



3 Acorns Eco-audits

Inspiration
Information
Implementation

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Introduction

We would like to thank Marc McKenna for organising and facilitating the details for the eco-audit site visits and the management and staff members who kindly gave their time to contribute to the eco-audit.

Unlike most organisations undertaking their first eco-audit, MHDT has already made a lot of progress in moving towards being an ecologically sustainable organisation and is running a number of positive eco-projects with the local community including the PACT project.

Their HQ's carbon footprint is already considerably better than typical for such a building. We hope this report will help you build on this positive foundation and help establish a reputation for being a leading ecologically responsible community trust.

Some experts believe the climate crisis is so urgent, that we need to aim for a global average of about 1 tonne per annum per person for all emissions at home and at work, if we are to avoid passing the irreversible tipping points that would lead to a disastrous run-away climate crisis.

The global average annual CO² emissions per person currently are about 4.4 tonnes and increasing at about 3% per annum, whilst in the UK they are about 15 tonnes if you include emissions from imports.

The UN states that the consequences of the climate crisis is already being felt by millions of people across the globe with the WHO estimating 150,000 deaths per annum already globally from the effects of the climate crisis and up to 20 million environmental refugees.

MHDT is in an excellent position to continue to further help local residents reduce their running or living costs by providing regular training and advice in eco cost-saving measures.

Its access to numerous lobbying opportunities with the local borough council, housing associations and other public bodies, gives it a positive role in enabling them to address the environmental implications of the services they provide to local residents.

1. Headline Figures 2014/15

MHDT

| | | |
|---|--------------|---------------|
| Electricity use: 51,000Kwh (est.) | 23 | tonnes |
| *Gas 0Kwh (est.) | 0 | tonnes |
| Building Energy Carbon Footprint | 23 | tonnes |
| Mileage 120 miles | 0.04 | tonnes |
| Flights: (3 short-haul) | 0.60 | tonnes |
| Energy carbon footprint: | 23.64 | tonnes |
| Annual photocopying paper consumption (including colour and A3) | 50,000 | sheets |
| Percentage photocopying paper made from recycled paper: | 10 | % |
| No of trees used for photocopying paper | 5.3 | |
| Non-recycled waste – black bags/week | 12 | |
| Recycled waste – black bags/week | 18 | |
| Annual estimated recycling rate | 60 | % |
| Water consumption (litres) | 55,000 | |
| Number of staff | 10 | |
| Energy carbon footprint per staff member | 2.36 | tonnes |
| Square meterage | 800 | |
| Annual Electricity Bill | £7,260 | |

*There is no gas supply in the building.

2. Data Analysis

Carbon Footprint

The carbon footprint per square meter is 29kg/m². This compares very well to 76kg/m² for comparable typical community premises.

Whilst the report includes a number of measures to reduce this even further, the quickest way to eliminate your entire premises energy carbon footprint would be to switch to a green electricity supplier.

Recycling

The recycling level of 60% is significantly above the current national average of 43%. This could be further increased by ensuring clearly labelled recycling bins are placed in all parts of the premises.

3. Key Targets for First Year

The following suggestions are made to guide your choices of targets and priorities for the first year of the eco-audit project.

1. Establish 19C as the standard office heating temperature in winter and 25C as the minimum temperature for the air-conditioning in summer.
2. Include summary environmental report in your annual report and accounts.
3. Replace recessed lighting with pendant lighting.
4. Switch to 100% recycled paper use for photocopying, external printing and bathroom paper.
5. Install provision to ensure only facilities manager or caretaker have access to heating/air-conditioning controls where possible.
6. Lock radiators in bathrooms to frost-protection.
7. Sign up for a green electricity provider.
8. Ensure relevant staff know how to operate the under-floor zoning system efficiently.
9. Install a door from the Social Area into the corridor, to enable the zoning system to work properly. Ideally the corridor area would not need to be turned on, especially when the library is closed.
10. Draught proof glass external doors.

4. Heating

Existing Good Practice

1. Heating in the Ladies unlike the Gents was turned down to frost-protection.
2. The under-floor heating system has zoning controls.
3. All the windows are well draught-proofed double glazed windows.
4. One permanently sealed window in the back office has been replaced with an open-able window, enabling the staff to use fresh air rather than using the energy expensive air-conditioner. Staff reported air-conditioning unit which had been used extensively, is now only rarely if ever used. This is important as generally air-conditioned premises can double the energy consumption.
5. Sealing up one of the glass front doors is planned which will help reduce draughts.
6. Modern insulation standards included in external walls.

Suggested Next Steps

1. Recommended room temperature for sedentary activities e.g. office work or reading in the library is 19C for heating in winter and no lower than 25C for air-conditioning in summer.

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

It is crucial that the relevant staff understand this. **Urgent**

Get simple digital thermometers and instruct staff to observe the CIBSE recommended temperatures.

