



Eco Design Advisor

Top Tips to Keep Your Home Warm, Healthy and Comfortable

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Free

Independent

Personalised

sustainable building advice



Nelson City Council

te kaunihera o whakatū

Heating



World Health Organisation (WHO) says to support healthy living, as a minimum:

- Inside temperature above 18°C
- Inside temperature above 20°C for very young, old or ill people
- Relative humidity less than 70%, ideally between 40% and 60%

We need to:

Keep our homes dry.

Keep our houses warm.

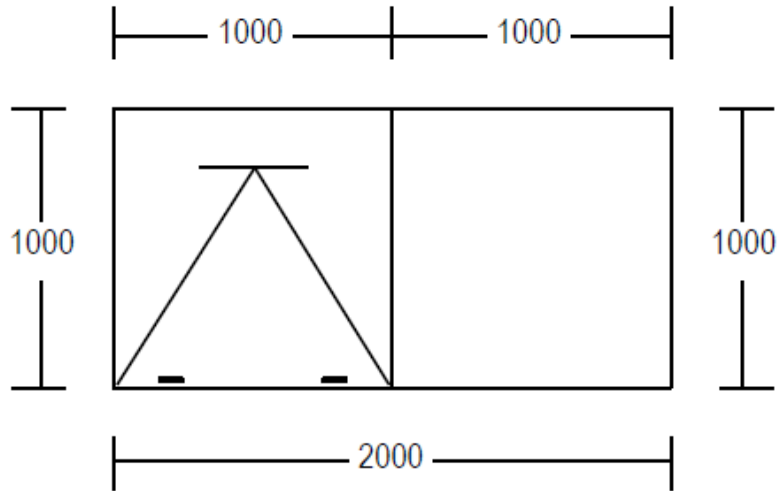
We need some ventilation to keep the air clean and fresh inside our homes.

Let the sun in

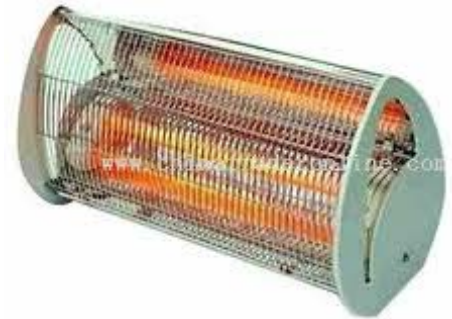


Open curtains and blinds during the day to let the sun in

Let the sun in



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2 m² of north-facing window can deliver as much energy as a 1 kW bar heater

