Protect our environment – save energy

A guide to managing energy in hotels

BEST PRACTICE PROGRAMME
Energy Efficiency
DEPARTMENT OF THE ENVIRONMENT

SAVE

INTERNATIONAL HOTELS ENVIRONMENT INITIATIVE

Published by BRECSU on behalf of the United Kingdom Department of the Environment (DOE) and the SAVE Programme of DG XVII of the European Commission.

Introduction

This good practice guide outlines a range of practical tasks that should be undertaken by hotel management to gain control over energy use.

It contains information on:

- staff tasks and responsibilities
- energy efficiency campaigns
- energy house-tours.

Six wall-posters are supplied with the guide. These can be used to raise staff awareness of energy issues and to encourage good practice.

The guide will help you:

- motivate staff to save energy
- ensure equipment and services are used efficiently
- reduce energy waste
- cut your operating costs
- reduce the environmental impact of your hotel.

Cost benefits

An energy efficient hotel saves money.
Possible energy savings are:

5% through good housekeeping and careful management

10% by installing low-cost items like improved controls or energy efficient lighting

20% through capital investment in proven technology with short payback periods.

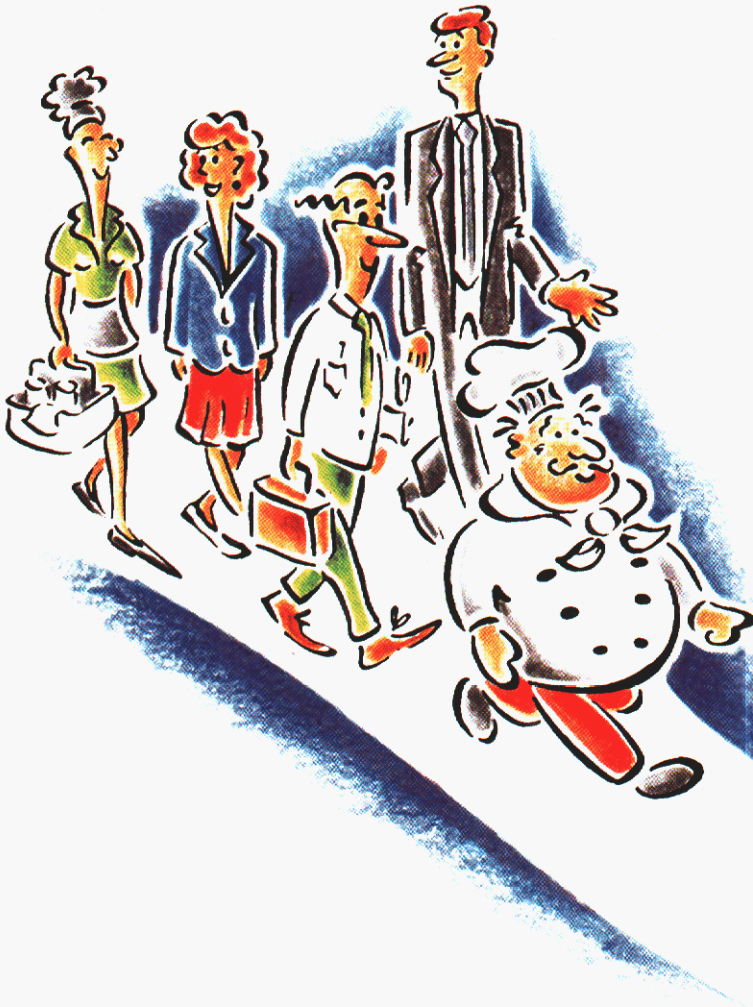
Other benefits

Guests benefit from well controlled and comfortable conditions that satisfy their needs and lead to repeat business.

The environment benefits because reduced energy use conserves natural resources and cuts emissions of harmful gases.

Burning fossil fuels - remotely at power stations to generate electricity or on-site in the boiler house to generate heat - releases gases into the atmosphere which have large environmental consequences:

- oxides of sulphur and nitrogen cause acid rain, which is responsible for polluting lakes, spoiling forests, affecting wildlife, and damaging the fabric of historic buildings
- carbon dioxide, a greenhouse gas, is believed to cause global warming, leading to increased risk of storms, coastal flooding, rainfall variations and droughts.



