Good housekeeping in nursing and residential homes

- Why save energy
- Achieving comfort without waste
- Practical cost-effective steps to energy saving
- Finding further information

Photo courtesy of Quantum Care Ltd
INTRODUCTION

The arguments for energy efficiency are overwhelming. Comparison between annual fuel bills for different nursing and residential homes shows a range from approximately £288 per bedspace up to £500 per bedspace. There are likely to be many reasons for differences, for example the type of building or heating system, but management of energy use can make a significant difference.

Savings of 5–15% of fuel bills are possible by improving energy management and housekeeping.

The advantage of ‘good energy housekeeping’ is that it requires no capital expenditure. It can give immediate fuel bill and cost savings, and identify opportunities to make cost-effective investments which can further reduce energy costs.

This Guide is particularly designed to help managers of residential homes reduce their fuel bills by good day-to-day management. This will ensure the comfort of residents, while avoiding waste, and will ensure that fuel is used in the most efficient way to provide the necessary heating, lighting, washing, cooking etc.

Although a manager may implement most of the suggestions in this Guide, there are also recommendations for involving other staff and, where appropriate, the residents themselves.

WHAT IS GOOD HOUSEKEEPING?

Energy is used in most activities in a home: for heating, lighting, ventilation, washing, cooking, cleaning and entertainments. Good housekeeping ensures that this energy is used as efficiently as possible to provide a comfortable internal environment at least cost.

Two initial steps which demonstrate what can be done and how worthwhile it will be are to:

- check annual fuel bills against a standard (see Energy Consumption Guide No. 57 for Care Homes)
- carry out a survey of the home to see where energy use could be reduced (see nos. 1, 2 and 3 on page 3).

Analysis shows that spending up to half a day every month on good housekeeping is worthwhile if savings of 10% on fuel bills can be achieved and maintained.

In addition to the two steps above there are a number of other actions that can be taken, some of which are detailed on the following pages.

- List good housekeeping improvements needed.
- Instigate an Energy Saving Campaign (see no. 4).
- Make necessary adjustments to timeclocks, thermostats etc (see no. 1).
- Consider energy use when purchasing new equipment (see no. 6).
- Decide on an acceptable budget for additional energy saving measures (this can be based on estimated fuel bill savings giving, for example, a payback on investment of up to five years).
- Monitor fuel use every month (see no. 5).
- Carry out regular building energy checks (see the energy checklist on page 5).

GOOD HOUSEKEEPING IN NURSING AND RESIDENTIAL HOMES

GOOD HOUSEKEEPING

HEATING AND HOT WATER GENERATION
Heating should be provided only when required and to a set temperature. Timers and thermostat settings are changed for a variety of reasons and are often mis-set.

- Check that controls, timers, room and hot water thermostats and thermostatic radiator valves, are correctly set.
- Typically room temperature thermostats should be set at 21°C in all rooms for elderly people and 18°C in corridors and hallways, although feedback from the residents is important.
- Provide markers on all thermostats showing the 'correct settings'.
- Where night temperatures are set lower than daytime temperatures (a night setback of 18°C is recommended), check that the system is operating correctly.
- Set hot water storage thermostats to the lowest usable temperatures (60°C-65°C to eliminate the risk of Legionella). Hot water should be delivered below 43°C at the taps to avoid scalding.
- Adjust timeclocks for summertime and wintertime, and to allow the right warm up periods for colder or warmer weather.

GENERAL MAINTENANCE SURVEY
A walk round survey can highlight areas where energy is being wasted.

- Supplementary electric heaters (fan, radiant or convector) will usually be an expensive method of heating (over 7p/hour per kilowatt of heat) and may indicate a problem with the main heating system.
- Draughts around doors or windows, due to a poor fit or the absence of draughtstripping, account for 10-15% of heat loss as well as causing discomfort.
- External door closers keeping doors properly closed will prevent energy being wasted.
- A dripping tap wastes both energy and water – about one bathful a day.
- Damaged or misplaced cylinder insulation or pipe lagging will mean heat is lost 24 hours a day.
- Lights are often left on in cupboards or store rooms for long periods of time, unless frame mounted door switches are installed.

- Turn off equipment when not in use and do not leave television sets on standby overnight. Items identified by the survey should be carried out as simple maintenance work or as low cost improvements (see page 6). Supplementary electric heaters are best kept in a cupboard for use only when really necessary.

EQUIPMENT USE SURVEY
Clothes washers, dishwashers, tumble dryers and electric cookers, freezers, and, to a lesser extent refrigerators and gas cookers use a substantial amount of energy. Consider the following.

- Clothes washers and dishwashers should be full whenever possible and use hot water from the central heating system, rather than the electric heater in the machine. Wash temperatures should be set as low as possible, and where possible choose a low temperature detergent.
- Tumble dryers may use a large amount of energy; ensure that timers are used to minimise running times.
- Explore the possibility of running equipment when tariffs are cheaper.
- Microwave ovens are an efficient way to cook and heat up food.
- Check temperature settings on fridges and freezers; mark and set at the temperatures consistent with food preservation. Make sure they are not located next to cookers.
AN ENERGY SAVING CAMPAIGN

Major energy savings can be made if both staff and residents (where appropriate) can become part of an energy efficiency campaign. A simple campaign might include the following:

- Hold an initial meeting and discussion with staff and where appropriate with residents, explaining the reasons for the campaign (comfort without waste, running the home efficiently, helping the environment).
- Motivate staff by, for example, offering a prize for the best suggestion for energy saving in the home.
- Ask staff to turn off unnecessary lights; not to adjust thermostats; to close doors and windows whenever possible; to minimise the use of hot water by using plugs in basins, and showers instead of baths (where appropriate); and to avoid the use of electric heaters.
- Put reminder stickers on light switches and windows in communal areas which are left on or open regularly – see back page.
- Allocate specific tasks to appropriate members of the staff, e.g., caretakers reading meters monthly or checking thermostats and timers weekly.
- Have regular update meetings to encourage the continuation of the campaign and demonstrate the fuel savings achieved.
- Use a notice board to display the change in monthly figures of gas, electricity and oil costs, with a comment on weather or other relevant factors.

