

Climate and Ecological Emergencies Advisory Committee report



Report of Head of Development and Corporate Landlord – Andrew Busby

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To: Climate and Ecological Emergencies Advisory Committee

DATE: Monday 11 December 2023

Leisure Property Decarbonisation – Progress Update Plan

Recommendation(s)

- (a) That CEEAC note that the report is for information only

Purpose of Report

1. To provide the Climate and Ecological Emergencies Advisory Committee (CEEAC) with an update on the direction of performance towards a carbon neutral council by 2025 in the council's leisure property portfolio.

Strategic Objectives

2. The report provides direction on the council exercising strong stewardship of all council assets including property and financial investments, optimising their performance for the benefit of our residents.
3. Provides a direction on the council maximising external funding opportunities to support our services and to enrich our leisure, sporting and community activities.

Background

4. The council declared a Climate and Ecological Emergency following a motion that was passed at the Council meeting on 11 February 2021. It builds on the council's declaration of a Climate Emergency in 2019, which was followed by a pledge to become a carbon neutral council by 2025 and a carbon neutral district by 2030.
5. The Climate Action Plan (CAP) outlines how South Oxfordshire District Council (SODC) will meet its target of becoming a carbon neutral council by 2025.
6. To measure our progress in achieving our carbon neutral target, we divided the actions in CAP into strategic, direct and enabling actions. This briefing will be focusing on 'direct' impact of delivery for our leisure property assets. .

Historical Context – Leisure Properties

7. In the CAP baseline year (2019/20) our leisure property portfolio contributed to 46.8 per cent of our carbon emissions. See appendix 1
8. Leisure centres in 2019/20 were consuming 1.4m kWh of electricity and 5m kWh of gas over a year. Please note that leisure centres consume energy 24/7 through plant operations to maintain the facility and comfort of its users. Especially where swimming pools are evident in our properties as these need constant heating to maintain temperatures for bathers. See appendix 2 for annual leisure consumption data.
9. On 21 March 2020, the Prime Minister announced that leisure centres were required to temporarily close as part of the wider Covid-19 lock down measures. The leisure management contractor Greenwich Leisure Limited (GLL) was required to close all leisure centres in South Oxfordshire.
10. Leisure centres remained closed until the government announced their reopening from 26 July 2020. Due to further national lockdown and Tier 4 restrictions, GLL was required to close all centres from 5 November 2020 to 2 December 2020, and 26 December 2020 to 22 March 2021.
11. During the reporting year 2020/21 and 2021/22 where leisure centres were faced with immediate closure and a period of time of controlled opening through social distancing, there was a significant reduction in the utility consumption within the leisure property estate. Naturally this was a reduction for this period of time due to plant machinery being switched off and less users during the controlled reopening of all the sites.
12. Consumption during the Covid-19 pandemic year 2020/21 was 448,247 kWh for electricity and 1.67m kWh for gas which for reporting will show a significant reduction with comparing year on year due to the unexpected events we were faced with.
13. Consumption during the year 2021/22 was subject to returning to normality after restrictions were starting to ease in the start of the financial year and customer visits returning. During the year consumption was 1.24m kWh for electricity and 5m kWh for gas.
14. Appendix 3 shows historic data since 2019/20 where utility consumption levels have improved. 2020/21 and 2021/22 have various reason explained already why in some cases these reporting years are lower than others.

15. Appendix 4 shows a direct assessment of 2019/20 to 2022/23 in comparison to a full reporting year. With user numbers returning back to pre-Covid-19 levels the table shows that emissions have significantly reduced. Various projects and operational control measures administered since the pandemic have seen 1.34m kWh in both electricity and gas being reduced across all leisure centres.
16. Throughout Covid-19 the council entered into a support package and change to the leisure contract by means of a deed of variation. This saw some facilities close earlier specifically over the weekend due to lack of use or limited number of users. The change of operations will have reduced energy use; however, this will have been a relatively low reduction mainly impacting lighting being on or off. The heating and ventilation would have remained in use to ensure the swimming pools remained heated and the building conditions protected for operation.
17. Natural gas consumption within leisure centres can fluctuate dependant on the weather outside and the impact this has on the leisure buildings themselves. This will have had an effect on our energy use when good weather was experienced in 2022/23.

