

Local Authority role |

Bristol City Council has just commissioned a 400 kW biomass boiler to provide heat to a series of nurseries at the Blaise Nursery site. The boiler is the first of its kind in Bristol. The Council has also built a wood fuel depot next to the boiler where arboricultural arisings can be stored for the nursery boiler. The store will also be used for other wood heating boilers around the city. Bristol City Council has already installed several other boilers and more are planned so this project will help to deliver wider use of biomass heating across the city.

Context, including funding and resource |

Bristol City Council is committed to reducing its own CO₂ emissions to help combat climate change and to demonstrate to Bristol residents and businesses that reducing our impact on the climate can also make economic sense. At Blaise Nursery, a combination of LPG and oil was being used to heat the greenhouses in order to keep the plants at a growing temperature and to protect them from frost. This cost over £19,000 per annum in fuel and electricity but also caused over 100 tonnes of CO₂ emissions into the atmosphere every year.

Process/partners |

Blaise Nursery was identified as a suitable site for a biomass installation by a feasibility study undertaken for Bristol City Council by CSE in 2003. The research showed that, with a level of grant support of 50%, the simple payback time for the new equipment would be 13 years, due to savings in LPG consumption. However, the significant increase in the cost of fuel since the study was undertaken means that the payback has improved significantly. It is estimated that the burning of 'waste' wood will save about 45,000 litres in LPG consumption per year.

The 400 kW boiler is fed with wood chips - made from tree trimmings from Bristol's parks, streets and other green spaces - and provides heat for the dozens of greenhouses, which supply the city and other local authorities with flowers and other bedding plants.

The majority of resources and services used for the scheme involved local companies, including: boiler installation, wood fuel depot construction, M&E, ground works and the electrical works.

Photo 1.

The City Council's 400 kW biomass boiler at Blaise Nursery, estimated to save over 100 tonnes of CO₂ each year



Carbon saved |

The installation will save 102 tonnes of CO₂ per year and 2,040 over 20 years. The annual energy saving will be approximately 500,000kWh of LPG. As well as carbon savings, by establishing wood heating at Blaise Nursery, arboricultural arisings from council and tree surgery activity can be diverted away from landfill. The use of woodchip at the Nursery also provides an end use for woodland thinnings, which can ultimately lead to an increase in sustainably managed woodland and biodiversity.

Project spin-offs |

This is the first project of its kind in Bristol and the importance of demonstrating biomass heating in the South West's largest city is a crucial step which paves the way for many more installations.

The installation has already encouraged two further biomass projects that will utilise wood from the Blaise wood fuel depot:

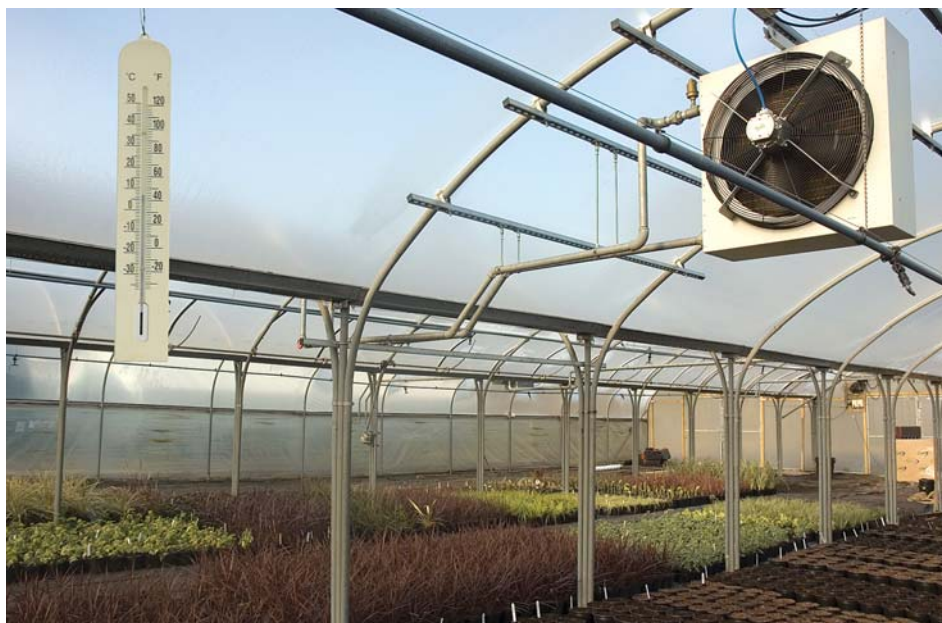
- **Florence Brown School, Knowle**
- **The Netham Sports pavilion.**

Photo 2.

The biomass boiler keeping these growing conditions right is saving about 45,000 litres in LPG consumption each year

In part due to the Blaise Nursery biomass project and the Council's commitment to biomass heating, the four new PFI secondary schools to be built in Bristol will also be installing biomass boilers. As a result Bristol will soon have one of the biggest biomass heat clusters in the UK.

Regionally this is currently the largest woodchip boiler in operation at a local authority site, and the largest step grate boiler installed in the UK. The wood fuel depot is also the first in the South West and has already encouraged other local authorities to consider establishing similar facilities.



Images supplied by Tom Keating

Contact, sources of advice |

Paul Barker
Energy Management Unit
Bristol City Council
Paul.barker@bristol.gov.uk

Environmental information:

Design by zodshop using 100% renewable energy from our own system - www.zodshopdesign.co.uk

- Printed using digital print technology which eliminates the use of aluminium plates
- Printed on Era Silk FSC 75% recycled paper. REGENSW March 2007