

Callow Place Flats, Sheffield, 500kW



In December 2005 Econergy Ltd installed a automatic woodchip boiler for Sheffield City Council, in Callow Place Flats. The Callow Place boiler room provides heating and hot water to 6 tower blocks in Gleadless, to the south of Sheffield city. The tower blocks were built in the 1960s and consist of 296 flats. The original power provision was electric under-floor heating. This was converted to coal in the 1980s and gas in the 1990s.

Biomass Boiler

The installation comprises a Froling Turbomat 500kW biomass boiler, two 600 kW gas boilers (converted coal boilers) and one CHP unit.

Technical Details

- The woodchip boiler is 90% efficient
- The boiler includes automatic boiler tube cleaning and ash disposal to separate grate and fly ash boxes.
- Automatic ignition allows the boiler to fire up automatically on demand using fuel of up to 50% moisture content.

- Particulate emissions are substantially better than EN 303-5 Class III criteria and are c. 1/5th of maximum emissions permitted for smoke control zones.

Below; Froling Turbomat 500kW in boiler house



Wood fuelled boilers Biomass energy services District Heating

Tel: 0870 0545 554 www.econergy.ltd.uk e-mail:sales@econergy.ltd.uk



Top left; Boiler room (behind) & fuel reception bunker
 Middle left; Lorry access to fuel reception bunker
 Bottom left; Manual push-back bunker lid awaiting a fuel delivery

Operation

- The site layout presented a particular fuel reception and transfer challenge which Econergy addressed with two fuel stores. The reception bunker and internal fuel store, in the boiler room, are connected via a 23m fuel transfer auger.
- The reception bunker is a purpose built 50m³ concrete underground bunker, built into the existing slope on-site, thus avoiding deep excavations and cutting down capital cost.
- The fuel store has a manual pushback lid, which is opened for the fuel deliveries. The woodchip is tipped directly into the fuel reception bunker.
- The internal fuel store (converted from a coal bunker) feeds the boiler automatically via an articulated-arm fuel extractor
- The system will consume approximately 800 tonnes (35% moisture) of wood fuel per year, sourced from South Yorkshire.

Fuel Supply

Wood fuel provider, Silvapower, has set up a contract with Sheffield City Council to supply woodchip to the Froling boiler.

Carbon Saving

The system will deliver an estimated 2,100,000 kWh per year of heat, avoiding some 650 tonnes of carbon dioxide emissions per year.

Grants

The installation was paid for by Sheffield City Council capital budget and supported by Yorkshire Forward Grant and Bioenergy Capital Grant Scheme.

Important Issues

- Planning Permission, Clean Air Act, Fuel deliveries times.
- Consultation – Tenants / Residents were fully involved.