

## Case Study

### Grade Ruan School, 8kW, Cornwall



#### 'Pupils gain insight into renewable energy heating systems'

Grade Ruan School, built by the Victorians, was sympathetically extended to provide additional space for the pupils. The extension to the school was built to current building standards at the time and was highly insulated.

The school fitted a "wet" underfloor heating system throughout with plenty of good quality insulation underneath. This along with the high insulation meant it was an ideal application for the use of a ground source heat pump to provide the space heating for the building.

Being a school there was plenty of land available for the ground arrays to absorb renewable energy from the ground. Two 70 metre deep closed loop boreholes were drilled within the playground area to provide the heat source and energy for the heat pump. The manifold for the boreholes was placed in a purpose built lockable cabinet mounted on the external wall of the school.

These are connected to an 8 kW "Compact" heat pump manufactured by Kensa Heat Pumps. The heat pump was designed to provide space heating with the school opting for the production of their domestic hot water via a set of solar thermal panels. This provided the school with all the space and domestic hot water they required and more importantly low running costs.



## The facts:

**Property Type:**  
Modern Extension

**Property size:**  
Approximately 160 m<sup>2</sup>

**Product supplied:**  
8kW Kensa Compact Heat Pump with single compressor

**Application:**  
100% space heating within the property, complementing underfloor heating. Domestic hot water provided by solar thermal panels

**Installation:**  
Two 70m deep closed loop boreholes.

**Cost Savings:**  
Significant savings over existing oil heating

**Fuel Displaced:**  
Oil

**CO<sub>2</sub> Reduction :**  
46% saving over oil (based on data from the DTI and BRE)

## £Grants

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## Project partners

**Specialist Driller**  
borehole drilling

**Clients' own contractor**  
heat pump

