

Below are the observations of a checked organisation's heating system.

3.3 Heating System



The centre uses industrial gas blowers, which are high heat and gas efficient. However, radiators will remain in the office.

- The heating system was replaced last year.
- The boiler is serviced twice a year.
- Thermostats and timers control the system, and the caretaker controls them.
- They are set to come on 2 hours before an event, to a temperature of 20 °C.



There is double-glazing in the new refurbishment of the prayer room and there are plans to replace the rest.

- There is draught and smoke proofing around the doors and windows.
- Some of the hot water pipes are lagged, but the building is not insulated.
- There is no air conditioning.

SCORE: 2

Next are the recommendations as they would appear in the unaltered report template/framework. Go through these, altering them to suit the above observations.

Recommendations

FACT: heating and hot water can account for up to 60% of a building's energy costs.

The Carbon Trust

Low cost

Continue and maintain the good practice of

To keep the heat in and make the most of it, do the following:

- Ensure no furniture has become an obstruction to the radiators, check on a regular basis and remind staff and users.
- Make sure curtains are thermally lined to reduce draughts.
- Fit draught stripping to all external doors and lobby doors and a self-closer to the main door.
- Fit draught seals to windows where opening is required. Remember if you can fit a 1p between the window and the frame you would benefit from draught excluding.
- Fill gaps under skirting boards and between floorboards with newspaper, papier-mâché or mastic sealant.

- o If cleaners tend to open the windows, switch off the heating when they are working.

Use basic (cheap) room thermometers to check on temperatures in rooms and adjust if necessary to those specified in table 3.3.1.

Table 3.3.1: Temperature Checklist

Type of Room	Air Temperature
Main Rooms	18 °C
Secretarial, admin room	18 °C
Corridors	15-18 °C
Toilet Areas & Cloakrooms	15 °C

Use basic (cheap) room thermometers to check on temperatures in classrooms and adjust if necessary to those specified in table 3.3.2.

Table 3.3.2: Temperature Checklist

Type of Room	Air Temperature
Classrooms & Dinning areas	18 °C
Assembly/Sports Halls	14 - 18 °C
Changing Rooms/Showers	18 - 21 °C
Medical Room	21 °C
Secretarial, Admin & Staff rooms	18 °C
Corridors	15 - 18 °C
Toilet Areas & Cloakrooms	15 °C

Managing bookings

(MAKE sure the

organisation actually has bookings!)

- o Reduce the number of days when heat is switched on. A building which heats the premises on Tuesday for a coffee morning, on Wednesday for an afternoon playgroup and on Thursday for an evening meeting is likely to use more heat than a building that combines the three bookings into one day.
- o Arrange bookings to maximise use of residual heat. A building which heats a hall for a sedentary afternoon activity might find that there is sufficient residual heat remaining to provide background heat for a later booking involving physical activity, such as an evening badminton club, without actually needing to extend the heating period.
- o Try and turn the heating off 15-30 minutes before a group leaves the building.



FACT: 75% of heat from radiators is lost through the walls

Ordinary aluminium foil can be used to reflect heat off the foil and back into the room, try these inexpensive ideas:

- o Put ordinary kitchen foil behind any radiators fitted to outside walls, you can buy specially designed panels from DIY stores. The heat will reflect back into the room.

- o Place reflective foil in the artificial ceilings on the back of the panels to help stop heat escaping through them.
- o Fit wooden shelves with aluminium foil fitted to the underside 15cm above radiators to prevent heat being lost to the ceiling.

Heating controls are able to react to changes in temperature, provide different levels of temperature in different rooms and let you switch your heating and hot water on and off when you want it. Consider the following types of controls:

- o Thermostatic radiator valves (TRVs) – stop you heating rooms that you are not using. TRVs enable you to control the temperature of each room separately and reduce your heating bills.
- o Time switch or programmer – will turn your heating and hot water on and off automatically at the times you set – saving you energy and money.
- o Room thermostat – this automatically switches your heating off once it reaches your chosen temperature.
- o Hot water cylinder thermostat – you do not need to have your water heated to a scalding temperature. Set the thermostat to 60°C/140°F, scalding water can burn as well as lose heat faster than warm water. Ensure that the hot water system has a time clock; two hours per day will provide sufficient hot water.

