

## **Energy retrofitting community buildings**

Links and resources to support energy audits and their implementation

### **CARRYING OUT AN ENERGY AUDIT**

Carrying out an audit is the essential first step, both to identify priorities for expenditure and as a checklist when maintenance is carried out in the future. For example, underfloor insulation may not be cost-effective on its own, but can be included when repairs to the floor are required.

It is always worth checking whether the building has already had an energy audit. Even if this was done several years previously, it will still act as a good starting point for review. All building documentation, including the audit, should be kept together so they can be easily found in future.

#### **1. DIY audits**

If you have committee members or others with technical or DIY skills, then you may be able to carry out a basic energy audit yourselves. The [Centre for Sustainable Energy](#) and [National Energy Action](#) both provide formats, comprehensive advice and resources to help. Professional advice may be needed subsequently on particular problem areas.

#### **2. Professional audits**

[ACRE](#) (Action for Communities in Rural England) provides a national [Village Halls Information Service](#), including a network of [Village Halls Advisers](#). Their services are open to all community buildings, not just village halls. In some cases, the advisers themselves may be able to provide an audit, but they will always be able to put you in touch with other halls who have had one done and may be able to recommend an auditor. They can also provide advice leaflets and other resources. It is also worth contacting your local energy advice charity, if there is one in your area.

The [Severn Wye Energy Agency](#) provides a compromise solution. Hall owners can fill in a DIY audit and send it with bills, plans and other information for professional analysis, including follow up support.

You can employ a commercial auditor with government backed [Green Deal](#) accreditation, without needing to progress to the full Green Deal loan and implementation. However, this is a standardised process and may not reflect the priorities of older buildings.

#### **3. Calculating savings**

It is hard to give accurate forecasts of how long investment in energy efficiency will take to pay back in cost savings, since this depends so much on the individual situation. However, as part of their [DIY energy audit](#), the Centre for Sustainable Energy provides an indication of savings and payback for each area of improvement followed by a handy calculator to work out overall savings (p. 7-10). The calculator concentrates on carbon savings but could be easily adapted to show financial savings too. The [Energy Saving Trust](#) also provides information about different technologies and possible cost-savings. While these are intended mainly for domestic properties, much of it is relevant to smaller community buildings.

## IMPLEMENTING AUDIT RECOMMENDATIONS

### 4. Energy Efficiency

Much of the domestic energy advice available, from sources such as the [Energy Saving Trust](#) and local energy organisations, is relevant for smaller community buildings. Resources from the [Carbon Trust](#) may be relevant for larger buildings. As with audits, the [ACRE](#) Village Hall Adviser network is also a good starting point. The SEACS energy advice leaflets produced by the Centre for Sustainable Energy cover many aspects of sustainable energy and are available [online](#).

The following information points cover some of the commonest issues encountered in the audits, and provided as part of the audit reports.

- **[Boiler efficiency database](#)**: The majority of boilers, old and new, are listed with their fuel efficiency. New gas condensing boilers are typically around 90% efficient.
- **Boiler optimisers**: These are also known as 'optimum start controllers', and allow a boiler to learn how long a building takes to heat up to the desired temperature. It uses internal and external temperatures to gauge how long and how much heating is required. See the Carbon Trust factsheets on [optimum start control](#) and [low temperature boilers](#).
- **Draughtproofing sash windows**: It is not easy to find the specialist materials needed to draughtproof sash windows in the main DIY stores. Q-Lon seals, produced by Schlegel, a multi-national company, seem to be the most available option. Online you can find them at [Stormflame](#).
- **Fluorescent tubes**: Older tubes (T12s) should be replaced with the smaller T8s or T5s. You can usually see the tube size stamped on the side of the tube with other manufacturer's information. If you can't find it, the number refers to the diameter of the tube, confusingly measured in eighths of an inch. T12s are 1.5 inches diameter, T8s 1 inch and T5s 5/8ths of an inch.
- **Remote control of heating systems**: These allow the user to remotely control their boiler (temperature, timing, etc) from a computer or smart phone elsewhere, so long as the hall has internet access. This is a fairly new concept, and there are currently two products on the market. One is produced by [British Gas](#) and the other by [Passivsystems](#).
- **Secondary Glazing**: Where double or triple glazing is not an option due to either cost or aesthetic/consent reasons, internal secondary glazing can significantly reduce heat lost through windows. Styles of secondary glazing vary from the cheap DIY fixes to bespoke systems which retain full use of the original window. The use of 3mm perspex secondary glazing is a popular and cost-effective option, which is also easy to install. [Magneglaze](#) is the market leader and provides sheets cut to size and ready to install. Their website provides useful information and videos about the system, maintenance and measurement. However, a cheaper option is to buy the sheets (cut to size) and fixing tapes in DIY stores and online: this is still a simple DIY task. See the [SEACS leaflet](#) on secondary glazing for an overview.

## **5. Renewable Energy**

The government Feed in Tariff which guarantees fixed payback levels for renewable energy technologies over a 25 year period means that investment in PV or other renewable technologies for a community building is an attractive and relatively secure investment. The Centre for Sustainable Energy provides a useful overview of renewable energy through their [PlanLocal](#) initiative.

There are a growing number of local Community Energy social enterprises (eg [Bath and West Community Energy](#)), who can advise and help raise funding, as well as similar national and regional initiatives (eg [Communities for Renewables](#)).

The [Rural Community Energy Fund](#) provides up to £150,000, part grant and part loan, for renewable energy feasibility and pre-planning costs. The website also provides a useful Q and A section, covering where to get further advice on setting up a community enterprise, for example. A similar Urban Community Energy Fund will be launched shortly.