Let the sun in

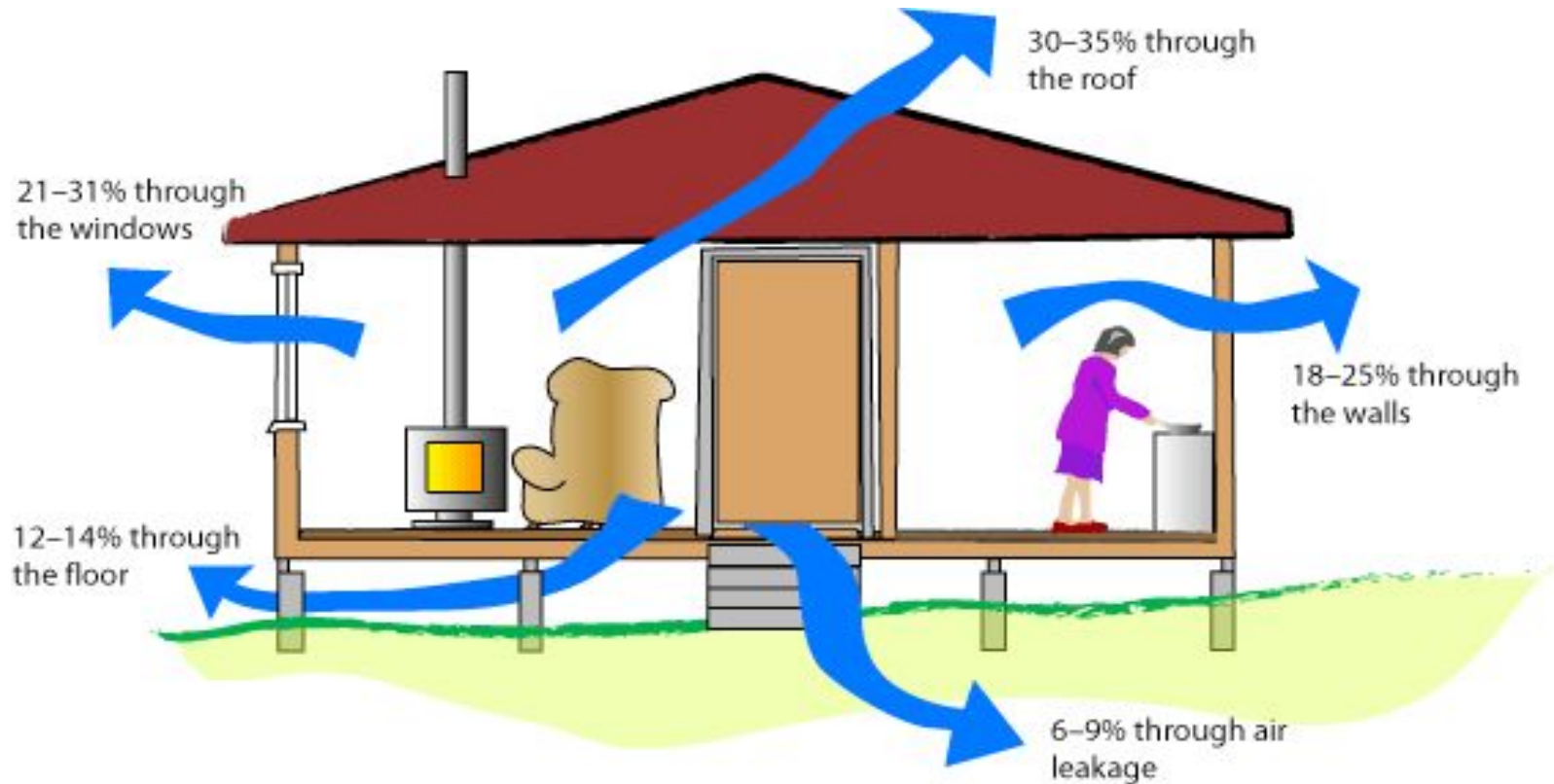


Trim back trees and bushes from north side of the house to let some winter sun in.

Get landlords permission first!

Stop heat escaping

- Insulate, insulate, **INSULATE!**

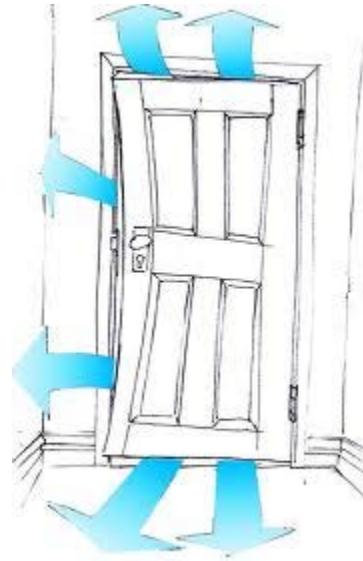


Stop heat escaping

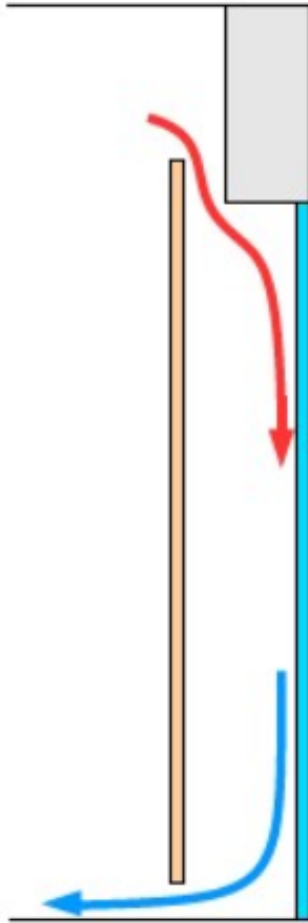
Stop draughts

DIY double glazing

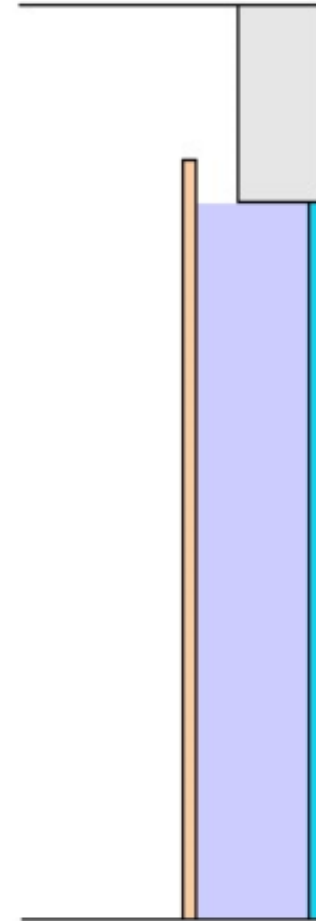
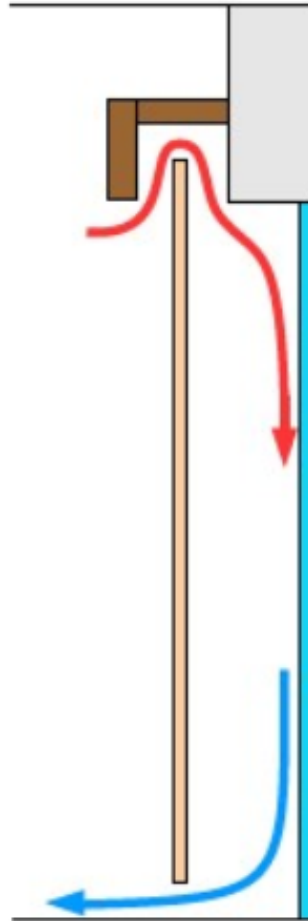
Good thick curtains