"Guiding your team to energy efficient practices will lower costs and reduce environmental impact . . .

Tasks and responsibilities

The role of the General Manager

- appoint an Energy Conservation Group (ECG) with delegated responsibilities and authority
- allow for any additional training which this group may need to carry out their duties effectively
- liaise with ECG to establish an energy policy, within the hotel's wider environmental policy
- set out and review targets for fuel consumption and costs in consultation with ECG
- monitor activities of ECG, assess progress and review requirements from time to time
- ensure energy costs are included within cost centre budgets
- ensure energy issues are included within staff training courses
- ensure energy and environmental requirements are included in contracts for the purchase of goods and services
- allocate appropriate budget resources for investment in energy efficiency measures

The role of the Energy Conservation Group

- establish present fuel consumption and costs, set consumption targets, monitor fuel consumption regularly, and ensure action is taken whenever excess consumption is detected
- carry out energy house-tours using the checklists at the back of the guide - prepare an action plan and inform the general manager of targets and target completion dates
- check tariffs with fuel suppliers to ensure fuel is purchased at minimum cost
- ensure independent operators on the hotel's premises are recharged for the fuel they use
- promote the hotel's environmental commitment in marketing and promotional literature
- consider whether the hotel could benefit from an independent and comprehensive energy audit
- ensure current equipment is used efficiently, and that it is maintained and serviced regularly
- review opportunities for improving energy efficiency, for example during refurbishment or alteration
- identify energy saving technologies appropriate to the hotel, and address their costs and benefits
- create and manage an energy fund, using any savings achieved for investment in energy efficiency
- refer proposals, policy suggestions etc to the general manager
- encourage guests to conserve finite resources and reduce environmental impact by switching off equipment and lights when they leave bedrooms

. . . comfort needn't c

Checklist for individual operating areas

	Area	1	2
	Date checked		
PLANT ROOM, fuel use, fuel costs, and controls			
Have tariffs been checked to ensure minimum cost of fuel purchased?			
Is fuel use checked regularly and compared with targets?			
Is accountability matched to responsibility through profit-centre operation?			
Are controls labelled to indicate their function and, if appropriate, their settings?			
Have responsibilities for control setting, review and adjustment been established?			
Is there a routine for checking control settings?			
Are optimum start/stop controls and weather compensation controls set correctly?			
Are boiler sequencing controls set correctly?			
Are time switches set to minimum periods consistent with requirements?			
Are temperature controls for cooling set to avoid cooling 'fighting' the heating?			
Are fans and pumps running only when they are required?			
Are hot water thermostat accuracy and temperature settings checked periodically?			
Is the temperature of stored water kept to a minimum, subject to safety?			
Are hot water storage tanks fully insulated and is the insulation in good condition?			
Is hot water pipework fully insulated and is the insulation in good condition?			
Have local hot water heaters been considered to avoid long pipe runs?			
Is the plant maintained in accordance with good industry practice?			
Are checks of combustion efficiency and flue gas temperatures conducted?			
KITCHENS			
Are kitchen staff informed of minimum heat-up times for cooking equipment?			
Are staff discouraged from using hobs or ovens for space heating?			
Do kitchen staff switch off equipment when it is not needed?			
Are taps turned off when not needed?			
Are dishwashers run on full load only?			
Are pans with the proper base size for hobs used?			
Are lids kept on pans whenever possible?			
When boiling, are hobs set to the minimum for simmering?			
Is the storage of cooked food minimised?			
To reheat relatively small quantities of food, are microwave ovens used?			
Are refrigerators and freezers placed away from sources of heat?			
Are doors to refrigerators and freezers opened for minimum periods only?			
Is food allowed to cool before being placed in refrigerators?			
Are the doors to walk-in freezer store rooms kept closed?			
Are kitchen ventilation fans set to operate only when cooking is taking place?			
Have current developments in efficient appliance design been reviewed?			
Are hot cupboards well insulated and fitted with thermostats?			
Have induction hobs been considered?			
Has low temperature dishwashing been considered?			
LAUNDRY			
Are operating hours adapted to linen requirements and the availability of steam?			
Is equipment being used only when fully loaded?			
Is there a timely flow of used linen to laundry - so equipment is not left idle?			
When the laundry is not operating, are steam and air supplies closed off?			
Are supply and exhaust fans switched off when laundry is not operating?			
Are there any leaks of water, steam and compressed air which require repair?			
Are there gaskets or ill-fitting doors that need to be repaired?			
Have low temperature detergents been considered?			
Are manufacturers' instructions on detergents and temperatures followed?			
Has tumbler operation been reviewed to prevent overdrying?			
Are driers loaded quickly to retain heat?			
Are production and cost figures kept and compared with industry norms?			
Have gas-powered driers been considered?			

