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Eco- Audit Report for: Burnham Parish Council

FAO: Louise Hayday, Town Clerk

Introduction

We would like to thank Louise, Tim and the rest of the parish-council staff for kindly facilitating the eco-audit process.

The key context for this eco-audit is the statement by the UN Secretary General that humanity must radically cut fossil-fuel emissions, if we were not to face potential extinction. In December 2020, he called for all nations to declare a climate emergency.

The International Panel on Climate Change (IPCC) report in March 2023 stated CO₂ emissions need to be halved by 2030, to have a two-thirds chance of avoiding temperatures catastrophically rising above 1.5°.

We are also in the middle of an ecological crisis with 70% of the wildlife that existed in 1960 already wiped out. The UK is the most nature depleted country in Europe.

And there is also a soil crisis, with industrial agriculture leading to the loss of over 50% of the world's best soils since the industrial revolution, with 85% of the UK's East Anglian soils lost. The UK government says that there are now less than 40 crops left in some of the UK's soils.

It is therefore welcome that Burnham Parish Council has declared a climate emergency and set up a working group whose remit is *“to coordinate action towards making Burnham a sustainable community, by making Burnham Parish Council Zero Net Carbon neutral before 2030 and working to stop nature loss”*.

We hope this report will be helpful in enabling Burnham Parish Council to implement this remit.

It is crucial for the council to be seen to be leading by example, in its efforts to help the local community to also work towards being carbon-emissions free and a parish where nature can thrive.

In addition to demonstrating best practice in its own operations, being the closest tier of government to the community, means it has many constructive opportunities to enable the town itself to reduce its carbon and ecological impact targets.

1. Headline Eco-Data Figures 2021/22

Combined data for all premises

Building Energy Consumption

Imported Electricity CO ₂ (tons)	(294,233 kwh)		61.2
Onsite Solar Production	(40,727kwh)	CO2 saved (tons)	(7.7)
Gas CO ₂ (tonnes)	(1,100 kwh)		0.2
Building Energy Carbon Footprint (tons)			61.4

Flights CO₂ (tons) 0

Vehicles :

Diesel (576L) 1.5

Petrol (365L) 0.8

Total Transport Carbon Emissions 2.3

Total Energy Carbon Emissions 63.7

Mains water consumption (litres): 2,694,000

Water supply CO₂ (tons) 1.3

A4 Sheets equivalent of paper 43,500

% Made from recycled paper 0

Trees consumed 5

Paper carbon emissions (tons) 1

Total waste (tons)

General waste 68.2

Recycled waste 28.6

Waste CO₂ (tons) - if general waste is sent to landfill 31.8

Recycling rate 30%

Bank: Barclays¹ -- cash reserve £100,000 (tons CO₂) 29

¹ Barclays invest more in fossil fuels than any other bank in the UK or EU.

Mother Tree estimates that for each £1,000 held in a Barclays account is responsible for contributing up to 0.29 tonnes of carbon per year.

<https://www.mymothertree.com/>

Utility Costs

Electricity £78,633

Water £21,080

Gas	£39
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Breakdown of Electricity Use (tonnes CO₂)

Electricity consumption was generally calculated from expenditure and estimates, not actual meter readings.

Burnham Park Hall	46.6
Street Lighting	5.0
George Pitcher Memorial Ground	9.3
Public Toilet	0.3
Total	61.2

Breakdown of Gas Usage (tonnes CO₂)

Burnham Park Hall	0.2
Total	0.2

Water Usage (litres)

Burnham Park Hall	444,000
George Pitcher Memorial Ground	684,000
Public Toilets	1,566,000
Total	2,694,000

Paper Usage

Paper	43,500
% Recycled paper	0

Total Measured Carbon Emissions (tonnes CO₂)

Electricity	61.2
Waste	31.9
Bank deposits	29.0
Vehicles	2.0
Water	1.0
Paper	1.0
Gas	0.2
Total	121

Data Analysis

Carbon Footprint

Your annual energy carbon footprint for building energy & street-lighting is 61.4 tonnes, which is about the equivalent of the average annual energy emissions of about 20 UK homes.

Your total calculated, measured carbon emissions come to 121 tonnes or about 40 homes energy emissions.

This does not include day to day consumption of other materials, that it would be too expensive to calculate exactly, for most organisations another estimated 40% can be added for this, but it would vary widely from year to year.

To reach net zero for energy usage, you would have to move to a net zero electricity supply, replace small gas boiler with some form of electric heating and electrify all remaining park's equipment and machinery.

Ideally, you would aim to produce all of your own carbon free electricity by 2030.

Electricity

Electricity is your top source of emissions. Burham Parish Council has taken the positive action of installing two solar arrays on their buildings, which saves about 7.7 tonnes of carbon emissions from fossil fuel powered electricity each year or the equivalent of 7 homes annual electricity consumption.

We understand that you've recently switched to a new electricity supplier. For your electricity supply to be net zero you will need to switch to a 100% renewables contract as soon as is possible.

As you have almost no fossil-gas usage, this would make you almost net zero for all building energy consumption.

We have listed some opportunity to increase your own carbon free sources of electricity below.

Waste/ Recycling

There is currently a recycling scheme in operation at the town hall. Your estimated recycling rate is 30%, which is below the UK average of 44%. Improving the recycling labelling on your waste bins will help.

A considerable amount of waste is collected from public bins in your open spaces, which have no recycling differentiation. An alternative might be to add well labelled recycling bins to the parks.

Carry out a waste-audit of your entire waste stream to identify what it consists of and devise a strategy to reduce waste production in the first place.

Consider employing a staff member to hand pick recyclable waste from the bins before the waste is collected and transferred to its final destination.

Bank

Your third highest estimated source of emissions comes from your banking, which is responsible for around 29 tons of emissions per year. Nationwide offer a savings account for parish councils.

Nationwide at 0.05 tons of emissions per £1k savings, are ranked far better compared to your current bank Barclays of 0.29 tons. Switching to Nationwide would offer your council a saving of 24 tons a year.