2. Turn all radiators in bathrooms down to frost-free and lock them. The radiators were on full blast at Mark 5, in the Gents when we visited, even though it was early summer. They were also on in the Disabled Bathroom.
3. A lot of heat is being lost through the gaps around the glass main front doors and the door into the garden.

These products might be suitable to draught proof the doors:

<http://shop.stormflame.com/glass-door-seals---raven-rp103rp104-604-p.asp>

<http://www.sealsdirect.co.uk/shopping.asp?intDepartmentId=3>

4. Ensure relevant staff are trained into how to operate the under-floor heating zoning controls efficiently. Ask the installers, if the knowledge is not available in-house.

5. Consider if any of the other windows which are not open-able, in rooms that have air-conditioning at present, could be made open-able to allow fresh air rather than air-conditioning to be used. We understand that there may be planning conditions in the way of some of them.
6. Ensure that the air-conditioning and heating controls are only accessible to facilities management staff rather than to all users as at present, maybe by locking them behind a small metal box where practical.
7. Ensure that the caretaker is trained on how to operate heating, air-conditioning and lighting efficiently.
8. The kitchen is heated with radiators rather than under-floor heating. Ensure that the radiators are turned off when the space is empty. If difficult for staff to remember this, you could consider installing a TRV timer. Check if this might be possible via the zoning controls also.

Currently it appears the kitchen is used 6 hours per week but heating is on during potentially the entire opening hours of the centre. **Urgent**
<https://goo.gl/rIUo1X>

9. Most of the heat emitted by the two over-head electric door heaters will be lost through the doors. Consider using an infra-red heater instead to keep the receptionist warm – these heat the person not the air around them.
<http://goo.gl/oKS89J>
10. As the IT suite is only used on Fridays for five hours, ensure that the heating is always turned off when not in use.
11. Whilst it is positive that the under-floor heating system has zoning controls, the problem is these are largely ineffective, as 3 of the 4 zones controlled have no separation between them.

Thus if the heating is off in one zone, the other areas will work harder to heat them. You could consider installing at least a doorway between the social area and the hallway. Check out the map you have of the zones, to see ideal location. When the library is closed, close the doors and programme the zoning controls to be off.

As far as we know the social area is likely to be always in use when the reception area is open, so it probably would not make sense to place a door between both of those separately zoned areas.

5. Electricity

Current Good Practice

1. Air-conditioning units are serviced regularly thus maintaining their efficiency.
2. A small correctly sized fridge is used for staff. It was also correctly set.
3. MHDT has already switched from using servers to the cloud which can save up to 90% of energy used.

Suggested Next Steps

1. MHDT is not currently on a green-electricity tariff. It would be good to switch to a green electricity supplier who sources all their electricity from zero carbon sources such as hydro, wind and solar panels.

Good-Energy (No 1) and Ecotricity (No 2) are considered to have the best green energy standards. www.good-energy.co.uk www.ecotricity.co.uk

This would in one hit remove **ALL** your CO₂ emissions from your electricity use.

Whilst green electricity is sometimes up to about 10% more expensive than fossil-fuel powered suppliers, you could consider in principle devoting say 50% of any cost savings achieved from the other recommendations to part fund this switch.

2. Ensure all laptops/computers are set to energy saving mode and lower screen brightness unless people have specific eye-problems.
3. Consider replacing PCs with laptops in future with the relevant ergonomic fittings, as laptops use about a third of the energy of a PC.
4. Turn off two security TV screens at night when centre is closed or put them on 24/7 timers.
5. The fridge in the back office needs defrosting to keep it working efficiently and to be turned down from 5.5 to mark 2.
6. Get 7day timers for photocopier/printers to turn them off when closed.

6. Lighting

Existing Good Practice

1. The five lights outside the main entrance already have efficient LED lamps in them.
2. There appears to be a good culture among staff to keep unnecessary lights off e.g. lights in the reception, hall and social area were off when we did the site visit.
3. There are no halogen or incandescent lamps in use.
4. Unlike the rest of the premises there is a pendant lamp in the Social Area which uses a single 20 watt energy-efficient bulb. It also has an aesthetically pleasing lamp-shade. (This type of fitting could be installed across relevant areas of the premises where the very wasteful recess lamps have been installed.)
5. The spot-lamps aimed at the ceiling sculpture in the reception area have energy efficient LEDs rather than the very wasteful 50 watt halogen spots.
6. Main hall was designed so it can be naturally lit during daylight hours.
7. Main hall lighting has plenty of switches with a sensible layout, so staff can manage light levels efficiently in line with the daylight available and requirements.
8. The four theatre spot-lamps are extra-efficient 10 watt LED spots.