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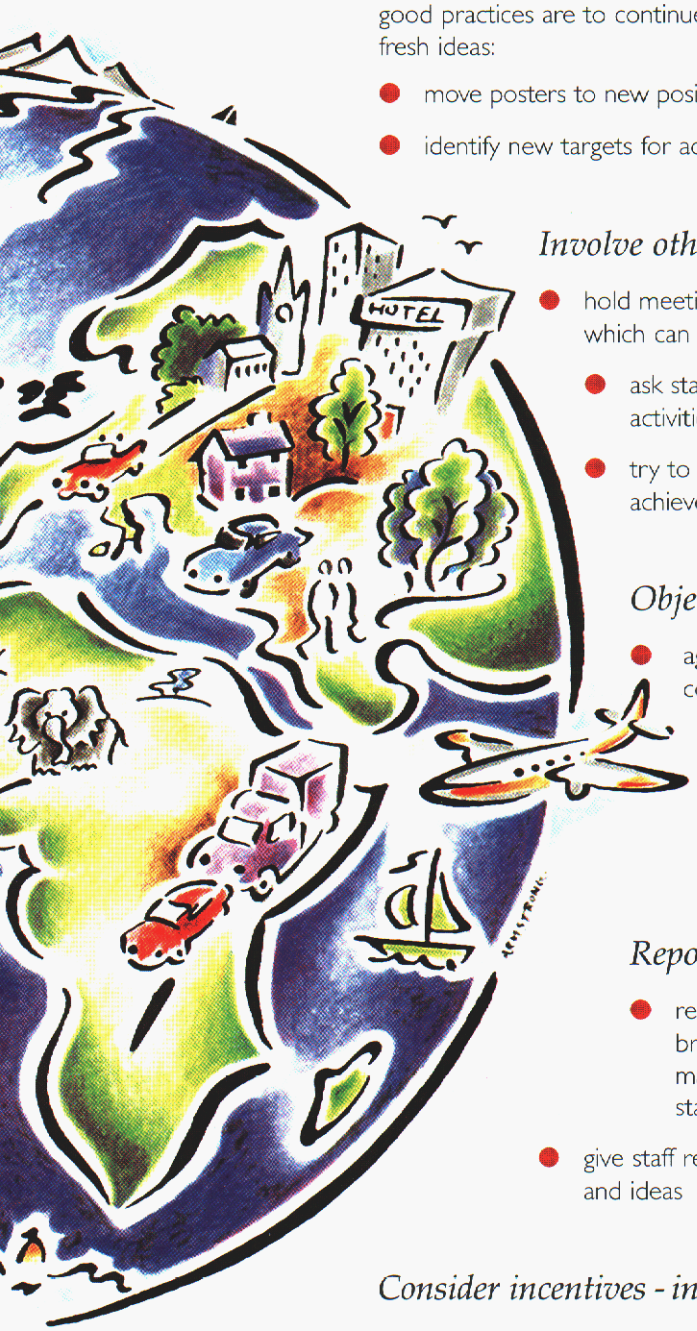
For industrial projects: Energy Efficiency Enquiries Bureau, ETSU, Harwell, Oxfordshire OX11 0RA. Tel 01235 436747. Telex 83135. Fax 01235 433066.

Guidelines for the Energy Conservation Group

Use posters, together with results of the energy house-tour, as the basis of an initial campaign to promote energy efficiency through good housekeeping practices.