<https://www.nationwidecommercial.co.uk/help-and-support/opening-an-account>

Vehicles, diesel and petrol

Your use of diesel and petrol is modest. However, it can still be reduced further by replacing current diesel- and petrol-powered machinery and vehicles with electric powered equipment.

Combined with a green electricity tariff, this would get you to net zero for this side of your operations.

However, due to its low mileage, we would only suggest that the van be replaced with a pre-used EV option, when it gets to the end of its useful life, as the embedded carbon in the existing vehicle would out-weigh the carbon saved from fuel consumption.

Water

A significant amount of your total 2.6 million litres of water used, is largely due to the 1.5 million litres used in the public toilets. It is possible that something is amiss there and so it is definitely worth investigating to see why the water usage for the public toilets is so high.

We suggest you take a meter reading at the end of the day and another reading the following morning to identify whether there is a leak.

Whilst your carbon emissions at 1.3 tonnes from water are modest, it is important to reduce water wasted, due to impacts of extraction on the ecology of rivers and streams. You could also explore options to harvest rainwater for use in the various premises toilets.

Paper

Office paper consumption is 43,500 sheets annually.

Switching to 100% recycled paper will reduce the trees felled for your paper supply from 5 to none. If you choose a greener paper manufacturer like Steinbeis, you will also reduce the carbon emissions associated with your paper consumption by about 53%, water consumption by 83% and energy use by 72%.

Gas

There is only one small gas boiler that heats Alex's office and the surrounding rooms. If you switch to a green electricity supplier and replace this boiler with an electric boiler or switched the heating in this area to infrared heaters, the emissions for heating this area would then also be net zero.

2. Policy & Management Recommendations

Suggested Next Steps

1. Submit the eco-audit report to the parish councillors with recommendations for action.
2. The Parish Clerk will ensure an annual eco-audit report is produced and presented to the council, including the above eco-data bench-mark measurements.

The report would include a summary of any other relevant environmental information, including progress on implementing eco-audit recommendations and progress made on initiatives involving the local community.

3. Request the councillors to appoint a green champion to support the Parish Clerk in the implementation of the recommendations.
4. The Parish Clerk to ensure that procedures that address waste reduction, recycling, green-purchasing and energy-efficiency monitoring are in place.
5. Ensure that a spreadsheet reporting implementation progress of eco-audit report recommendations, is a standard item on the relevant management committee meeting agendas.
6. Include eco-issues in future tenant and room-hire agreements, such as electrical, water and heating efficiency and participation in the recycling services.
7. Any future contracts that the council signs should include criteria that facilitate it working towards its carbon and ecological targets.

3. Human resources

1. Staff contracts should be amended in consultation with the staff to include a new provision along the lines of: *“Burnham Parish Council is committed to being an environmentally responsible council. You will be expected to help in delivering this commitment, in how you fulfil your day-to-day duties, as a member of our staff”*.
2. Similarly, job-specifications should be changed where relevant, which will help ensure new eco-procedures are passed on to new staff.

For example, the job specification for the parish-clerk should include a section requiring them to report annually to the council on its environmental performance, including the data sets outlined above.

3. Then targets for implementation of the green strategy can be included in relevant staff annual appraisals and include environmental training / awareness in any personal developmental plans.
4. Induction procedures for new staff should include procedures adopted to implement this policy of environmental responsibility e.g., including how to use energy & water efficiently, green purchasing and waste-reduction & recycling procedures.

4. Top Ten Priorities for First Year

The following items are suggested as your top ten priorities for the next year:

1. Investigate whether it is possible to change the contract with your current main electricity supplier and switch to a 100% renewable tariff. A renewables only contract will make all your electricity use Net Zero.

If it is not possible under the current contract, without a punitive penalty, ensure that the switch is made when its term is complete.

2. Switch to a green electricity supplier when your street lighting contract comes up for renewal in May.
3. Consider moving from Barclays to a bank which invests less in fossil fuel projects and has significantly lower carbon emissions per £1,000 deposited.
4. Carry out a waste audit of your existing waste streams. Develop a plan to reduce waste production in the first place and to increase the volume of waste being recycled.
5. Ensure heating and hot-water timers, temperature settings and zoning controls are set correctly.
6. Complete the switchover of all remaining relevant lighting to LEDs.
7. Instigate annual financial year-end environmental reporting to the council on its own environmental performance progress and the local community's.
8. Develop a plan to increase the wildlife value of your open spaces.
9. Only buy paper products made from post-consumer recycled paper and switch from paper hand-towels to blow-dryers in your public bathrooms.
10. Create a timeline for the switchover of your diesel and petrol operated equipment and machinery to electric options and carry out feasibility studies into potential expansion of your renewal energy capacity.

5. Heating and Cooling

Temperature / Timings / Controls

The ground source heat pump (GSHP) in the Burnham Park Hall was programmed to be on from 6am to midnight every day, including Sundays when the hall is closed.

Louise changed the settings to better reflect the occupancy of the building, see below.

If successful, this will lead to the GSHP being on 40 hours less a week, which is a potential 40% reduction in operating costs.

Mon – Thu	0600 – 2100
Fri	0600 – 2300
Sat	1300 – 2200
Sun	Off

1. The recommended winter-heating room-temperature by the government's Climate Change Committee (CCC) for sedentary activities such as office-work is 18°. The Chartered Institute of Building Service Engineers (CIBSE) recommend 19°.

Management should adopt a set temperature and ensure it is implemented

Important: *Each extra degree wastes up to 10% of your heating bill.*

This means that if the premises is heated to 23C, it is wasting up to 50% of your energy bill and also creating unnecessary carbon emissions.

Some rooms and offices in Burnham Pak Hall were heated to above the 18° recommended by the CCC, including Louise's office (20°), the Parish office (21°), the old staff room (21°), Alex's office (22°) and the Mezzanine, (21°).

