

Callow Place Biomass Boiler

In December 2005 Econergy Ltd installed a 500kw Fröling Turbomat automatic woodchip boiler for Sheffield City Council, to provide heating and hot water to 296 flats.



Boiler room (behind) & fuel reception bunker

Background

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. Currently the boiler room consists of one 500kW biomass boiler, two c.700 kW gas boilers (converted coal boilers) and one Combined Heat & Power (CHP) unit.



Manual push-back bunker lid awaiting a fuel delivery



20m auger from fuel reception to internal bunker



INVESTOR IN PEOPLE



Technical Details

- The installation comprises a Fröling Turbomat 500 kW woodchip boiler (90% + efficiency), fed via an auger from an articulated-arm fuel extractor in an internal fuel store (converted from a coal bunker).
- A purpose built 50m³ concrete underground fuel reception bunker with manual push-back lid delivers to the internal fuel store via a 20m auger.
- Automatic ignition allows the boiler to fire up automatically on demand.
- The boiler includes automatic boiler tube cleaning and ash disposal to separate grate and fly ash boxes.
- The wood boiler will run year round alongside the CHP and gas boilers.
- The system will deliver an estimated 2,113,000 kWh per year of heat, saving some 650 tonnes of carbon dioxide emissions per year.
- The system will consume approximately 800 tonnes (35% moisture) of wood fuel per year, sourced from South Yorkshire.
- Particle emissions are much lower than the EN 303/5 Class III criteria.



Articulated arm fuel extractor



Fröling Turbomat 500



Fuel reception bunker

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 must be fully involved.
- All partners should understand the reasons for biomass installation. This should in turn influence their role in the project.

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