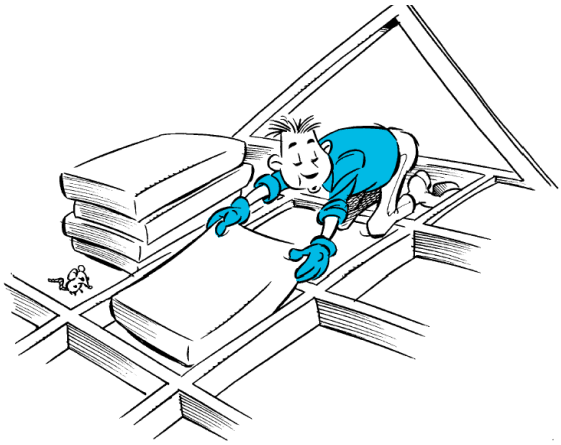
Top Tips for Staying Warm

Your home needs only as much heat as it loses.

That may seem strange at first glance, but before turning on a heater this winter, think about how much of the neighborhood your heater is heating. If you reduce the heat loss from your home as much as possible, that means more heat for your family, NOT your street.

Houses, like human beings, continually shed heat. If there was no heat lost from your home it would become continually hotter, no matter how cold it was outside, but that simply does not happen. If you think about it, the size of your heating bill is actually a measure of how much heat your home loses, and how quickly it is lost. An appropriate analogy is that of hot water in a leaky bucket: determining how the hot water is made – that is, the efficiency of the kettle that boiled the water – is nowhere near as important as insulating and patching the holes in the bucket to keep the water and heat in it! Imagine your home is the bucket… where is the heat leaking from your home? Those are the 'holes' you need to plug.



Tip 1: Insulate your home well.

Good insulation in your roof and walls will keep you warmer in winter and cooler in summer, saving you money year in and year out, whilst also improving your home's resale value through a higher EER.
In an uninsulated Canberra home about 40% of heat loss is through the ceiling, while 20-30% is lost through the walls and about the same through the windows (depending on the ratio of wall to window space), and around 10% is lost through the floor.

- For the greatest savings, improve your ceiling first then your walls and windows, and finally the floor.
- Rockwool/treated cellulose cavity wall insulation can be retro-fitted to most brick veneer and double brick houses.
- When building or renovating, avoid penetrations through your insulation. Any recessed light fixtures (such as downlights), extraction fans and skylights are all 'holes cut in the blanket' of your ceiling insulation. If you must install a fan make sure it has a built-in draft sealing device. If you put in a skylight, double glaze it at the roof and layer 25cm+ thickness of bubblewrap on top of the diffuser, then seal it with No More Gaps. This will mimic your ceiling insulation.
- It's not the type of insulation you use that matters, it's the 'R-value' that counts. 'R' stands for *resistance to heat flow*, and the higher the R-value the better the insulation.

To stop much of this heat loss, insulate your ceiling to R5+, walls to R2+, and floor to R2+.

Tip 2: Fit good curtains and pelmets.

Once you have insulated your ceiling and walls, most of the remaining heat loss will probably occur through your windows. Installing well-designed, insulating curtains or blinds, and box pelmets can more than halve this loss, saving 10% or more on your heating bills.

- To prevent air circulation from windows spaces into rooms, a process which acts to cool rooms in winter and heat them in summer, curtains should: (1) have some form of pelmet (box or invisible); (2) reach the floor; and, (3) seal to the wall on either side of the window (velcro can achieve this, as can wraparound curtain tracks).

- Line your curtains with 'blockout' backing to prevent conducted heat loss (and reduce summer gain). Add a second layer of felt (between backing and aesthetic fronting) if possible as this will trap two layers of air and add to the curtain's insulating qualities.
- Use tightly woven fabrics. Fabrics you can see through do not insulate well – if you can see through it, air can pass through it!
- To be effective, blinds must be as close to airtight as possible. Vertical and Venetian blinds do not insulate at all. Instead, consider honeycomb blinds fitted snugly into the window reveal, or multi-layered Roman or Holland blinds either snugly fitted into the window reveal, or mounted on the reveal frame, sized to fit the frame, and used in combination with velcro to seal the blind to the reveal frame.
- Window coverings on northern windows should be opened during the day in winter to let in the sun.
- All windows and window coverings should be closed/drawn during hot summer days and opened when it cools off outside (generally around 9 p.m.).

