St Mary's Embsay with Eastby – Heating Baseline Surveys December 2022
Key findings

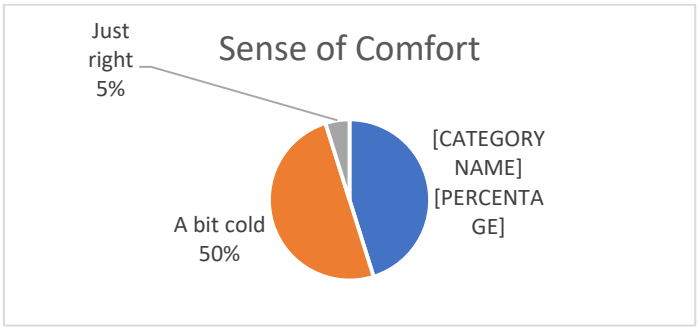
Background

The church council authorised a survey following two Sunday services in December 2022 in order to be better informed on the effectiveness of the current gas-fired radiator system. The survey was conducted on the first two Sundays in the month when the outdoor temperature was 5°C and -5°C respectively. Temperature within the church was between 10 and 13°C on the first occasion and 9-10°C on the second. Thirty-nine responses were completed on the first Sunday and twenty-six on the second. More than half of the responders were present on both occasions.

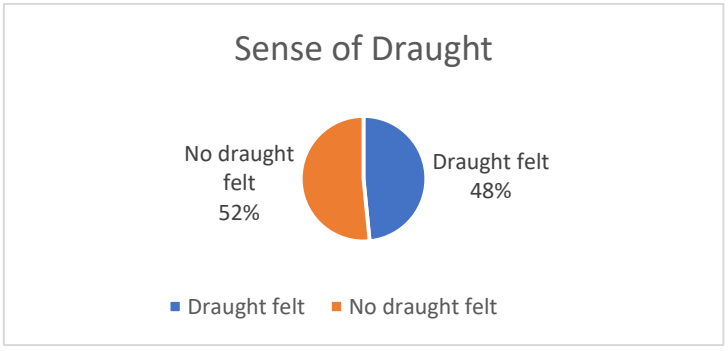
The heating had been running for one and a half hours before the first Sunday and two and a half hours before the second. Almost everybody was wearing outdoor clothing and retained it throughout the services.

Findings

- The main message was consistent, people felt uncomfortably cold throughout both services as illustrated by the first graph below, with only 5% recording that they felt "just right"; nobody ticked the "A bit warm" or "Uncomfortably warm" boxes.



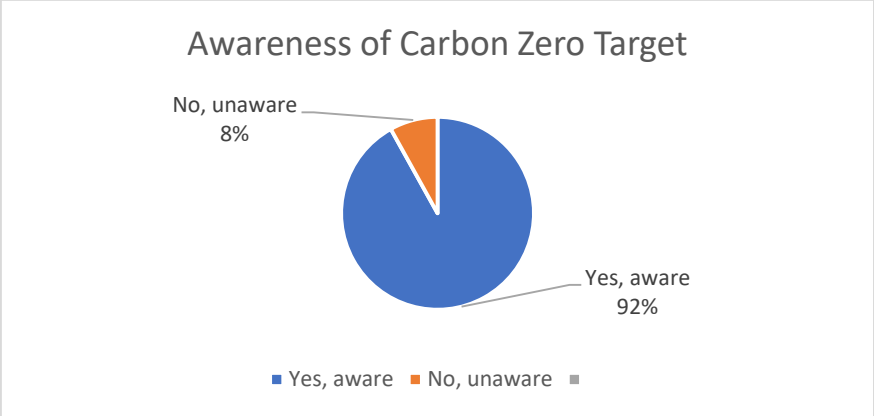
- Almost half of those present recorded that they felt a draught, some remarking that it was particularly chilling.



- There appears to be some correlation between experiencing draughts and where people were sitting, with intermittent draughts felt to the rear of the church, especially on the North (kitchen) side. Further investigation and discussion suggest that this is caused by the fan heaters themselves. While these units generate heat in their proximity, their very nature causes air circulation which appears to bring bodies of cold air to certain parts of the church.
- Some of the people sitting adjacent to the South door also recorded occasional draughts.
- There is a difference in heating between pews on the South side of the church where the heating pipes run along the wall and under the pews and the central block of seats which are distant from

any heating source. People in the central block tended to feel colder, especially in the central and rear sections.

- There are some areas of the church which are entirely unheated. The choir is the main example, the kitchen and toilet are others. All those sitting in the choir and organ areas commented on this.
- Few people noticed the noise from the heating fans although one or two individuals found them to be quite audible in quiet moments of a service.
- It was gratifying to learn that the great majority of those present were aware of the Church of England's 2030 target for becoming carbon neutral.



Thinking Points

- St Mary's heating at present does not enable people to be comfortable during services in cold weather, even when being run for around five hours in order to attempt to provide some prior warming-up of the building.
- The existing heating is expensive and contributes around 10 tonnes of carbon to the atmosphere each year.
- The size and height of the building make space heating an inefficient way of providing a reasonable degree of comfort on the four or so occasions each week when people are in attendance.
- This baseline survey provides us with useful points of comparison for when we run the person-focussed heating trials after Christmas.
- This part of our heating and carbon neutral review has benefitted from the willing participation of church users on two cold days. We appreciate their contribution which will enable us to evaluate heating options more objectively. We shall be looking to involve volunteers in the trials of electric heating which will be undertaken on some weekdays in January.

A note about the fabric

- We have been advised that the organ itself needs some background, localised heating in order to maintain the wooden components in a healthy state. This is in hand for installation in January 2023
- We will be monitoring temperature and humidity alongside the new heating trials in order to ensure that there will be no damage to the fabric of the building caused by a change to the heating system used.