

## A Ground Source Heat Pump Installation for Leintwardine Community Centre, Herefordshire



Leintwardine is a large village in Northern Herefordshire, which has both Medieval and Roman roots. In Roman times when Leintwardine was known as Bravonium, it was a stopping point along a busy trade route and today Leintwardine still is a stopping point for many visitors who come to marvel at the picturesque landscape of Northern Herefordshire.

Modern Leintwardine has a vibrant community feel. Much of the activity of the village is centred around the Leintwardine Centre. The site contains two main buildings: The Leintwardine Community Centre and the Reading Room. The Reading Room has been converted from a Village Hall Centre Project, into a Library and Meeting Room. The Leintwardine Community Centre was formerly the Village school.

### The Problem:

The upgrading of the Leintwardine Community Centre was Phase One of the Leintwardine Centre Project. The Community Centre contains the Main Community Hall (converted from two classrooms) with an adjoining kitchen and servery (a third classroom conversion). On the other side of a spine corridor are offices, print room and archive, store rooms and toilets and washrooms. The nineteenth century buildings were built with thick stone walls and little to no insulation. Heating in the offices was provided by an assortment of electric radiator/convector. The heating in the Community Hall was from high level radiant heaters which were only switched on when the hall was occupied. The hirers of the hall kept the heating going by feeding a coin meter. The Architects designing the Community Centre called upon the services of an energy consultant to assist with the choice of a heating system. The energy consultant advised the use of a Ground Source Heat Pump.

### The Solution:

WDS Green energy were approached to offer a cost effective solution to heating this bustling community centre. **2No Dimplex SIH 11 ME ground source heat pumps with boreholes** were installed in a dual heat pump system. The dual heat pump system WDS Green Energy installed allows for the overall heating of both the Community Hall and the ancillary offices from a single point but also allows for individual control over the temperatures for each section of the building. This allows the heating to be turned up in one part of the building if it is in use and turned down in the other if it is not in use. This allows the centre committee to further save on costs.

### The Benefits:

The capital cost of the heat pump installation was met by a 50% grant from the Department of Energy and Climate Change (Low Carbon Buildings Programme Phase 2). The remainder of the costs were covered by a grant from the BIG Lottery Community Buildings Programme. At an ambient temperature of 16°C with the outside air temperature of 3°C, the pumps have a Coefficient of Performance of 4 to 1.

Because the heating is operated 24/7 there has been no reduction in the electricity bills compared with the former system, whereby the hall was heated only when occupied. However the building is now warm, dry and welcoming. Footfall has increased, the hire charges have been increased and increased use of the modern facilities has produced more income for the Centre and enabled the creation of an operating surplus which will be used to create a sinking fund to pay for maintenance of the building and finance future improvement. The possibility of benefitting from the Renewable Heat Initiative is being investigated.

