

## Heating the future.....

Nine years ago, Richard Freeborn, a marine engineering graduate of Cornwall College, designed and manufactured an innovative heat pump, leading to the creation of one of Cornwall's largest renewable technology companies.

### Overview

Richard Freeborn first came across the concept of heat pumps when he was working as a superyacht captain and became interested in the engine cooling systems they used. On further investigation, he saw an opportunity to create a heat pump system, which could be used on smaller boats, and a derivative of this is now used on the majority of RNLI rescue vessels.

Richard explains "After creating a pump system for the marine industry, I couldn't see why a heat pump system couldn't be adapted to work in buildings. For me it was the logical next step. The rest they say is history."

Richard went on to develop a ground source heat pump system and formed Kensa Engineering. "Kensa" was chosen as it means first in Cornish and the company was the first to design and manufacture ground source heat pumps within the UK. It also remains the only company approved under the UK Government flagship "Clear Skies" (now 'The Low Carbon Buildings Program') renewable energy initiative ([www.clear-skies.org](http://www.clear-skies.org)) to manufacture and install ground source heat pumps.

The company has grown significantly in the past nine years and now employs 25 members of staff. Richard Freeborn is now the Chairman of the business and Simon Lomax has recently joined the team as Managing Director, as the business enters its next phase of growth.

### Technology

Kensa has the capability to build ground source heat pumps for any size of building, with a choice of heating or cooling optimisation, depending upon the loads. Kensa's systems are specifically designed so that no specialist training is required to install them and therefore general builders/contractors and plumbers can provide the installation service and are encouraged to do this.

Every ground source heat pump that Kensa manufactures is tested to BS EN 255 (parts 1, 2 or 4 as applicable) using a calorimeter. Kensa prides itself in its testing which is far more rigorous and taken over a much longer time period and at a much greater range of temperatures than the standard requires.

### Clients

Kensa has supplied heat pumps to a number of clients including: Cotswold Water Park, Caerphilly Visitor Centre, Abergavenny and Minehead Community College.



The business has recently moved from Falmouth to a 20-acre derelict mine site at Mount Wellington, near Bissoe. The move allows Kensa to expand as the demand for renewable energy technology increases.

Simon Lomax adds: "Kensa's heat pump engineers are acknowledged as the best in the business, and our award-winning products can compete directly with gas and oil boilers in new buildings that have under floor heating. Being based in Cornwall has many advantages for the company. The county truly is leading the way in renewable technology; it is open to new ideas and innovation and is the home of heat pump technology in the UK."

The internationally famous Camborne School of Mines, now part of the University of Exeter's Cornwall Campus at Tremough, prides itself on being one of the world's foremost centres of Earth Science. CSM offers the UK's first undergraduate programme in Renewable Energy, producing its first graduates last year and Cornwall College has also developed its own foundation degree in the subject.

Simon adds: "Having access to the level of research and expertise that exists in Camborne School of Mines is fantastic. Not only that, but we are also well placed to recruit graduates both from Camborne School of Mines and Cornwall College."

### Support

In April 2006 Kensa were introduced to Mark Scibor-Rylski who was a Business Mentor for Environmental Industries at the University of Exeter in Cornwall Enterprises Limited.

The University of Exeter in Cornwall Enterprises Limited was set up to manage Objective 1 related consultancy activity in Cornwall and to support a new role for Cornwall; that of Business Mentor. The Business Mentor works with SMEs in the Environmental Technology sector in Cornwall to assist in the regeneration of the county. These businesses, both new and existing, which are supported by the Business Mentor, are helped to grow in markets responding to environmental challenges.

Mark provides Kensa with invaluable aid and since his introduction has become a non-executive Director for Kensa.