

Innovative energy

Cornwall's reputation as a powerhouse of sustainable energy and environmental technology has attracted one of the UK's leading ground-source heat-pump suppliers.

Overview

As corporate mission statements go, it's admirably clear and bold: "To provide well built, well designed and cost-effective heating systems that help reduce CO2 emissions and encourage a cleaner world." As it suggests, Eco Heat Pumps is one of a growing band of Cornwall-based businesses that combine environmental vision with technical know-how and commercial flair.

It's a combination that's proving remarkably successful: over the past five years, the company has been busy installing ground-source heat pumps at some 250 locations all around the UK, ranging from community centres, hospitals and schools to farm buildings, new-build homes and even swimming pools. The systems are cheaper to run than oil, LPG, electric and even mains gas systems, delivering substantial savings over their 20-25 year lifespan.

Workforce

Managing director Phil Moore has over ten years' experience in the heat pump business, having been accredited by the International Ground Source Heat Pump Association in 1996 and trained extensively with IVT and Thermia of Sweden. Ben Hodges, who manages Eco Heat Pumps' South West operation, is himself from Cornwall, and after spending several years outside the county working in the IT sector, he was delighted to return to take up a challenging role within a young but rapidly growing industry. The company also has two installers in the South West, both recruited locally, and like all the company's technical staff they have received intensive training in Sweden. Eco Heat Pumps is planning to recruit more staff in 2007, and Ben says that Cornwall has no shortage of people with the technical capabilities of the sort that the company needs - indeed, it is renowned as the UK's leading centre of renewable energy R&D

Clients

Eco Heat Pumps have designed and installed systems for a wide range of clients in the public sector, including housing associations, educational authorities and NHS trusts, as well as for many private developers and individual home-owners in all areas of the UK, from the Hebrides to Lands End. Recent high-profile installations include an air-sourced heating and hot-water system for the 'Big C' Family Cancer Information & Support Centre, an innovative circular building at Norfolk & Norwich University Hospital. As well as devising tailor-made solutions to suit particular sites, the company can also advise its clients on accessing the government grants and tax breaks that are available to help towards costs.

Technology

The principle behind the technology is actually very simple. The pumps take heat stored in the ground (or sometimes in air or water) and move it into a building. The sun naturally replenishes the energy that's removed, so the supplies that are tapped are almost literally limitless. But exploiting this resource with maximum efficiency and reliability calls for highly sophisticated solutions.

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As fossil fuel prices have risen, payback times on installations have now fallen to as little as five years, comparing very favorably with solar and wind technology.

Eco Heat Pumps was started by Phil Moore, a graduate of Camborne School of Mines who had previously worked on ground-breaking renewable energy research and system design in Cornwall. The company's main base is in Sheffield, but in 2006 Phil decided to open a South West subsidiary to deal with high levels of demand in the area. Phil himself had built his own house in Cornwall ten years previously - featuring a ground-source heating system, needless to say - so there was also a strong personal motivation for strengthening the company's links with the county.

EHP installs state-of-the-art systems manufactured by the Swedish firm Thermia, which has been at the forefront of ground-source pump technology for over 30 years.

They typically comprise a continuous closed loop of special pipe buried near a building, either in trenches 1m deep or in boreholes that range from 25-150m deep. A mixture of water and anti-freeze is circulated through the buried pipes, where it absorbs heat from the surrounding earth. The ground loop is connected to a heat pump inside a building that takes heat out of the circulating mixture and transfers it into the heating circuit and hot water tank. Depending on the size of the building, systems can range from a single 4kW unit to multiple units with a single controller producing around 300kW. Ground loops can also be placed in lakes or ponds, and in some circumstances the best solution may be a special air-handling unit that collects solar energy from the air.

Support

Phil Moore's background meant that he already had extensive connections in Cornwall's renewable energy sector, which is now supported by the Cornwall Sustainable Energy Partnership (CSEP). This is seen as a model programme not only in the UK but all over Europe, and works to integrate sustainable energy into public, private and community-sector strategies. Eco Heat Pumps is now represented on CSEP's Energy in Buildings Working Group.

Before opening its South West subsidiary, the company contacted Cornwall Pure Business, who Ben says have been useful in terms of providing contacts for funding, helping to find premises to meet expansion plans and also by putting Eco Heat Pumps in touch with actnow, Cornwall's dedicated broadband and IT support agency. With actnow's help the company has been able not only to install broadband internet but also to invest in the latest computer technology that it needs to run the sophisticated software used in the design process.