Project Milestones Achieved

18. Officers have completed a number of smaller projects throughout 2021-2023 which mainly considered the upgrading of lighting in all leisure centres to LED. This was to ensure all our leisure facility stock removed all fluorescent and halogen lighting across the estate. The current data we have with the LED installations and upgrading works has saved 137,356 kWh per year and can be found in Appendix 6.
19. The leisure team have used a combination of capital expenditure where projects are a smaller cost, to utilising s106 and Community Infrastructure Levy (CIL) funding for larger project work. This has enabled the leisure team to ensure that additional capital has not been used from our reserves and maximised the use of developer's funds to improve the carbon levels at all leisure sites.
20. Negotiations and forecasted projects have also been agreed by ensuring Oxfordshire County Council (OCC) have contributed to the upgrading of lighting throughout the leisure centres and further decarbonisation work under the Joint Use Agreements (JUA) continue. In many cases, the leisure property estate is under JUA leases with OCC for both educational and leisure provision. There are specific commitments and proportionate percentage shares that OCC have as part of their operational responsibility to the emissions of the leisure centres.
21. It is worth noting that the leisure centre project where OCC have contributed to the overall costs, OCC will have a share of the carbon emissions savings through the JUA. The council will not claim the full carbon savings for these projects in our greenhouse gas emissions reporting. A proportionate share will go to OCC in line with the percentages under the JUA.
22. Whilst Appendix 5 shows a number of LED projects completed Officers have also conducted a number of operational assessments using experts in the field of leisure centre operation. A key project was to conduct a flow testing survey on the swimming pool treatment systems at all swimming pool properties to establish the flow rates achieved at varying motor frequencies.

Key aims of the survey was to:

- Provide information on whether the existing flow rate is suitable to achieve the guidance set out in Pool Water Treatment Advisory (PWTAG) Swimming Pool Water: treatment and quality standards for pools and spas.
- Establish whether there is scope to lower the existing circulation pump speed to achieve a reduction in energy consumption whilst remaining compliant with PWATG's Swimming Pool Water: treatment and quality standards for pools and spas.

From the engineer's report findings, it was found that the circulation pumps turning over the swimming pool water could be significantly reduced at three leisure facilities (Didcot Wave Leisure Centre, Riverside and Thame Leisure Centre) both during use and outside of operational hours. The annual reduction in consumption was 325,227 kWh per year through managing a close control on the plant operations.

Future Project Delivery

23. Officers are continually researching options to drive down the carbon emissions across the leisure estate outside of larger project delivery. Currently in the project plan is the installation of destratification fans at Didcot Wave Leisure Centre. Officers are using a case study on a recently successful trial of destratification units that were installed at the White Horse Leisure and Tennis Centre, in the Vale of White Horse. A description of 'Destratification' is included in the box below:

About Destratification:

Thermal stratification is a natural phenomenon that affects all buildings. Hot, lighter air rises towards the ceiling. Cool air falls to the floor. The result is a dramatic temperature difference between the floor and ceiling. This happens significantly with swimming pool environments.

The heating, ventilation systems have to work harder to maintain an even temperature, and consequently energy bills are higher as a result.

Swimming pools have high ceilings and more likely to suffer from extreme temperature differences. Wasted heat will inevitably rise to the top of the ceiling and have the opportunity to increase in temperature by up to 14 degrees Celsius. Conversely, heavier cooled air which is more difficult to distribute is wasted by sinking to low points in a building or by becoming trapped in difficult to circulate areas.

Destratification fan systems that will balance the internal temperatures in the swimming pool hall force the heat from the ceiling down, by recirculating existing heat and any additional heat generated from people, processes or solar gain.

The recent case study data with the newly installed system at the White Horse Leisure & Tennis Centre has shown over the last three months the system has been able to reduce consumption by 108,762 kWh. Showing a pay back on the investment over four

to five months from installation. The first three months of installation data can be seen in Appendix 6.

