

10. BUILDINGS AND ENERGY

As a diocese we are concerned with church buildings and the cathedral, schools, vicarages, the diocesan office, parish offices, halls and the Bishop's Palace. There are a number of issues which relate to these.

- to what extent can sustainable building methods be used in repairs and new buildings?
- what are our sources of energy? Are they renewable?
- how can we reduce energy wastage through heat loss and the unnecessary running of lights and appliances?
- can our buildings be used for energy generation?
- what will alternatives cost?

Sustainable Building Systems

The traditional building systems that were used in our old buildings had a low environmental impact. Wood, stone and metal were re-used as much as possible. Heat and light (such as it was) came from renewable sources. Building repairs carried out with similar systems are relatively environmentally friendly.

New building systems using recycled and biodegradable materials are being rapidly developed. Within our area we have many examples of these and sources of advice.

Sources of Energy

It is now easy to buy electricity from renewable sources. However, many of our buildings already have heating systems which use fossil fuels. Condensing boilers, which are highly efficient, are becoming mandatory and can be fitted when replacements are necessary.

The use of combined heat and power (CHP) systems is at present unproven but within a few years could become a highly commendable system. These generate electricity while providing heat for a building thus eliminating the significant energy losses which occur in the electricity grid.

In many European countries where there are significant sources of wood the use of wood chip or wood pellet boilers is common. They are available here and the supply system for these is developing. They are not carbon neutral, as CO₂ is generated in transporting the wood, but they are very low.

Ground source heating requires either a large area or deep boreholes and the capital outlay is considerable.

There are systems in place to enable people to offset their fossil fuel consumption with compensatory tree planting schemes.

Energy Loss

Reducing drafts is relatively easy and cheap, and reduces heat loss considerably. However, buildings need ventilation. This can be done by leaving church doors open for an hour after a service and house windows open in the morning. In offices automated systems can be installed, giving a programmed system of ventilation.

Insulation can now be done using biodegradable materials. Houses can be brought up to passive house standard in which they require little or no heating.

Low energy light bulbs are very efficient.

Houses and offices could sometimes be cooler than they currently are.

Appliances not in use should be switched off.

Energy generation

Some of our vicarages, schools and halls and most of our churches are ideal sites for PV cells, as far as location and orientation is concerned. Some would also be good locations for small wind turbines. However there are issues of appearance and technical matters about installing cells on lead sheet roofs. Small wind turbines can be fitted on houses.

Solar panels can be effective in schools or other buildings with a social programme requiring daily hot water.

Glebe land could sometimes be used for locating wind generators or growing trees. In some places water turbines could be installed. It is planned to use the moat of the Bishop's Palace in this way.

Grants are available for renewable energy schemes and surplus energy can be sold. The availability of and criteria for grant aid needs to be continually monitored as it changes regularly.

Carbon Offset Schemes

These enable people to pay for woodland development sufficient to offset the carbon they have put into the atmosphere by the travel or energy generation. These need to be considered carefully. For example, there is an argument that trees planted in the wrong places can increase the warming of the earth.

Costs

Any of these measures cost money in the short term. However, the capital outlay of many energy reduction or generation schemes can be reduced by grant aid. Our buildings are also resources for the church's mission, of which caring for the earth is one aspect. A church which is willing to spend money on measures to reduce the environmental impact of its buildings is also setting an

example in a society which is often focussed on short term gain.

Money spent on an energy saving or generation scheme in a vicarage is also an investment which increases the value of the property.

The principal short term beneficiaries of any schemes in vicarages will be the resident clergy. Such improvements will, to some extent, offset the failure of the diocese to increase stipend levels to the extent it had intended and will protect the clergy against increasing energy costs. If the clergy pay for such work themselves there is at present no way they can receive any return when they move out of their vicarage.

RECOMMENDATIONS

We recommend the following action be taken:

I. Church Buildings

- The Diocesan Advisory Committee exists principally to advise the Chancellor on faculty applications, but it also offers advice to PCCs. Its priority is the mission and ministry of the church, not the maintenance of ancient monuments. Reducing our environmental impact is part of our mission and the DAC will consider any applications for work to this end. Its heating adviser is well informed in these matters. But the DAC is a responsive body. Ideas for development need to come from parishes. We encourage PCCs to think creatively about how they can reduce the impact of their building and submit applications to the DAC.

- An Environmental Advisor should be appointed to the DAC.

- In order to reduce their environmental impact PCCs should carry out an energy audit on their buildings. They might do this as part of the eco-congregation programme or might do it separately and compare their figures with the national benchmark for their kind and size of building. They should then work to improve their energy efficiency. This will include both reducing losses and schemes for energy generation.

- We encourage PCCs to seek advice from architects and specialist advisers in the relevant fields. The situation is changing fast and no one adviser can be expected to be up to date with all developments.

- We are aware of considerable interest in these issues and many commendable developments and ideas across the diocese. In addition to the work of the DAC and Diocesan Architects we recommend that an additional system be put in place for exchanging ideas and information about good practice.

2. The Diocesan Office

- An environmental audit should be carried out on The Old Deanery and the practices of the Diocesan Office and a budget prepared for improvements which should be submitted to and considered by the managing body.

- The Old Deanery should be switched immediately to an electricity supply from renewable sources. The aim should be for it to become carbon neutral.

3. The Bishop's Palace

- Consideration is being given to installing a heat transfer system in the moat to generate electricity, to putting a turbine into the moat by-pass, and to using a restored water wheel to raise water for allotments. We commend this work. The first two could be significant electrical generators from renewable sources.

- An environmental audit should be carried out on Palace building and the practices of the Bishop's Office, a budget prepared for improvements and the case should be put strongly to the relevant bodies that changes should be made accordingly.

4. School Buildings

- The Board of Education should work closely with the various Local Authorities, who have officers working on energy reduction and generation, to assist Governing Bodies to take steps to make their buildings increasingly environmentally friendly.

5. Vicarages

- The Diocesan Surveyor should continue to work to steadily improve all diocesan housing towards a passive house standard.

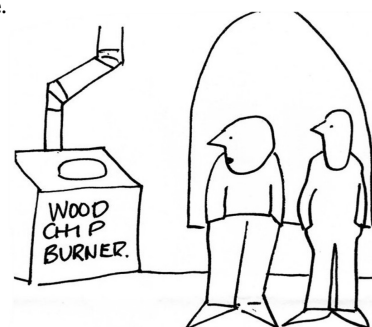
- New vicarages should be built to a high environmental standard.

6. The Cathedral

- The Cathedral Chapter should be encouraged and supported in their concern to reduce the environmental impact of the cathedral. The other churches of the diocese and the diocesan organisation should consider how they can help in that.

- The Cathedral is an important visitor and pilgrimage centre and its ministry impinges on the lives of very many people. Care for the earth needs to be a significant and visible feature of its witness through displays and events and its worship.

- The Cathedral Chapter should seriously consider being involved in and publicising a carbon offset scheme.



I ALWAYS THOUGHT THAT IN GETTING RID OF THE FEWS THEY HAD A HIDDEN AGENDA.