

A big step forward — the Microgeneration Certification Scheme

In the last edition of HPN I referred to a 'tipping point' being near for heat pumps in the UK. We're not there yet, but the next step is firmly in place in the form of the MCS scheme.

How does it work? Over the last 12 months, HPA members have made a major contribution to the creation of a framework for the introduction of heat pumps to a wider domestic market. This framework covers the technical efficiency of heat pumps to be installed and the technical competence of those planning to install them, with formal accreditation by BRE to ensure that both manufacturers and installers comply. The scheme also applies to other technologies such as wind, solar thermal, P.V., biomass.

A manufacturer or installer seeking accreditation will apply to BRE (application forms are now available for heat pumps on the BRE website) and will subsequently be inspected by a BRE team. Compliance for heat pump performance will be based on BS EN14511, with demanding performance criteria provided by the HPA. Installers will be assessed not only on their organisation and installer competence, but also on their ability to understand and implement system design which fully reflects the characteristics of heat pumps.

The advantage of the scheme is that a potential owner of a heat pump system for a home can select an installer from an approved list in the knowledge that the company has been assessed by an independent third party as being competent in its field. Product and installer training, usually carried out professionally by manufacturers, will feed into this scheme and evolve over the next few years. The list of approved installers will take time to build, but is available on the BRE website under www.ukmicrogeneration.org. Currently lodged in the BRE Redbook, it will soon be relocated to the Green Book.

At present the MCS requirements apply only to installations where grants are claimed under the Low Carbon Building Programme, but the expressed intention of government and industry is that they become the industry norm, a reliable technical base for progress. There will be initial resistance to the scheme from some companies on the grounds of cost, but the long term objectives are clear. We

expect all manufacturers to get on board the scheme and support the high performance standards which are enshrined within it.

A significant achievement is the inclusion within the scheme of air source heat pumps for the first time. Air source units have a clear role to play in providing wide ranging solutions for domestic heating, and there are now performance and installation standards for specifiers and local authorities to adopt. We anticipate a

considerable expansion of this market as a result.

The aim of the HPA has always been to encourage the competent installation of good quality heat pumps in all applications, and work put into MCS will have a major effect on their use in domestic dwellings. There remains work to be done, and we will closely monitor the development of the scheme. However, we are pleased to see it in place.

Tony Bowen, President, HPA

Heat pumps come to the village



The Wiltshire Leisure Village, for families wishing to enjoy a luxury holiday home in a country club community, forms the latest part of the 275 acre, Wiltshire Golf and Country Club and is the brainchild of owner, best selling author and former newspaper Mogul, Eddy Shah. The first phase comprises 44 Scandinavian style, timber framed, holiday homes and is a superb example of an ecologically sound, sustainable and cost effective, residential style development.

Space Air, the Daikin distributor, has been specified to supply the new Altherma by Daikin, air source air-to-water heat pumps providing both space heating and domestic hot water to all the luxury homes. The heat pumps are complemented by other highly energy saving equipment already specified for the Leisure Village, including sun tubes, solar powered ventilation, energy saving lighting and other environmentally friendly features. These improve upon Swindon Council's guidelines, which require at least 10% renewables in all new build projects.

Eddy Shah commented, "Being environmentally friendly is crucial to our design ethos."

Described as 'the intelligent heating system', Altherma heat pumps provide energy efficiency 'at its best', exploiting renewable energy by absorbing free heat from the ambient air and typically delivering at least three times more heat (kW) than the amount of electricity (kW) consumed. The Altherma will deliver water at 55°C and operate in temperatures as low as -15°C. A back-up electric heater can boost water temperatures when required.

According to Space Air, the Altherma air-to-water heat pumps, are extremely cost effective. In addition to being significantly easier to install than ground source alternatives, highly efficient, cheaper to operate than gas-fired central heating systems and virtually maintenance free, air to water heat pumps have the potential in the UK to substantially reduce global warming carbon dioxide emissions.

Email: marketing@spaceair.co.uk

**New HPA Website
Launched**

NIBE air heats Leicester Square

Burgess House near the centre of Leicester is a recently completed complex of 179 luxury apartments, a mixed tenure development with some residents owning outright, some owning a share of their apartments and others renting. Part of the larger Leicester Square development that features the Grade Two Listed Hosiery Mill and its chimney, the architects of Burgess House have combined a contemporary design with the industrial overtones that the site retains. All the homes have sustainable-timber double glazing, high insulation levels and energy efficient lighting and, perhaps most important of all, each has a NIBE ventilation and heat recovery system supplying energy efficient space and water heating. Heat recovery from exhaust is an effective, energy saving and environmentally sound system that has proved popular

over many years in Sweden, where the NIBE units are designed and made.

The theory of heat recovery is simple. Ventilation is essential in all homes but the exhaust air that is expelled retains the heat that it has acquired inside the building. What the NIBE Fighter recovery units do is to utilise that heat before allowing it the exhaust air to escape, recycling it into a high water and space heating capability. In the case of Burgess House, the oxygen-poor exhaust air is collected via vents in the bathrooms and kitchens and replaced by fresh air from outside. The unit takes the warm air into the recovery system via a heat exchanger and uses the retained energy for domestic water heating and to retain an ambient, controlled room temperature.