24. Recently Officers have worked closely with the Climate Action Team and the External Funding Lead in the submission of an application to draw down Government grant funding in the decarbonisation of two leisure properties (Didcot Wave Leisure Centre and Park Sports Centre) through the Salix Finance Phase 3c Scheme.

Salix Finance is managing applications to the Public Sector Decarbonisation Scheme Phase 3c (PSDS3c) on behalf of the Government. PSDS3c aims to tackle emissions from heating public sector buildings, aid a green recovery and support the UK's 2050 net zero target and clean growth goals.

PSDS3c allows public sector bodies to apply for a grant to finance up to 88% of the costs of capital or at a maximum cost of £325/tCO₂e (£325 per tonne of direct carbon saved), for energy-saving projects that meet the scheme criteria. The essential capital projects to decarbonise the above leisure facilities met these criteria.

Applications for Didcot Wave Leisure Centre and Park Sports Centre were submitted on Tuesday 7 November 2023 in the hope that the council will be successful in its bid to decarbonise both leisure facilities in the near future.

The grant application is for £1,380,887 worth of Salix PSDS3c funding and a council contribution of £1,692,158.

Overall, if our application is successful the annual energy consumption will be reduced from 1.45m kWh to 41,466 kWh at Didcot Wave Leisure Centre and from 305,196 kWh to 1,675 kWh at Park Sports Centre giving an overall annual saving of 1.71m kWh.

The announcement of this PSDS3c grant is expected very soon after the submission given the application is based on a first come first serve basis. If successful, this project will take over two years to complete with the works being completed by 31 March 2026.

25. Recently the government's Swimming Pool Support Fund (SPSF) was launched, providing a total of £60 million to local authorities in England as a support package for public leisure facilities with swimming pools, the funding is split into two phases.

- Phase I - Revenue: £20m is available to support facilities with swimming pools with increased cost pressures, leaving them most vulnerable to closure or significant service reduction.
- Phase II - Capital: £40m is available from the government for capital investment to improve the energy efficiency of public facilities with pools in the medium to long term.

Officers have worked closely with the Climate Action Team and the External Funding Lead in the submission of an application to draw down Government grant.

Phase I saw the successful application SPSF of £285,465 in South to support GLL with the increased cost pressures.

Phase II application was submitted on Tuesday 10 October for energy reduction measures at Abbey Sports Centre, Berinsfield for £157,527 and Thame Leisure Centre

for £160,351. The main focus of this funding is for the installation of Solar PV to reduce utility costs and carbon emissions. The announcement of the grant is expected in January 2024, and for the projects to be completed by 31 March 2025.

Financial Implications

26. This report is for information only and therefore there are no financial implications as part of the update.

Legal Implications

27. There are no legal implications arising from the recommendation in the report which is for information only.

Climate and ecological impact implications

28. The Climate Action Team have been fully engaged with during each stage of the report and supportive of the projects completed. This report is for information only by way of any update of the work currently completed in our trajectory towards net zero.

29. This report is for information only and there are no equalities implications.

Risks

30. This report is for information only, and therefore no highlighted risk has been made as part of the information supplied.

Conclusion

31. Evidently it can be seen the leisure facilities property teams focus on CAP and the council's own emissions to ensure our operations and service provision are driving down emissions.

32. The forecast of future reductions in CO2 emissions in this report are based on the best estimates provided by specialist consultants. These are by necessity subject to environmental impacts beyond the Council's control. For example, on the demand side ambient temperature fluctuations will affect the amount of heating required in our leisure centres and on the supply side solar PV electricity generation is largely a function of the number of sunshine hours throughout the year. Officers will continue to monitor actual outcomes against forecasts. Where deemed appropriate officers will consider what other additional technologies could be employed to create reductions in our carbon emissions.

33. If the council is successful with both Salix PSDS3c and SPSF Phase II the overall impact of these projects could potentially reduce consumption by a further 1.93m kWh annually.

