

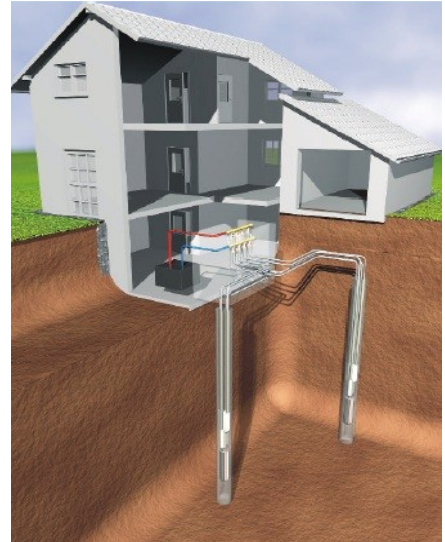
# McCALLUM

## HIGH TEMPERATURE HEAT PUMPS



### Ground Source Heat Pumps for Domestic Hot Water and Underfloor Heating

McCallum brings you the Chaltherre<sup>®</sup> range of heat pumps, specifically designed for Ground Source Heat Pumps (GSHP). Using new-generation technology, they give temperatures in excess of all other heat pumps on the market. Not only does this mean they are more efficient at temperatures of 40° for underfloor heating and 60° for legionella-free hot water, but they are also ideal for direct retrofitting to older 80-90° hot-water radiator systems. All this comes without the need for extra resistance-heating. They use the natural heat from the ground to heat your home, even on the coldest winter night. Chaltherre<sup>®</sup> keep on heating for years after your neighbour's air-to-air heat pump has stopped working.



They also happen to be the quietest heat pumps on the market, have the highest Coefficient of Performance (COP), the lowest running costs and lowest electricity consumption of any. All put together, they are clearly the most environmentally friendly of any GSHP's. And far more-so than any air-to-air heat pumps. Unlike other green-technology such as Solar, they work even if it is raining and unlike wood pellets and other biomass, don't need storage, cleaning or suddenly discharge years of accumulated CO2 into the environment.

*Ground Source Heat Pumps (GSHP) are one of the fastest growing green-technology solutions in the world. Over 40,000 are installed annually in both the US and Sweden, while 75% of all new houses in Switzerland now have a GSHP installed\*.*

*Ground Source Heat Pumps are a high-quality solution to all ongoing heating requirements. They will still be helping the environment and remaining the most economic system for decades to come.*

*Ground holds far more heat than air. The two commonest forms of heat extraction from the ground are the Vertical Borehole and the Horizontal Loop. The Vertical Borehole has a higher initial installation cost, but this is more than offset by the fact it can be installed almost anywhere, is easily multiplied for large commercial or institutional projects, and takes advantage of the constant deeper ground*

*temperatures that are unaffected by the season or human activity. The Horizontal Loop is a good lower cost option for situations where there is plenty of land close to the house.*

*Without significantly lowering ground temperatures, the GSHP takes advantage of the huge amount of natural warmth of the ground and concentrates this into a lot of useful heat for the home. All it takes is the cost of running the heat pump. This gives it an output of often well over 3 to 1.*

*New Zealand heat-pump technology is a world leader. Chaltherre<sup>®</sup> is the only system to easily produce temperatures when needed of over 65 degrees. It is well proven industrially. Over 700 systems daily producing 85° water have been installed in agriculture over the last 6 years. It is generally maintenance-free, but can be easily serviced by any good refrigeration technician. Independent reports highlight the cost-savings*

available in a test-situation and a real-life installation<sup>1,2</sup>.

reverse heat-pump process. McCallum installers are IGSHPA certified.

McCallum will provide you with the complete solution to meet your needs, from insertion and testing of the Borehole, connection to the Chaltherre<sup>®</sup> Heat Pump, then connection to your hot water, underfloor, radiator or forced-air heating, or even swimming pool. Systems are also available to allow summer cooling by the

Through our experienced team of local drillers, borehole exchangers are inserted with minimal disruption to the environment and with full compliance to all local permits and requirements as under the Resource Management Act 2004.

### Chaltherre<sup>®</sup> Technical Details:

#### Domestic Hot Water with Combined Underfloor Heating System

	DU-8	DU-12	DU-16
Heating (kW)	8	12	16
Input Power (kW)	2.6	4	5.3
Electrical Supply	3Ph 415V	3Ph 415V	3Ph 415V
COP W10/W35	8.09	8.09	8.09
Refrigerant	R 134A	R 134A	R 134A
Std Supply Temp	60°/40°	60°/40°	60°/40°
Max Supply Temp.	90°C	90°C	90°C
Compressor Type	Bitzer	Bitzer	Bitzer

#### Also available:

- Domestic Hot Water Only
- Domestic Hot Water and Warm/Cool Air.

#### For further information contact:

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#### References

- 1 Kemp, R . Evaluation Report: Mahana Blue Heat Pump Evaluation Trials. Technology Innovation Group, Agresearsh, Hamilton, NZ. 2003
2. [http://www.caenz.com/sustain/Downloads/Technical\\_Report.pdf](http://www.caenz.com/sustain/Downloads/Technical_Report.pdf) Heatcraft Mahana System: p50-54

\*2008 Figures