Suggested Next Steps

1. One of the biggest sources of electricity wastage at MHDT are the recessed lights, which whilst they have efficient bulbs, the fact that they are recessed means that most of the energy is wasted lighting the recess.
If you replaced these with pendant lamps, like the one that is already in the Social Area, you could cut energy lighting usage to nearly one tenth of current consumption.

Each of the recessed lighting fixtures has 2 x 26 watt lamps (52watts). That is the equivalent of 2.5 x 100 watt incandescent lamps in lighting terms!

For example, there are 14 x 26 watt fluorescent bulbs (total 364 watts) in the gents. Ideally these could be replaced with 2 x 20 watt pendant lamps (total 40 watts).

The small disabled bathroom has 104 watts of recessed lighting, which could be replaced by one 11 watt pendant lamp.

The Ladies has a very high lighting wattage of 416 watts which could be reduced to about 2x 20 watts (40 watts total).

The reception area uses 14 x 2 x 26 watt lamps (totalling 728 watts!) for a relatively small area. These could be replaced with about 4 x 20 watts pendant lamps using a total of 80 watts.

Ensure the blackboard in the Social Area also has efficient lighting.

2. Where there are banks for light-switches, label them, so staff can control them accurately.
3. Total wattage in the main hall is 2,952 watts and so quite expensive to run if all the lights are on.

Ensure staff to use them efficiently, using only the amount of lighting needed.

4. Open the blinds in the meeting rooms so that full advantage of the natural light can be taken. There was a meeting for 2 people in one of them, during our site visit, which had the blinds down and all the lights on, in the middle of the day.
5. Install separate switches for the lights in the meeting rooms so that correct amount of light needed can be provided.

7. Recycling/Miscellaneous

Current Good Practice

- 1 Recycling system already in place.
- 2 Real mugs are used for staff drinks.
- 3 Vegetable raised beds installed and being used.
- 4 On-site composting of garden waste is in place.
- 5 Organic plant-feed being used.
- 6 Peat-free compost being used.
- 7 Re-used pallets used for plant-holders in the garden.
- 8 6 bike stands already installed outside the building.

Next Steps

- 1 Ensure a named person is responsible for recycling in the office.
- 2 Clearly label the recycling bins with what can be recycled in them.
- 3 Ensure electronic waste, such as computers are recycled (legally required.)
- 4 Consider planting some soft-fruit shrubs and dwarf-rooted fruit trees e.g. plums which could be trained to grow along the walls. <http://www.organiccatalogue.com/>
- 5 Consider if any fruit shrubs or trees could be planted in some of the shrubberies and land surrounding the building in liaison with the HA
- 6 Also consider planting perennial salad greens that do not need to be planted every year and are slug-resistant e.g. sorrel, chives, wild-garlic, mint, purple chard etc
- 7 Ensure your bank account or pension schemes are not funding coal and fossil fuel exploration.
Check your bank at The Ethical Consumer Bank Ratings, which also helps with researching alternatives.
<http://www.ethicalconsumer.org/buyersguides/money/banksavingsaccounts.aspx>

The Share Action website provides some guidance on ethical pensions, endowment funds and investments also. <http://www.fairpensions.org.uk/>

8. Purchasing

Current Good Practice

1. Hand-driers rather than paper-towels are used, thus eliminating a major waste-stream.
2. The eco-shield urinal sleeve uses no chemicals but is totally biological.
3. Real crockery is used for staff drinks and the weekly lunch that is cooked.
4. MHDT calendars are made from recycled paper.
5. Many of the materials used to decorate/furnish the Social Area were re-used materials, including reclaimed wood. It would be good if you put up an infographic about the project, to educate visitors about the benefits of using reclaimed material and pre-used furniture.

Suggested Next Steps

1. Ensure you buy only 100% recycled paper for photocopying in future. This would save about 5 trees annually.
Evolve is regarded as one of the better brands of recycled paper on the market.

Recycled paper as well as helping create a market for waste paper, uses about 43% of the carbon footprint of virgin paper.

Get the PR benefits of having switched to 100% recycled paper, by ensuring that this fact is included on the artwork for all in-house documents produced for external use.

The wording is up to you but suggestions include “*printed on 100% recycled paper*” or longer version “*printed on recycled paper because MHDT cares about our environment*”.

2. Ensure bathroom-tissue is made from recycled paper.
3. Ensure photocopier and PCs programmed to automatically print double-sided.
4. Ensure all other stationery items such as post-it notes, envelopes, small note-pads, new file, flipchart paper etc are made from recycled paper.
5. Get your cleaners to use e-cloths for glass and surface cleaning, which eliminate the need for almost any cleaning products. <http://www.e-cloth.com/>
6. Do not buy bottled anti-bacterial soap for the bathrooms. Anti-bacterial soaps should only be used in clinical situations. They are banned for general use in

many European countries due to the pollution and potential bacterial resistance they are causing. The active ingredient Triclosan is beginning to pollute waterways and the seas.

