Fact sheet

Easy DIY improvements

In this fact sheet:

- Checking out your ceiling cavity (i.e. relaying disturbed insulation after your plumber/electrician has been)
- Draught proofing
- Wrapping your hot water cylinder / pipes
- Installing a rainwater tank or barrel for garden watering

Checking out your ceiling cavity

Even if you don't feel up to laying new insulation, check out the state of your ceiling cavity - there could be small improvements you can make yourself.

If you have had electricians in, or someone installing a ducted system (e.g. a heat transfer or ventilation system), chances are they have moved any insulation that is up there already. And there may be obvious things like ducting coming loose which you can fix pretty easily yourself. Here's a list of the kind of things to look for in your ceiling:

- **Ceiling hatch – is it insulated?** If the rest of the ceiling is insulated but your hatch isn't, it will act as a chimney for heat to escape. It's pretty easy to insulate the hatch yourself, by taping the insulation onto the top of the hatch so it stays on, even when you move the hatch.
- **Has any insulation been piled up somewhere? Are there bare areas with no insulation?** Move any piled up insulation back into place, trying to make it fit closely to the wooden rafters and next pieces of insulation. However, if there have been downlights installed in your ceiling, those areas might be bare for a reason – insulation mustn't be placed over downlights as it could catch fire.

- **Is ducting in the ceiling connected?** If it has come adrift, tape it back together again with duct tape.

- **Do you have a leak in your roof?** Can you see holes, or damp patches? Sometimes the nails pop up on corrugated iron roofs, and you can see this easily from inside the cavity.
- **Is there building paper between your roof surface and the framing?** (e.g. corrugated iron or tiles) If there isn't, next time you re-roof, make sure the roofer installs building paper to help keep your ceiling cavity drier.

For more information, download *NZS 4246: 2008 Energy Efficiency Installing Insulation in Residential Buildings* free at:

http://www.energywise.govt.nz/sites/all/files/installing-insulation-in-residential-buildings-07.pdf

Draught proofing

Draughts are caused by cold air forcing its way through gaps around windows or doors. By blocking the gap, you will stop the draught.

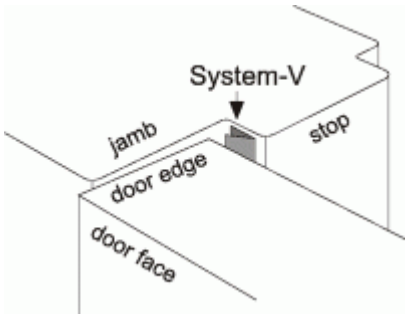
To help find the source of a draught, light a candle and use it to find the source. Move the candle around the edge of a frame - the flame will flicker where the draught is coming in.

It is often difficult to calculate the size of the gap when draught proofing. To help you measure small gaps, a useful gauge can be the thickness of the edge of a coin. A quick reference is:

- Old style 50 cent piece = 2mm
- $2 coin = 3mm

Types of draught proofing products

Draught sausages  	These are pretty easy to make yourself, or you can buy deluxe versions (which go under the door and surround both sides) from community organisations such as Community Energy Action (their online shop at www.cea.co.nz sells these).
Self-adhesive foam strip	Widely available from your local hardware store – usually in packs of different millimetres thickness, or strips you can cut off to the length you want. Eyeball the gap you want to fill and, if possible, measure its width in millimetres before

