



ECO SYNAGOGUE
RESOURCES

BUILDINGS

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www.ecosynagogue.org

Buildings

Our synagogues are an opportunity to act as patterns and examples of low-carbon, sustainable living. They can speak out in the local community by demonstrating to others what is possible, and be spaces to foster the growth of sustainable communities. When considering what changes to implement think about:

- What you have control or influence over, and who needs to be involved. Who is responsible for the building and the land it is built on? Make sure you include them in any discussions. Any substantial changes will need their approval.
- Your community may not own a building, but you may well be able to influence the building owner on these issues.
- Sustainable living is not supposed to make people feel miserable! Don't turn the heating down so low that it is detrimental to people's well-being, or make changes that make it harder for the less able to access the building.
- Cost, including what is most cost-effective relative to the scale of the changes proposed. ([source: Quaker resource](#))

Energy use and carbon footprint of synagogue building/s (attempts to reduce carbon footprint and improving energy efficiency)

Most of the energy we use in our buildings for heating, hot water, lighting, appliances and cooking comes from burning fossil fuels (coal, gas or oil). We either burn them directly or indirectly through the use of electricity. For most synagogue buildings energy use for heating will be the most significant activity under corporate management. The amount of CO2 we release from energy use in our buildings depends on four main factors:

- 1) Our use of 'energy services' – the level of heating and lighting we require, boiling water used to make drinks, hot water for washing up, use of computers, photocopiers, refrigerators, etc.
- 2) The care with which we manage our energy use – switching off heating and lights when not using rooms, boiling only the amount of water we need, etc.
- 3) The efficiency of the building and of appliances.
- 4) The source of the energy (are we using 'green' sources of energy or suppliers that are creating renewable energy sources?)([source](#))

Monitoring energy use:

Starting out can be the most daunting part of any project. Three steps to reducing your synagogue's energy use and carbon footprint:

- 1) Be informed on climate change facts and links with Judaism – as well as looking at others synagogue's projects. Communicate the information to your community.
- 2) Gather together a working group to take the lead on these critical issues. Include those interested and those with responsibilities. Focus discussions on actions inside and outside the synagogue building.
- 3) Start reducing your carbon footprint. It is important to first monitor your energy use to understand your starting point – and then create your synagogue's energy policy. ([Eco-church resource](#))

Ways to reduce energy use:

- Look at external auditor coming in to look at the building, do an energy assessment and give advice on energy saving. (Use BREEAM?)
- Calculate your synagogue's carbon footprint with the Carbon Trust's calculator for small and medium-sized businesses
- The Energy Saving Trust have a really useful and easy to use website which helps on practical energy saving advice (is mainly for homes but still relevant)
- More detailed website for businesses with tools around energy consumption: <https://www.carbontrust.com/resources/tools/>
- Use less heating:
 - Only heat rooms that are in use.
 - Keep doors between rooms shut and draw curtains after dark.
 - Use the smallest room needed for a given activity.
 - Schedule building use to reduce the number of hours when the heating is needed.
 - Reduce the thermostat temperature, but remember to consider the needs of unwell and older people in your meetings for whom cold can be uncomfortable and a health risk.
 - Install timers for the heating and hot water or – if your building use varies a lot from day to day – make sure the heating is switched off manually when it's not needed.
 - Put up signs asking building users to keep the temperature low.

- Use less hot water:
 - Don't leave hot taps running.
- Read your meters:
 - Reading electricity and gas meters on a monthly basis could help reduce energy use as you will become aware of how much you are using and notice if anything is amiss
- Use less? artificial light:
 - Keep windows clean and free from obstructions to take advantage of natural daylight.
 - Turn lights off when not in use, or when not needed (during meeting for worship perhaps!).
 - Put up 'switch off' signs by light switches. ([Quaker resource](#))

Creating Green policies

NOTE: how to support people to create green policies at their synagogues (look at Lifestyle resource under 'Green Champion')

- For example, designing a 'green building' – find out more here (very American website but maybe still useful)

Appliances

The appliances that use most energy are generally freezers, fridges, washing machines, tumble dryers and dishwashers. TVs – especially those with large plasma screens – can also be significant electricity users.

When replacing appliances choose those with the highest rating for energy efficiency. Grade A electrical appliances (A+ or A++ for fridges/freezers) are best, or look for the Energy Saving Trust's blue 'Recommended' label. See www.energysavingtrust.org.uk for more information.

