



CASE STUDY
REHABILITY, CHEDISTON, SUFFOLK

System Summary:

Boiler:	Gilles HPK-RA 45kW
Output:	45kW
Fuel:	G50, W30 Woodchip, locally sourced
Fuel Storage:	Converted cartlodge with 3.0m sweep collector
Fuel Storage Capacity:	25m ³
Annual Heat Load:	95MWh per year
Annual Fuel Requirement:	27 tonnes (G50, W30 Woodchip)
CO ₂ Saving:	25 tonnes per year
Features:	Automatic ignition, heat exchanger cleaning, ash removal

Rehability is a state of the art occupational therapy and disability assessment centre set in a beautiful old Suffolk barn.



The owners decided that during the major redevelopment, they must seriously consider all kinds of low or zero carbon technologies. After much deliberation and deciding just what was really required in terms of heating and hot water requirements, wood fuel was decided upon as all the space heating and domestic hot water (DHW) could be met with the installation of one system.

The boiler

The 45kW Woodchip boiler is fully automated in terms of ignition, fuel feed, heat exchanger cleaning and ash removal. All this means that the carbon neutral system looks after itself from month to month. The boiler has also made significant running cost savings over the alternative oil-fired system.

"We thought we would like something which is more sustainable," said the owner. "We looked at wood fuel and talked to Energy Innovations who were able to solve one particular problem - the storage".

When Energy Innovations and the owners of Reability were designing the fuel storage for the 45kW system, it was decided to continue with the ethos of all of the other building work on site - to use existing buildings and space to make something practical, yet aesthetically pleasing. This resulted in the fuel store being constructed in an existing cart lodge. The store is steel lined and clad in wood to tie in with the rest of the buildings. The result is a boiler room that can hardly be differentiated from the 500 year old barn.

This fuel store holds 6 tonnes (24m³) of woodchip, which is sufficient to keep this boiler running for two and half months during the heating season when used with G30 chip at 25 - 30% moisture content.

Using wood fuel

"When we turn the central heating up a notch, you feel virtuous. We're also helping to manage East Anglia's woodlands," said the owner. The owners of the centre are pleased with the installation as a whole. Their house and business will be run from the central boiler that burns a sustainable fuel yet has all the convenience of a fossil fuel alternative.



The proud owner with his Gilles boiler at the opening of Reability



The fuel store under construction with the sweep collector in place.



The finished fuel store incorporated within the barn and cart lodges.