34. Overall annual consumption will have reduced to 3.20m kWh per year from 6.47m kWh seen in 2019/20.

35. Whilst it is appreciated leisure properties would struggle to be carbon neutral by 2025 over 50 percent reduction of kWh consumption will have been achieved by 31 March

2026 through the delivery of larger projects if the council is successful with its grant submissions.

36. Officers will continue to focus on new technology to support the ongoing reduction of consumption across the leisure property estate. Both the focus on small and large projects creating reductions in our carbon emissions.
37. Revisiting Concept Energy heating's options reports and decarbonisation site assessment reports over 2023 with the leisure management contractor GLL to improve routine energy management good practice.
38. There will be a focus on the new leisure contract for September 2026 and work with the Climate Action Team to ensure that the specification have a direct focus on reducing carbon. This will be through ensuring Key Performance Target expectations are made at the point of tender, and contractors providing method statements during the tender stages to show how this would be achieved through their quality submission.
39. Continue to support and work with the External Funding Lead to ensure that the process of preparation with any future grant funding opportunities is robust to stand the best chance of success.

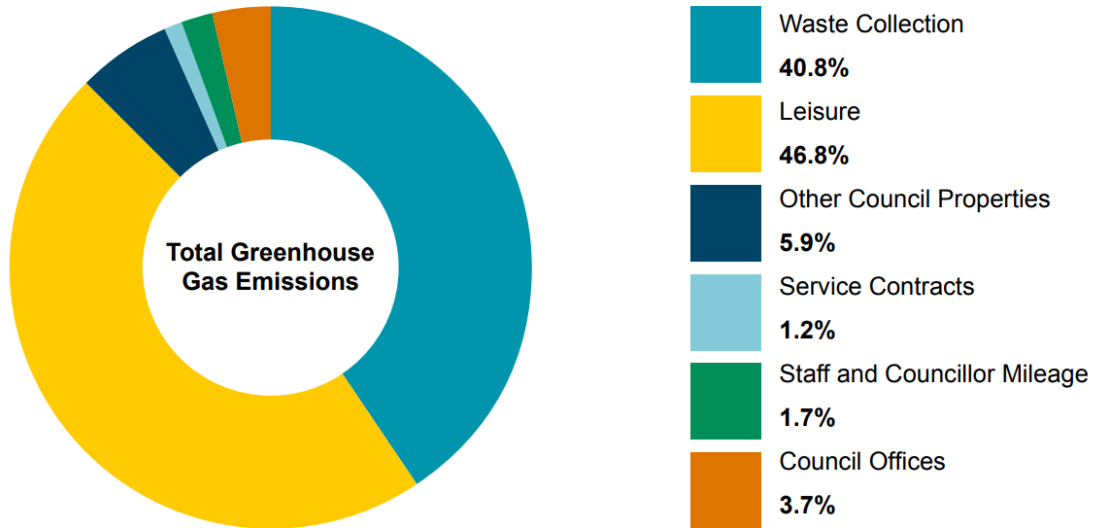
Background Papers

40. There are no background papers as part of this information update.

Appendix

Appendix 1

South Oxfordshire District Council Greenhouse Gas Emissions 2019/20

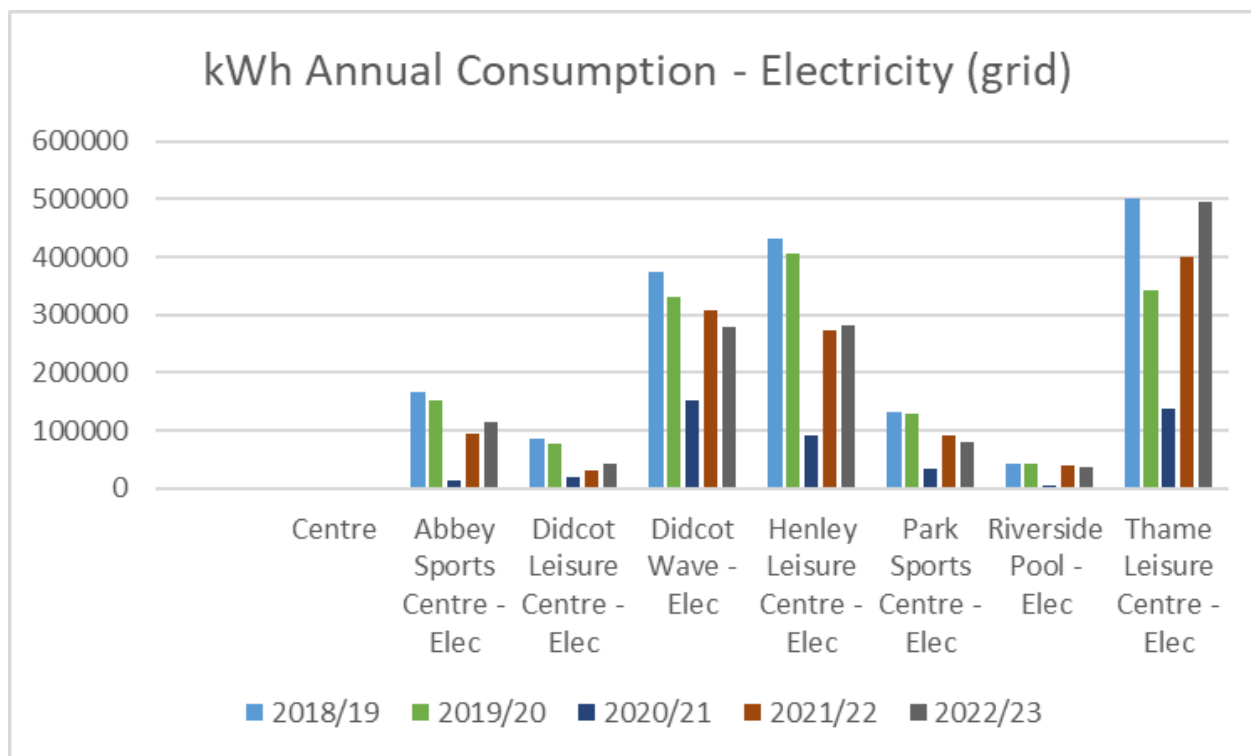
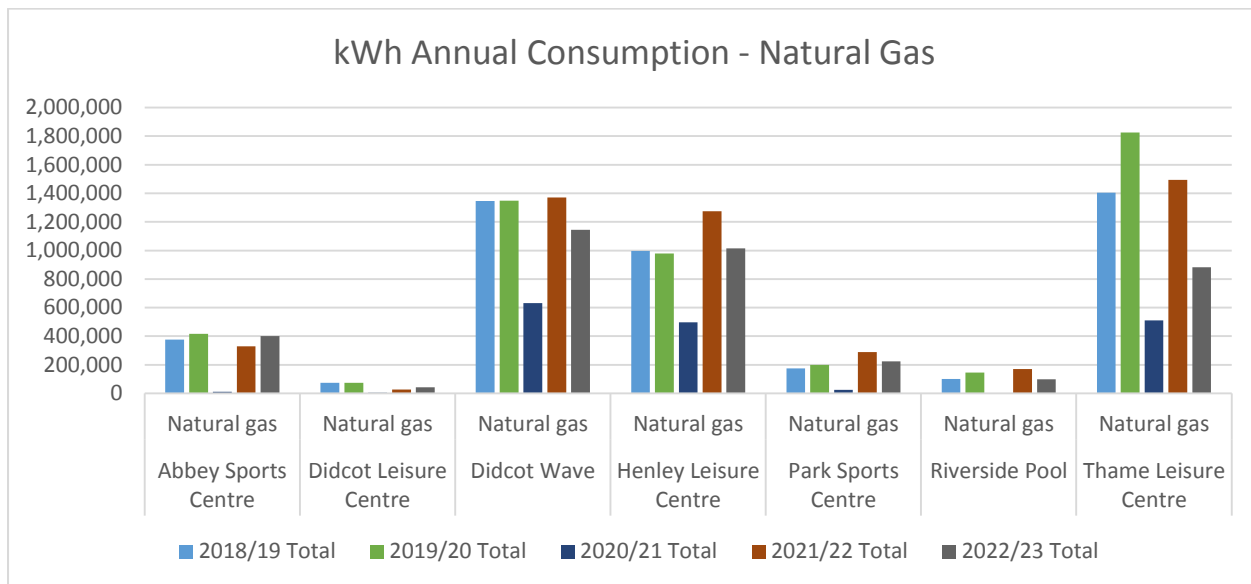


