

Bluecoat Carbon & Energy Reduction

The Chester Bluecoat Charity (TCBC) is committed to improving the energy performance of the Bluecoat building in order to reduce emissions, and to help protect the environment for future generations to come. Due to the Bluecoat's Grade II* listed building status, however, it simply is not possible for the building to achieve Net Zero. Conservation rules and regulations are set in place to protect the fabric of important historical buildings – of which the Bluecoat is one - and TCBC must adhere to them. However, in liaison with industry and conservation experts, TCBC has ensured to make the Bluecoat building as energy efficient as possible. Listed below are ways we have achieved this.

- Between 2018 and 2020, the entire Bluecoat roof was replaced, and high-quality insulation was installed. This insulation prevents heat loss, improves the energy efficiency of the building, enhances protection against moisture, dampness and mold development, and reduces the building's carbon footprint. During these works, the roof space was also partitioned into small zones (instead of being left as one cavernous roof space) in order to further reduce heat loss.
- Along with the new roof, a thermal barrier (as opposed to a less effective felt barrier) was installed underneath the slate. The thermal barrier is water and windproof. The thermal barrier keeps heat in, yet it is also vapour permeable (i.e. damp can freely exit the insulation in order to vapourise, thus reducing the capacity for molds to occur).
- The Bluecoat's previous oil-fired boilers have been replaced by brand new gas boilers which are much less polluting. In the winter months, TCBC can now regulate the flow temperature of the gas heaters to 60°C (whereas previously the flow temperature of the heaters could only be turned down to 85°C). Additionally, with a flow temperature of 60°C or lower, the Bluecoat gas heaters can recover enough heat to reach their higher efficiency potential. A reduction in flow temperature also lowers the return temperature (all boilers are more efficient when the return temperature is low, saving energy).

- Staggered internal thermostats have been installed throughout the Bluecoat building. These monitor the ambient temperature throughout the whole building and will automatically turn off the heating boiler if 20°C is reached.
- The Bluecoat building now has an external frost detector. As such, the heating comes on when temperatures drop to freezing, thus preventing condensation build-up, and also lowering gas usage from a cold start-up.
- Heavily restricted in terms of heritage conservation, TCBC are not allowed to install secondary double glazing and, indeed, most of the Bluecoat windows are strictly not to be replaced (permission was gained for only a few windows to be replaced and this work was carried out during the refit).
- TCBC are unable to install energy saving cavity wall insulation as there are no cavities in the Bluecoat walls (which are solid).
- TCBC have installed mostly electric-powered items in the building, as opposed to gas-powered, as gas produces more CO₂ emissions.
- Bluecoat lights were installed in 2014 and these lights will be replaced by L.E.D. lights as and when the older lights fail (i.e. our Buildings Manager has already replaced all the older lights in Work Zone's office suite).
- A timed light switch has been installed on the first-floor corridor (where there is an effective natural light source). This automatically switches lights off when not in use.
- Efficient lighting has been installed in all Bluecoat toilets. These have movement sensors to make sure lights are only on when in use.
- All Bluecoat toilets have modern flush systems in order to reduce water wastage. Plus, there are drip-fed water filters in the male toilets/urinals which reduces water wastage.



- Bluecoat boilers are regularly serviced by industry professionals.



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