Curtains

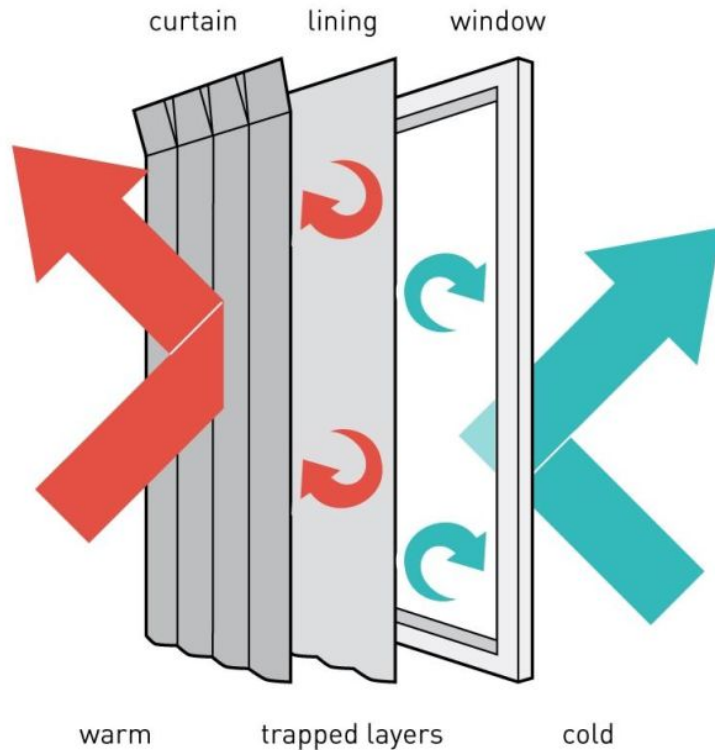


Curtains sitting above the floor rob the room of heat



Curtain sitting hard down onto floor stops cold air spilling into the room

Curtains



Must fit tight to the floor and sides, close off top if possible.



Need layers – the more layers the better, just like clothes!

Do not dry laundry inside



Every load of washing you dry inside will add five (5) litres of moisture into the air inside your house.

This can make houses damp and cause mould.

Dry laundry out side



Use the sun and
the wind to dry
washing.

It's free to do!



Clothes driers



Should vent to outside the house.

Okay to use in winter.

Using the sun to dry your clothes will save you @ \$200 a year.

Bathrooms



Opening bathroom windows does not get rid of the moisture quick enough, especially in winter.

Keep the bathroom door closed to stop the moisture from the bathroom moving through into the rest of the house.



Bathrooms

Turn extract fans on as soon as you start the shower or fill the bath.



Leave fan running until all signs of moisture have gone from inside the bathroom.



Kitchens



Use pot lids, range hoods and extract fans to stop moisture and steam spreading into the home.



Cooking can add three litres of moisture/ day inside your home.

Good ventilation



Open windows during warmest time of the day. 15 to 20 minutes is usually enough.

Shut windows by mid afternoon in winter.

Use extract fans if fitted.

Bad ventilation



Do not leave windows open at night.

Seal gaps around doors and windows to stop heat loss.

Portable gas heaters



Does anyone
use one of
these heaters?

Do NOT use portable gas heaters



They give off up to one litre of moisture per hour.

Put poisonous gasses into your home.

Cause breathing problems.

Do NOT use portable gas heaters



They are the most expensive type of heating!!!

30% of households buying gas heaters also buy a dehumidifier within 6 months.



MOISTURE CREATED BY COMMON HOUSEHOLD ACTIVITIES

Activity	Litres
Cooking	3.0 per day
Clothes washing	0.5 per day
Showers and baths	1.5 per day (per person)
Dishes	1.0 per day
Clothes drying (unvented)	5.0 per load
Gas heater (un-flued)	Up to 1.0 per hour
Breathing, active	0.2 per hour (per person)
Breathing, asleep	0.02 per hour (per person)
Perspiration	0.03 per hour
Pot plants	as much water as you give them
Sub floor moisture	40 per day



Where does mould come from?



Mould grows in cold, damp conditions.

Keeping your home warm and dry will help stop mould growth.

45 percent of all NZ homes are mouldy.