The most efficient appliances are usually more expensive, though may pay for themselves in energy savings ([Quaker resource](#))

Environmentally friendly products

Recycled toilet paper

Paper usage/use of recycled paper

Encouraging cycling by building cycle racks and engaging with various local cycle schemes and free bike workshops/lessons, eg Barnet council

Environmentally friendly cleaning products

- The Independent's 10 best eco-cleaners
- Women's Environmental Network eco-cleaning fact sheet
- Sadeh's soap nuts as laundry detergent

Disposable items (eg paper cups and plates)

- When making food and drink in our community, we need to ask the question, what kind of cups and plates have the least impact not only on the environment – but also on taste and hospitality towards guests and visitors? We could save the planet, but scare the people. As a result, much creativity and compassion are needed as we make this most important of decisions – what cups, plates and cutlery should we use?

Avoid disposables

- Styrofoam cups are the worst culprits, as they never degrade, warns The Recycler's Handbook. Americans throw away 25,000,000,000 styrofoam cups every year. Even 500 years from now, the foam coffee cup you used this morning will be sitting in a landfill somewhere.

Recycle your grinds

- If your synagogue uses fresh coffee, have you ever thought about what happens to all those waste grounds each week? Bio-bean is an award-winning clean technology company that has industrialised the process of recycling waste coffee grounds into biofuels. The process diverts waste from landfill, incineration and anaerobic digestion to reduce greenhouse gas emissions and create carbon-neutral biofuels. If you are inside the M25, [Bio-bean](#) can pick up your waste grounds and use them for good.

Review the reusables

- [The desire to drink coffee has led to more than 2.5 billion cups being thrown away every year in the UK, says The Guardian](#). People assume these cups are recyclable, but the recyclable bit is trapped under a film of plastic that stops the paper getting soggy. It's also difficult to remove. If you are going to use disposable cups, think about investing in compostable [paper cups](#) and [containers](#)

Recycling facilities

If your town or council offers recycling, your community may still need some reminding when it comes to putting bottles, cans, and paper in the right bins.

Make sure there are always recycle bins next to trash bins, and make sure they are clearly labeled (this could be a good project for your Hebrew school).

At the Hazon office, we label the trash bins with a sign that says "landfill" – a somewhat in-your-face reminder of where our non-recyclable trash ends up. If your town doesn't recycle, find out if there are organizations that can take your recyclables, and organize a drive in your community.

In addition to making sure your materials get recycled, encourage your institution to purchase products made from recycled materials. Newspapers, paper towels, aluminum, plastic, glass soft drink containers, steel cans, and plastic laundry detergent bottles commonly contain recycled materials. As consumers demand more environmentally sound products, manufacturers will continue to meet that demand by producing high-quality recycled products.

Ideas to increase recycling at your institution:

- Find out what the local recycling laws are and evaluate your institution to see if they are in compliance.
- Encourage recycling by making bins available everywhere food is eaten (classrooms, offices, social hall, outside, etc.)
- Engage your community in a poster campaign: the winning entry will be displayed throughout your institution to encourage recycling.
- Organize "drives" for specialty recycling items, such as electronics and batteries, and bring them to a facility in bulk. Make sure to feature your efforts in your institution's newsletter!
- Buy recycled paper, dishes, and napkins. Recycling gets a lot more air time than the other two of the "3 Rs"—yet reducing the waste we generate, and lengthening the shelf life of the products we do use, must become as routine as recycling. Here are some tips for Reducing and Reusing:
 - Buy in bulk
 - Use pitchers and glasses for water, or a water cooler, rather than individual-sized water bottles ([Hazon \(p42\)](#))

Water: Toilets/water saving devices AND water supply (rainwater collection, 'grey water' systems)

Much of Britain suffers from water shortages, and as water comes directly from rivers and groundwater every drop we use has an impact on the environment. Electricity is used to pump water, and chemicals are used to make it clean enough to drink.

