

# Air to Water (Aerothermal) advantages and applications:

## Efficient, Low-cost energy

The same technology employed in air to air heat pumps delivers even higher efficiency and extraordinary economy through air to water systems. Even at sub-zero temperatures, aerothermal operational efficiency remains very high. Rooms are split into separate control zones and some rooms can be shut off or temperature adjusted as required to ensure maximum home heating efficiency. Talk to us about hybrid homes also a speciality, combining solar collectors with the above and hot water heat pumps.

## Ecological

Because South Island electricity is derived primarily from green hydro and wind generation, the CO<sup>2</sup> emissions are almost nil. There are no pollutants given off from heat pumps, just air – and we employ non-ozone depleting, environmentally friendly R 410A or R32 gas.

## Simplicity

Heat pumps are simple to operate. Our systems are easily programmed and tells the heat pump exactly what to do and when to do it (video tutorials are available on our website. Heat pumps are also very low maintenance – unlike most boiler systems.

## The benefit of radiant heat

Radiant floors distribute heat evenly across the room for high personal comfort. Because there's no air movement, there are no drafts around your feet or down your neck. It's like soaking up the sunshine on a summers day. They maintain better humidity levels than a hot air system making for a more comfortable home.

## Healthy, Clean and Quiet

Effective radiant heat requires lower air temperatures to maintain comfort levels which results in lower energy losses, this is due to long-wave radiant heat not leaking from your home as quickly as short-wave hot air heat convection. Less convected air means less airborne dust and lower dust mite levels as the floor environment is too dry for them to flourish – a more healthy environment, particularly for those with respiratory problems. Also as hot air is not the primary means of heating, less energy is lost when ventilating your home.

## Complete Air-conditioning

Our floor heating radiant systems can be combined with SlimFlow<sup>®</sup> fancoil radiators to provide year round comfort – with the ability to heat or cool all from the one system. Some of our air to water heat pumps can supply a fancoil ceiling cassette unit with hot or cold water, to provide short term heating or cooling through summer.

## Domestic Hot Water Heating

The same heat pump that heats your floor can also be diverted to heat our Duplex stainless steel hot water cylinders (10 year warranty). The high electrical efficiency of some of our units, results for around the same annual savings as a solar system – a 65-70% reduction, with improved aesthetics. We can also heat swimming pools and Spas off your radiant floor heat pump.

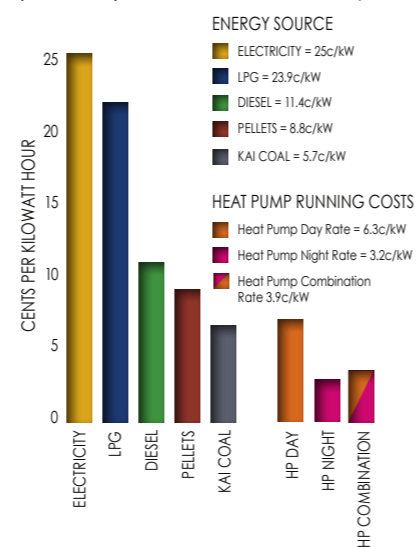
## Safe and Space Saving

Every additional square metre of floor space will cost you around \$2,000. Our aerothermal heat pump unit sits outside your home and does not require any floor space at all. The control system fits neatly onto or into a wall and the pipes are hidden in the floor so that there are no dangerous hot surfaces.

## Radiators/Radiant Heating

Heat Pump powered European designed Quinn Integrale radiators for consistent, cost effective home heating. Emmeti SlimFlow fan radiators can have high output in large rooms thereby increasing your wall space.

Approx. cost per kW heat delivered (cents/kW) in Dunedin as at February 2014



# Healthy Economical Heat Pump Powered Floor Heating & Domestic Hot Water

For over a quarter of a century we have specialised in radiant heated floors, with over 1000 homes in the Otago and Southland area.



[www.warmandcool.co.nz](http://www.warmandcool.co.nz)