Killing Mould



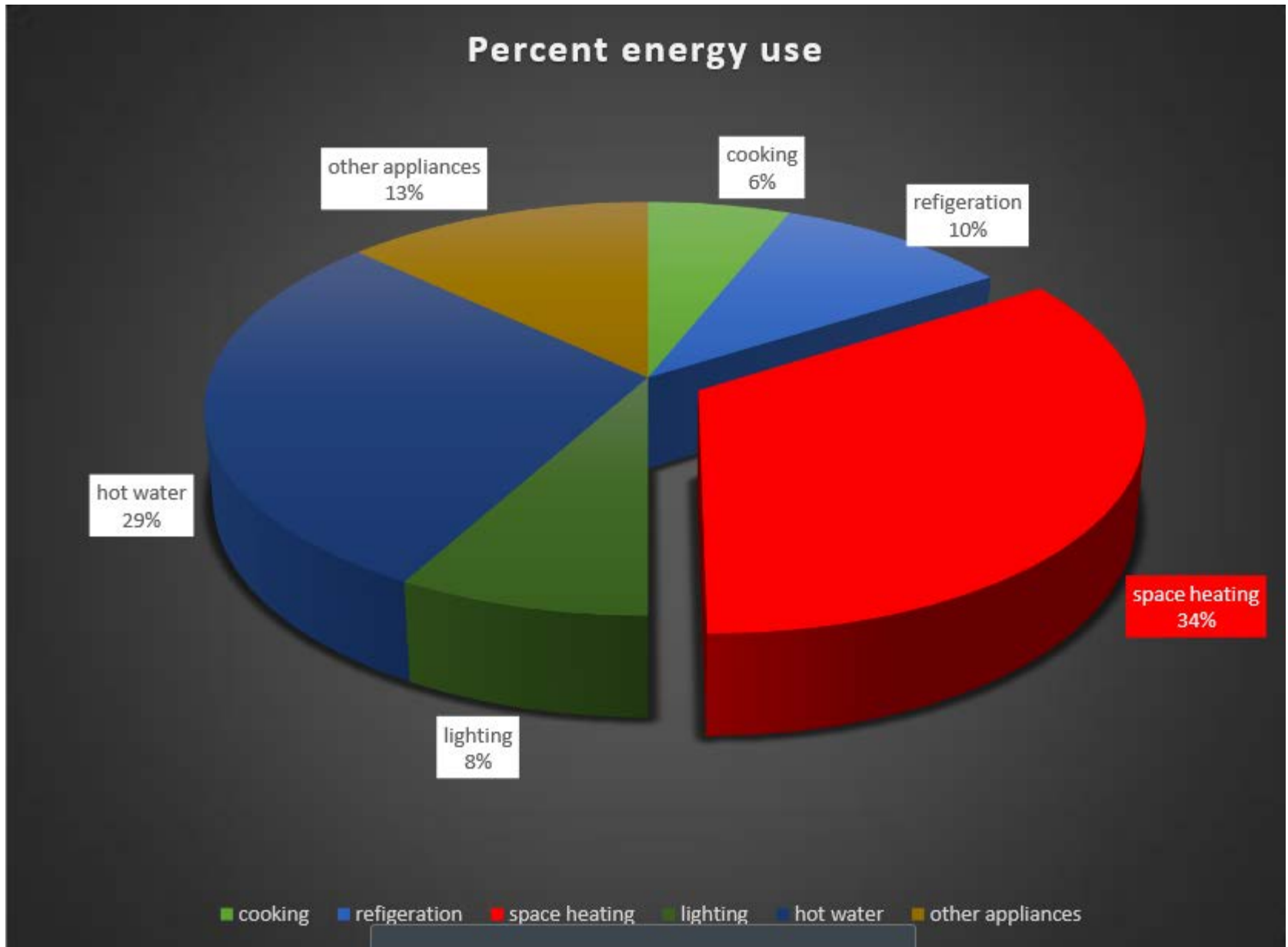
Use White Vinegar to kill mould

Mix 70% White Vinegar with 30% water.



Apply to mould, wait 15 - 20 minutes then scrub with hot soapy water, wipe and rinse off.

Heating - biggest energy user in NZ homes

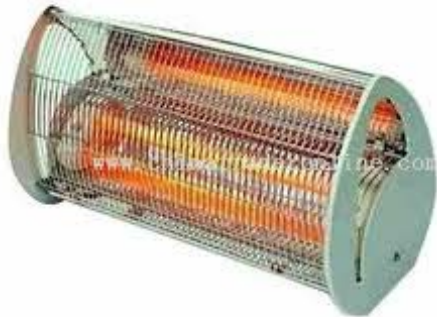


What do you use for heating?



Heat Pumps

What do you use for heating?



Electric Heaters

What do you use for heating?



Wood Burner

What do you use for heating?



