



Following a review of its office accommodation, Maidstone Borough Council took the decision to consolidate its offices into a single, centrally located, accessible property in the town centre. It also wanted the new premises to be an exemplar of sustainability and decided in partnership with its landlord, the Mall Corporation, to install a biomass boiler as the primary heat source. The scheme provides approximately 50,000 ft² of new and refurbished office accommodation including a 'gateway' to shared services with Kent County Council and other partners from the community and voluntary sector.

objectives

- To reduce fuel costs and dependency on fossil fuels.
- To reduce CO₂ emissions.
- To make use of wood resources from within a 10-mile radius of Maidstone.
- To encourage a return to usage of managed woodland and the associated skills.
- To encourage other companies and authorities to consider similar installations.

actions

- A feasibility study was carried out to establish practicality and cost of incorporating a biomass boiler to provide 90% of the heat load in the Council's new office accommodation, Maidstone House.
- This study also looked at the return on investment from use of biomass fuel compared with fossil fuels and the CO₂ emissions saved.
- As the new accommodation is leased, the landlord was closely involved as a partner in the scheme.
- The boiler chosen is a Froling Turbomat 320, burning woodchip fuel delivered to the boiler by an auger and hook lift bin feed arrangement.
- The boiler is backed up by gas boilers that provide back-up heating at peak load times and periodic heating requirements outside of the main heating season.
- The installation heats approximately 50,000 ft² of offices and public reception areas.

achievements

- Because of various delays, the installation wasn't commissioned until the end of the heating season, and will remain dormant until autumn 2009. For this reason, it's too early to say whether the project has been a success.
- However, the original feasibility study estimated savings of 92 tonnes of CO₂ emissions and cost savings when compared to gas of around 40%. These figures will be checked after a full season's heating.

background

- The installation costs were abnormally high as the accommodation was a refurbishment rather than a new-build project, the costliest element being the incorporation of storage and transportation plant.
- The viability of the project was greatly improved by grant funding of approximately 37% of the total cost from DEFRA under their Bioenergy Capital Grants Scheme.
- The level of fuel in the bins is automatically monitored and the supplier is polled when the supply is at a specific level.
- Wood chip will be sourced from within 10 miles of the boiler and is supplied by South East Wood Fuels Ltd. under an energy supply contract
- The installation and commissioning of the boiler and controls were severely delayed by a combination of events, including delays by the local electricity supplier diverting a mains power supply and incorporating the control system into the computer-controlled building management system.
- It is intended that the installation will be accessible to businesses, schools and other local authorities as a promotional and educational resource.

quotes

"It's important the offices make sense environmentally and economically. The measures we've put in place save energy and money, so we're doing what we can to reduce our carbon footprint and cut down costs."

Mark Wooding, Cabinet Member for the Environment

"We're delighted with our new offices. Having all services together in the centre of town is better for both staff members and the public. We have also achieved a considerable level of sustainability which we hope will set an example for businesses throughout the borough."

Trevor Gasson, Deputy Chief Executive, Maidstone Borough Council

partners

Froling (boiler supplier)
South East Wood Fuels
Ltd.(Wood fuel supplier)

funding

DEFRA (Bioenergy Capital
Grant Scheme)

lessons learnt

- The delays and difficulties experienced arose from the complex nature of the scheme and the interface with external bodies, over which neither the Council nor its landlord had any control, and not because of any inherent problems with a biomass boiler.
- Arrangements for a secure fuel supply to the specification required should be set up well in advance.
- Placing of heat meter in circuit after buffer tank provides difficulties in making accurate assessments of heat usage.
- The regular and periodic maintenance requirements of the boiler should be understood well in advance and robust arrangements should be in place before the boiler is handed over.
- Training in the operation and maintenance of the boiler is of paramount importance.