ENERGY INNOVATIONS

Sole Distributors For GILLES BIOMASS HEATING

CASE STUDY

ARCHER'S FARM, SUFFOLK

System Summary:

Boiler:	GILLES HPK-RA 95
Output:	95kW
Fuel:	G50, W30 woodchip sourced from local woodland
Fuel Storage:	Semi-submerged store with 3.4m sweep collector
Fuel Storage Capacity:	48m^3
Annual Heat Load:	200MWhr/yr
Annual Fuel Requirement:	57 tonnes (G50, W30 woodchip)
Annual CO_2 Saving:	53 tonnes/yr
Boiler Features:	Automatic ignition, heat exchanger cleaning & ash removal
Other System Features:	District heating, ultrasonic heat meters, return temperature limiting.

The renovation of a complex of old barns and a farmhouse, at a site in rural Suffolk was the ideal opportunity to put in a biomass boiler and small district heating system. The layout of the site meant that one central boiler could easily supply heat to the surrounding properties. The cluster of properties contains residential units, a commercial unit and boiler room and fuel store.

The total heating demand from the site will be met by a single 95kW Gilles woodchip boiler. The boiler room and fuel store were designed to minimise user intervention. As the properties on this site are high spec residential units the boiler room and fuel store were carefully designed to blend with the overall development. The boiler room and fuel store have also been positioned and constructed in such a way that access can be maintained to the fuel store without impacting on the residential properties.

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Suitability of a Woodchip System

The rising price of fossil fuels and the client's wish for the development to have minimal environmental impact, led to the interest in renewable energy systems. The abundance of wood from farm woodland, along with the fact that a biomass boiler is a complete single renewable heating solution, providing both domestic hot water and space heating, led to the decision to install a Gilles woodchip heating system.

The 95kW Gilles HPK-RA boiler provides the heat to the properties via a network of pre-insulated underground pipes. The pipes are laid around half a meter underground and carry hot water to each property supplying heat, through a heat exchanger, when the demand is there. The heat supplied to each property is measured through ultrasonic heat meters, which monitor heat used for billing purposes to individual tenants. The system has been carefully designed and commissioned to minimise both heat and pumping losses.

The fact that there would be no-one on the site to maintain the boiler meant that an important factor in choosing a suitable product was the level of automation. The Gilles woodchip boiler is fully automated and should run for two months without attention.

The boiler can be monitored remotely by Energy Innovations from their office, to ensure the boiler is running efficiently and provide fault diagnostics by using the Gilles Fireview Software.

Image 1: Kamstrup Heat Meter
Image 2: Isopex Pipes
Image 3: The boiler room and fuel store
Image 4: A view of the development where all the properties are heated by one central Gilles woodchip boiler.

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