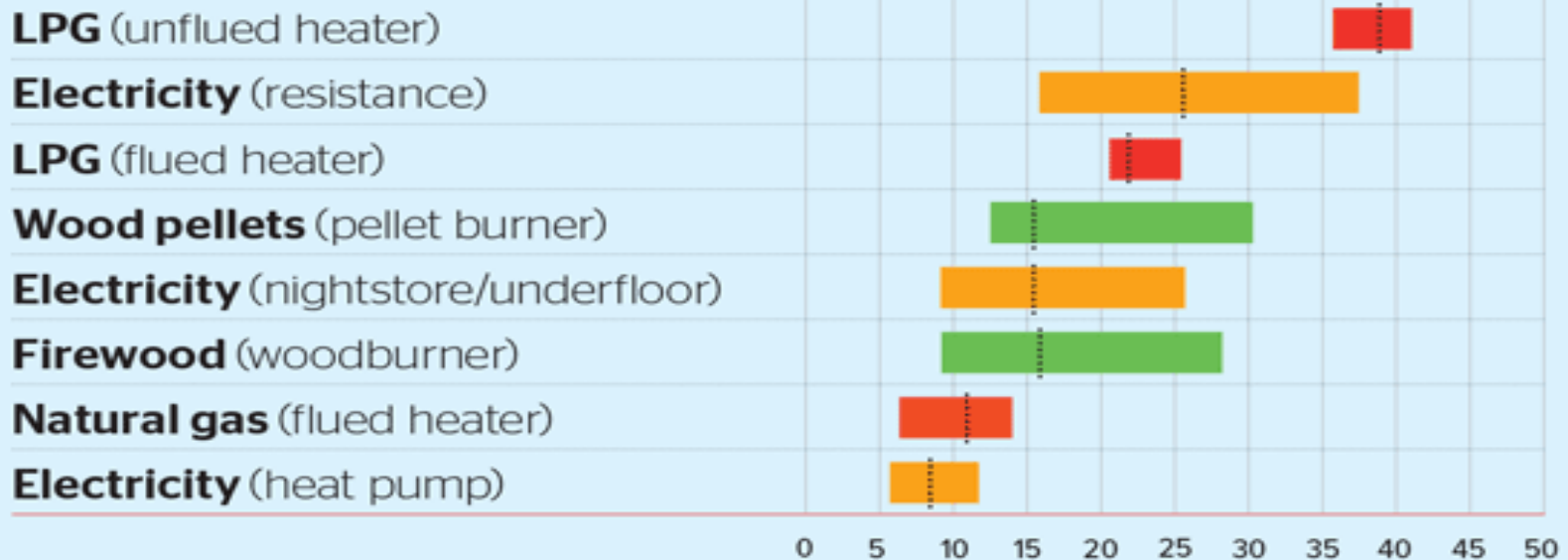
Portable Gas Heater



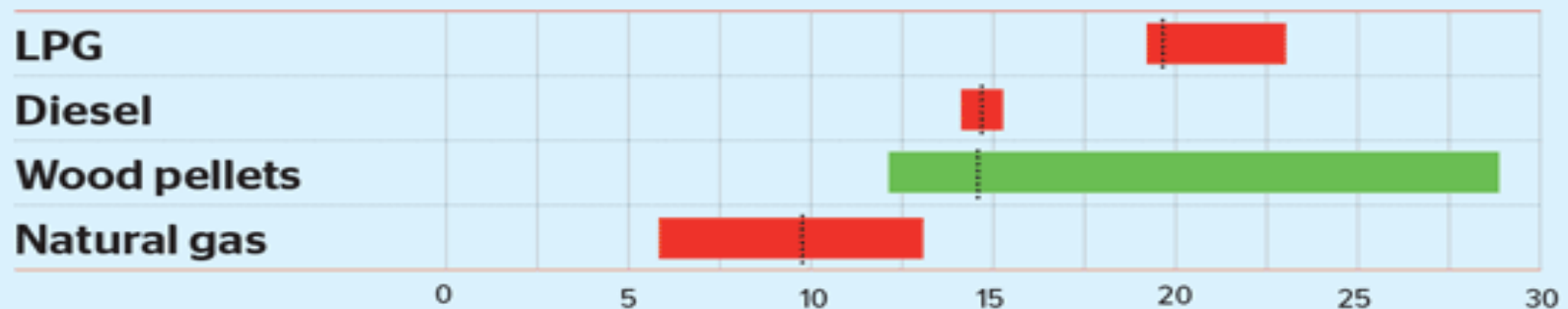
Flued Gas Fire

Heating Costs

Heaters

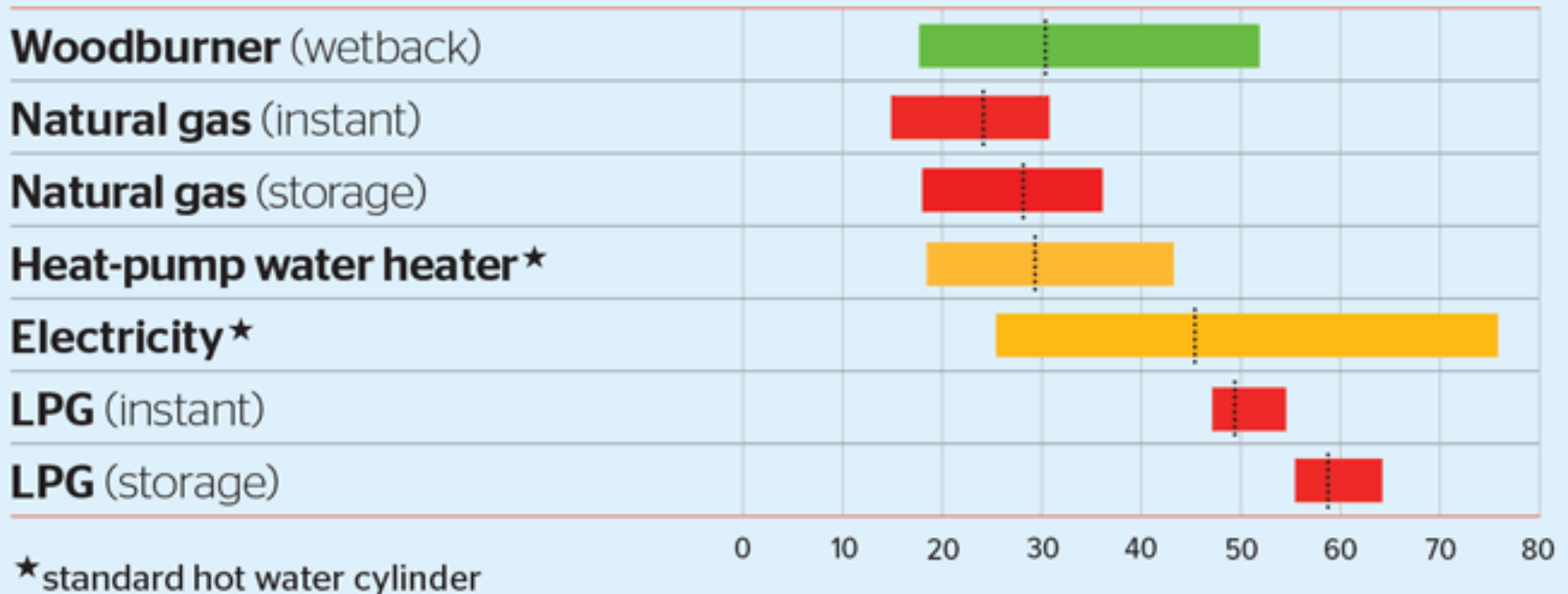


Central heating

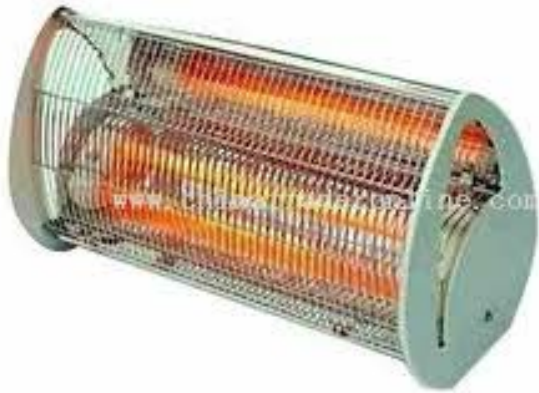


Water Heating Costs

Type of heat



Radiant Electric Heaters



- Sometimes known as bar heaters.
- Heat objects directly in front, don't heat air.
