

Greenland Road, Sheffield: Biomass community heating serving 380 flats



SOCIAL HOUSING



Sheffield Homes was set up by Sheffield City Council in 2004 to manage the day-to-day running of council homes. Sheffield Homes manages approximately 42,000 homes and 2000+ leasehold properties.



Client	Kier Sheffield LLP, for Sheffield Homes
Application	4 blocks of flats and maisonettes, 380 dwellings in total
Solution	A new build energy centre including two wood chip boilers, along with standby condensing gas boilers. High performance ceramic filters provide flue gas clean-up.
Boiler type	Two Fröling Turbomat 500kW boilers
Fuel reception	Twin underground fuel bunkers are fitted with rotary arm fuel extractors and slide open woodfuel loading hatches, to allow tipped delivery of wood chip fuel.
Fuel supply	The boilers are expected to use c. 1,700 tonnes of locally sourced seasoned wood chip to supply c. 5 million kWh of renewable biomass heat to the housing estate each year.
CO2 saving	830 tonnes per annum
Start-up	April 2010



Greenlands biomass energy centre showing the fuel reception bunkers

Project history

Econergy installed the first biomass community scheme for Sheffield Homes in 2006 to heat 296 flats at Callow Place, followed shortly afterwards by a biomass community heating scheme at Carwood Close for 97 houses.

Econergy worked with Sheffield City Council to assess the feasibility at several further locations, leading to the design, supply and commissioning of the new biomass energy centre serving Greenlands. Econergy secured CERT funding for the scheme from British Gas.

Design, installation and operation

Wood chip is delivered by a tipping trailer into a pair of adjacent 5.5m by 5.5m by 3m deep underground fuel stores, one for each boiler. The system requires up to one delivery per day in winter of wood chip fuel at a moisture content between 25% and 40%.

Two 5,000 litre buffer tanks are installed to minimise boiler start-stop cycles for optimum efficiency and to maximize the utilisation of the biomass boilers

Advanced Particulate Filter Technology

Local Air Quality at the Greenlands Estate is poor and close to statutory PM10 limits due to nearby industry and car emissions from the M1 Motorway

The Local Authority was not prepared to permit incremental PM10/ PM2.5 emissions over the existing gas emissions. In a UK first on this scale for a biomass community heating scheme, Econergy installed two high performance ceramic filters from UK Company Glosfume to reduce the biomass boiler PM10 emissions to well below 5 mg/MJ. The filters are fully automatic and self-cleaning, ash is emptied at the same time as the boilers.

Econergy offer integrated ceramic filter systems for all our wood pellet and chip boilers between 30 kW and 1000KW



Glosfume Ceramic Filters being manufactured



Turbomat boiler and Glosfume Ceramic Filters

Similar case studies:

Sheffield Road Flats	Community heating, 166 flats Barnsley
Rocks Green	Community district heating, 91 houses Ludlow
Carwood Close	Community district heating, 97 houses Sheffield
Callow Mount	Community heating, 296 flats Sheffield

Contact details



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