In the winter when heat requirement is at

its peak a subsidiary immersion heater in the water tank will boost the system to maintain required temperatures but for much of the year the NIBE Fighter will be the sole heat supplier.

In Burgess House great care has been taken to supply the NIBE unit that best suits the size and configuration of each apartment.

www.nibe.co.uk



HeatKing can make majestic savings

While air source heat pumps are traditionally less efficient over a heating season than ground source heat pumps, they can make a significant difference to people who are currently living in fuel poverty. Air source heat pumps have the advantage of lower installation cost than ground source heat pumps because of the absence of ground works required. In smaller properties it is not only the cost issue though, but the practicality of being able to install a ground array (the pipework that is installed below the ground to absorb the earth's energy) because of the garden's small size or inaccessibility to digging equipment.

National Energy Action (NEA), the charity campaigning to eliminate fuel poverty, has installed several HeatKing BWarm units to

test the practicality and potential for air source heat pumps to help fight their battle to allow all families in England and Wales to live in warm homes. Arthur Scott, NEA's technical manager, believes these trials prove that air source heat pumps can make a significant impact on reducing fuel poverty in off-mains gas areas.

NEA recently installed a HeatKing BWarm 8000 in a park home in Peterborough, which previously had been heated by solid fuel, costing the homeowner £40 a week. After the installation of the air source heat pump these costs were reduced to £10.60 a week including lighting and cooking costs.

Another HeatKing customer, Miss Goodwin from Stow in the Borders of

Scotland, who has benefited from a BWarm air source heat pump installation by Everwarm, was suffering from heating bills of £80 month.

Previously, Miss Goodwin had used electric storage heating and electric water heating with a Scottish Power Economy 7 Tariff. This cost £20 per week for her small house.

The Housing Association proposed a new system for the house and in April 2007 an 8kW HeatKing air source heat pump unit was installed along with solar panels and a 165-litre hot water cylinder.

She was delighted with the installation. The savings proved to be even higher than anticipated and her monthly charge was reduced to £18.70, bringing a saving of over 75%, a not untypical saving when replacing electric heating systems with a HeatKing air source heat pump.

The BWarm range of air source heat pumps offer a CoP of around 3 at 0°C ambient temperatures, which offers obvious running cost advantages against direct electric or storage heating.

Finally, comparing air source heat pumps with solid fuel one should not only focus on the considerable fuel cost savings, but also on the convenience compared with keeping solid fuel appliances topped up. Indeed for the elderly not having to go outside in the cold to top up their fuel can be reason enough to switch to an air source heat pump.

www.tevlimited.com



Irish church opts for heat pumps



An installation of Toshiba split air conditioning systems at the newly refurbished Roman Catholic Church in Sligo, Ireland provides heating and cooling for this beautifully panelled building. Specialist contractors Airflow Services of Galway installed the seven Toshiba Super Digital inverter wall-mounted units, supplied by Toshiba distributor GT Phelan.

The Parish Priest, Father Martin, had conducted extensive research into the most effective way to provide heating for the church and had even considered

geo-thermal among other options before making his final decision. He said, "The Toshiba units each provide 9kW of heat, consuming 3.3kW of power at a cost of just 56€ per hour (at 100% output). The equipment has proven a great success, with comfort levels being achieved rapidly and quietly. Cooling comes as a bonus which will no doubt be appreciated in the summer."

GT Phelan supported Airflow Services in the design of the most appropriate system for this unusual application. The Toshiba 'A' rated inverter system was chosen on the basis of capital cost, convenience of installation reduced carbon emissions and running costs. The indoor units were incorporated into the choir balcony and the plaster-work on the walls was also re-formed to allow the wall units to be mounted around the church, providing complete coverage for the congregation.

Email: marketing.uk@toshiba-ac.com

Barn's heat pump saves hundreds

The owners of a Grade 2 listed barn conversion were delighted to see their annual fuel bill plummet after opting for a Viessmann Vitocal 300 BW212 M 12.8 kW single phase heat pump, in addition to a 200 litre buffer and a 300 litre Vitocell stainless steel cylinder.

The barn has been heated for over a year so an annual running cost of £1,050, which includes all the heating and over 95% domestic hot water plus all the electric for the house including washing, drying, etc. has been confirmed.

Compared with the predicted oil use, the savings are an estimated £800 - £1,000.

Specialist heat pump installers, Renergy, installed underfloor heating throughout the property, and the collectors are ground loops with Viessmann manifolds, covering 400sq metres.

Using the Viessmann advanced weather compensation control, the heat pump has been set up to provide optimum comfort and efficiency utilising the individual room controls in the barn to fine tune the level of comfort.

