



3 Acorns Eco-audits

Inspiration
Information
Implementation

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Eco-audit Update Report: Hertford Town Council

FAO: Joseph Whelan, Town Clerk

The original eco-audit was carried out in June 2021.

This summary update was carried out by Donnachadh McCarthy FRSA, from **3 Acorns Eco-audits** in April 2024 and this is your resulting update report.

It is important that this update should be read in conjunction with the recommendations from your original main eco-audit report, as the update process consists just of a data collection process and a review meeting with two of your officers, with no site inspections.

We would like to thank Nick Kirby, Steve Catherall and Claire Costello and the rest of the team for their help with this update report.

Taking environmental action has become even more urgent since the original eco-audit. The UN now says that there is now no credible path to not breaching a catastrophic 1.5C rise in temperatures, which the BMA Journal editorial warns will be devastating for human health. Chatham House now states we have less than 5% chance of staying under 2C.

Since the 1970's we have lost over 70% of global wildlife populations and continue to lose that at a rate of 1% per annum. The UK is one of the most nature depleted nations in the world.

We are now in a race against time to prevent a human civilisation ending 3C rise in temperatures and to ensure any remaining populations of wildlife can be saved and regenerated for future generations.

Successes

We were delighted to see the impressive progress made in implementing many of the eco-audit's recommendations, including significantly improving the energy efficiency of the castle, the eco-sustainability of your programme of public events and the ramping up of positive active measures to promote nature in your open spaces since the original eco-audit.

These positive efforts are reflected in the 30% fall in total energy consumption at the castle (the figures do not yet reflect a full year of the benefits of the new infrared heating system) and the overall fall of 33% in electricity usage across the full portfolio of premises.

Installing a new efficient heating system in the castle, replacing the inefficient lighting throughout with LEDS and refurbishing the draughty windows in the period since the original audit, took a team effort and is very rewarding for us to hear about.

And the truly amazing reduction in paper usage from 660,000 to just 43,000 A4 sheets/annum is really laudable. Saving 77 trees per year for a decade equates to saving a small woodland with 770 trees!

Well done to the all the relevant staff for the work involved in achieving this.

Greening Finances

Since the original eco-audit was carried out, there have emerged useful metrics to estimate the very significant associated carbon emissions with the council's HSBC bank accounts and pensions.

We suggest tackling these should be the council's top priority for tackling its own internal carbon emissions over the coming year.

Other Next Steps

Reducing the amount of non-recycled waste, the council's mains water usage and beef consumption at events and developing a renewable energy strategy are other suggested focuses for the coming year.

We were also pleased to see the council has adopted a 2030 net zero carbon target and the launch of the council's proposed Eco-Fest in September to help inspire the community to get involved to ensure this vision is successfully achieved.

We hope the updated recommendations in this report will be helpful in guiding your next steps in improving the council's environmental performance over the coming year and enabling the planning of your actions over the coming six years to achieve a carbon-free Hertford Town 2030 target.

Eco Data 2020 and 2024

Combined data for all premises¹

	2020	2024
Electricity (kwh)	156,500	104,500
Electricity CO ₂ (tons) ²	0 (43.2)	0 (24.4)
Gas (kwh)	13,000	16,000
Gas CO ₂ (tons)	2.5	3
Gross Building Energy Carbon Footprint (tons)²	45.7	27.4
Net Building Energy Carbon Footprint (tons)²	2.5	3
Flights CO ₂ (tons)	0	
0		
Diesel (tons of CO ₂) (8,000 miles)	2	1.8
Total Transport Carbon Emissions	2	1.8
Total Gross Energy carbon footprint (tonnes) ²	47.7	29.2
Total Net Energy Carbon Emissions²	4.5	4.8
Mains water consumption (litres):	2,978,000	1,284,000
Water supply CO₂ (tons)	3	0.5
A4 Sheets equivalent of paper	660,000	43,875
% made from recycled paper	0	74%
Trees consumed	78	1
Paper carbon emissions	14	0.5
Total annual municipal waste (tons)	141.1	71
Non-recycled waste (tons)	109.4	40
Recycled (tons)	31.7	31
Waste CO ₂ (tons)	51.1 ³	17
Recycling rate (Town Hall only) (%)	50	85%
Town Council recycling rate	n/a	44%
Financial Emissions		
HSBC (at year end)	n/a	£1,534,800
HSBC CO ₂ ⁴	n/a	344
Nationwide (at year end)	n/a	£350,000
Nationwide CO ₂ (tons) ⁴	n/a	15
Total Banking CO ₂ (tons)	n/a	359

¹ Energy data includes leased-out premises.