We suggest you buy thermometers and appoint a staff member to monitor the building to keep it at the correct temperature.

2. If particular staff have a need for extra warmth, examine if it is possible to place their desks by the radiators or get a plug-in infrared panel heater to place beside them. These can be stood on wooden stands or mounted on the wall or ceiling by the staff member. Or you could even consider offering them a council provided fleece.
3. Understanding the thermal capacity of the council's buildings is important to enable better understanding of when to turn the heating on and off.

The thermal capacity is:

- i) The time it takes for the building to heat up to set working temperature from cold.
- ii) The time it takes to cool down after the heating has been turned off.

A well-insulated building with efficient heating can take as little as 30 minutes to heat up and over 2 hours to cool down.

A building with less insulation and inefficient heating will take longer to heat up and will cool down more quickly.

Experiment with the heating timings until you've found the minimum time that you need to the heating turned on to heat the building prior to occupation. And the maximum time from when you turn the heating off to when the temperature drops to less than 18° prior to staff vacating the building.

Or you could get external temperature related controls if the system does not already have them.

4. Ensure that office, meeting room and hall doors are kept shut when heating is being used, to stop the warm air from escaping heated spaces.
5. Check and see if maintenance of the thermostat and other heating controls are included in the heating service contract, if not we recommend changing the contract to ensure their maintenance is included.
6. It is important to ensure that the air-conditioning is turned off when rooms are vacated. At least one room we visited during the audit had the air conditioning on whilst the room was unoccupied. Nominate a staff member to over-see this.
7. There are numerous thermostats in Burnham Hall that are publicly accessible and can therefore be tampered with by the public, leading to considerable waste due to over-heating or over-cooling. Add a thermostat cover to all of the relevant thermostats throughout the building and ensure the key is accessible to authorised staff only.

<https://www.securitysafetyproducts.co.uk/security/protective-covers-cages/thermostat-covers/>

8. We understand that there are significant issues with the underfloor heating and the controls thereof. Alex has the underfloor heating manual in the buildings electrical plan, he is going to check to see if there are instructions for the underfloor heating and zoning in this manual. If not then we recommend calling in an engineer to see if it is possible to get the system working efficiently.

Cooling / Air Conditioning

1. **Air-conditioned buildings can use up to 100% more energy than non-air-conditioned buildings.** It is crucial therefore that you use it in an energy efficient manner.

Ensure staff are implementing the good practice of prioritising ventilation over air conditioning, whenever possible, as this avoids using the main air-conditioning units, which on average consume up to 2,000 watts each!

2. **It is important that air-conditioning only be used to cool premises down to the CIBSE recommended temperature of 25° and no colder.**

Cooling it any lower could be wasting up to 100% of the energy used.

It is strange but often staff who are cold in winter at 19° and want the heating to be raised to 22°-23°, often want air-conditioning to be cooled to 18° in summer, both of which are very wasteful in energy and carbon!

3. It's important that new staff know that if they turn on the air-conditioning that the doors and windows must be closed. Otherwise, it's as wasteful in energy terms as having them open with the heating on in winter, as the money spent cooling the air is lost as it escapes.
4. Also, it is important that staff know that if they set the temperature lower than required, to get it cooled faster, it does **not** do so faster, but it means the temperature will overshoot and so waste significant amounts of electricity.

George Pitcher Memorial Ground Pavilion

Current Good Practice

1. The cavity walls were reported as insulated.
2. All pavilion windows are double glazed.
3. The roof already has some insulation.

Suggested Next Steps

1. The pipes to the hot water tank need insulating to reduce the heat escaping through the pipes.
2. The hot water pipes in the control room also need insulating with pipe lagging.
3. Increase the insulation in the pavilion roof from 100mm to 300mm, bringing it up to modern standards.

4. Add insulation to the loft hatch so it meets the same standard as the rest of the roof.
5. The heating in the Pavilion is already electrically powered, which means that if you switch to a green electricity tariff, it will be net-zero.

There are six heating zones and the staff are unsure how to control what looks like a very complex system. Unfortunately, the engineer that installed the system has passed on. The staff would appreciate a simpler system that would give them control over temperature, timing and zoning.

Then review and change the timers for the heaters, in the service room to match the occupation pattern of the building, ensuring the heaters are not heating the space when it is unoccupied.

6. If the current system of electric heating in the ceilings is convective heating rather than infrared, then it will be less efficient, as convective heat rises, whereas infra-red heat uses radiant heat to heat the fabric and occupants of the building below them.

With a green electricity tariff, it can also be net zero for carbon dioxide emissions.

Some of the electricity used by the building, is already provided by the solar electric panels installed on the roof. Although the contribution when the heating is required in winter will be modest.

Alternative options for heating the Pavilion are as follows. Combined with a green electricity tariff both can be net-zero.

a. *Infra-red heating.*

Infrared panels could be installed on the ceilings.

They have the advantage that space in the dance studio would not be taken up with radiators and pipes and you would not face the risks of a boiler breakdown, as whilst one panel might fail, the whole system never will, except if there was a power outage.

Modern controls mean that the timing and temperature of the various zones can be controlled easily remotely via laptop.

<https://www.herschel-infrared.co.uk/commercial-heating/village-halls/>

b. *An air source heat pump (ASHP).*

ASHP's transfer heat from the outside air to water, the water is used to heat your rooms via radiators or underfloor heating. It can also heat water stored in a hot water cylinder for your hot taps.

You have the required outdoor space to install an ASHP.

Their running costs are potentially significantly lower, but they have high capital costs to install and would require the installation of a new set of pipes and radiators, which may interfere with the requirements of the dance studio.

<https://energysavingtrust.org.uk/advice/air-source-heat-pumps/>

7. It is best practice to turn heating in all toilets and changing rooms down to frost protection, as they are only occupied for short periods of time.
8. Consider installing ceiling mounted infra-red heaters above the workshop space in the garage, to provide comfort for staff working there.