Patterns of wasteful behaviour can become entrenched and staff need to be motivated frequently if good practices are to continue. Vary the elements of the campaign and initiate a regular flow of fresh ideas:

- move posters to new positions, and/or devise new ones
- identify new targets for action, while also ensuring the old ones are still being met



Involve others

- hold meetings to discuss the outcome of energy house-tours, and the lessons which can be learned from them
  - ask staff to help you identify what can be done to improve day-to-day activities in order to reduce waste
  - try to ensure departments collaborate so that comfort conditions are achieved only when rooms are in use

Objectives and actions

- agree objectives and performance measures in terms of costs, consumption or environmental pollution
  - identify clear and achievable actions, such as routines for checking lighting, heating and equipment at certain times of day
  - agree who will be responsible for carrying out these routines, and who will check they have been undertaken

Report success and give recognition

- report regularly on progress, and the achievements of the campaign; a brief quarterly report to the staff covering both global and local energy matters could be helpful in maintaining interest in the subject - use the staff newsletter if there is one
- give staff recognition for their achievements and acknowledge their suggestions and ideas

Consider incentives - individual or group

- incentives - whether financial or in kind - may be appropriate in some organisations
- group incentives, such as allowing a department to decide how a proportion of money saved should be spent, may be just as effective as individual rewards

Evaluate whether incentive schemes are appropriate and justify your conclusions to management. Remember, if all the savings are taken back, staff will be less motivated to save money.

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Invest in people - staff training

- ensure good housekeeping practices are included in training courses
- incorporate, where appropriate, suggestions made by staff for improved routines and procedures, together with information in the guide and posters, into staff training courses

Checklist for an energy house-tour

1 **Refer to this checklist and the one on the following page during the energy house-tour.**
2 **Write in the names of areas being assessed and record the dates when you check them.**
3 **Mark items needing attention with a cross. A tick indicates no action required.**
4 **Use the information as the basis of an action plan to introduce improvements.**

To ensure that standards are maintained use the checklist regularly.

A limited budget could be given directly to the ECG to encourage it to investigate and implement measures requiring capital expenditure.

Measures involving significant capital investment such as Building Energy Management Systems (BEMS), Combined Heat and Power (CHP) systems, building fabric insulation, condensing boilers, double glazing should also be considered.

Good housekeeping involving minimum or no cost
Measures involving limited capital expenditure

	Area	1	2	3	4	5	6
	Date checked						
Space heating system							
Is the space comfortable - neither too hot nor too cold?							
Are room thermostats and controls on minimum settings to provide comfort?							
Are windows and doors kept closed when the heating is on?							
Are radiators or heaters free of all obstructions?							
Is heating turned off in areas that are not in use?							
Hot water							
Is the water temperature from appliances limited to being hand hot?							
Are leaking or dripping taps, baths, showers or wcs reported and repaired quickly?							
Are low-flow fittings and flow restrictors used where possible?							
Lighting							
Are lights in the positions where they provide the most effective lighting?							
Are light switches labelled or colour coded adequately to encourage switching off?							
Are windows and rooflights clean to ensure the maximum amount of daylight?							
Do nets and curtains allow maximum use of daylight?							
In restaurants and bars, is the lighting turned off outside opening hours?							
Is the lighting switched off whenever it is not required (subject to safety)?							
Can the required lighting levels be met by fewer lamps?							
Are light fittings cleaned regularly to ensure maximum light output?							
Are shades and diffusers translucent or clear to increase light output from fittings?							
Do lamps have good reflectors to ensure maximum light output?							
Are light colours used to improve reflected light from walls and ceilings?							
Have 38 mm fluorescent tubes been replaced by 26 mm tubes?							
Have tungsten lamps been replaced by more efficient compact fluorescent lamps?							
Have automatic controls, such as timers and daylight sensors, been considered?							
Mechanical ventilation							
Do extract fans operate only during the periods of use?							
Air-conditioning systems							
Are heating and cooling operating simultaneously in the same part of the building?							
Does refrigeration plant operate only when outside temperatures justify it?							
Miscellaneous equipment							
Is equipment operated only when it is actually in use?							
Building fabric							
Is draughtstripping (in cold and temperate climates) in a state of good repair?							
Are self-closing mechanisms to external doors fully functional?							
Are roof voids insulated to reduce heat loss/gain?							
Swimming pool and leisure facilities							
Are supplies to sauna, steam room, or showers shut off when they are not in use?							
Is a cover used over heated swimming pools when they are not in use?							
Externally							
Is security lighting switched off during daylight hours?							
Does external lighting use high efficiency light sources?							

