

## Massey University Press Release

### Research Trial of the DVS<sup>®</sup> Home Ventilation System.

#### ***'Wet winter housing woes wafted away'***

Windows dripping condensation, water puddling on sills, damp curtains, mould partying in the bathroom and in cupboards, dank, cold air – welcome to a typical New Zealand house in winter.

New Zealand's high rainfall and temperate climate, coupled with a lifestyle of detached houses which are often inadequately heated and insulated, contribute to dwellings being overly damp and mouldy in winter, by world standards.

Massey University Institute of Technology and Engineering lecturers Robyn Phipps and Marie Fleming and honours student Hayden Kennedy recently investigated whether domestic trickle ventilators fixed the problem. They measured moisture, fungi and ventilation levels in 15 houses in the Manawatu-Wanganui area, over eight weeks at the beginning and end of winter, before and after the installation of the DVS<sup>®</sup>, a commercially available home ventilation system.

Trickle ventilation works by having a small fan feed filtered air from the roof space, which is frequently warmer and drier, into the living areas of the house. It partially pressurises the living spaces, forcing out damp air. Another side benefit is that dry air takes less energy to heat than damp air.

Human occupation - water vapour exhaled by breathing, steam generated by baths and showers, unflued gas heaters and clothes driers - all contribute to houses having up to 70 litres of water in the inside air, every day. Houses left closed up and unheated each day have problems, as do houses with inadequate sealing between the ground and the floor.

"That's not such a problem in summer, but winter's lower air temperatures make the water condense on cold surfaces such as windows, un-insulated walls and ceilings, where it causes problems," Ms Fleming says. "When condensation and dampness increase; fungi counts skyrocket."

All these factors can contribute to increased ill-health. Ms Phipps says up to 15 percent of the population is allergic to moulds - spores and their toxic bi-products - which grow in most households. The allergies manifest as asthma, headaches, eczema and sneezing fits.

"The relationship between these things is not conclusively understood yet, but the study participants said they felt better, living in their houses after the DVS<sup>®</sup> ventilation systems were installed."

They found that in the majority of the 15 houses in the study, the DVS<sup>®</sup> home ventilation system increased air circulation, and reduced humidity and fungi. The improvement in air quality that occurred in only eight weeks was impressive.

"Overall, the indoor air quality was better, with occupants experiencing fewer headaches, sneezing and eye irritation," Ms Fleming says.

The same houses were further assessed one year after the initial research to check the longer term changes in conditions and it was found that fungi levels had reduced even further as hidden moisture was dragged out of building materials by the DVS<sup>®</sup> ventilation system.

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