

## How Next Energy's Geothermal heating helped build a model of sustainability

**Project** Minaret Ridge, Wanaka

**Brief** An energy efficient heating solution that would be sustainable with minimal environmental impact.

**Solution** Installation of a Dual Fluid 2-10 Geothermal Heating Systems that via infloor heating pipes heat a total floor area of 305m<sup>2</sup>. Plus 2 Domestic Hot Water systems.



*“We wanted something for the future, the most efficient long lasting house we could build.”*

Randolph & Marty Holst, owners

### Benefits

- ✓ **Cost saving and energy efficient**
- ✓ **Totally renewable with minimal environmental impact**
- ✓ **Consultative approach to Service**

### Finding the right supplier

Marty and Randolph Holst wanted their new home in Wanaka to be a model of sustainability. “We wanted something for the future, the most efficient long lasting house we could build.” With their backgrounds, Marty from the East Coast of America and Randolph from Europe, they knew how eco-friendly and energy efficient geothermal heating solutions were but when they began researching locally they couldn't find what they were looking for. That changed when their Architect Ken Warburton from Parker Warburton Team Architects told them about Next Energy.

“It was good to find someone who actually knew what they were talking about!” said Marty. “We were so happy that Geothermal had finally come to New Zealand! We could have a proven, major European brand with a very good reputation for energy efficiency and we didn't need a bore hole but could have captors placed in a relatively shallow horizontal field.”

### Enhancing the efficiency of the system

Planning began and as Next Energy was involved early-on in the project they were able to contribute significantly; calculating where more energy savings could be made and increasing insulation levels. This included recommending better floor insulation and thermal

breaks, adding 100 millimetres of extruded polystyrene to the concrete slab that would encase the hydronic in-floor heating system. This additional insulation complemented the homes super wall and ceiling insulation, all designed to increase thermal resistance.

Comments Marty "If you are going to invest in a heating system you want it to be the most efficient as possible and you can't argue with facts and figures."

The hydronic in-floor heating system supplied by Next Energy further capitalises on energy savings and is designed to run at low temperatures and yet still radiate considerable heat. Says Marty, "We are really warm and comfortable and the home is heated evenly. It's so unhealthy going from hot to cold, to hot."

### **Development of the Cold Pantry**

As the project progressed, Next Energy continued to help solve problems and offer creative advice. This included developing a Cold Pantry.

The Cold Pantry cooling system runs off the Geothermal Domestic Hot Water Unit. If the Cold Pantry is warmer than the set point, the thermostat in the pantry turns a fan on and this allows the Geothermal Hot Water Unit to absorb the excess heat in the pantry and use it to heat water. Once the pantry reaches the desired temperature, the fan switches off and hot water is then heated as normal by the Geothermal Ground loop. This simple solution keeps the room cool at between 10° and 12°C and, says Marty, "provides an important food storage area for increasing the shelf life of dry goods as well as for bulk storage of garden produce and wine."

### **Geothermally heated Greenhouse**

Next Energy also developed a geothermal heating system for the couples new Greenhouse, once again, designed to be as energy efficient as possible. "We didn't want to heat it electrically and solar was no good during the winter and so geothermal was the perfect choice." says Marty, "even on the coldest days it will be kept at 10°C and is estimated to cost only about 80 cents a day to run."

### **Consultative approach to home heating**

Consultation is an important part of Next Energy's service, this project in Wanaka, not only resulted in a highly efficient heating solution but also lead to the development of two new uses for Geothermal heating, contributing to the owners' aim of sustainability.

Says David Arrowsmith, MD of Next Energy, "We treat every project individually and take time to ensure our clients get the most energy efficient system available. This attention to detail is important to us and we see it as a major differentiator from competitors."

**"Next Energy have been just brilliant, I couldn't give a contractor a higher score, so reliable! A real class act."**