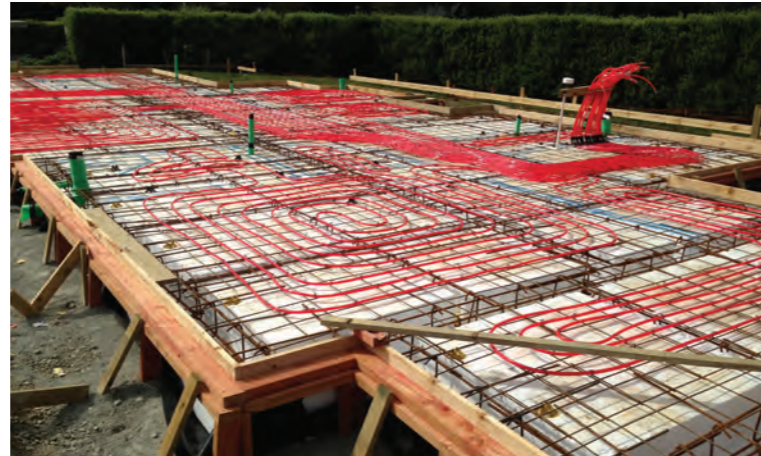
Visit our showroom 9.00am to 5.00pm or by appointment  
Ph 03 453 10 10 223 Kaikorai Valley Road, Dunedin  
Visit: [www.warmandcool.co.nz](http://www.warmandcool.co.nz)  
Coming to Queenstown soon at Eastern Access Road, Frankton

# A better way to warm your world, make your home a heater.

## Infloor Central Heating

Water-fed radiant floors warm from the floor up as opposed to most other forms of heating. This creates a build up of heat at ceiling height - heat that has cost you good money!

Radiant energy heats the floor, the carpet, the furniture, the walls and you, rather than heating just the air.

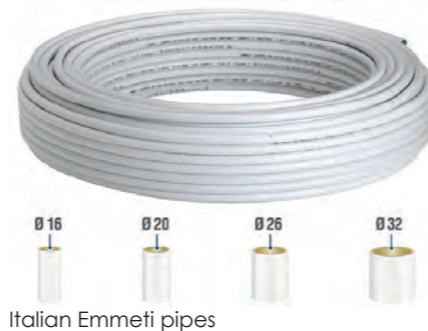


### Air to Water Advantages

- Radiant floors operate with 30% less energy than hot air system when maintaining constant room temperatures at 2.4m stud height.
- With the advent of air to water heat pumps, \$1 of energy can regularly purchase you up to \$4.20 of heat at a power price of 25¢ kW, so you only pay 6¢ kW for your energy. This is approx a 1/3 of diesel and even cheaper when compared with LPG.
- Very low maintenance when compared with other energy sources.
- The more expensive energy gets, the return on investment from an aerothermal heat pump becomes even more attractive as the savings grow more rapidly.
- European Emmeti SunFlow Branz appraised systems available.

### Advantages of heat pump radiant heated floors over hot air systems

- Will maintain a comfortable room temperature in a 2.4m stud building with the use of 30% less energy. With higher stud heights savings are even greater.
- Radiant heated floors when designed for air to water heat pumps mean the heat pump only needs to heat water to approx 38°C, this means very high operating efficiency.
- Radiant heated buildings have less airborne dust from carpets and furnishings than buildings heated with hot convected air.
- Radiant heated buildings can be ventilated more effectively with less loss of energy.
- Radiant heated floors also create a healthy environment as many dust mites etc cannot live in the floor coverings due to lack of moisture.
- Individual rooms are controllable (talk to us about your requirements).
- All pipes used by Warm and Cool are multi layered oxygen barriered.



Italian Emmeti pipes



Insulated floor retrofitted into a home

## The advantages of Air to Water Heat Pumps (Aerothermal)

Heat Pumps offer many advantages over other sources of heating - returning up to and beyond 420% giving very high energy gains (thats \$1 of power to \$4.20 of heat).

Warm and Cool supplies and services a wide range of market leading domestic heat pumps through out the Otago, Central Otago, Southland and South Canterbury regions.

The same air to water that heats your home can also be used to heat your domestic hot water, swimming pool and spa.



### Advantages

- Photovoltaic Solar Assist on winter afternoons, 1kW in equals 4kW out (request a Solar PV System brochure or visit our website).
- We have cold weather heat pumps with full output down to -15°C.
- Simple installation and servicing - no earthworks required
- Ground recovery systems are expensive to purchase and install and require larger circulation pumps. Unlike Europe and North America, our outdoor air temperature does not warrant such expensive systems for domestic purposes.
- Better suited to NZ's temperate climate (even Queenstown has average June/July temperatures of +4°C - NIWA Science)
- We also install air to water heat pumps to modern radiator systems.
- Some of our systems monitor outdoor temperature, floor slab temperature, room temperature and provide early warning of temperature changes to ensure maximum home heating efficiency.

### Retrofitting to existing homes

- Heat Pump powered insulated floor can be retrofitted into existing homes.



Up to 22kW single phase units available



Request a Solar PV Systems brochure or a Heat Recovery & Ducting brochure or view them at [www.warmandcool.co.nz](http://www.warmandcool.co.nz)