

## Outline Case Study



**Site :** Surrey

**A significant manor house dating from 1620-1710 sitting on approximately 20 acres.**

**Challenges :**

**Listed Grade II.  
Previously heated via LPG.  
Very poor levels of insulation.  
Very high standards of making-good required to remove all evidence of trenching.**

**Solution :**

**Loft insulation via 100mm Thermafleecce Wool battens.  
Ground floor insulation via 100mm Triso Sheet installed to cellar ceiling.**



**Spatial heating and hot water for the main house via 2 x 40kW Ground Source Heat Pumps.**

**Source taken from a 4200m surface soil horizontal collector field located in an adjacent paddock.**

**Outdoor pool heating and spatial heating and hot water for ancillary buildings via 1 x 14kW Air Source Heat pump.**



Isoenergy provided a comprehensive consultancy report to evaluate current energy efficiency and advise on where improvements could be made.

A detailed report outlining proposed systems, potential savings and an indication of installation costs was undertaken. The survey identified the need for both loft and ground floor insulation as a prerequisite to installing any form of heating system into the property. Ground floor insulation via 100mm Triso sheet was installed to the cellar ceiling with 100mm of Thermafleecce placed in the loft between the battens.

A subsequent thermal imaging survey on this significant manor house from 1620 showed significant heat loss from windows but no loss from the roof.