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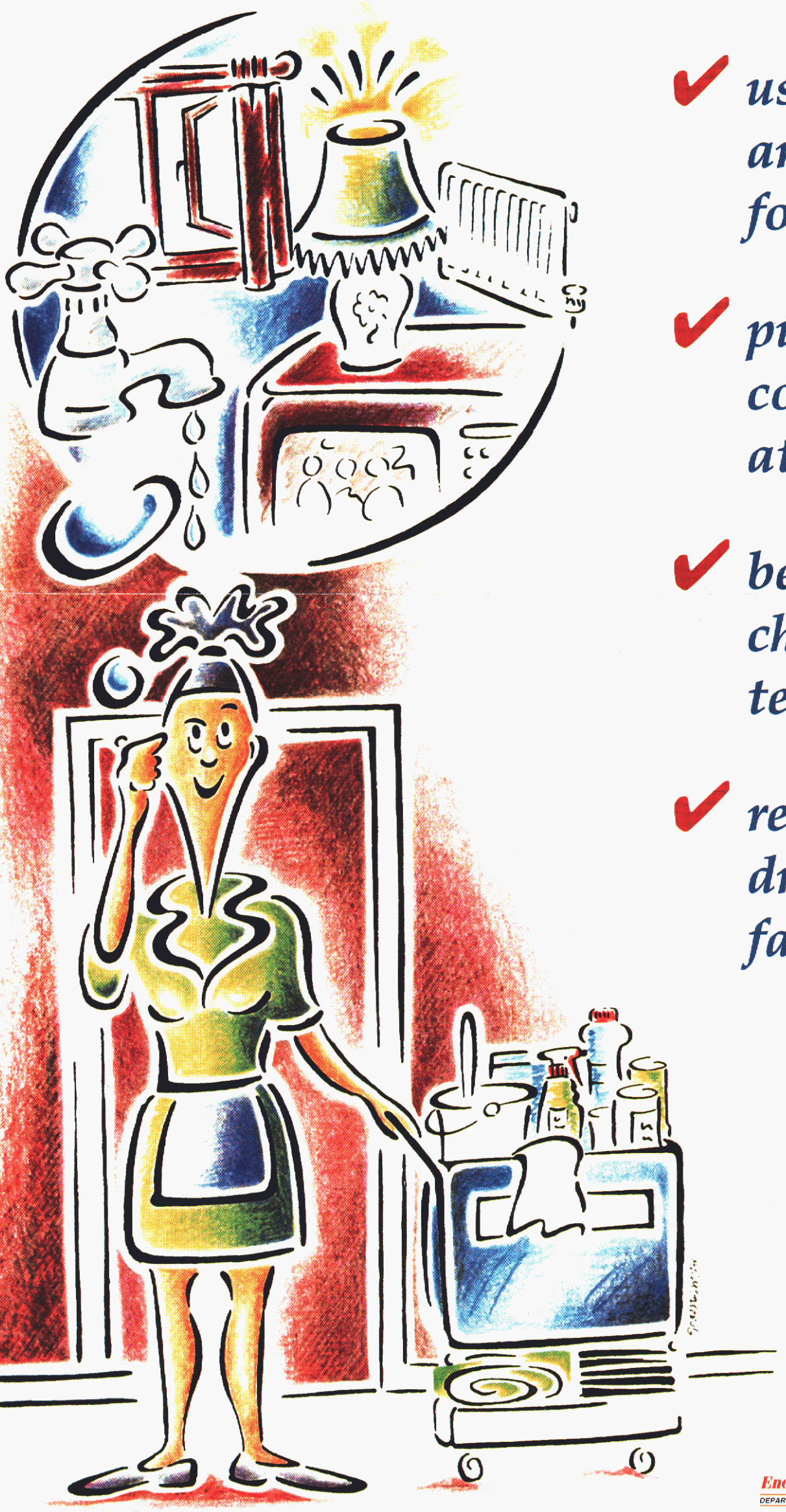