As mentioned above, infra-red heaters directly heat the fabric of the building and the people below them, not the air. Thus, the infra-red heaters would not waste energy heating the whole of the draught and uninsulated depot building.

Burnham Hall Offices

Current Good Practice

1. The fire door in Meeting Room 3 on the 1st floor is well draught proofed.

Next Steps

1. Ensure the heating is turned off when the rooms are unoccupied for long periods of time, especially in the large hall and larger meeting rooms which have intermittent occupancy.
2. Consider adding a lobby to the reception front door, which will stop the warm air from escaping when people enter and exit the building.
3. Alternatively and more optimally, consider adding a glass partition between the atrium and the café area. The reception could remain where it is, behind the new glass wall but with a glass window.

The reception staff can be warmed directly with infra-red heaters and the large space of the reception atrium could then remain largely unheated, as it is mostly unoccupied, provided that the zoning system allows this.



Heating the atrium if it is unoccupied, is very wasteful as it is the size of a number of houses.

4. Approach the underfloor heating installer and ask about the costs and feasibility of adding a zoning control to the underfloor heating in the Dropmore Hall, if it is not present already.
5. Dropmore Hall: recommend draught proofing the door to the space with the air-vent behind the curtain.
6. The door to Alex's office needs draft proofing, so the office can retain its heat, without it leaking into what should be an unheated hallway. This in addition to keeping the office-door shut will remove the need for the additional 2kw electric heater being used to supplement the gas central heating.
7. Investigate the possibility of fitting a window that can be opened, into the large windows in 1st floor Mezzanine meeting room, to allow for some natural cooling.
8. The server room air-conditioning system was set at 16°C. Contact the manufacturer to ask them what is the maximum operating temperature at which your server can function efficiently.

Modern servers now usually operate at far higher temperatures than formerly and most now run efficiently at 28°C or higher. This would save significant amounts of electricity as the server's air-conditioning system is on 24/7.

6. Electricity

George Pitcher Memorial Ground

Good Practice

1. You have already replaced some petrol and diesel machinery with electric options, including the line painter and leaf blower.
Additional benefits are reduced noise and zero pollution for the staff operating them. Other council ground maintenance teams who have invested in top-end quality electrical machinery, have reported positive results to us.

Suggested Next Steps

1. Consider replacing the 13-year-old freezer in the cafe with a modern A+++ rated freezer, which would be up to 70% more efficient.
2. Ensure any freezers are set to -18° and fridges are set at 5° for maximum efficiency.
3. Continue the switch to electrical machinery where practical, e.g., sit-in mower, hedge trimmers, strimmer's etc.
When coupled with a renewables only contract, all of your electrically powered machinery will be net zero.
4. Consider including public EV charging points when the new car park is built and their installation in Burnham Park Hall car-park.
5. As your mileage is modest, we only recommend changing to electric vehicles, when your current vehicles reach the end of their lives, prior to your target net zero date of 2030, to take into account the embedded carbon in new vehicles.

Installing EV charging facilities at the depot at George Pitcher Memorial Ground means the vehicles could be charged overnight, or during the day when the solar panels are operating, thus removing the need for staff to visit fuel stations.

Burnham Park Hall, Parish Office

Current Good Practice

1. Burnham Park Hall is moving to a cloud server, which will save around 90% of the energy used maintaining an onsite server.

Suggested Next Steps

1. The walk-in fridge was about 5% full. It takes a lot of power to keep such a large space cold, especially when the fridge is 95% empty. Recommend that you turn the walk-in fridge off and replace it with a smaller A+++ fridge.
2. Lager, beer and white wine can all be stored at a temperature of 10°, currently the cold room is set at 4°. Set the temperature correctly for them.
3. The wine fridge is located inside the cold room and so the hot air that it emits will make the cold-room work harder to maintain the correct temperature.
Turn the wine fridge off and open its door so its contents will be chilled to the correct temperature of 10° in the cold room.

4. The drink fridges in the bar are running at 3°, they should be operating at 10° temperature for best efficiency.
5. Replace display cooler in café with a closed-door alternative.
6. Recommend adding 24/7 timers to the drink fridges in the bar so that they are off when the bar isn't used.
7. Recommend adding 24/7 timer to the Jeagermeister super cooler in the bar.
8. Consider adding a timer to the ice-machine in the bar and experimenting with the timer. It might be possible to turn it off entirely for two days of the week when you are closed, and during the day when the bar isn't used.
9. Recommend that the 'generated' and 'exported' solar meter readings are taken on the last day of the financial year for both solar arrays in Burnham Park Hall and George Pitcher Memorial Park. .
This will allow admin staff to keep an accurate log of how much solar power is generated, used on-site and exported.
It would also allow you to calculate net imports.
10. Recommend that electric meter readings are taken on the last day of the financial year.
11. Consider switching to laptop computers only, when the PC's come to the end of their lifespan, as they use around a third of the energy of PC's, as staff are already using laptops when homeworking.

7. Lighting

Current Good Practice

1. Some of the lighting is already LEDs.
2. LED lighting is already being installed as old lamps fail.

Suggested Next Steps

1. Replace remaining fluorescent lamps and tubes with LED options with immediate effect in areas that are on regularly. As the payback in such areas can be below just 9 months. Continue to replace bulbs with LEDs as they blow in areas that are occupied only intermittently.
2. It is important to change to a 100% renewables contract for the street lighting when the contract comes up for renewal in May. Currently the council is using the equivalent of 9 homes worth of electricity to power the street lighting annually.
3. Switch the fluorescent tubes in the Pavilion dance studios and male changing rooms to LED tubes

Burnham Park Hall, Parish Office

Existing Good Practice

1. The recessed lighting in the reception was turned off during our visit.

Suggested Next Steps

1. Switch to 5w desk lamp for each office workstation, rather than using the ceiling lights in Louise's office, Alex's office and the Parish office. Add a 10-watt LED uplighter for ambient light when required.
2. Turn the lights off when there is enough natural light to work.
3. The motion sensor light above Laiba's desk is on a separate circuit and not required. Ask electrician to disable the light or remove the lightbulb.
4. Laiba's desk is directly below a sky light, consequently it has enough natural light for working conditions most of the time, without using electric lighting.
5. There are 5 recessed lights in the 1st floor corridor ceiling, one is broken and two are LED. As the lights are on in this corridor regularly, we recommend that the bulbs are changed to LED bulbs as soon as possible.
6. 90% of light from recessed lighting is lost in the recess. The 1st floor corridor ceiling is too low for pendant lighting replacements, consequently we recommend you consider replacing the recessed lighting with ceiling mounted LED lights at a suitable point in the future.

