



Denton Hall, Ilkley, Yorkshire © NG Bailey

CASE STUDY: Denton Hall, Ilkley, Yorkshire

Denton Hall is a Grade I listed mansion, set in 2,600 acres of farmland in the heart of the Yorkshire countryside. It is the head office of national building services provider, NG Bailey, having been bought by the company in 1979, and also operates as the firm's training academy.

Sustainability is at the heart of NG Bailey, both in the work it delivers for clients and across its own estate. So, in 2006, the company embarked on a schedule of work

that would result in improved environmental performance of all its offices, as well as at Denton Hall – a journey that would be challenging because it is a listed, stone-built, high-ceilinged, draughty property which must retain its visual impact.

With these parameters in mind, a team of the company's own engineers set about the task, which included the following:

Installation of solar thermal panels

- With over 75% of Denton Hall's energy consumption coming from oil usage, there were significant savings to be made from using solar panels to heat the domestic hot-water supply.
- The panels required very precise positioning in relation to the sun, to maximise solar energy conversion.
- The optimum location was identified at the front of the building. They had to carefully design ground-level, natural camouflaged units to comply with listed buildings regulations.

The use of energy-efficient lighting

- With lighting contributing up to 60% of electricity consumption at the Hall, improvements were imperative.
- Denton Hall has 17 chandeliers with 344 light bulbs; specialist suppliers matched and replaced the candle-shaped bulbs with their more environmentally friendly counterparts.

Introducing the correct building controls

- 11 wireless sensors / monitoring units were installed, creating 'zones' in which energy consumption would be measured.
- An intranet-connected Tridium Intelligent Building Management system was installed throughout. This, for example, means that lights are switched on and off according to when a room is booked for use.
- A large screen in reception shows the latest consumption statistics, which in turn helps to raise awareness of the energy-reduction programme.



Solar thermal panels at Denton Hall © NG Bailey

Internal communications

One of the biggest challenges in reducing consumption was engaging the users of the Hall. The use of technology cannot improve energy consumption alone; the desire has to be embedded within the culture of an organisation, so NG Bailey set out to change the hearts and minds of its workforce through an internal communications campaign, including a screen located in reception which displays real-time energy-performance information.

The company continues to improve environmental sustainability, including through the planned installation of a biomass boiler. It is well on its way to hitting its energy-reduction target for the Hall.

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