- Good for spot heating.
- Don't leave unattended.
- Never use in a bedroom.
- Fire risk if too close to objects.

Electric Fan Heaters



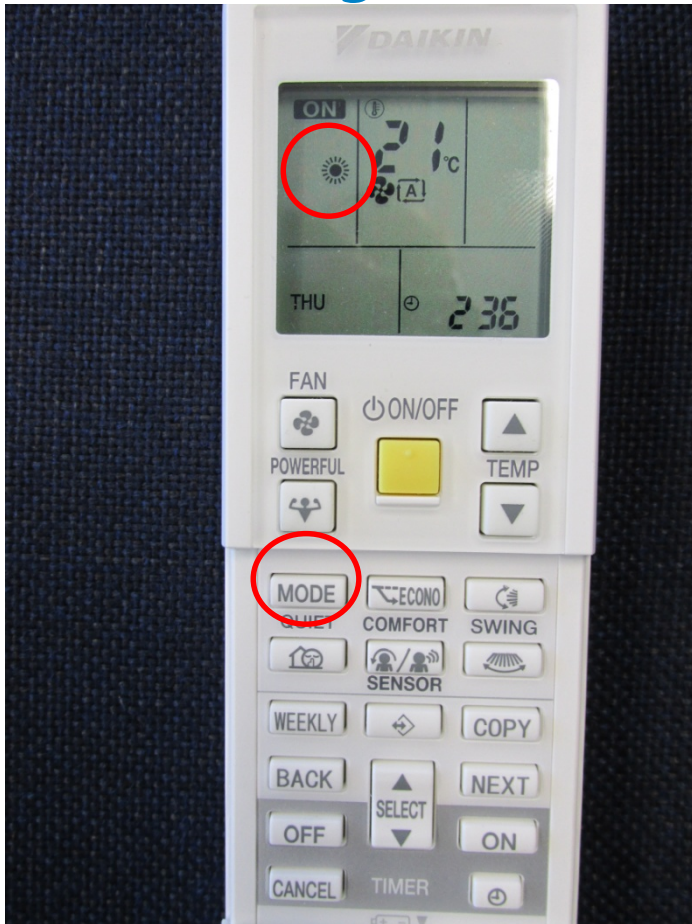
- Heat a room three times faster than an oil column heater of same output.
- Fan noise can be disturbing.
- Good for quick heating.
- Fire risk if covered.
- Can disturb dust.

