

HOUSES THAT HEAT AND COOL THEMSELVES



Gordonton country house **
2009 NZIA Architecture Award.
Judges' comments: "Designed on a pattern of 'barn - form' pavillions, which separate the components of the plan ... incorporates both new and established methods for the control and use of solar energy".



Port Waikato beach house *



Whangamata beach house *



Pauanui beach house **
2009 NZIA Architecture Award.
Judges' comments: "A sculptural arrangement of three simple volumes, one placed above others, combine harmoniously to create separate accommodation for communal and family use".



Mangawhai Heads beach house *



Omaha beach house *

Architect Frans Kamermans has been designing houses that heat and cool themselves for more than 25 years. His designs are naturally comfortable and use less energy. This year he won two NZIA Architecture Awards in the Waikato Bay of Plenty region (*Gordonton country house - top two left & Pauanui beach house - top two right*). Good house design achieves inexpensive and effective natural heating in winter but also cools the house during summer which evens out temperature extremes. Homes designed by Frans Kamermans are exceptionally comfortable. They reduce your 'ecological footprint' by making use of free energy which also means lower electricity bills.

The essential design features are:

Sun control:

Good winter-sun exposure and summer-sun shading, achieved through roof or building overhangs on the north side of the building. Mainly northern glazing, limited east and west glazing and minimal southern glazing.

Thermal mass:

Concrete floor slabs (or concrete block walls) absorb and slowly release winter-sun heat while keeping the building cool in summer as they are shaded from high-angle summer sun.

Insulation:

Maximised wall and roof insulation with an insulated concrete floor that retains warmth in winter.

Ventilation:

Main living areas with high-level windows create natural ventilation currents for the whole house.

The demand on active heating (and cooling) systems is greatly reduced by passively harnessing the free energy around us. In most New Zealand climate zones these houses need some additional heating during parts of winter. Most newly built houses in New Zealand already use the materials needed for a naturally heated and cooled house. However they lack the appropriate design. So a home designed by Frans Kamermans can achieve natural heating and cooling without adding to construction costs. Frans has taken these sustainable principles further to introduce rainwater storage for garden irrigation, car washing, laundry use and toilets in urban house designs.

Kamermans & Co Architects is currently working on several residential projects as well as an early childhood and community centre, all following Frans' ethos of creating architecture that is more sustainable.

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North Waikato country house **



Music Point house *