For more convenience, the heat pump is set up to heat the domestic hot water on cheaper off peak electricity ready for the morning showers. The domestic hot



water has been given priority over the space heating to ensure that the needs of the owners are met, allowing the heat pump to manage things in the background without any need for intervention by the owners.

Viessmann have a full range of heat

pumps from 6kW to 106.8kW, many of which include an optional cooling function. Viessmann's own tube and flat solar thermal panels and ultra efficient controls can complement these.

www.viessmann.co.uk

Mitsubishi Electric moves into heating



Mitsubishi Electric Living Environmental Systems UK has created a new heating department to focus specifically on hot water and space heating products for the domestic market and has launched its first heat pump boiler, the Ecodan. This will be followed up with further launches early in 2008.

The Ecodan air to water heat pump boiler gathers over 70% of the heat energy it needs from the surrounding air. This makes it, claims Mitsubishi Electric, significantly more efficient at providing heating and hot water than modern condensing gas boilers, emitting at least 30% less CO₂.

Launching the Ecodan Mitsubishi Electric said, in an official statement, "The energy in the air that surrounds us is a key

sustainable resource that doesn't currently factor in peoples' thinking. Installing Ecodan can therefore help developers and house builders achieve Level 3 of the Code for Sustainable Homes. Introduced in 2006 as part of a growing body of legislation aimed at reducing CO₂ emissions, the Code sets national standards for the sustainable design and construction of homes."

The company is confident that its new boiler technology will give significant reductions in carbon emissions when compared with current gas, oil or LPG boiler technology and will also offer proven benefits in performance over other alternative low carbon technologies such as solar panels, wind turbines, CHP, biomass boilers etc.

"With the Government's Code for Sustainable Solutions, house builders now have a national standard for sustainable design and construction within new homes", explained Jason Tinsley, manager of the product marketing and technical section of the new Division. "Few products are available right now that can help developers meet the Code's stringent one to six star ratings so we have a real opportunity that can immediately help builders achieve a 3-star rating."

Ecodan, which has Building Research Establishment testing to validate

performance, uses a sealed vapour compression cycle to exchange heat (or energy) between the outdoor air and the water supply. A packaged system, it is suitable for a variety of house sizes and styles. It achieves an average of 10 - 30% reduction in running costs over gas, depending on the age of the gas boiler being replaced.

It requires an in/out water and single-phase electrical connection and the company stresses the need for exacting standards of installation coupled with modern levels of building insulation to ensure the greatest efficiency for each home. It is suitable for underfloor heating systems or traditional radiators and uses inverter-driven technology to regulate the heat output.

www.mitsubishielectric.co.uk/aircon



Smiles all round for Calorex

A major dental products manufacturer is all smiles after installing a heat pump from leading energy specialists, Calorex Heat Pumps of Essex.

Wiltshire-based Kemdent produces a globally recognised range of dental laboratory and surgery products at its specialist factory in Swindon.

It was the recommendation of heat pump technology at an energy-conservation course that resulted in the company approaching Calorex.

"I don't think people realise how effective heat pump technology is — as soon as we had installed and switched on the unit we had a free supply of hot water, it was pretty unbelievable", said Kemdent director, Graham Mayoh.

"Although only installed in January of this year, early estimates indicate savings of around £600 per month over the winter months (Nov-April) and £150 over the remainder of the year, which is fantastic", he added.

Kemdent funded the purchase of the unit, a Calorex AW1534BH through an energy-efficiency loan provided by The Carbon Trust. The loans are part of a £10m government-backed initiative providing funding of between £5,000 and £100,000 to qualifying small and medium sized enterprises in England and Wales.

Part of the manufacturing process in the Kemdent factory involves the melting of

wax, which results in a large amount of heat being expelled into the air. The Calorex unit works by capturing this previously wasted hot air, recycling it to produce a free supply of hot water for the factory.

To utilise the large amount of 'free' heat produced, Kemdent has combined the Calorex unit with a new gas boiler, linked via a heat exchanger to provide heating for the whole factory. This has replaced an array of immersion heaters, electric fans and under floor heating previously required.

Unlike other water heating systems, Calorex heat pumps are capable of delivering up to five times more energy than they consume. This makes them environmentally friendly and inexpensive to operate and the ideal product to qualify for a Carbon Trust interest free loan.

www.calorex.com



Conservatories need heating and cooling

The experience of more and more purchasers of conservatories, particularly as more and more of them are used year round is that modern conservatories need heating as much as they do cooling. Carrier heat pump split systems such as the XPower recently installed by Domair for Mr and Mrs Jones in Salisbury provide both.

They also have the flexibility to easily switch from one mode to another. With Air4Life patented filtration capabilities relief from hayfever and other allergies is a likely bonus if this option is selected.



The Heat Pump Association is a founder member of the U.K. Heat Pump Network.

Origination and printing by The Advertising Designers, Edenbridge, Kent.

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How to Join:

The HPA is dedicated to the application of heat pump technology and will achieve this goal with the aid of new members joining the already committed companies.

If your company would like to receive information on joining the HPA. Please contact Terry Seward, HPA Secretary.

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