7. Switch to organic fair-trade tea/coffee/sugar and organic milk if available locally.
<http://www.traidcraftshop.co.uk/p-8655-buy-traidcraft-fair-trade-organic-freeze-dried-coffee-500g-single-traidcraft-online-shop.aspx>
8. Ask all your suppliers for details of their environmental performance and inform them that you will now be including this as a factor in supplier selection.
9. Ensure that any emails sent on behalf of MHDT include a footer request not to print if possible.
10. When commissioning external print-buying., always ask for quotes for printing on recycled paper. It would be worth shopping around to see if you can find a printer who does not charge a premium for printing on recycled paper, if your current printer does charge a premium.

Some charge no premium at all, if they are doing sufficient volumes of recycled paper already for other clients in order for bulk discounts to kick in.

If you cannot find a cost effective printer locally try www.alocalprinter.com that have a particularly good eco-policy including only using vegetable based inks.

And do not forget to include recycled paper logo on the artwork.

11. Get a second-hand fold-up bike for local staff journeys. Legitimate good quality second-hand bikes available from: <http://www.re-cycling.co.uk/> or from Recycles Ilford, The Salvation Army, Ilford Corps, 15 Clements Road, Ilford IG1 1B (local non-profit homeless training scheme)
12. You bought three short haul air-tickets last year. Carbon Neutral has a very simple and easy to use flight emissions calculator.
<http://www.carbonneutralcalculator.com/flightcalculator.aspx>

These 3 short-haul return flights would emit about 0.6 tonnes of CO₂ and would cost just about £6 to carbon-offset.

9. Water

Existing Good Practice

1. Bathrooms already have spray taps, which reduce flow by about 30%.
2. Rainwater butt already installed.

Recommended Next Steps

1. Many of the valve wcs appear to be leaking. Get a plumber in to fix them. And put inspecting them on the premises walk-about check-list in future.
2. Check that flow regulators have been installed in all sink units. Water pressure in London is set at 20 litres/ minute, whereas bathroom sinks only need 4, showers 9-12 and kitchens 9 litres/minute.
<http://www.aquaflowregulators.co.uk/why-use-regulators.html>
3. Retrofit push- button controls on taps especially on hot-water taps in bathrooms used by the public. Available from Aqualogic.
<http://www.aqualogic-wc.com/>
Push button mixer taps available from: <http://www.taps4less.com/PP/U-TWS009.html>

10. Events

Existing Good Practice

1. The Hidden River Festival has recycling facilities provided.

Recommended Next Steps

1. Appoint one person to be responsible for energy efficiency/recycling at each event.
2. Ensure recycling/waste facilities are available, properly labelled and easily found at events.
3. When selecting venues, include their eco-policy, public transport accessibility and eco-record as part of your selection criteria.
4. Avoid disposable crockery and cutlery (reported that disposable ware is current standard practice).
5. If supplying disposable serviettes, ensure they are made from recycled paper.
6. Consider food miles when/if choosing wine and other drinks.
7. Use jugs of tap water, rather than bottled water.
8. Avoid tropical or orange juice; try English apple juice instead as a litre of orange juice is estimated to represent 1,000 litres of imported water, usually from a water-stressed country such as southern Spain, California, Morocco or Israel or better still just provide fresh fruit and jug of tap-water.
9. Only provide all-vegetarian catering. The UN has estimated that the meat industry contributes about 18% of total global climate-crisis gases, which compares to about 3% for the aviation industry.
10. If serving fish ensure it's MSC (Marine Stewardship Council) approved, as coming from a sustainable fishery which is not being over-exploited.
11. Encourage people coming to events to use sustainable transport methods by providing local public transport information or any available cycle routes.
12. Seek to only use local caterers (ask them if they can do an organic service).

11. Cleaners

When renewing your cleaning contract ask:

- Will they supply bathroom tissue and hand-towels made from recycled paper
- Will they use/supply eco-friendly cleaning materials e.g. Bio-D <http://www.biodegradable.biz/> including non anti-bacterial soaps.
- Will they use e-cloths for glass and surface cleaning which eliminate the need for almost any cleaning products <http://www.e-cloth.com/>
- Will they train their staff in how to be energy, water and material efficient in how they clean the premises
- Have they got an environmental policy and any evidence of the environmental policy being implemented e.g. annual eco-audit report
- Do they use low emission vehicles if transport is used or have a cycling policy
- Will they supply bio-degradable or recycled plastic black-bags and bin-liners
- Are staff trained to not remove bin-liners daily but only when torn or messy
- Is it possible for them to clean during heating-hours in winter or not require the heating to be put on specially for them
- Are bin-bags made from recycled plastic