Electric Convection Heaters







- Oil column heaters slow to heat up.
- Don't heat rooms evenly, heat can get stuck near ceiling.
- Can't effectively heat large spaces.
- Background heating for small spaces only.
- Fire risk if covered.

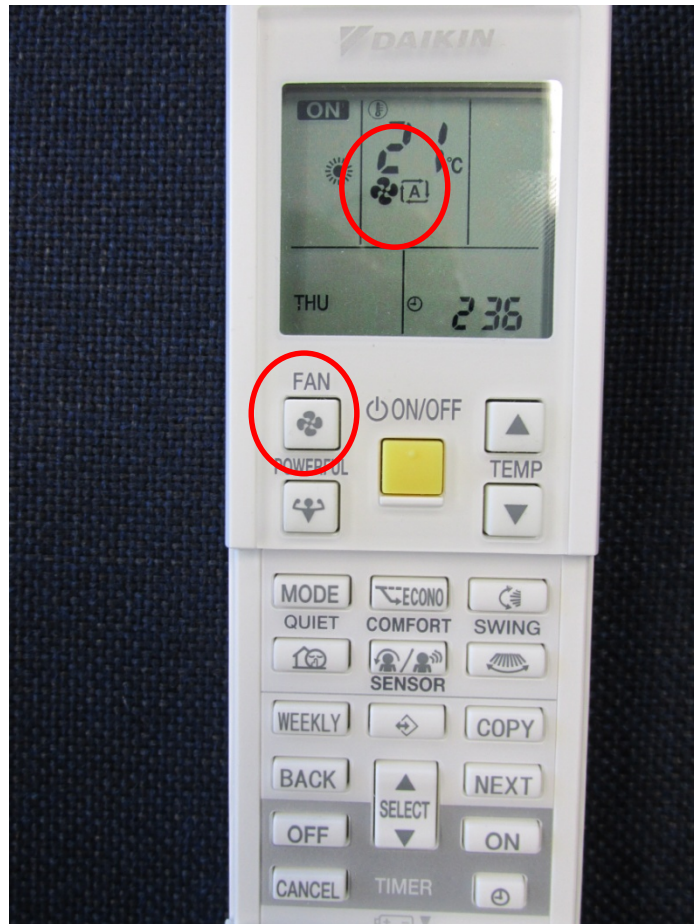
How to operate your Heat Pump correctly



- Press **MODE** or **MASTER CONTROL** button until you have selected the **Heat (Sun)** setting.

Auto or		
Cool or		
Dehumidify		
Fan only		
Heat or		

How to operate your Heat Pump correctly



- Press the **FAN** button until you have selected the **Auto Fan** setting.

Run the fan in "**Auto**" mode.

Fan "Auto"



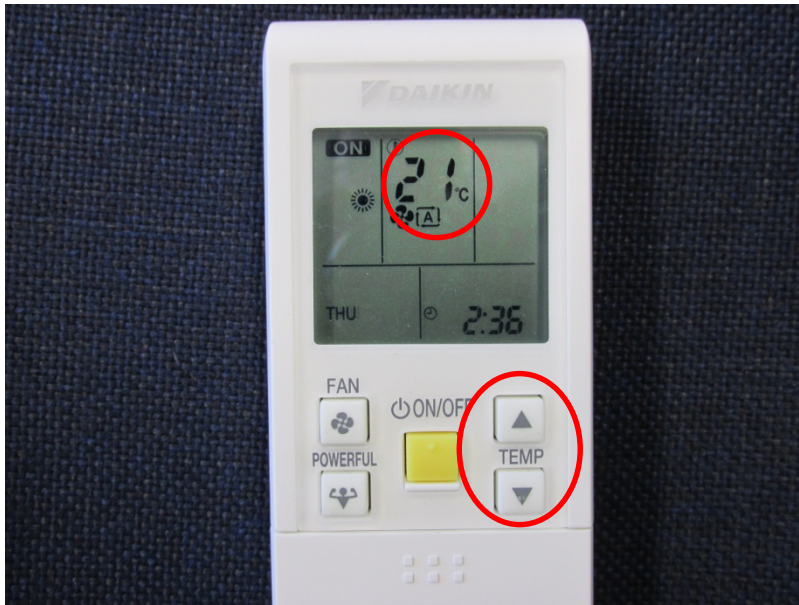
Fan "Low"



Fan "High"