² Government regulations require imported green electricity to be measured at average UK electricity emissions/kwh but allows it to be also recorded voluntarily as net zero. You were on a green tariff for both years.

³ If all non-recycled waste is landfilled.

⁴ Estimates for financial emissions were calculated using the My Mother Tree metrics: <https://www.mymothertree.com/bank-league-table>

Breakdown of Electricity Use	2020	2024
Castle Town Hall	112,000	78,000
Seed Warehouse	31,000	21,000
The Wash	11,000	3,700
Cemetery shed	2,500	1,700
Total	156,500	104,500

Breakdown of Gas Usage (tons CO₂)

Town Hall	0.0	0
Seed Warehouse	2.5	3
The Wash	0.0	0
Cemetery shed	0.0	0
Total	2.5	3

Breakdown for Water Usage (litres)	2020	2024
Town Hall	414,000	332,000
Seed Warehouse	248,000	6,000
The Wash	93,000	25,000
Cromwell Rd allotments 1	380,000	565,000
Cromwell Rd allotments 2	1,335,000	n/a
North Rd allotment s	199,000	278,000
Frampton St	84,000	n/a
Sele	19,000	33,000
Wademill Rd	301,000	n/a
Bramfield Road	n/a	34,000
Bengeo Allotments	n/a	3,000
St Leonards	n/a	8,000
Total	3,104,000	1,284,000
Total CO₂ (tons)	3.1	0.6

Note: There was a reported leak at the Cromwell Road allotments, which explains some of the high consumption in 2020.

Paper Usage (A4 Sheets)	2020	2024
Town Hall	397,000	32,500
% From Recycled	0%	100%
Trees Used	47	0 (4)
External printing	262,800	11,400
% Recycled	0%	0%
Trees used	31	1.5
Total	660,000	43,900
Total trees used	78	1.5
% Total from Recycled	0%	74%

Paper usage by leased premises is not added to council's carbon emissions.

Breakdown of Waste 2020

Due to data on amount of waste recycled from the cemetery not being available, this figure is not an accurate % for total waste recycled or total waste collected at Hertford Cemetery.

Premises	Total Waste (tons)	Non- Recycled (tons)	Recycled (tons)	CO₂ (tons)	Recycling Rate(%)
Town Hall	57.2	28.6	28.6	8.3	50%
Hertford cemetery	40.5 ¹	40.5	n/a	11.7	n/a%
Allotments	29.7	29.7	0	8.6	0%
Seed Warehouse	7.5	7.5	0	2.2	0%
Tourist Office	6.2	3.1	3.1	0.9	50%
Total	141.1	109.4	31.7	31.7	22.5%

Breakdown of Waste 2024

Premises	Total Waste (tons)	Non- Recycled (tons)	Recycled (tons)	CO₂ (tons)	Recycling Rate(%)
Town Hall	31	5	26	2.5	85%
Allotments	34	34	0	16	0%

Total (including Seed + Tourist Information) 71 40 31 18.5 44%

Waste from allotments calculated on basis of 17 x 6-yard skips disposed of each year.

Total Measured & Estimated Carbon Emissions (Tons CO₂)

	2020	2024
Bank	n/a	359.0
Pensions	n/a	277.0
Waste	32.0	17.0
Gas	2.5	3.0
Vehicles	2.0	1.8
Paper	14.0	0.5
Water	3.0	0.5
Electricity	0.0	0.0

Data Analysis

Carbon

There were significant reductions in your reported waste and paper carbon emissions.

Your premises carbon emissions remain modest as you only heat one premises with fossil gas and you have switched to a green electricity contract.

Your largest sources of estimated carbon pollution are your bank reserves and pension investments.

To get to net zero for your premises would require you to switch the remaining gas boiler in the Seed Warehouse to some form of electric heating, powered by a green tariff & as much of your own produced green electricity as possible.

Electricity

There was a positive 33% reduction in electricity consumption, and as mentioned all electricity remains net zero, as you remained on a green electricity contract.

