



The Carwood Close boiler room provides heating and hot water to 97 houses in the Burngreave area to the northeast of Sheffield city. The houses were built in the 1980s and until now were heated from 2 gas pressure jet boilers in a temporary boiler room.

The new purpose built boiler room consists of one 320kW biomass boiler, two 400kW boilers and a 5000 litre accumulation tank.

Before this installation could take place there were a number of important issues that needed to be addressed. These included obtaining planning permission, complying to the clean air act and working out fuel delivery issues such as supplier and frequency of delivery. Consultation was also undertaken with the tenants to fully involve them with the project.

## Biomass Boiler

The Froling Turbomat automatic woodchip boiler was installed in September 2006. The biomass boiler will take the main load with the gas providing back up and peak demand.

Left; Froling 320kW Turbomat boiler in boiler house

## Technical Summary

- The Fröling Turbomat 320 kW woodchip boiler is 90% + efficient
- Automatically modulates down to 30% output at this high efficiency





- Automatic ignition allows the boiler to fire up automatically on demand.
- The boiler includes automatic boiler tube cleaning and ash disposal to an ash can.
- The boiler can accept woodchip up to 50% moisture content.

#### Operation

- The woodchip is stored in a purpose built 67m<sup>3</sup> concrete underground fuel store bunker
- The fuel store has a manual pushback lid, (top right hand picture) which is opened for the fuel deliveries. The woodchip is tipped directly into the underground fuel reception bunker.
- The woodchip is delivered direct to the biomass boiler via a spring-arm fuel extractor and a 6m auger.
- The system will consume just under 1,000 tonnes of woodfuel every year, sourced from South Yorkshire.

Top Left; Boiler house and fuel reception area.  
 Top Right; Purpose built underground fuel store. Manual pushback lid is opened, ready to receive woodfuel delivery.  
 Right; Inside the boiler

#### 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 2,085,168 kWh / year of heat, avoiding some 644tonnes 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 the Biomass Capital Grant Scheme.