7. The mezzanine meeting room on the 1st floor has lots of natural lighting. Consequently, the lights needn't be used very often during daylight hours. The bulbs will only need to be replaced with LED bulbs when they blow. Ensure that people who hire or use this room are briefed not to turn the lighting on during the day when there is enough natural lighting.
8. Switch from 7 x 50w halogen lamps in the ceiling to a 5w station desk-lamp on the reception desk.
9. Install a motion sensor light in the kitchen, which will turn off automatically when the room is vacated, saving electricity.
10. There is a total of 5568-watts of lighting in the Dropmore Hall. All of these lamps should be switched to LED immediately. LED's use around 50% less electricity than old T8 tubes.
11. Consider removing the backlighting strip-lights in the Huntercombe Hall. These serve no illumination purpose.
12. Consider replacing the recessed lighting with pendant lights in the Huntercombe Hall. Up to 90% of the light can be lost with recessed lighting.

8. Water

George Pitcher Memorial Ground Pavilion

Good Practice

1. The showers have push button taps, which means they cannot be left running by mistake.

Suggested Next Steps

1. Install aerator shower heads on all the showers at the Pavilion if they are not already. These use up to 30% less water than conventional shower heads by injecting a bubble of air into the bubble of water.

2. Repair the leaking hot water tap in the cupboard next to the referee room. A dripping tap can waste up to 5,500l of water a year.
3. Repair the leaking cold tap on the left-hand side basin in the Ladies toilet.
4. Replace the taps in the gent's toilet with push button or sensor taps. Push button and sensor taps can't be left running accidentally.
5. If any toilet cisterns are 7 litres or more, consider installing cistern water-saving bags, see link below.
Alternatively, you can reuse plastic bottles filled with water, Take the lid off the toilet tank and place the canister inside, in an out-of-the-way spot.
<https://lowenergysupermarket.com/product/toilet-cistern-tank-water-saving-bag/>

Burnham Park Hall, Parish Offices

Current Good Practice

1. The 1st floor toilet taps have timers fitted, stopping them from being left turned on in error.
2. The 1st floor toilet taps are fitted with spray heads, which can save up to 10 litres a minute.
3. The ground floor toilets have push button taps fitted.

9. Renewable Energy Potential

Current Good Practice

1. There are already two fairly sizeable solar arrays on George Pitcher Pavilion and the Burnham Park Hall totalling nearly 200 panels.

Suggested Next Steps

1. The planned new car park at George Pitcher Memorial Ground has potential for installation of a solar PV system as part of the car-park design. They payback for installing solar is currently 6-10 years.

Avoid planting trees on its east/west/south boundaries to protect its solar potential.

The Solar Shed Company have experience in installing arrays in open fields. So, you might like to ask them about potential array to support any future car parks.

https://www.bre.co.uk/filelibrary/nsc/Documents%20Library/BRE/89087-BRE_solar-carpark-guide-v2_bre114153_lowres.pdf

2. Prune at least one of the trees in front of the George Pitcher Pavilion that are now over-shadowing the solar array.
3. Explore feasibility of installing one or two medium sized wind-turbines at the George Pitcher Memorial Ground.
4. Explore feasibility of installing a solar array on roof of the machinery storage building at the depot. The main depot building itself looks to be too overshadowed by mature trees.

10. Waste Reduction / Recycling

Suggested Next Steps

1. Carry out a waste audit of all your existing waste streams. Develop a council wide plan to reduce waste production in the first place and to increase the volume of waste being recycled.
2. Add mixed recycling bins beside the general waste bins in all meeting rooms, offices, cafés and halls. Ensure they are all clearly labelled to distinguish which bin is which and what items can be placed in each bin.

Buckinghamshire council can recycle the following:

Mixed Recycling

- plastic bottles
- plastic pots, tubs and trays (including black plastic trays)

- glass bottles and jars
- tins, cans
- tin foil, foil trays
- aerosols
- milk, juice and soup cartons

Paper Recycling

- paper – magazines, newspapers, envelopes and junk mail
- shredded paper – must be put in an envelope
- cardboard – greeting cards, cardboard packaging, corrugated cardboard, toilet and kitchen rolls
- mixed card and paper – books, directories and catalogues

<https://www.buckinghamshire.gov.uk/waste-and-recycling/what-goes-in-each-bin/>

George Pitcher Memorial Ground Pavilion

Good Practice

1. Green waste is composted onsite, reducing the amount of waste going to landfill.
2. Community recycling is offered for batteries, printer cartridges and Pringles tubs, reducing the amount of waste going to landfill.
3. Blower hand driers are fitted in the disabled toilets. Environmentally, blower hand-driers in toilets eliminate the need for paper hand towels and if powered by renewable energy, are net zero.

Suggested Next Steps

1. In the café consider switching from wooden disposable to metal reusable spoons.
2. Consider switching to real cups with a deposit scheme to ensure their return.

Burnham Park Hall, Parish Offices

Good Practice

1. The cleaners are emptying the bins without changing the bin liners, whenever they can.

Suggested Next Steps

1. Recommend switching to blower dryer, in the toilets on the 1st floor.
2. Ideally crockery for the reception café should be reusable but if this is not practical source compostable disposable cups for the reception café. They can be sent to George Pitcher Memorial Ground site for composting.
3. Add recycling bins next to the general waste bins and ensure they are both clearly labelled so staff and public know where to put their waste.

