

# Case Study



**Location:** Dungannon, Co. Tyrone  
**Installation date:** February 2006

**Contractor:** McAleer & McGarrity Plumbing and Heating, Dungannon

- Clear Skies accredited installers
- Specialists in renewable systems
- Supported and mentored by Imagination Solar and Kensa Engineering

## Technologies installed:

- Hepworth Underfloor heating
- 8kW, single phase, single compressor, Kensa Heat Pump
- Twin panel Imagination Solar system and 250 litre pressurised system

## The site:

A timber frame storey and a half, with zoned underfloor heating on the ground floor only. Excellent insulation levels implemented. The renewables suite of products is housed within the garage which is no more than 10m from the main dwelling. The garage has a Southerly aspect for the two solar panels, each of which is accompanied by a small photo voltaic panel, used to drive the pump. Slinkies buried in 2m depth trenches, 300mm wide and 40m long. The heat source for the 8kW Kensa heat pump are 2x40m slinkies in area behind the garage.

## 8kW Kensa Heat Pump

- Single phase, single compressor heat pump
- Typical power consumption 2kW
- 25 amp rated, 18.7 amp max running current
- Co-efficient of Performance (COP) typically 4

## The Hepworth Underfloor System

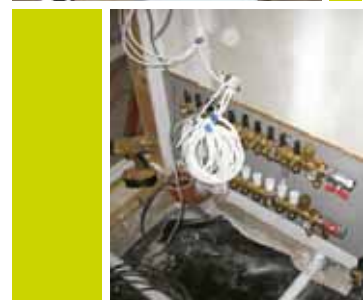
- Two manifold system one for living areas and other for bedrooms and bathroom
- Each room individually thermostatically controlled
- Hep20 pipe with Oxygen barrier
- No pipe joins under screed
- Pipe guaranteed for 50 years

## Imagination Solar Drainback Vessel

- The drainback system ensures the system is freeze and overheat protected
- Pump within drainback unit is powered photovoltaic cells, also on roof
- Linked directly into the solar coil of the 250 litre pressurised, stainless steel, hot water cylinder, with 2 x overheat protectors

## The Imagination Solar Panels

- 5.4 meters squared of flat plate solar system, with 2 x photovoltaic panels
- Each panels weighs only 25Kg
- Connected to drainback unit using 10mm copper
- 3 x 8mm holes through roof felt, flow & return and a PV light sensor to switch system on and off



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## Customer benefits:

- Thermostatically controlled rooms
- Savings on heating bill of approximately £600 per annum
- Lifetime savings of £19,200 (25 years) at today's oil prices (Dec 05)
- Savings on domestic hot water bill of approximately £250 per annum
- No scheduled maintenance
- Significantly reduced carbon emissions
- Grants obtained to value of £2,600

## Testimonial:

"The decision to install a renewable heating system in our new home, was based mainly on the rising costs of oil and gas. The Geothermal Heat pump, was an ideal way of cutting the heating costs in our new home, made even more appealing with grant assistance. I would highly recommend the use of renewable energy in any new build or existing home."

A. McMullan  
Co Tyrone



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