Gas

Gas is only used for heating in the Seed Store. If you replace this with a form of electric heating powered by a genuine green electricity tariff, then you will have achieved net zero carbon for your premises energy consumption.

Paper

There was a really impressive drop of 93% in paper usage and a switch of 74% of the remaining paper consumption to recycled paper, saving the equivalent of 77 trees. Only 1 tree was used in the past year for virgin paper consumption, a drop of 99%!

Greening Finances

Banking and pensions are now by far your largest estimated source of carbon emissions. HSBC is the 2nd highest carbon emitting bank per £1,000 invested of the UK major banks.

Moving your cash reserves to one of the lower emitting banks would be a top priority for the coming year.

We do not know the carbon emissions associated with the Herts CC scheme that you are a member of.

So we have made an estimate taking staff numbers as 11 and the average pension pot for 35- to 45-year-olds in the UK to be £30,000, giving an estimated total pension pot of £330,000.

If this total was placed with The People's Pension scheme, then the estimated emissions according to My Mother Tree would be about 277 tons. If placed with their ethical option, it would be 170 tons.

Placing it with one of the greenest options on the market could thus reduce this by an estimated 107 tons.

The most urgent task with your pension emissions is thus to seek information from your pension providers as to what their carbon metrics are and to then develop a strategy in consultation with your staff based on the information provided.

Waste

Reported total waste has fallen by 50%. However, this may be due to uncertain data from both years. Waste emissions remain a significant proportion of your operational emissions. Carry out a waste audit to identify opportunities to eliminate or reduce various waste streams.

Water

Reported water consumption dropped an impressive 57%, if correct. Associated carbon emissions fell even more, as the water industry is also de-carbonising. But it would be good to reduce consumption even further, due to its impact on nature and the energy used to transport it.

Set a target for your allotments being mains-water free.

Some Significant Achievements Since 2021

This is a list of some of the many positive actions implemented since the original eco-audit report.

It is not an exhaustive list but it will give a taste of what has been achieved to date.

Heating

1. Infra-red heating was installed in many parts of the castle to replace inefficient storage heaters, which had almost non-existent zoning, timing or temperature controls. Staff reported that they were very pleased with the results and the comfort provided.
Heating in formerly left-on spaces adjacent to the main office were able to be turned off following its introduction, as former draughts were eliminated.
2. Sash windows in the castle were refurbished and draught proofed.
3. The loft in the castle and above the museum learning room had modern levels of loft-insulation installed.
4. Heating on back-staircase and upstairs corridor (was at 25C) have been turned down to frost-protection in Seed Store.
5. Heat reflectors were installed behind radiators in Seed Store.
6. CCC recommended temperature of 18C for office work has been adopted.

Electricity

1. Electricity consumption is down 33%.
2. Inefficient fluorescent and halogen lamps throughout the castle have been replaced with more efficient LED lamps.
3. EV charging point is planned for the council's vehicle.

Waste reduction/ Purchasing / Recycling

1. Total paper consumption was reduced by 93%.
2. Councillors now being sent electronic reports rather than on paper.
3. Finance department has moved most functions from paper to electronic options where advised on legality by your auditors.
4. Paper towels have been removed from bathrooms with hand-driers.
5. Micro-fibre cloths now in use, which eliminate need for most chemical cleaning products.
6. Almost all paper products (photocopying, external print, bathroom tissue etc) are now made from recycled paper and rubbish bags made from recycled plastic.

Recycled v Bamboo Bathroom Tissue

We were asked our views on the debate between recycled and bamboo-based bathroom tissue.

Our opinion is that the former is better, as bamboo forests are often planted on land cleared of former native forests in China and are more enormous wildlife-decimating monocultures, just like European commercial conifer forests.

Buying UK produced bathroom tissue made from post-consumer wastepaper provides a market for UK sourced wastepaper and has less transport emissions. If both papers are produced using respective national grid electricity, then UK grid emissions are less than half of Chinese grid emissions, as they are still using large amounts of coal for electricity production.

Open Spaces / Water

1. Spaces devoted to wildflower meadows have been created in a number of the council's open spaces, including the cemetery and church grounds that the council maintains.
2. Over 400 native trees have been planted around the boundaries of some of the open spaces, laying the basis for native woodland hedgerows which are rich in wildlife.
3. Local wildlife trust has been consulted on increasing biodiversity at the allotments.
4. Suitable low-height native flowering plants have been included in seed mix for areas that are regularly mown, which increases pollen feed for pollinators.
5. Electric hedge-trimmers have replaced diesel-powered trimmers.
6. 2 small communal orchards have been planted at allotment sites.