11. Purchasing

Current Good Practice

1. Peat free compost is being used. Peatlands are a unique ecosystem that support biodiversity and serve as carbon sinks. Peat releases huge amounts of stored carbon dioxide when it is harvested, which adds to greenhouse gas levels.

Peat mining is effectively unsustainable – it grows back at just 1 mm a year.

2. No beef sandwiches are sold from the café in the reception.
3. The 56 new chairs bought for the outside bar were made from recycled plastic, meaning no new plastic was created or wood chopped down to make them.

Suggested Next Steps

1. Switch all photocopying paper to post-consumer recycled paper.
2. If getting printing done externally request that recycled paper is used. Some printers do not charge a premium for using recycled paper.

If you cannot find one locally, [alocalprinter.co](http://www.alocalprinter.co.uk) does recycled paper with vegetable-ink printing at a reasonable rate.

<http://www.alocalprinter.co.uk/eco-printing/green-printing-policy>

Do not forget to include “printed on 100% recycled paper” on the artwork when you switch to recycled paper.

3. Ensure all other paper products such as bathroom tissue, kitchen-roll, paper-towels and napkins are also all made from 100% post-consumer recycled paper.
4. Buy bin-bags made from recycled plastic for all premises.
5. Switch to refillable whiteboard markers and pens made from recycled plastic.
<https://www.greenstat.co.uk/recycled-assorted-bullet-tipped-whiteboardflipchart-markers>
6. Ensure in future that items such as post-it notes, envelopes, small notepads, new files, folders and flipchart paper, etc are made from recycled materials.
7. Buy organic and fair-trade tea/coffee, sugar and organic milk. If not available locally, try: <https://www.fairtrade.org.uk/>

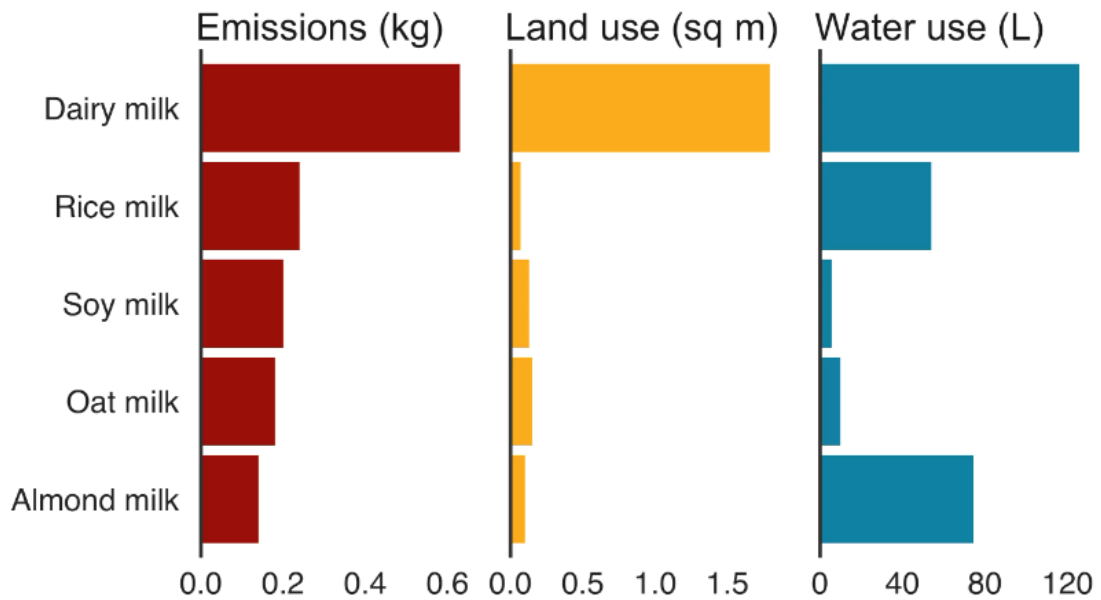
Michael Gove has stated that there are areas in the UK with less than 40 crop rotations left before the soil becomes barren. Purchasing organic food and drink supplies where possible is a means of supporting soil health and reducing soil degradation.

<https://www.gov.uk/government/publications/state-of-the-environment/summary-state-of-the-environment-soil>

8. Switch from single-use sugar sachets to using a sugar shaker.
9. See if you can change the packaging for cakes to a compostable option. Plastic waste can take up to 450 years to break down.
<https://www.vegware.com/uk-en/>
10. Consider increasing the number of organic beers, wines and spirits available in the bar. Trial a few organic options to see what sells with a view to increasing the overall quantity of organic lines over time.
<https://www.vinceremos.co.uk/>
11. Oat milk has a far smaller impact on the environment, lower emission and uses less water to produce. We recommend including oat milk as an option for coffee and tea sales and for staff drinks.

Which milk should I choose?

Environmental impact of one glass (200ml) of different milks



Source: Poore & Nemecek (2018), Science. Additional calculations, J. Poore



12. Buy shade grown organic coffee, which avoids rainforest destruction, which protects biodiversity, protects from soil erosion and provides carbon sequestration, with natural pest control and improved pollination.

<https://birdandwild.co.uk/>

13. Avoid buying antibacterial soap for any of your premises, as it should only be used in clinical situations.

The FDA says that traditional soap works just as well for ordinary bathroom usage and to tackle cv19 which is a virus not a bacterium.

The active ingredient Triclosan in many antibacterial soaps is polluting waterways and the seas. Particularly important as your location is home to some extremely rare chalk stream habitats.

