



Renowned Artist Sculpts Energy Efficient Future

Artist and sculptor Keith Maddison and his wife Christine live in a 4 bedroom, stone built bungalow, which nestles in the historical and picturesque village of Elsdon in the heart of the Northumberland countryside.

Although beautiful, the temperatures can be unforgiving in the depths of winter and deliveries of fuel supplies can prove difficult in poor weather conditions. A hot water and heating system that relies upon these deliveries is certainly not ideal, and with no gas in the property to provide alternative heating, an efficient and reliable system is essential.



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Renewable Heating Technology

Domestic Heating

Case Study

Elsdon Sculptor
November 2010

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“Until now we have been relying on an AGA cooker fuelled by coke to provide the heating and hot water to the bungalow, but with solid fuel costs rising and supplies diminishing we had been looking around for a replacement,” said Mr Maddison. We were not happy with alternative fuel sources such as anthracite and pellet fuel and wanted a sustainable solution.

“Sorting out the AGA was labour intensive, not only did it need topping up twice a day - which you forgot at your peril, as that meant we could be without heat and hot water for quite some time - we also had to clean it out and dispose of the ashes on a regular basis,” he explained.

Mr Maddison wanted a cost-efficient, renewable energy supply that he could rely upon in all weathers, so he called in the UK’s largest and longest established renewable technology company, Ice Energy Technologies.

Dave Webb, Installations Manager for Ice Energy Heat Pumps Ltd, visited the Maddison’s property to advise on which new system the couple should install. Having carried out a site survey at the property he recommended they replace their old system with Mitsubishi Electric’s Ecodan air source heat pumps.

“Originally, we looked at the possibility of using a ground source heat pump system, said Mr Webb. “However, there was not enough space for a horizontal collector system, so early on in the design process we determined that an air source heat pump would be the right technology for the Maddison's property.

Installation Summary

4 bedroom stone-built bungalow

Off-gas area

Two 8.5kW Ecodan air source heat pumps fitted to increase heating efficiency and lower energy costs

Originally heated by AGA



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Certificate Number: MCS HP0002
Product Reference: PUHZ-W50YHA-(BS)
PUHZ-W50YHA2-(BS), PUHZ-HW140YHA2YHA2-(BS)



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“We performed a full heat load assessment on the building and the results confirmed that the property required two air source heat pumps linked together to provide sufficient heating and hot water for the couples’ needs,” he explained. “The new system is controlled by an Ice Energy control system and heating is provided via a new radiator system, whilst hot water is supplied from a single 210 litre cylinder.”

Terry Hart, owner of Catterick-based, Hippo Plumbing, was called in to carry out the installation of the pumps, along with the renewal of the existing central heating system. Radiators and their connecting pipework were replaced in order to provide the correct amount of heat for the property and optimise the efficiency of the new system.

The work took place in some of the toughest weather conditions the UK has experienced for several years. In temperatures well below freezing, Mr Hart installed two, 8.5kW Ecodan units to the outside wall of the property.

“The weather definitely made life interesting in terms of getting the kit to the property,” said Mr Hart, “but the real challenge was the space restraints I had to overcome. The new cylinder was fitted back into the existing cylinder cupboard and the pipework run from outside, underneath the bath into the cupboard, and back out again to the central heating, in order to fit everything in. We chose a cylinder that was not pre-plumbed in order to help deal with the space restraints, which was a major factor in helping me to overcome the challenge.”



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Certificate Number: MCS HP0002
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Mr Hart also praised Mr and Mrs Maddison's patience and their "can do" attitude throughout the work, as they both continued to live in the property whilst the new system was installed.

The new Ecodan units harvest renewable low grade energy from the surrounding air and upgrade it into useful heat, which is used to supply the bungalow with all of the Maddison's hot water and heating requirements.

This renewable energy technology is both fuel efficient*, and low carbon, helping to meet the Government's goal of substantially reducing the UK's carbon emissions by 2050.

Due to the very severe weather conditions, the installation took a little longer than average to complete, but Hippo Plumbing went above and beyond what was expected of them in order to get the job done. In fact, when the delivery vehicles could not reach the house one day, they even managed to transport a large unvented hot water cylinder, two Ecodan heat pumps and several other items, over 300 yards, manually.

"The Ecodan's are the ideal solution for us: no fuss, no mess, and very economical, I am really pleased with their performance. They are also virtually maintenance free, all that is required is an annual check by a qualified tradesman to make sure the units are working properly and the vents are clear of debris," concluded Mr Maddison.

** For every 1kW of electricity fed into the outdoor unit of an Ecodan heating system you could get at least 3kW of heating energy. The overall system efficiency and energy savings will depend on how it compares to the heating system it replaced, satisfactory system design and installation, the operational settings and how the heating system is used.*



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