Management Issues

1. Original eco-audit report circulated to councillors.
2. Contracts for new tenants now include eco-clauses.
3. Council is staging an Eco-Fest to involve the local community in greening Hertford.
4. Council has adopted a net zero target date of 2030.
5. Environmental issues now being included in staff annual appraisals.
6. Potential for a woodland burial site for the town is being explored. As well as providing option for green burials, it would act as a carbon sink for the remaining hard to avoid emissions from the council's activities.
7. Environmental options introduced into council's grants criteria.

Events

1. As approximately 50,000 people attend the council's public events programme, it is a significant source of the council's environmental impacts. All events now

- have an Environmental Management Plan (EMP).
2. At least one vegan/vegetarian stall is now provided at all relevant events.
 3. Stall holder contracts now include sustainability eco-standard clauses.
 4. Stall holders selling hot drinks now required to have sign saying they welcome customers using their own re-use mugs.
 5. Publicity for events is almost now totally electronic, rather than paper based.
 6. Volunteers are now at all major events to encourage attendees to use the recycling facilities provided.
 7. No single use plastics are now allowed at events .
 8. A fully vegetarian Eco-Fest is planned for September.
 9. A water bottle refill scheme is provided.
 10. Signs welcoming re-use bags/containers now up on all stalls.
 11. Town-hall event buffets now all plant-based.
 12. Stall-holder applications now done electronically rather than by paper.

Additional Recommendations 2024

Management Issues

1. Divesting cash reserves from fossil-fuel funding banks is even more important than divesting shareholdings and pensions, as it can help restrict the flow of funds for new fossil-fuel expansion.

Since the last eco-audit, a new metric estimating carbon emissions from bank reserves has been launched by Mother Tree.

This estimates that for each £1,000 deposited with HSBC, it emits about 0.217 tons of CO₂ but with Nationwide only 0.0432tons.

Thus, switching reserves from HSBC to Nationwide or the Co-operative Bank could cut emissions by an estimated 276 tons to 68 tons.

Thus, we suggest you consider switching where you bank your cash reserves be a top priority.

The full Mother Tree list is here:

<https://www.mymothertree.com/bank-league-table>

If you need a high-street bank account, you could still maintain your HSBC account but switch your reserves to a lower CO₂ bank.

It is crucial that if you carry this recommendation out, that you explain to HSBC why you are doing this.

2. Request the carbon metric of tons of CO₂/£1,000 pension pot invested with the Herts CC scheme. Also ask if it is free of investments in oil corporations or banks that are investing in new fossil fuels. Once you have the requisite information, develop a strategy on how you might reduce your pension related carbon emissions.
3. Include an eco-audit report, including the above eco-data in parallel with your annual accounts. This will help keep your focus on your annual environmental progress in future years.
4. Keep implementation of the eco-audit and the update recommendations as a standing item on relevant management meeting agendas.
5. Take meter readings from all your utility meters on the last day of the financial year. This will make future reporting much easier, as you will not have to depend on the erratic nature of estimated billing.
6. Allocate responsibility to a named member of staff for collecting your eco-data and collating it for reporting at the financial year end.
7. Check that areas designated to be suitable for wind-energy are included in the next area plan.
8. Liaise with museum on how their exhibitions can assist the council in its ambitions to green the community, by for example, having exhibitions on how the town used to have sustainable transport, packaging, food production etc.
9. Develop an EV charging strategy for the town.

Electricity

1. Commission a feasibility study on the potential for solar and wind energy across your properties, including solar carports in the carparks and ground-located solar.

Then develop a programme of renewable energy projects including quotes, so that if/when the government releases next tranches of the public buildings' decarbonisation budget, you have projects ready to submit or seek other funding routes, such as the Public Works Loan Board.

2. Ensure that the Castle hot-water system in the basement is not being left on overnight.

Heating

1. Net zero for your premises, would require your Seed Store gas-boiler to be converted to some form of electric heating, whether that be air-source heat-pumps, electric boilers or infrared heating, if combined with a genuine green electricity tariff, supplemented wherever possible by your own green energy.

