

## Case Study

# Caerphilly Castle Visitor Centre

‘Medieval castle uses moat to keep visitor centre warm’

## The facts:

### Property Type:

Timber framed new build

### Product supplied:

Kensa Compact Heat Pump with single compressor

### Application:

100% space heating and cooling within the building

### Installation:

Open loop system taking water from the moat and extracting the energy for heating or increasing its energy for cooling

### Cost Savings:

Significant savings over oil heating

### Fuel Displaced:

Oil

### CO<sub>2</sub> Reduction :

46% saving over oil (based on data from the DTI and BRE)



built in 2002 uses modern technology to meet its high environmental credentials.

This visitor reception building at Caerphilly Castle is heated using a heat pump and renewable energy from the castle's surrounding moat. The adjacent moat not only acts as a heat source during winter, but also disperses unwanted heat from the building in the summer when the heat pump is configured for cooling. In heating, a water pump moves moat water into the Kensa Compact heat pump where it's useful heat energy is extracted. The colder water is discharged back into the moat. The cycle is reversed for cooling.



The model of Compact heat pump used, features Kensa's "co-axial" heat exchangers. There is also an additional 'standby' water pump as part of the installation. These heat exchangers are made from materials similar to those commonly used for domestic drinking water and are a highly efficient method of heat transfer. They are suitable for use in any type of "open loop" application.



Kensa's Compact heat pump is connected to an underfloor heating system to heat the building, and a water based fan coil system will be used to provide cooling during the warmer summer months. No servicing or maintenance should ever be required.

**£Grants**  
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