

CASE STUDY

200 kW PELLET BOILER



■ The elderly people's accommodation comprises 56 apartments arranged in blocks of 4. The total living area is about 4,000 m².

■ The whole complex is supplied with heat and hot water from a central boiler house.





■ Inside this boiler house are 2 boilers, a 200 kW biomass boiler and a 200 kW oil fired one used for backup.



■ The boiler is fed with pellets using a fully automated screw feed system.

■ Pellets are stored in a 30 m³ fully enclosed hopper adjacent to the boiler house. This hopper is capable of storing around 18ton of pellets. The pellets are delivered by using a blower lorry. The re-order signal can be configured from level probes and relayed to office by SMS message.



■ The burner is purpose built to handle pellets and has all necessary certification to be sold throughout the EU. The system is completely safe with the triple safety shutdown equipment installed. This comprises of temperature controls, water sprays and flexible hose linking the feed regulator and burner together.



- The internals of the burner are shown to the right.
The hearth and secondary air inlet duct can be clearly seen.

The start up sequence is as follows:

- Upon start signal the boiler is purged with air by the fans for a pre set time
- 2 litres of pellets are metered into the feed screw
- An electric hot plate heats up
- After a pre-determined time the pellets are fed slowly onto the hot plate
- The primary air fans start up on slow speed
- Combustion is slowly ramped up by increasing the fan speed
- Once the photo cell detects 100% combustion the slow feed of pellets starts
- The feed rate for this boiler is 40kg/hour

This particular burner is configured to operate on an ON/OFF basis but full modulation is also an option.

Once the signal to stop feeding is given all pellet feed stops and the fans ramp down slowly. After 30 mins if another start signal has not been received a blast of air blows any remaining ash off the hearth ready for the next cycle.

- The pellets burn very cleanly with minimal emissions

- The amount of ash produced is very small