Source: South Oxfordshire District Council Greenhouse Gas emissions report 2019/20

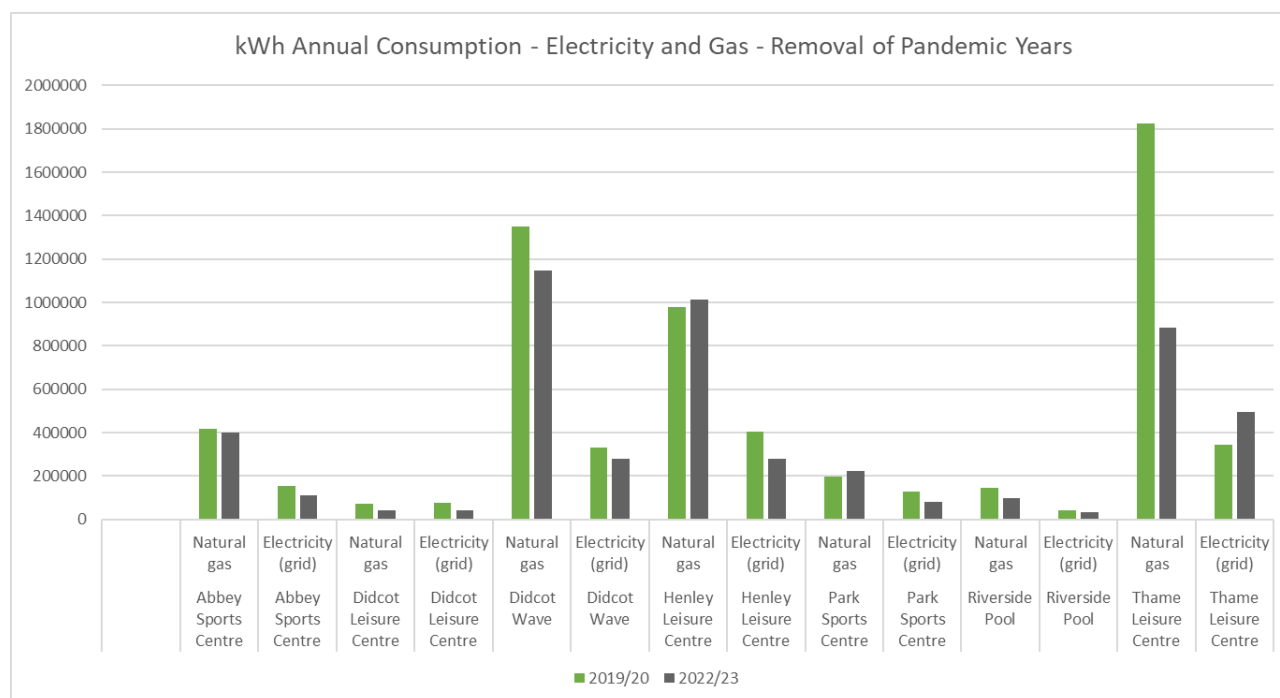
Appendix 2

		2018/19	2019/20	2020/21	2021/22	2022/23
		Total	Total	Total	Total	Total
Abbey Sports Centre	Natural gas	376,333	417,462	10,846	328,707	400,372
Abbey Sports Centre	Electricity (grid)	166,855	153,077	13,018	93,784	112,972
Didcot Leisure Centre	Natural gas	73,053	73,993	3,437	27,891	42,027
Didcot Leisure Centre	Electricity (grid)	85,799	76,844	18,985	31,434	42,429
Didcot Wave	Natural gas	1,346,568	1,347,726	631,216	1,370,315	1,145,115
Didcot Wave	Electricity (grid)	374,173	330,664	151,722	308,639	280,075
Henley Leisure Centre	Natural gas	995,786	977,732	496,276	1,273,606	1,014,582
Henley Leisure Centre	Electricity (grid)	431,687	406,893	90,711	272,932	280,480
Park Sports Centre	Natural gas	173,688	199,789	24,359	288,649	223,731
Park Sports Centre	Electricity (grid)	130,923	127,734	33,342	92,651	80,733
Riverside Pool	Natural gas	101,249	145,951	0	169,857	98,436
Riverside Pool	Electricity (grid)	42,981	43,284	3,474	40,159	35,238
Thame Leisure Centre	Natural gas	1,404,300	1,825,763	509,675	1,494,711	881,764
Thame Leisure Centre	Electricity (grid)	500,807	343,097	136,995	399,679	494,134
	Natural gas	4,470,977	4,988,416	1,675,809	4,953,736	3,806,027
	Electricity (grid)	1,733,225	1,481,593	448,247	1,239,278	1,326,061

Appendix 3



Appendix 4



Appendix 5

South		2020-24			
Centre	Description	Cost	Est. Savings Mnthly	Completed	KWh Saving
Abbey	Upgrade sports hall lights	£11,454.48	£388.22	Apr-22	15427.5
	Flow rate reduction	£383.00	£0.00	Nov-22	N/A
DLC	Upgrade car park lighting	£2,101.00	£41.67	Jun-22	1613
	Upgrade to sportshall lighting	£19,523.32	£728.33	Jul-23	20572
