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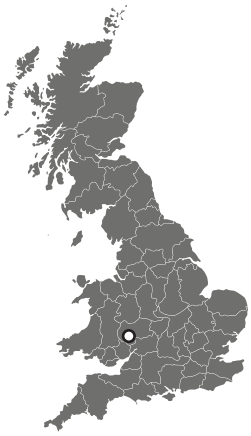
Case Study

# Wilmot House, Cathedral School Hereford

## Wilmot House is a school boarding facility, housing students at Cathedral School Hereford



### Key Facts

Carbon Neutral biomass system

Supplemented by Solar, both thermal and PV.

Weather compensation system.

Thermostatically controlled radiators.

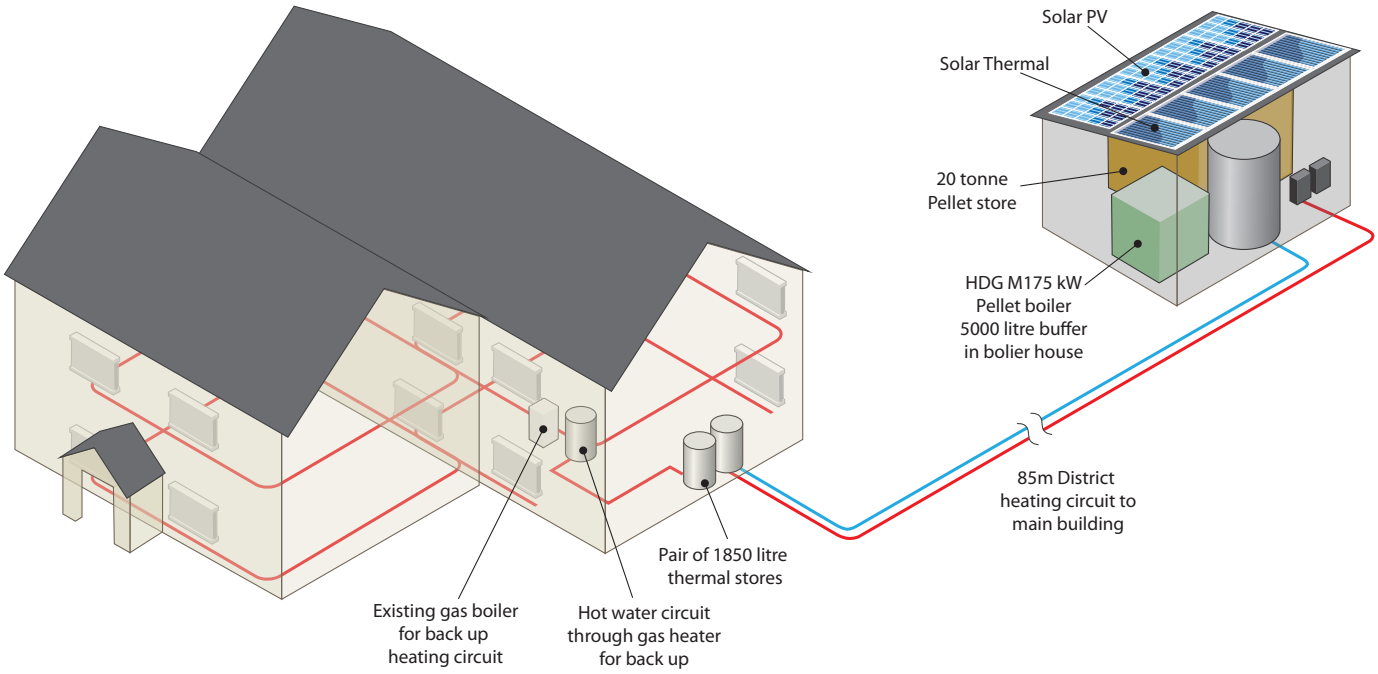
Retains the old heating system as a backup

The beautiful Georgian building, which has been fully refurbished with all modern amenities, needed a revamp of it's heating system.

The room heating requirement was been met by two liquid petroleum gas (LPG) boilers and a gas heated hot water tank for domestic hot water and a more cost effective and environmentally friendly solution was required.

With space at the rear of the property for a bespoke boiler house and fuel store, the decision was made to future proof their heating requirements with a HDG M175kW biomass wood pellet boiler and build a boiler house orientated with a south facing roof to maximise both thermal and PV solar panels to supplement the pellet boiler.

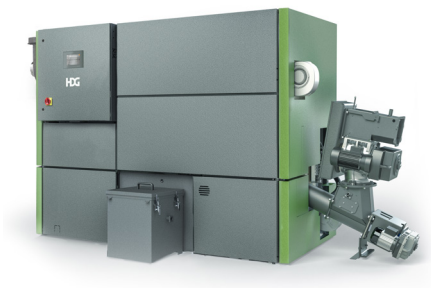
The boiler house contains the 175kW pellet boiler which is fed by a flexible auger from a 20 tonne pellet store and the heat generated is initially stored in a 5000l thermal store also in the boiler house. The 13.3m2 of thermal solar panels on the roof also feed their heated water into the thermal store in the boiler house and the solar PV is used to power the pumps to deliver the heat to the main house.




