3

The GLA RE:FIT Energy Performance Contract Year 1: Six month savings report

Site: RE:FIT Portfolio

Client: Royal Borough of Windsor & Maidenhead



people + passion



Document Control

Survey Details

Document Title :	ear1 : Six month savings report					
File name :	Annual Reconciliation Report Civic complex					
Client Name :	Royal Borough of Windsor & Maidenhead					
Prepared For:	Michael Potter					
Date Created :	20 July 2015					
Last Updated :						
Last Updated By:						

Issue Control

Release Date	Summary of Changes

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3.	Performance Measurement	5
Next	Steps	7

1. Baseline

MITIE was chosen as the preferred contractor to implement energy saving measures at the school. The Baseline consumption was agreed with the client and is detailed below

Baseline Year (Agreed with Client at Investment Grade Porposal Phase)							
Site Electricity Natural Gas Total Energy							
	kWh kWh		kWh				
Portfolio	2,836,926	11,189,155	14,026,081				

2. Guaranteed Target Savings

The following set of Energy Conservation Measures (ECMs) were installed under this contract.

Lighting Upgrades Insulation Heater Controls Upgrade BMS Strategy Upgrade Refrigeration Control Air movement systems

Upon successful installation of the ECMs MITIE have guaranteed the following energy

Anticipated Annual Savings ¹						
Guaranteed Energy (kWh)						
1,138,191						

3. Performance Measurement

At the 7 month point of the 1st year, the performance of the ECMs installed was measured against the anticipated target.

Without carrying out any adjustment for routine changes such as different weather conditions between the baseline period and the reporting period year and for non-routine changes such as change in occupancy period the consumption for 7 months was recorded as...

		Total (Electricity + Gas)												
Site		YTD			Full Reporting Year									
		Savings Estima		Estimate	ted Target Savi		ings FORECAST		Savings TARGET		Uncapped FORECAST - TARGET Variance			
		kWh	£	kWh	£	RHI \ FIT (£)	kWh	£	kWh	£	kWh	kWh - %	£	£ - %
1	4 Marlow Road, Youth and Community Centre	56,295	£3,995	61,368	£3,646	£0	74,802	£5,523	78,383	£4,936	-3,581	-4.57%	£586	11.88%
2	Magnet Leisure Centre	-288,530	-£25,968	179,052	£16,115	£0	-477,121	-£42,941	296,086	£26,648	-773,207	-261.14%	-£69,589	-261.14%
3	Maidenhead and Windsor Library	71,754	£6,458	52,874	£4,759	£0	90,691	£8,162	66,828	£6,015	23,863	35.71%	£2,148	35.71%
4	Stafferton Way Car Park	38,760	£3,488	158,937	£14,304	£0	58,431	£5,259	239,598	£21,564	-181,167	-75.61%	-£16,305	-75.61%
5	Tinkers Lane Depot	16,975	£3,590	53,572	£4,458	£0	37,081	£5,586	76,494	£6,488	-39,413	-51.52%	-£902	-13.90%
6	Victoria St. Car Park	0	£0	0	£0	£0	0	£0	0	£0				
7	Windsor Leisure Centre	40,368	£10,245	182,950	£16,465	£0	205,138	£18,462	261,200	£23,508	-56,062	-21.46%	-£5,046	-21.46%
Portfolio -64,377 £1,809		688,752	£59,747	£0	-10,978	£52	1,018,588	£89,159	-1,029,566	-101.08%	-£89,107	-99.94%		

Measurement based on November 14 - June 15

To reflect the true energy savings realised from the implemention of the ECM, the baseline and the reporting period energy consumption will need to been adjusted for the annual report. The following adjustments **ARE TO BE** carried out within the 12 month report.

- Baseline Natural Gas Consumption was weather corrected to the external weather in the reporting period. i.e to quantify how much gas would have been used in the baseline if it has weather conditions experience from April 2014 – March 2015
- 2. Heating Degree Days calculated using the base temperature of 15.5 C (Thames Valley region). To understand more about Heating Degree Days please refer the attached Carbon Trust Guide CTG075 degree days for energy management)
- 3. The heating degree days recorded in the savings period year 1 is then plugged into this equation to create an adjusted baseline
- 4. The reporting period gas consumption data has also been adjusted to be opening hours recorded in the baseline year. The reporting period consmption has been Fzeroed during 18:00 to 06:00 and the savings have been recalculated.
- 5. Non routine adjustment factors covering changes to building use including CHP use, number of building users, change of use to aspects of buildings, tempertures and times.

Next Steps

The key to completing the annual report is to now collect the adjustment facts to allow the finalised figures to be issued at the end of the 1st 12 months. The current report highlights several key questions that are currently being reviewed.

Current challenges:

Magnet Leisure: The use of the CHP is critical to the amount of electricity drawn down from the grid. The recent change of CHP has thrown the current building electrical use into a heavey defisit. The period of no CHP use will need adjusting and the new CHP operation will need monitoring data provided to Mitie on an ongoing basis to allow the correct measurement of actual electrical savings.

Stafferton Way MSCP: The site has not dropped in electrical use as expected. A survey of the site has identifed a number of additional lods within the building. A seperation of any additional new loads will be needed for a true picture of the lighting upgrades performance. Further surveys are due to identify the make up of the site load.

General: Change of use has been identified and a coninued program of notification of change will be needed to allow for corrections to change of building use.