	Upgrade studio lights	£2,953.97	£82.45	Nov-22	2864
	Upgrade studio 2 lights	£3,848.63	£83.26	Nov-22	3223
Wave	Installation of aquabion unit	£4,980.00	£83.33	Mar-22	0
	Flow rate reduction	£383.00	£718.37	Nov-22	71837
	Upgrade swimming pool lighting	£22,835.00	£5,000.00	TBC - Oct 23	
	Upgrade lights - external, showers, store, first aid, change village	£3,448.59	£128.45	Jul-23	2625
	UV system switched off since August				
Henley	Upgrade squash court lights	£4,990.00	£83.33	Sep-22	3225
	Upgrade car park lights	£3,755.00	£208.33	Sep-22	2813
	Upgrade sports hall lights	£7,274.00	£451.67	Apr-22	17484
Park	Upgrade lighting in school change & disabled change	£3,952.68	£166.67	Nov-22	6451
	Upgrade lighting in office, baby change, member changing	£3,381.70	£25.00	Nov-22	967
	Upgrade sports hall lighting	£9,732.00	£666.67	Oct-22	25806
	Upgrade external lights	£2,152.00	£41.67	Oct-22	1613
Thame	Upgrade sports hall & small hall lighting & replace sports hall netting	£32,000.00	£725.50	Jul-23	23530
	Flow rate reduction	£383.00	£2,291.76	Nov-22	229176
	Upgrade spin studio lights	£3,310.00	£281.91	Mar-23	9142
Riverside	Upgrade lighting	£5,501.00	£500.00	Jun-22	
	Install pool cover	£10,000.00	£6,000.00	Mar-23	151388
	Flow rate reduction	£383.00	£2,905.73	Nov-22	24214
TOTAL		£158,725.37	£21,602.32		613970.5

Appendix 6

<u>White Horse Leisure & Tennis Centre - Destratification System</u>												
	May-22		May-23		Jun-22		Jun-23		Jul-22		Jul-23	
	H		H		H		H		H		H	
Predicted allowing for degree days at 10% per degree C												
	211,607		135,861		113,398		91,430		130,820		119,772	
	kWh		%		kWh		%		kWh		%	
	-75,746		-0.36		-21,968		-0.19		-11,048		-0.08	