

# Case Study



**Location:** Ballyclare, Co Antrim

**Installation date:** Summer 2005 / 2006

## Technologies installed:

- Hepworth Underfloor heating
- Windsave 1kW wind turbine.
- 10 kW twin compressor Kensa Heat Pump
- Twin coil cylinder ( Solar compatible)

## The site:

2 Storey new build timber frame property approx 3,000 sq ft. The renewables suite of products is housed within the garage which is approx 5 metres from main dwelling.



## Slinkies

The heat source for the 10 kW Kensa heat pump are 2 X 50m slinkies in lawn at front of main dwelling. Closed loop ground array (32 mm plastic slinky pipe) absorbs low- grade heat energy from the ground. The heat pump subsequently "upgrades" this heat into usable energy to heat buildings. The owners of this property chose to back fill their trenches with sand insuring good contact between the pipe loop and the ground. This also reduced the risk of damaged pipes due to the presence of sharp flint and rock in the soil. Slinkies buried in 2 x 2m depth trenches, 300mm wide.



## 10kW Kensa Heat Pump

- Single phase, single compressor heat pump
- 25 amp rated, 23.5 amp max running current
- Typical power consumption 2.5kW
- Co-efficient of Performance (COP) typically 4

Heat pump shown installed in garage along side "Slinky Manifold". (This manifold can also be fixed to the external wall of the building.) All pipe work and commissioning was completed prior to the garage floor being poured. Heat Pump installed in the garage.



## The Hepworth Underfloor System

- One manifold system for ground floor living areas, sunroom, bedroom and Shower room.
- Each room individually thermostatically controlled
- Hep20 pipe with Oxygen barrier
- No pipe joins under screed
- Pipe guaranteed for 50 years

Manifold system installed understairs storage space of this dwelling

## Oso Twin Coil Cylinder

- 250 litre pressurised, stainless steel, hot water cylinder, with 2 x overheat protectors. (Solar compatible)

Owners installed this system with a view to connect Solar panels in the future. Twin coil cylinder positioned in hot press on first floor.



## Windsave

- Unique Plug'n'Save technology
- Simply plug into a 13amp socket/fuse spur
- No hazardous batteries or complex wiring
- Supplementary 230volt electricity direct into your ring main.

Placed on the side of the garage the owners can look forward to supplementary electricity averaging 1 to 2 Megawatts per year depending on wind-speeds. Windsave turbine installed at end gable of garage.



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## Customer benefits:

- Thermostatically controlled rooms
- Savings on heating bill of approximately £750 per annum
- Lifetime savings of £22,950 (25 years) at today's oil prices (Dec 05)
- Savings on electricity bill of approximately one third per year.
- No scheduled maintenance
- Significantly reduced carbon emissions
- Grants obtained to value of £2,250

## Testimonial:

When initially designing this property the owner was keen to go "green" with as many products as their building budget would allow.

"I wanted to build an environmentally friendly home and in the process provide as much of my own energy requirements as possible. With the rising costs of oil and electricity I am delighted to see the benefits already. I run my Heat pump on the economy 7 tariff and currently my Underfloor heating bills are averaging less than £5.00 per week! My turbine has just been installed so I am looking forward to a smaller Electricity bill in the next quarter! The attention to detail and first rate advice from Renewables Ireland and Kensa Engineering influenced my decision to use their products. I spent a lot of time at Self Build shows and scanning the Internet and doing hours of research. The guidance I have received during and since installation regarding the running of my systems has been second to none. I even had replies to my queries during the weekends. Now where else can you get that level of customer care?"

Melanie Cameron  
Sept 06



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