As the boiler house is 85m from the main house, an additional pair of 1850l thermal stores were added in the main accommodation building; they both have domestic hot water coils. These stores are connected to act as one thermal store with dynamic balancing valves and draw hot water from the master thermal store in the boiler house.

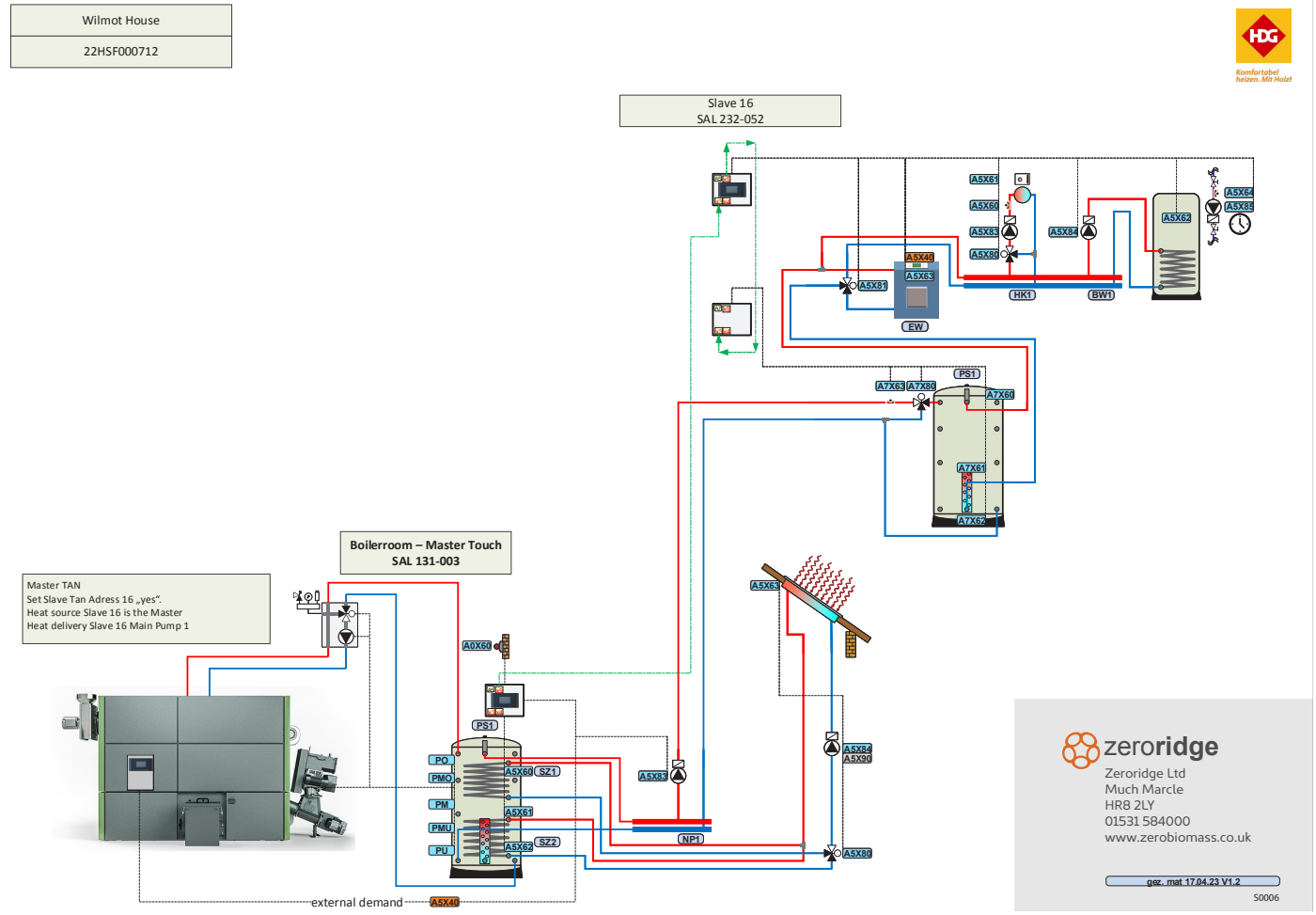
With this holistic view of the heating and hot water production, utilising different heat sources and balanced delivery to remote storage locations, Wilmot House is assured an efficient and reliable supply of heat and hot water in the future.

Comfortable heating. With wood!



Potable hot water from the biomass system is drawn through the existing gas-fired hot water tank, and as a backup, sensors check the temperature if the water isn't hot enough (the biomass boiler may be turned off for servicing or scheduled maintenance) then the gas boiler will fire up automatically act as a backup and add dual-redundancy to the system.

This integrated heating solution using a biomass boiler with supplementary solar thermal panels and retaining the old gas fuelled system as backup ensures an environmentally heating system with low fuel costs and a gas-powered backup system in emergencies.

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