

CASE STUDY

**South Bristol Skills Academy
Bristol**



South Bristol Skills Academy is located at the gateway to Hengrove Park, Bristol. This 11,200m² City of Bristol College centre provides facilities for over 3,000 students across four levels including teaching facilities for a wide range of vocational courses.

The building has achieved a BREEAM rating of 'Very Good' and includes energy generated by roof mounted solar panels and has the majority of the heat and hot water requirement provided by a Binder 400kW chip biomass boiler.

The Binder chip step-grate boiler has a gas burner ignition to allow wood chip fuel to be utilised with moisture content up to 50%. This allows maximum versatility in wood fuel supply. This will be particularly important as the biomass heating industry expands, enabling the boiler system to operate on a broad range of wood fuel specifications. This will ensure low running costs long into the future.

Overall, these benefits make this a highly cost effective, exemplar application of biomass heating and highly replicable for other sites.

The fuel storage solution is a double hook bin solution. Each hook bin holds c. 30m³ of wood chip corresponding to about 25,000kWh of stored energy per bin. Each bin has its own walking floor system to allow wood chip to be automatically fed into the boiler on demand. Other features of the boiler include an automatic heat exchanger cleaning system, automatic de-ashing to a separate steel container and a cyclone to remove any fly-ash within the flue gases.

The system also benefits from a 10,000 Litre accumulator tank to reduce low load boiler cycling and to maximise the benefit from the biomass boiler.



Name of project	South Bristol Skills Academy
Location	Bristol
Boiler type	Binder GmbH chip 400-600 wood chip boiler
Maximum rated output	400kW
Maximum Moisture content	50% (W50)
Ignition system	Gas burner ignition
Maximum particle size	G50
Fuel storage volume	60m ³ (2 x 30m ³ hook bins)
Commissioned	May 2010