These have varying capital requirements and running costs.

Replacing a gas boiler with:

- An electric boiler - cheapest capital wise but more expensive running costs. Current radiators and pipes can be kept.
- An air-source heat-pump powered central-heating system - high capital but lower running costs, but all radiators and pipes may need to be replaced.
- Infra-red panels - lower capital cost than ashp, and more flexible but may have higher running costs if the ashp is professionally installed. No pipes or radiators are required and entire system will not fail if one boiler fails.
<https://www.herschel-infrared.co.uk>

Purchasing / Miscellaneous/ Waste Reduction/ Recycling

1. Ensure clearly labelled recycling and general waste bins are provided at all premises.
2. Buy organic catering for events and organic teas, coffee, plant and dairy/plant milk, sugar etc for staff hot drinks etc.
Globally we have already lost over 50% of planet's fertile soils. In the UK, UK government states that we have only about 40 crops left in much of our soils. Thus, seeking to promote as much sourcing of organic produce as possible is crucial.
3. Landfilled unrecycled waste has high carbon emissions, of about 0.467 tons CO₂/ton of waste.
Calculating the weight of unrecycled waste from parks/allotments/events is therefore important in order to determine where it lies in your priorities for net zero 2030.
4. Thus, it is also important to revisit potential for providing recycling facilities at the Seed Store. There may be space in the hallway.
5. Once the council has an EV charging point in place, seek 2nd hand options to replace fossil fuelled vehicles with EVs.
6. Food composting has yet to be introduced at events. Try and get an estimate of the annual weight produced, so that you can calculate its carbon footprint and decide where it should lie in your 2030 net zero carbon target priorities.
7. Carry out a waste audit, to identify waste streams that you might be able to reduce or eliminate entirely.
8. Beefburgers are still seen as an essential provision at events.
We suggest that a calculation of the associated carbon emissions be carried out, based on estimated total number of beefburgers sold at the council's events, with a view to establishing its place in your order of priorities for a net zero 2030 for the council's operations.

A research paper in Science Direct found that an Irish beef hamburger was calculated as emitting 19.7kg of CO₂, whilst a vegetable patty was 3kg. Unfortunately, grass grown beef has higher carbon footprint but better animal welfare than industrial lot grown beef.

Open Spaces/ Water

1. Continue with your positive progress on maximising the amount of space devoted to nature on your open spaces, including planting small copses and creating more wildflower meadows and woodland boundary verges.
2. Consider intermingling some native fruit and nut bearing trees in such boundary plantings.
3. With industrial farming, insect populations have plummeted by as much as 80%, which has had the knock-on impact of causing starvation among many of our declining bird and small mammal populations.

The UK government has signed up to the COP15 Biodiversity Treaty which committed us to protecting a minimum of 30% of UK land and oceans for nature.

The council could consider making a commitment to supporting this on its own open spaces (if not achieved already) and launching an initiative on how to take this out to the wider community.

4. Carry out a survey to see what % of your open spaces are protected for nature.
5. Continue to liaise with local and regional wildlife groups on how to maximise the creation of habitats for locally native wildlife species or projects to restore lost species, including in your cemeteries and allotments.
6. Set a target to eliminate mains water consumption for your allotments and open spaces as far as practical.

Wendover Parish Council grounds-team have installed very simple wood-framed lean-to roofs at their allotments, (similar to one in the picture below but bigger) which feed an array of IBC rain-storage tanks (Intermediate Beverage Containers – which are readily available pre-used on ebay).

This has eliminated almost all mains-water consumption at their allotments.



7. Britain has lost about 75% of our ponds in the last 100 years. They are invaluable for helping repair our decimated wildlife. Revisit suggestion on trying to identify suitable locations in at least some of your open spaces including your allotments.
8. If you have been able to cut down on staff working hours required for grounds maintenance by moving towards more nature regenerative practices, maybe see if you could reallocate freed up capacity toward sorting out the mixed municipal waste arising from parks to increase recycling levels.

Thanks!

Many thanks again for the help officers kindly provided to **3 Acorns Eco-audits** in the carrying out of this update report and good luck with further reducing your environmental impacts over the coming years.

Report author: Donnachadh McCarthy FRSA pp 3 Acorns Eco-Audit June 2024