REGULAR METER READING AND FEEDBACK

Regular reading of electricity and gas meters (and oil use) will show the effects of energy saving actions. Monthly readings are suggested with the monthly energy use shown on a graph. Comments on the weather, e.g., if it is colder or hotter than normal, should be added. More accurate results can be obtained if required, using degree day data described in the Practical Energy Saving Guide for Smaller Businesses (see back page). Comparison with the previous month and the previous year will indicate:

- the effects of the energy saving activities
- any serious problems occurring with the boiler e.g., a mis-set thermostat or timer
- a deterioration in the good housekeeping programme.

EQUIPMENT REPLACEMENT

When electrical equipment is being replaced, it is usually possible to choose a more energy efficient model, so that all the equipment in a home will eventually become efficient. Consider the following measures:

- Compact fluorescent bulbs can replace tungsten filament bulbs (they use one fifth of the energy).
- Chest freezers, or freezers with drawers use less energy.
- Tumble driers which are heated by gas are cheaper to run. Some models have heat recovery systems.
- The energy consumption of clothes and dishwashers, freezers and refrigerators varies considerably, though consumption may be difficult to ascertain. Look out for energy rating comparisons.

Where other items have to be replaced there may also be the opportunity to improve energy efficiency.

- Modern boilers, particularly balanced flue models, are much more efficient than most older models and, furthermore, condensing boilers (gas or oil) are likely to reduce fuel bills by at least 20% (this should give a good payback on the extra cost).
- Rotten windows can be replaced by double glazed units, or broken panes may be replaceable by double glazing.
- Gas cookers use less energy than electric cookers.
- Hot water cylinders should be replaced by factory insulated ones.
The following checklist can be used to form part of a regular monthly check on energy housekeeping in a residential home, and could be followed up with a report on its results to staff in the home.

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**Room thermostats set to correct temperature?**

**Timers set correctly?**

**Thermostatic radiator controls set correctly?**

**Hot water thermostats set correctly?**

**Does any draughtstripping need replacing?**

**Do all windows and doors close properly?**

**Are there any dripping taps and showers?**

**Are supplementary electric heaters used unnecessarily?**

**Kitchen and laundry equipment working correctly?**

**Does any pipe lagging or hot water cylinder insulation need repair/replacing?**

**Spot check**

**Are any lights left on unnecessarily?**

**Are any windows left open when the heating is on?**

**Is kitchen and laundry equipment being used efficiently?**

**Meter readings**

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OTHER IMPROVEMENTS AND FURTHER INFORMATION

LOW COST IMPROVEMENTS
(a payback of about 2 years)

The following energy efficiency measures are low cost and could be seen as maintenance items, or part of an ongoing programme (possibly funded by fuel bill savings):
- installing draughtstripping
- fitting push button light switches in cupboards and store rooms
- replacing conventional bulbs with compact fluorescent bulbs or fluorescent strip lighting
- installing thermostatic radiator valves
- improving pipe insulation, and fitting an extra cylinder insulation jacket.

For further opportunities to invest in energy efficiency, see other publications in this series.

FURTHER INFORMATION

The following publications can be obtained from the BRECSU Enquiries Bureau – contact details below.

Energy Consumption Guide

Good Practice Guides
139 Draughtstripping of existing doors and windows, London, DOE, 1996
155 Energy efficient refurbishment of existing housing, London, DOE, 1995


Free Energy Efficiency posters and stickers are available from Department of the Environment, Blackhorse Road, London SE99 6TT

The Government’s Energy Efficiency Best Practice programme provides impartial, authoritative information on energy efficiency techniques and technologies in industry and buildings. This information is disseminated through publications, videos and software, together with seminars, workshops and other events. Publications within the Best Practice programme are shown opposite.

Visit the website at www.energy-efficiency.gov.uk
Call the Environment and Energy Helpline on 0800 585794

For further specific information on:
Buildings-related projects contact:
BRECSU
BRE
Garston, Watford WD25 9XX
Tel 01923 664258
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Industrial projects contact:
Energy Efficiency Enquiries Bureau
ETSU
Harwell, Oxfordshire
OX11 0RA
Tel 01235 436747
Fax 01235 433066
E-mail etsuenq@aeat.co.uk

Energy Consumption Guides: compare energy use in specific processes, operations, plant and building types.

Good Practice: promotes proven energy-efficient techniques through Guides and Case Studies.

New Practice: monitors first commercial applications of new energy efficiency measures.

Future Practice: reports on joint R&D ventures into new energy efficiency measures.

General Information: describes concepts and approaches yet to be fully established as good practice.

Fuel Efficiency Booklets: give detailed information on specific technologies and techniques.

Introduction to Energy Efficiency: helps new energy managers understand the use and costs of heating, lighting, etc.

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