- ✔ *use the minimum amount of water for cleaning*
- ✔ *put heating and cooling controls at agreed settings*
- ✔ *before leaving, check lights and television are off*
- ✔ *report leaks, dripping taps, and faulty showers*

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- ✔ *switch equipment on only when you need it*
- ✔ *switch off when you no longer need it*
- ✔ *use the correct type and size of appliance for the task*

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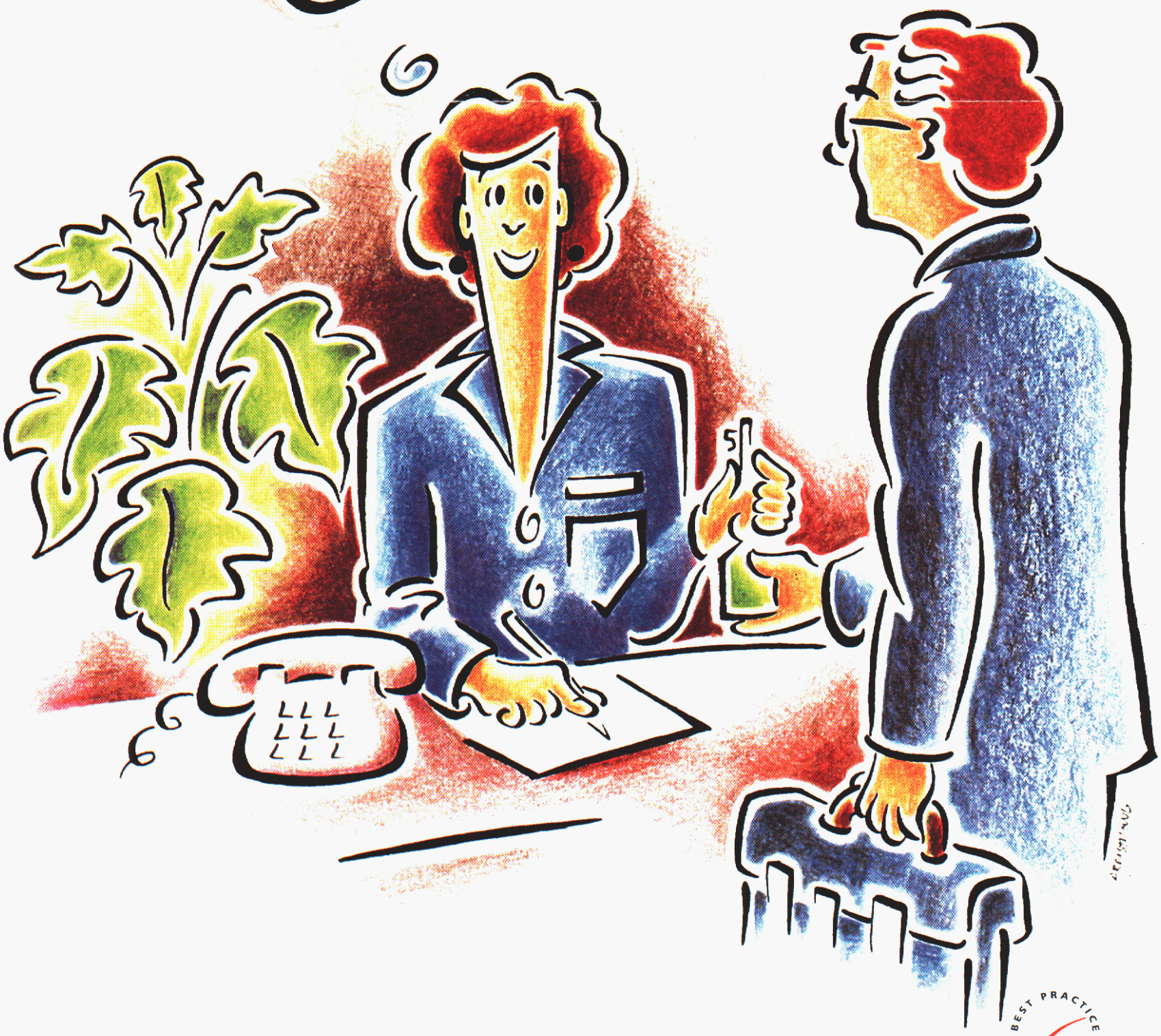
- ✔ *allocate rooms in accordance with an agreed programme*
- ✔ *report feedback from guests about comfort levels*