Tip 3: Seal cracks and gaps.

Cracks and gaps in a typical house account for 10-15% of heat losses, and the draughts created make you 'feel' cold. Installing draught excluders at the bottom of doors, foam strips around windows, and sealing cornices, skirting boards and architraves is often the most cost effective way to improve how warm your home feels, and to reduce your energy bills.

- The smoke from an incense stick held near your doors and windows on a windy day can quickly show up any gaps that need filling.
- Double brick homes in Canberra commonly have large gaps between the skirting boards and the floor. These gaps are much more noticeable on polished floors and create a draft at floor level which cools the floor.
- Exhaust fans act as chimneys unless they have built-in draft seals. Replacing unsealed models with models with built-in draft stoppers, or adding draft stoppers (which can be purchased at hardware stores) to existing fans is a good idea. (Note that it is not a good idea to put draft stoppers above Tastics unless the fan and heating element in the Tastic are wired to operate simultaneously.)
- Permanent vents, which are unnecessary but can often be found in the walls/ceilings of old homes, should be sealed.

Tip 4: Reduce your heating bill – efficient zoning, thermostat control, duration of use.

When installing a new heating system, it is important to choose one that is highly efficient (5/6-star rated) and allows you to zone – that is, not heat areas that aren't in use.

Minimise the space you heat as much as possible:

- Heating smaller spaces is far more efficient than heating the whole house. There is no reason to heat rooms you are not using at the time.
- Create separate zones (e.g. living area, active bedrooms, guest rooms, study) for areas used at different times – that way you will only have to heat the zone you are using, which will reduce the load on your heating/cooling system and your bill.

Keep your thermostat down whilst staying warm:

- Every degree you lower the thermostat will save up to 10% of your heating bill. We recommend a thermostat setting between 17-20°C. It is much more efficient, and less costly, to put a jumper on and keep the heating on a moderate setting than it is to wander around in a T-shirt with the heating on high!

Minimise the time you heat/cool as much as possible:

- A common myth doing the rounds is the idea that leaving heating on a low setting 24 hours a day will save energy against using the heating in targeted bursts. This myth could not

be further from the truth! Minimising the length of time that heating is used will minimise your heating bill. Heating should be turned off when you are getting no benefit from it – that is, when no-one is at home, and overnight. Using a timer to turn your heater on half an hour before you get home in the evening, and half an hour before you get up in the morning (if necessary), is far more efficient than leaving the heater on the whole time, even on a low setting.

Other hints:

- When purchasing a new central heating system, make sure well-insulated ducts (R1.0) will be installed – it is a BCA requirement, and they will save you money on heat that would otherwise be lost to your ceiling/floor cavity.
- Do not install vents next to windows, and if possible install floor vents as they are more effective than ceiling vents.
- Improve the efficiency of your ducted system by using vent deflectors on floor vents to redirect heated air into the centre of your room and out from under furniture.
- If you have high ceilings, install a reversible ceiling fan. On low, it will push the heat down to where you need it in winter. The fan will also act as low cost cooling in the summer.

Tip 5: Consider radiant warmth not just air temperature.

Humans experience different kinds of warmth differently. For example, human skin is much more sensitive to radiant heat than it is to warm air, so at a constant air temperature you feel warmer if the sun is shining on your skin than if it is not. So, instead of increasing the air temperature, another way to increase your comfort at home is to increase the level of radiant warmth in your living areas.

One way to do this is by utilizing solar passive heating – placing exposed thermal mass (such as slab flooring, an internal brick/concrete wall, or a trombe wall) in front of northern windows – the sun heats the thermal mass during the day, and the thermal mass will then radiate that heat when the temperature drops. Another way is by installing gas-powered hydronic heating in which gas is used to heat water which passes through radiators in your house. Gas powered hydronic heating is both efficient and highly flexible/zonable, and you feel the warmth more than the warm air produced by ducted gas heating. Targeted small radiant heaters can also allow you to lower the thermostat and still feel cosy.

Tip 6: Check your EER report.

If your home was energy rated before you bought it, look at the EER report for suggestions on how your home's performance might be improved.

More information

This fact sheet is produced by the Home Energy Advice Team (HEAT) to provide you with some basic information on staying warm.

If, after reading it you'd like more free information about this or any other topic to do with saving energy in your home, don't hesitate to contact us:

ACT GOVERNMENT

HomeEnergyAdviceTeam