How to operate your Heat Pump correctly



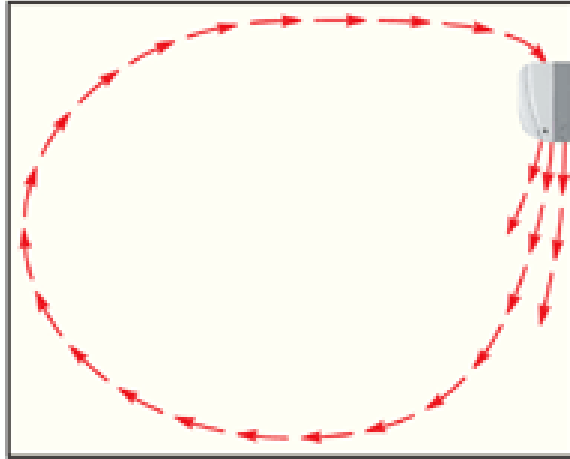
- Set the temperature between 20° C and 22° C
- Setting it higher makes it work harder and it will be less efficient.
- Running a heat pump at 26° C will use 50% more power than at 21° C.
- If you are not at home during the day, turn the heat pump off when you go out.

Adjusting the Vertical Air Flow Direction

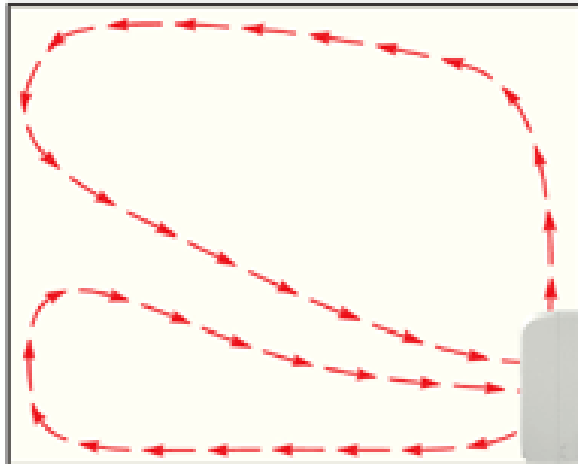


- Use the SWING button to adjust it.
- Watching the flap movement, press the SWING button at the position of your choice
- The position is saved in the memory.
- Next time you use the Heat Pump, the flap will stop at that position.

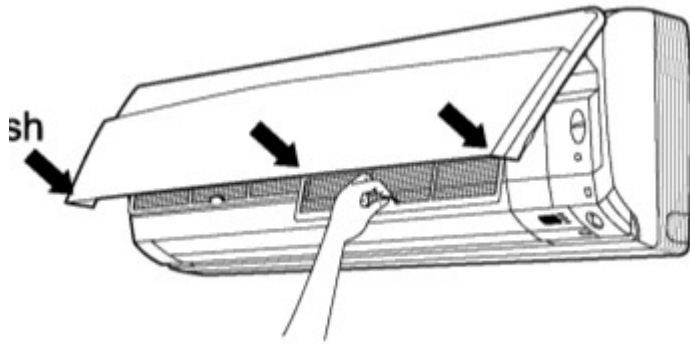
Air flow direction



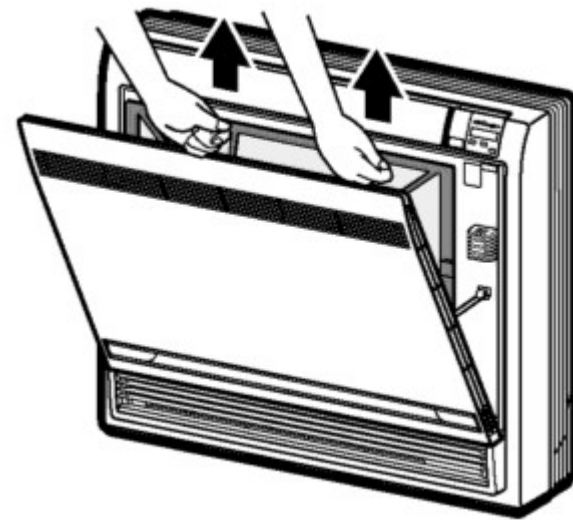
For heating direct the warm air down across the floor where it will rise up



How to operate your Heat Pump correctly



Clean the filters monthly



How much does it cost to run a Heat Pump?



A 6 kW heat pump running for 8 hours a day will add around \$60 to \$70 a month to your power bill.



That is based on running it in the correct settings.

Learn how to burn smoke free



<http://nelson.govt.nz/environment/air-quality/home-heating-tips/learn-how-to-burn-smoke-free>

Firewood



Seasoned, dry wood
less than 25%
moisture content

'Seasoned' = left long
enough after cutting
to dry out before
using – can take up
to 12 months

Council has a list of
Good Wood suppliers

Keep your family safe

Handrails to stairs

Smoke alarms



Upgrade light bulbs



Image courtesy of EECA

Old-fashioned bulbs cost 400% more to run than LEDs.

Replace old bulbs with LEDs in the rooms you use the most

Minimise your running costs

Grow edibles – vegetables, fruit, nuts



Thank you for listening

Questions?