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✔ *switch on equipment only when it is required*

✔ *switch off equipment at the end of the day*

✔ *check temperatures and lower them if possible*

✔ *repair leaks, dripping taps and faulty showers*

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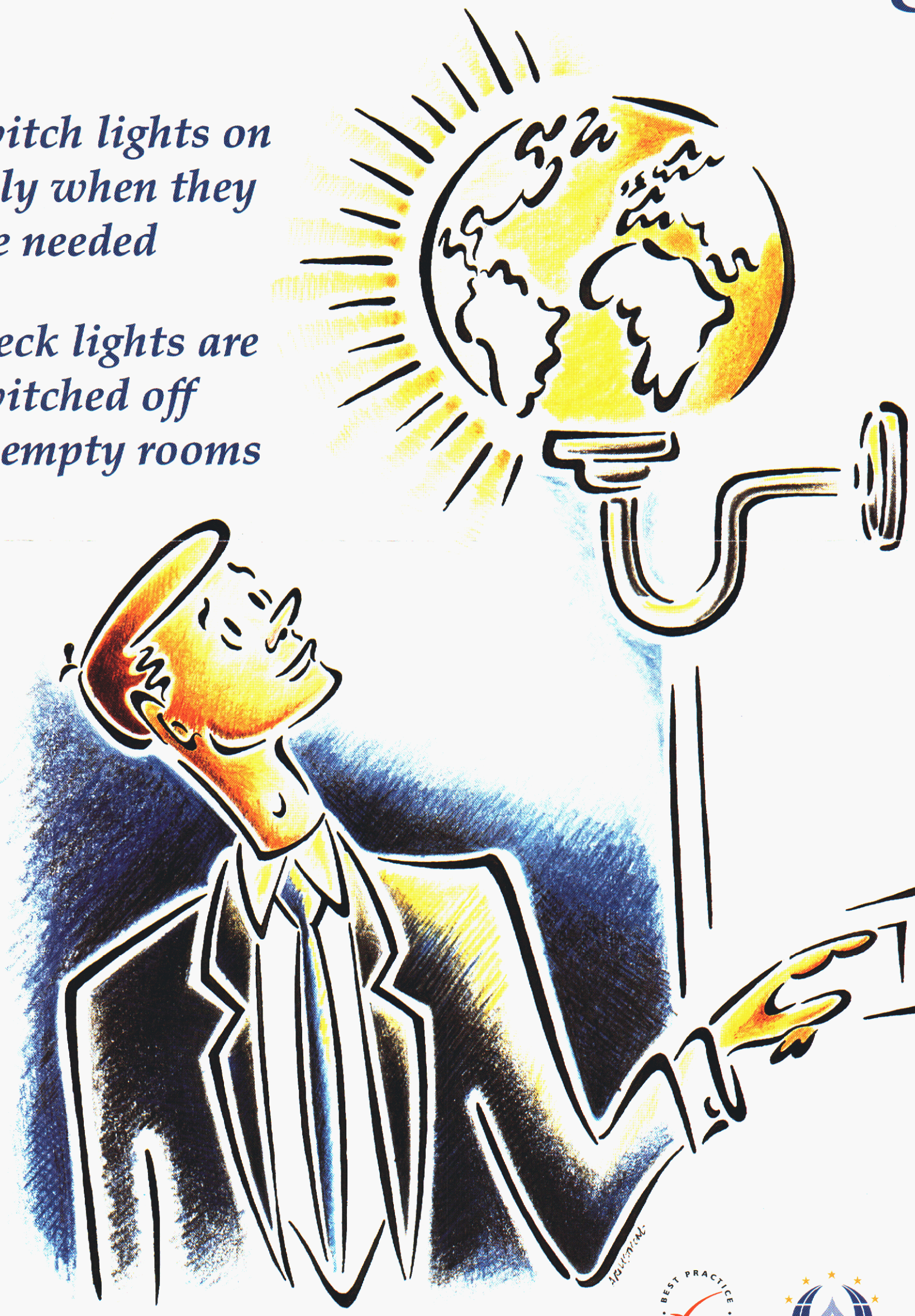
- ✔ *switch lights on only when they are needed*
- ✔ *check lights are switched off in empty rooms*