Water-saving devices

- Using less water in toilets:
 - Put a 'hippo' in the cistern – some water companies offer them for free. You may want to try it out in one toilet before installing them in every cistern.
 - When buying a new toilet choose a water-saving, low-flush or dualflush model and consider waterless urinals for the men's loos
- Reduce water use for washing up:
 - Don't leave taps running! Invest in a washing-up bowl.
- Save water in the garden:
 - Install a water butt.
 - Consider choosing plants that won't need watering, and allowing your lawn to develop a scorched look for a few weeks in the summer – it will recover!
- Reduce water wastage:
 - Mend dripping taps
- Install a water meter:
 - If you have a water meter installed your bill will reflect your consumption, which is likely to save you money (Quaker resource)

Water supply (rain-water collection and 'grey water' systems)

Renewable energy / 'green tariffs'

Note: see Lifestyle (5) section for more about changing tariffs

Boiler ratings

Install a more efficient boiler If your boiler is 15 years old or more, replacing it should pay for itself. Check for grants

When your boiler or heaters reach the end of their useful life, look for the most efficient replacement appliance. With boilers, try to get one with a SEDBUK rating of A (90% efficiency and above). Also consider whether there are more carbon efficient alternatives. For example, consider replacing direct electric heaters with gas heaters (cheaper in any case) or a heat pump (though this is very expensive and definitely not worthwhile if gas is available).

You may be able to save energy by installing a 'combi' (combination) boiler. This heats water directly when a hot tap is turned on, rather than keeping a storage tank full of hot water ([Quaker resource](#))

Lighting (LED, low energy)

- Replace incandescent light bulbs with more efficient alternatives (the carbon impact is so significant that it is worth doing this before the incandescent bulbs have stopped working):
 - CFLs (compact fluorescent lamps) – the most common and cheapest energy-efficient light bulbs available. Special dimmer-switch-compatible ones are now available.
 - LED lights – even more efficient and long lasting, and coming down in price. These can now replace halogen lamps (which use nearly as much electricity as incandescent bulbs).
- Remember efficiency for external lighting too, and check that motion sensors work properly.
- Use light-coloured paint and mirrors to reflect light. ([Quaker resource](#))

[EST has some useful tips for which bulbs suit your needs best](#)

Insulation/double glazing

- Draft-proof:
- Windows: use sealing strips to prevent draughts.
- Doors: attach suitable draught-proofing strips to all edges of doors (and/or make a draught excluder).
- Floors: seal spaces around skirting boards and gaps between floorboards. N.B. Be careful not to block off all ventilation as this can lead to condensation and damp.

Insulation:

Loft insulation has a very short payback period, as does cavity wall insulation. Solid wall insulation may not pay for itself in energy savings. Check for grants and subsidies. Of course, savings depend on the way the building is used.

- Roofs: if possible fit loft insulation in the loft space.
- Walls: Fill any cavity walls. External or internal insulation can be put on solid walls, though it is more expensive.
- Windows: replace broken or cracked window panes. If possible replace single glazing with double-glazed units, or add secondary glazing. Homemade secondary glazing, made from clear polythene taped to window frames, is cheap (though may damage your paintwork). Hang heavy lined curtains that extend the length of the windows, or fit thermal (heatreflective) blinds.
- Floors: add a carpet with underlay, or other floor covering that keeps in heat (such as cork tiles).
- Hot water cylinders (storage tank): make sure that the cylinder is insulated and hot water pipes are lagged.
- Radiators: put silver foil with insulated backing behind radiators, particularly on external walls, to reflect heat back into the room. Attach a shelf above radiators to do the same and to prevent hot air rising (all from Quaker resource)

NOTE:

More information about specific insulation materials: <https://www.renewableenergyhub.co.uk/insulation-information/types-of-insulation.html>

Eco-church: <https://3ak4be4522es3y5i4l2cwfkx-wpengine.netdna-ssl.com/wp-content/uploads/2016/01/Buildings-Guide-to-Insulation.pdf>

Generating your own energy (wind turbines, solar panels, solar hot water, heat pump, solar PV panels)

Both electricity and heat can be supplied from renewable sources. Those most likely to be useful for synagogues are:

- Photovoltaic (PV or solar) cells: these can be mounted on your roof to generate electricity. With the feed-in tariff they can be a good investment for a meeting. This scheme does raise some complicated ethical issues, however, in terms of how elements are mined.
- There are a number of companies that now offer to install PV cells for free. The Energy Saving Trust has a comprehensive list of questions to think about if a company approaches you.
- Wood-fuelled boiler: this could be a good heating option for a rural meeting with local wood available, particularly if there is no mains gas.
- Energy sources less likely to suit the needs of most meetings are: ~ wind turbines ~ air source heat pumps ~ ground source heat pumps ~ solar panels for heating water
- Details of all of these sources are available on the Energy Saving Trust website. ([source: Quaker resource](#))

NOTE:

More on how to generate your own energy: <http://www.energysavingtrust.org.uk/renewable-energy>

<http://www.energysavingtrust.org.uk/renewable-energy/electricity/solar-panels>