Ensure regular maintenance of the boiler continues, this can save 5-10% of your annual running costs.

To get the most from **electric storage heating** you should make full use of the controls:

Early and late in the heating season turn down the INPUT or CHARGE control on the storage heater. This reduces the amount of electricity taken in by the heater at night.

Use the OUTPUT or BOOST control to adjust the daily heat output to suit your individual living patterns. The low setting slows down the release of the stored heat; the high setting allows the stored heat out earlier in the day. For example, if the house is generally unoccupied during the day set this control to the lowest setting when retiring at night and move it up to the high setting when you come home in the evenings.

A fan-assisted combination storage heater has a very high level of insulation to retain the stored heat longer. The fan extracts this heat quickly whenever higher room temperatures are needed.

Operating the controls on your electric heaters will make your system more energy-efficient and will keep heating costs to a minimum.

To dispose of a small residue of central heating oil contact a sludge company such as **CarCare**.

For large quantities of central heating oil, contact the **Oil Care Help Line** (for commercial and domestic disposal).

The Clear Skies Initiative is organised by the Dep. of Trade and Industry and it is offering Grants for organisations that take the initiative in developing and installing their own renewable energy schemes. The scheme also covers training and accrediting installers. **Prizes/Awards:** Grants up to £100,000 for community organisations.



Medium Cost

When purchasing fridges, freezers, washing machines, tumble dryers, dishwashers, electrical ovens and light bulbs check out the EU Energy Label, and try to purchase the most energy efficient.

Improving loft and cavity wall insulation is the single most cost effective measure you can take to save money, consider the following:

- o Get loft insulation, if you already have you can still top it up to a depth of at least 250mm.
- o If you have cavity walls get them insulated, contact **Cavity Insulation Guarantee Agency (CIGA)** about installation.
- o Remember to make sure all your pipes and hot water tanks are lagged.

Design Advice at the Building Research Establishment (BRE) co-ordinate an Environmental Consultation scheme. Through this scheme a consultation is arranged through a local/regional accredited environmental consultant who subsequently provides a comprehensive report detailing prioritised recommendations for actions. In some instances the costs of the consultation may be refunded in full by BRE. The refund is usually given to building considering new building or redevelopment/refurbishment and is partly dependent on the size of premises.

High Cost

Solar water heating can be used to reduce the need for gas or electricity.

Solar Energy Using Solar Energy is increasingly an economic as well as 'green' energy source. Grants are currently available for domestic as well as business use.

Useful Websites:

www.sedbuk.com/ compares the energy efficiency of your boiler with the index, - SEDBUK¹ developed under the Government's Energy Efficiency Best Practice Programme with the co-operation of boiler manufacturers, and provides a basis for fair comparison of the energy performance of different boilers.

Interested in solar power check out www.solarcentury.co.uk or www.ecoheat.co.uk

www.clear-skies.org – check out for grants for installing renewable energy schemes.

Additional Information

As previously mentioned the report also contains a title page, introduction and a contents page. These have been included to show you how they are set up, and the contents page illustrates more details on the structure of the report.

Now that you have completed that exercise, have a look at the suggested recommendations below and see how these compare to what you have done.

Recommendations

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 - Fit draught seals to windows where opening is required. Remember if you can fit a 1p between the window and the frame you would benefit from draught excluding.
 - Fill gaps under skirting boards and between floorboards with newspaper, papier-mâché or mastic sealant.
 - If cleaners tend to open the windows, switch off the heating when they are working.
- You don't need to have your water heated to a scalding temperature, for most people setting the thermostat to 60°C/140°F is quite adequate. Scalding water can burn as well as lose heat faster than warm water. Adjust the thermostat on the tank or consider having one fitted.
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