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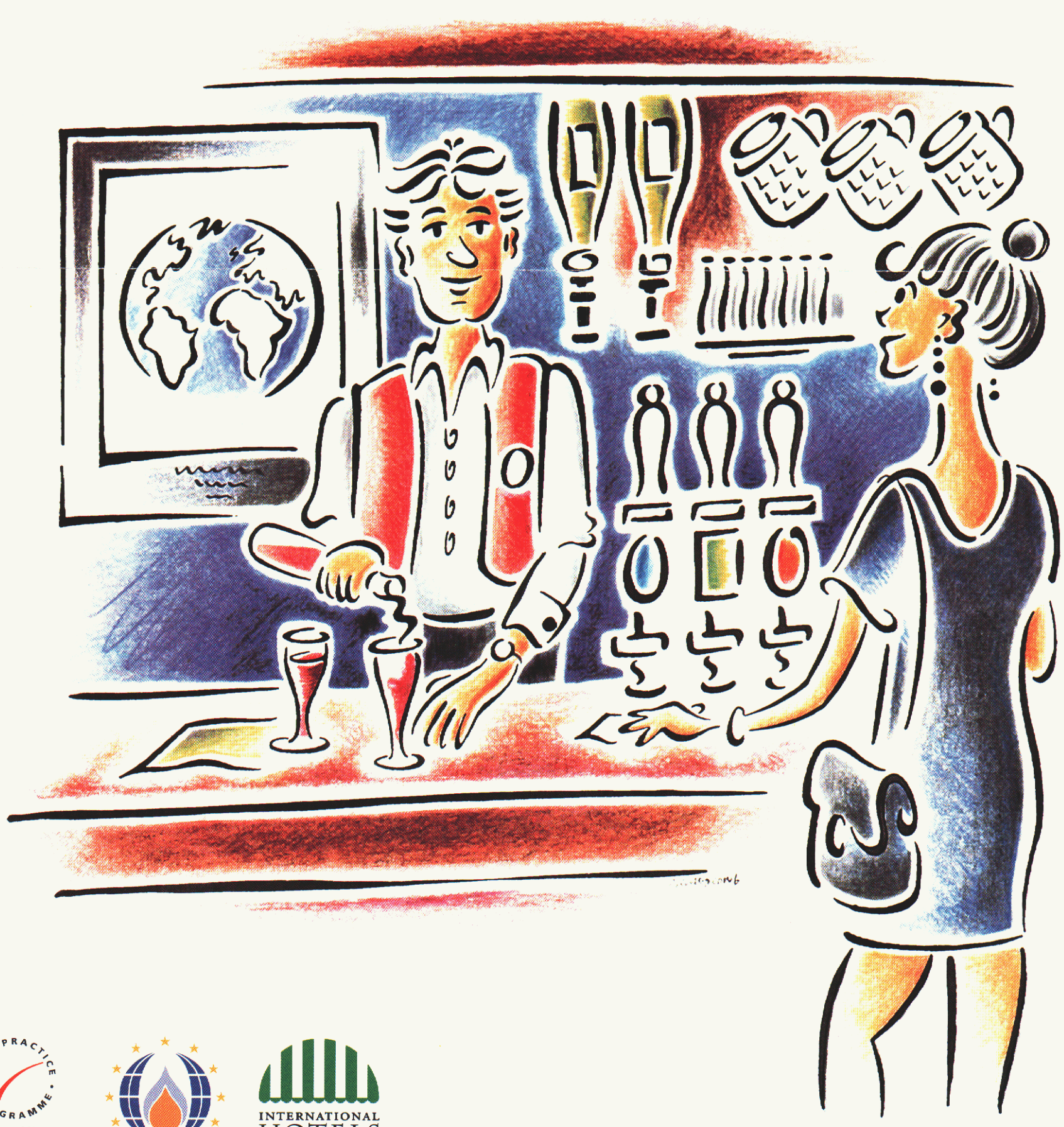

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