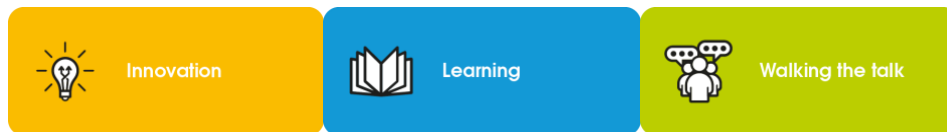


## CLIMATE CHANGE AND ENVIRONMENT



### Stroud District Council

## Low Carbon Heating in Historic Listed Buildings

Stroud District Council has completed a project for the design, installation and commissioning of water source heat pumps at the sites of two Grade II\* listed, former woollen mills.

The buildings are occupied as offices whilst the site at Ebley Mill also serves as the council's main administrative headquarters.

The project was conceived to primarily reduce direct carbon emissions from two of the council's major buildings, removing the reliance on heating the buildings from burning fossil fuels and to sustain the economic life of the historic buildings.

### Historic Buildings containing traditional heating systems

Brimscombe Port Mill sits within the former Brimscombe canal port that is undergoing a major redevelopment which will include the reinstatement of the Stroud water canal together with the historic canal basin. The former woollen mill will be the only building retained as a part of that redevelopment and will form a prominent landmark within the completed scheme.

The existing gas boiler plant was located in a building due for demolition and although only some seven years old a suitable housing would be required should the boilers be salvaged and re-located.

The boilers at Ebley Mill dated the building's conversion to offices in 1989 and replacement gas boilers or alternative fuel sources for the space heating needed to be considered.

### Strategic Context

As described earlier both sites required a solution to the replacement heating system for different reasons but prime in coming up with the solutions was the drive to reduce carbon

emissions and reduce dependency on burning fossil fuels for providing space heating and domestic hot water.

The buildings' locations immediately adjoining the main river over which the council have ownership led to the decision to harness the latent heat from the river.

In both locations connections between heat pumps and external river collectors was relatively short whilst the only partial occupation of ground floor spaces enabled the formation of internal plant rooms housing the new heat pumps.

The relatively limited alterations meant that neither Listed Building Consent nor Planning approval was required.

The council have adopted a 2030 strategy to achieve carbon neutrality and the decarbonisation of both buildings is an intrinsic part of that strategy.

### **Timeline for the Project**

The heating from the new sources at both sites was achieved by November 2021 and the commissioning and completion of works was achieved by December 2021. The initial feasibility studies were drafted in March 2019 and the schemes were finally tendered in June 2020 where the successful contractor was appointed in December of that year.

The initial feedback from building users is very positive with good distribution of heating and very few problems with the commissioning and running of the plant.

The project provided a very practicable solution to the future heating of the buildings and coupled with successful applications to the Office of Gas and Electricity Market's (Ofgem) renewal heat incentive scheme ensured a satisfactory return on the capital investment.



### **Key Project Learning**

The project was undertaken in the middle of the Covid 19 pandemic resulting in some

materials supply delays and the interruption of programmes where contractor's operatives were isolating due to illness.

Early engagement with consenting authorities, especially the Environment Agency was required to ensure works could be substantively completed before space heating was required.

Both buildings required an upgrade to their mains electricity supplies and the extent of the upgrade and early engagement with the District Network Operator was required to avoid further delay.

There has been a very positive response from publicity of the completed schemes generating interest in the technology from a number of groups/organisations.

It is obvious from such discussions that few people are aware of such options to harness water to heat any buildings let alone historic, large, typically draughty mill buildings.

Publicity therefore will improve knowledge, encourage innovation and provide confidence to owners considering options for their buildings.

### **Co-Benefits**

The project has a significant impact on extending the economic life of both buildings that have considerable prominence within the council's building portfolio.

Encouraging too, is the staff and tenant adoption of the changes to the method of heat generation and further shows the intent of the district council in reducing carbon emissions wherever it can directly have influence.

The comfort levels for occupants will be enhanced and the buildings will suffer less from peaks and troughs in internal temperatures. Wasteful 'lead in' periods will also be avoided in raising buildings' temperatures to comfortable levels.

The return to the council's investments through the RHI scheme coupled with unforeseen escalating fuel costs make the project all the more viable both in financial terms, public relations and for fuel certainty.

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