	buying your draught strips. This product is best used around doors – on the door frame, so that the door fits snugly when closed. Make sure the surface is clean when you stick it on (clean and then wipe with methylated spirits to remove any grease). If you use this product on windows, don't use one which is too thick – otherwise it will be hard (or impossible) to close the window. Don't use this product on wooden windows as it can warp them over time.
Self–adhesive rubber strip	Similar to foam in terms of availability and use. It is a more long-lasting product, so although it is slightly more expensive, it is probably worth the cost.
Brush strips 	Widely available from your local hardware store in a range of colours and styles. These are generally for installation on the bottom of external doors to stop draughts coming in the gap under the door. Can be mounted (with screws) on either side of the door (inside or out) depending on the way the door opens. May need to be cut to size.
V Seal 	This is available from Community Energy Action (www.cea.co.nz) in Christchurch (they have online sales), from Negawatt Resources in Wellington, or from Energy Options in Whakatane. These are able to be used on doors or windows and are particularly good for older wooden sliding windows, double-hung sash windows (like in a villa) or wooden casement windows (like in a bungalow or houses built in the 40s and 50s). These are self adhesive also, and you need to fold the plastic tape in half (make sure it's a really good fold) before doing the installation. Again clean the frame surface and wipe with methylated spirits to get rid of any grease.
Silicone sealant cartridge	For filling gaps such as between skirting and floorboards. A flexible sealant will last for many years when used in this way. Silicone-based products are more expensive than other

	flexible sealants but are generally less prone to deterioration. Vacuum carefully around the gaps to be sealed and then apply the sealant directly into the gaps. If you have not used a sealant cartridge before (and even if you have), it may be wise to mask either side of the join before applying the sealant – the tape should be removed immediately after application as it will be extremely difficult and messy to remove one the sealant has cured.
Keyhole covers 	For a lock with a hole that goes right through the door, you can buy a range of products from a locksmith that fit over the external hole to prevent draughts when the lock is not in use. These normally pivot at the top and are simply swung out of the way when the lock is used and swung back afterwards. They can also be fitted to the inside of the door.
Cat doors	An ill-fitting or damaged cat flap is guaranteed to produce a draught. If yours is broken, replace it with a good quality cat flap with a close-fitting flap and strong return mechanism so it doesn't blow open in the wind.

Wrapping your own hot water cylinder (and lagging the pipes)

Hot water cylinder wraps and pipe lagging are widely available from hardware stores. First check what size hot water cylinder you have. Most electric hot water cylinders are either 135 litres (small) or 180 litres. New cylinders may be larger than this. It is worth wrapping even new hot water cylinders.

To lag pipes, you can buy foam tube pipe insulation from your local hardware store or plumbers' merchants. It's important to wrap the first metre of the hot water pipe from the cylinder as this is where most heat loss occurs.

To install a cylinder wrap, you need to have good access to the cylinder. You will need at least five cm all around the cylinder - more will make the installation easier. If you have easy access to the cylinder, installing a wrap is not difficult and takes about two hours.

(Source : www.smarterhomes.org.nz)

Tips:

- Lag your hot water pipe first
- Check for leaks and that connections are in good condition - if there is a problem, get this fixed first
- If you need to cut your wrap down to size, mark it up first use a knife, and cut over a timber surface
- If it's tricky to get the wrap around, you can tie a cord to a bottom corner of the wrap to help pull it round the cylinder.
- Tape the join together near to where the thermostat and element control box are, so they can be accessed in the future if you need to.
- If you have a **gas hot water cylinder**, these should **not** be wrapped as they need ventilation to be safe, but you can still lag the hot water pipes.

Installing a rainwater tank or barrel

You can install either a rain barrel (generally about 240 litres) or a rainwater tank (500 litres +) for garden watering. Gravity-fed systems (without need for a pump) will need the barrel or tank on a stand. Because a litre of water weighs a kilo, a rainwater tank stand needs to be fairly robust, and should be concreted into the ground. It will need to be over 30cm and less than 1 metre high.

Ideally you should include a mesh grate to prevent leaves from entering the barrel or tank (this can be fitted in the guttering) and you will need down-pipe fittings. You might need to get these from a specialist plumbers' store; though in the provinces, they are also available at your local hardware store.

It's best to locate the tank in a cool place, out of sunlight, to stop algal growth. An overflow outlet, and access for cleaning is also important.

For more information:

- See Fact sheets on
  - Keeping the heat in: Overview
  - Keeping the heat in: Insulation
  - Rainwater systems
  - Maintaining your rainwater system
  - Saving with hot water