



A Growing Family Permanently Improves the Comfort of Their Home



THE HOME:

This home is a timber framed construction clad in pine weatherboards with timber floors supported by concrete stumps. The roof is a standard attic style with a broken hip veranda constructed with roof trusses and metal cladding. This family found the home to be very hot and uncomfortable in summer and, despite extensive heating expenses, the house remained stubbornly cold in winter. There were a number of factors contributing to their discomfort and unimpressive 1 Star energy rating.

THE CHALLENGES:

- 1. Insufficient, Poor-Quality Draught Proofing:** External doors were fitted with weather stripping that was brittle and non-compressive, not making sufficient contact with the door edges. Draught excluders were not fitted. All window and door architraves exhibited small unsealed cracks between the architrave and the wall plasterboard. All exhaust fans were unsealed.
- 2. Lighting Compromising the Effectiveness of Insulation:** Gimbaled halogen down lights and incandescent vented down-lights allowed the air to enter via the attic space due to the uninsulated area required to be remain clear for fire safety.
- 3. Inconsistent and Sparse Ceiling Insulation:** The ceiling had inconsistent and ineffective insulation. The cellulose and fibreglass insulation batts were loose and there was no insulation in some areas.
- 4. Lack of Underfloor Insulation:** The floor comprised structural chipboard and was in sound condition but was not fitted with any form of insulation.
- 5. Inconsistent Level of Quality Wall Insulation:** The walls were fitted with common reflective laminated foil house-wrap, the quality of which has a large bearing on the insulation value. The southern and western walls were fitted with fibreglass batts. The weatherboard construction made it impossible to determine the thoroughness and quality of the foil installation.
- 6. Untreated Single Glazing:** All windows were timber framed awning style with standard clear, annealed glazing. The frames and opening sashes were in good condition. Sliding glazed doors and glazed French doors were entry doors to the veranda. The front door was timber framed with side lights on either side.

"Draught proofing is often the most cost effective improvement that can be made to increase comfort and reduce energy consumption."

THE RECOMMENDED SOLUTIONS:

- 1. Professional Draught Proofing:** Architectural quality perimeter seals and draught excluders were fitted to all doors and windows. Zoning was achieved by treating the internal doors of the home's wet areas. Ceiling exhaust fans were sealed with an automatic device. Wall vents, architraves and skirting boards were sealed to prevent additional unwanted airflow.
- 2. Lighting:** To properly insulate the ceiling and to restrict air flow to the attic space the existing down-lights were replaced.
- 3. Ceiling Insulation:** Existing insulation was augmented with a complete layer of R1.5 polyester insulation batts.
- 4. Flooring:** The sub-floor in the living areas was insulated with two *ecoMaster* products to provide the most effective result.
- 5. Wall Insulation:** Insulating between the external timber cladding and the internal plasterboard was recommended to make the walls 10 times more thermally effective than the standard cladding.
- 6. Secondary Glazing:** *ecoMaster's* own Secondary Glazing System, *ecoGlaze*® will be applied to all window and door glazing.

This family has taken a phased approach to their home retrofit.

When their retrofit is complete, the home will qualify for a 5 Star Energy Rating.