<https://www.fda.gov/ForConsumers/ConsumerUpdates/ucm378393.htm>

A plant-based soap for refillable soap-containers is available from Bio-D

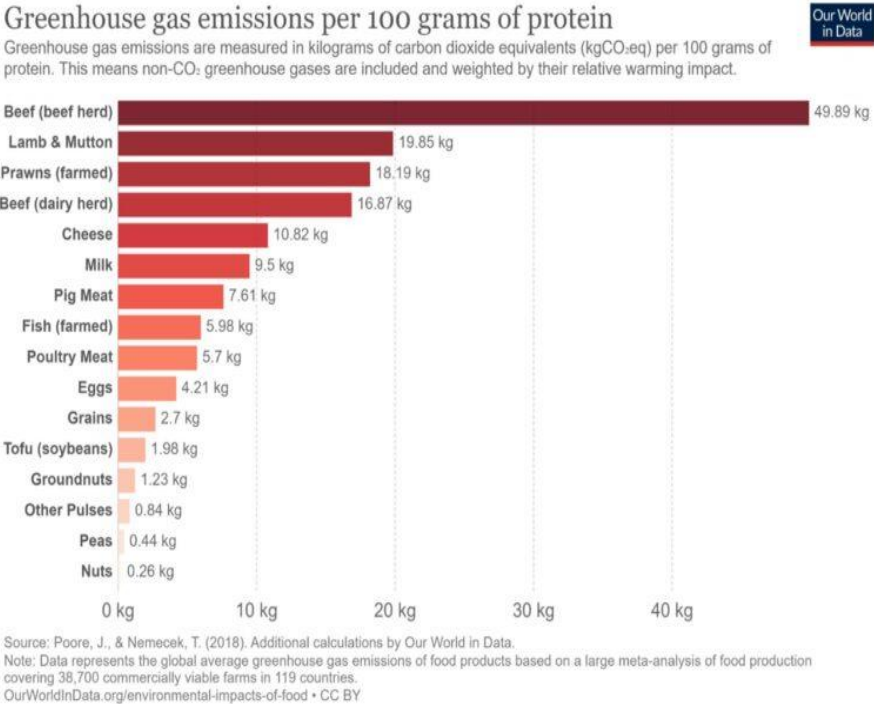
<https://biodegradable.biz/shop/hand-soaps/bio-d-geranium-sanitising-hand-wash-5l/>

14. For your remaining cleaning products consider switching to Bio-D, which are made in the UK.

<https://biodegradable.biz/laundry/laundry-liquid-with-juniper-seaweed-5l.html>

15. See if you can replace beef burgers in the park café and beef flavoured crisps with other choices, for example chicken burgers and cheese and onion flavoured crisps. Beef is by far the most environmentally and ecologically damaging meat to produce.

For example, if you sold 30 hamburgers per weekend, over the 6 winter/spring months this would result in an estimated 6 tons of CO₂. If they were chicken burgers it would be about 1 ton.



12. Open Spaces / Cemeteries

The council owns or is responsible for the ground maintenance of several open spaces across the town.

These include an operational cemetery, three parks and the George Pitcher Memorial Ground.

The UK government has recently signed up to the UN COP15 Biodiversity Treaty, which commits governments around the world to protect a minimum of 30% of land and oceans for nature.

The council could lead by example on this, by seeking to protect 30% of its open spaces for wildlife habitats.

Existing Good Practice

The grounds maintenance team is already supportive of placing a positive value on protecting and encouraging wildlife on your open spaces. We make suggestions below on how this can be built on and expanded to make the spaces the council pays for the upkeep of, to be of greater value to the local community and wildlife.

Whilst we lay out some broad suggestions below, we recommend consulting with local wildlife specialist organisations to guide the details.

George Pitcher Memorial Ground

Current Good Practice

1. Dead trees are being left in situ where possible. A healthy forest contains up to 60% dead and decaying wood, which provides a nutrient-rich habitat for fungi, a nursery for beetle larvae and a larder for insectivorous birds and other animals.
2. The grass in the upper regions of the George Pitcher Memorial Ground is only cut once a year. It would be worth asking the wildlife trusts about maximising the wildlife potential of this grassed space, as we were unsure why the grass here grows so slowly and sparsely.
3. Peat free compost is being used.

Suggested Next Steps

1. Recommend increasing the areas of wildflower meadow in the park. The UK is the most nature depleted country in the EU, every step we can take to improve the levels of biodiversity will help improve our environment.
2. Those boundaries that have no natural woodland hedging, where appropriate, around the various open spaces, could include an edible forestry approach, with hedges including hazelnut, wild pear, wild plum, mulberry, wild apple and walnut trees.

3. Consider expanding the boundary copse by about 3 meters into the upper meadow, which will further improve the levels of local biodiversity.
4. Allow the hedges around the football pitches to expand as much as practical, without encroaching on the playing space. Hedges play a vital role in the biodiversity mix in the UK.
5. Recommend expanding the hedge on the south side of the memorial ground to help improve the biodiversity of the area.
6. Recommend that any future nature gym spaces have wood chip bases rather than tarmac.
7. Consider planting additional native broadleaf trees to the mound north of the western football pitches. A greater variety and number of trees will further improve biodiversity.

Cemetery

There is one council-maintained cemetery, adjacent to St Peter's Church.

Suggested Next Steps

1. A suggested new strategic vision for the cemetery that you could consider would be to convert proportions of it into a memorial eco-park for the local community.

Naturally, such a proposal would have to be developed in consultation with the local community and done sensitively.

The rest of the recommendations below outline potential elements that you could include in such a new vision.

2. Consider moving most of the long-abandoned gravestones to the side of the cemetery, to increase the open space available for nature and community use.
3. Some areas are still subject to an expensive high-frequency grass-mowing regime. Consider converting some of these to natural woodland and wildflower meadows, with the boundaries neatly maintained and with clear signage explaining the maintenance regime.
4. Cut grassed paths through the new eco-park and create small areas of open cut grass for kids to play, people to have picnics or sit-in and install some seating for the elderly.

5. Consider adding a wildlife pond, which are invaluable at increasing the biodiversity of open spaces.

St Peters Park

Current Good Practice

1. The southern boundary of the park is already an excellent hot spot for native biodiversity. The semi natural woodland and flora around the pond and stream add significant biodiversity value to the park, which otherwise is fairly devoid of any biodiversity value currently.

