

REDUCING MOISTURE AND CONDENSATION

ECO DESIGN ADVISOR FACTSHEET NO.3

It's a sad fact that many New Zealand homes are cold and damp. These conditions contribute significantly to health problems such as asthma and respiratory illness, which have a disproportionate impact on children and older adults.



*Independent, personalised advice on
how to create a sustainable and
healthy home*

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Mould thrives in a cold and damp environment. These conditions can exist in a home for a number of reasons:

- poor design and construction;
- inadequate ventilation;
- lack of or not using extractor fans;
- drying washing indoors;
- the use of un-flued gas heaters;
- rising damp from beneath the floor;
- leaks in walls or roofs.

Because many New Zealanders do not adequately heat their homes, we are unwittingly providing the conditions for mould to thrive. Research indicates that many of our homes are not heated to the World Health Organisation recommended minimums of 18°C for living spaces and 16°C for bedrooms. The higher the temperature the less likely condensation and mould will develop.

Healthy levels of relative humidity within homes can vary between 30% and 65%. At the high end of this range and above, mould and dust mites can thrive.

Addressing the problems of a cold, damp home include the following strategies: 1) minimise or eliminate the sources of moisture; 2) insulate and heat your home adequately; 3) manage the conditions for health and comfort.

Minimise or eliminate sources of moisture

- Do not air washing indoors. Ensure that clothes driers are vented outside.
- Do not use un-flued gas heaters.
- Use an extractor fan and pot lids while cooking. The best range hoods are larger than the cooking area, are vented outside, and have quiet motors.
- Use an extractor fan while showering and keep showers short. Better yet, install an automatic timer so that the fan runs for 10 minutes after you leave, and make sure the bathroom door is closed when you do. Choose an extractor fan with good air flow volume, and if it struggles to ventilate the space, ensure there is enough inward air flow (either through an open window or a gap under the bathroom door).
- Ensure adequate drainage around the perimeter of your home. Contact a specialist if you suspect water is flowing underneath the structure.
- If your home is on piles and the basement is fully enclosed, install a ground vapour barrier such as heavy-grade polythene to prevent rising damp.
- Limit indoor pot plants and cover fish tanks.
- Check gutters and downpipes for signs of leaks.

Insulate and heat your home

Adequate insulation and tightly fitted, lined curtains will make it easier and more cost effective to heat your home. Please see Eco-Design Advisor Fact Sheets #1 "[Insulation](#)"; #2 "[Windows and Curtains](#)"; and #7 "[Comparing Insulation](#)."

Depending on your location, the three most cost effective options for heating a home are a heat pump, a flued mains gas heater or a wood burner. Running one of these in combination with insulation and good curtaining will allow you to heat your home to a healthy temperature at the lowest cost.

Manage conditions for health and comfort

- Keep beds and furniture at least a hand-width from external walls.
- Wipe condensation from windows as soon as you see it.
- Leave wardrobe doors slightly ajar to allow air circulation.
- Regularly check for mould behind curtains and furniture, and in corners.
- Spray a mixture of 70% white vinegar and 30% water on mouldy surfaces, leave for 15 minutes to an hour, and then scrub. Be sure to rinse off the vinegar afterward with a sponge. This is extremely important as mould will grow back on the vinegar residue if not rinsed properly.
- Wash or dry clean affected curtains.
- If there is no extractor fan in the bathroom, open windows when showering or bathing.
- Flush your home with fresh air once or twice each day for 10 to 20 minutes by opening windows and doors. During winter months the best time to do this is around mid-day when outdoor temperatures are highest. It is better to fully flush the home with fresh air than to leave windows ajar all day and night.
- Run a dehumidifier as needed.
- Only consider a positive pressure or dilution ventilation system as a last resort. They are not suitable for all houses and can cause more problems than they solve.

- In modern, tightly sealed houses, balanced ventilation systems may be an effective and energy efficient option to provide a constant flow of fresh air while minimising loss of heat from the house.



More information

For further information, contact your nearest Eco Design Advisor, visit our website

www.ecodesignadvisor.org.nz or view helpful resources at:

- Smarter Homes (www.smarterhomes.org.nz)
- Level (www.level.org.nz)
- Energy Efficiency and Conservation Authority (www.eeca.govt.nz)
- Building Research Association of New Zealand (www.branz.co.nz)
- Beacon Pathway (www.beaconpathway.co.nz)
- Ministry of Business, Innovation and Employment (www.dbh.govt.nz)