Suggested Next Steps

1. Consider planting a community orchard outside the children's enclosure. Orchards have a hugely positive effect on local biodiversity offering habitat for birds, insects and mammals and fruit for local people. UK imports up to 80% of its fruit currently.
2. Recommend adding tree, shrub and herb hedging to the northern perimeter of the park. This could in line with the edible forest boundary approach mentioned above.
3. Unfortunately, the stream was polluted with oil run-off carried into it by rain runoff from local roads. See if you can plant a reedbed where the road water enters the park to slow the flow, allow the heavy metals settle back down into the subsoil whence they came and to hold back lighter oils & plastics particulates .
4. Invite Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust to assess the site and advise on how to improve the levels of biodiversity.
<https://www.bbowt.org.uk/>

Burnham Park

The park has some good natural woodland boundaries. But has a preponderance of large open grass deserts, devoid of almost any native wildlife value.

Current Good Practice

1. More lavender is being planted this year.
2. Two more trees are being planted in memory of Queen Elizabeth II.

Suggested Next Steps

1. Recommend lining the walkways with trees, to increase the biodiversity and offer protection from the weather to people walking in the park. At a minimum replace the 6-8 trees that were killed in the storm in 1988. Every mature tree can store up to a ton of CO₂.
2. Burnham Park has enormous positive potential to become a rich area for native wildlife. All of the following would have a positive impact on local biodiversity: community orchard, wildlife ponds, wooded areas and additional natural children's play areas.
3. Expand the number of trees in the small stand of trees in middle of the park and stop cutting the grass here and allow it to move to a natural woodland state.
4. Consider having the fete and fair take place in the same area of the park, as doing so would free up other areas of the park, much of which could then be re-wilded and handed back to nature, increasing the local biodiversity.
5. Hog Hill, this small area would benefit from better boundary hedging and or boundary trees to protect the playing children from air and noise pollution.

Stomp Park

Suggested next steps

1. Increase the hedging around the perimeter of the park, to improve the biodiversity and protect children playing there from pollution.
2. Plant shrubs and hedging in the green space opposite the tennis courts. This will create habitat for local wildlife and have the added benefit of stopping drivers from parking on the grass.

13. Events

The council organises regular community events over the year.

These will have significant climate and ecological impacts, so it is important that you pay attention to reducing their environmental impacts, wherever practical.

For example, let us say 300 people coming to a large outdoor event ate a beefburger, at 7.7kg of CO₂ per burger, this would emit 2.3 tonnes of carbon, equivalent to just under the emissions for electricity used by 3 homes in the UK, annually.

If they ate a tofu-burger instead, at 0.16 kg of CO₂ per burger, this would emit 0.05 tonnes of CO₂.

The following section is divided into two parts, the first is specific suggestions and the second is a generic tick-list for events.

Specific Recommendations

1. When choosing food vendors for events, prioritise vendors who offer a high proportion of plant-based options, organic produce and recycled or recyclable packaging. Ideally those that do not supply offering single use cutlery or coffee mugs etc. Some event caterers operate a deposit scheme for ware.
2. Ensure food-waste, due to its high methane emissions at landfill, is collected for recycling. Methane is up to 100 times more powerful a greenhouse gas than CO₂.
3. Include signage to encourage people to bring their own reusable mugs to reduce waste.

Events – Generic Tick List

All events have different environmental impacts, but this suggested generic tick-list should be considered by those arranging events by the council.

1. Appoint a named staff member to be the Green Champion responsible for the environmental performance at each event.
2. Any electrical equipment should be used efficiently and turned off when no longer needed.
3. Ensure recycling facilities are available, properly labelled and easily found.
4. Avoid use of disposable crockery and cutlery for food and drinks.
5. If using disposable serviettes, ensure they are made from recycled paper.
6. Consider food-miles when choosing wine and other drinks, keep the supply chain as short as possible e.g., if serving wine, it should be English and organic.

7. Use jugs of tap water, rather than bottled water.

8. Try to use local organic food and drink.

UK soils are being lost at an alarming rate due to industrial agriculture, with some soils reported by the UK government to have only about 30 to 40 crop rotations left in them.

9. Consider doing all-vegetarian or plant-based catering at as many events as possible.

The UN has estimated that the meat industry contributes about 14% of total global climate-crisis gases.

10. If this is not possible at this stage, then seek to at least avoid beef and lamb, which together are responsible for a staggering 7.5% of all UK domestic carbon emissions.

There are now some very realistic plant-based meat substitutes.

11. If serving fish ensure it is MSC (Marine Stewardship Council) certified, as coming from a sustainable fishery which is not being over-exploited. Avoid fish-farmed salmon etc.

12. Encourage people coming to events to use sustainable transport methods.

13. If providing any printed literature, ensure that it is on recycled paper and labelled as such.

14. Eco-audit Implementation

1. E-mail eco-audit report to all parish councillors and staff members.
2. Add implementation of eco-audit report recommendations as a standard agenda item for staff/management meetings.
3. Regularly report to the council, progress being made in implementing agreed recommendations from the eco-audit.
4. Create a spreadsheet with traffic light coding for each specific recommendation, identifying whether done, being implemented, postponed or rejected.
5. Use a newsletter to get information out about how residents can reduce their carbon and ecological impacts.
6. Develop a range of decarbonisation projects including quotes, so that if and when the government releases next tranches of the public buildings' decarbonisation budget, you have projects ready to submit.
<https://www.gov.uk/government/collections/public-sector-decarbonisation-scheme>
<https://www.salixfinance.co.uk/public-sector-funding-schemes>
7. Develop a step-by-step programme for applying for loans to the Public Works Loan Board to achieve your net zero goal by 2030.

Eco-audit report written by Donnachadh McCarthy FRSA and Caspar Hughes, 3 Acorns Eco-audits, March 2023