Case Study: Under-Pew Heaters; Infra-Red; Quick Wins Grant

Holy Trinity Church, West End

Surrey Heath, Surrey; Surrey Heath Deanery

Summary

Holy Trinity, a small Victorian church, conscious of its inadequate gas-fired heating system and aware of its obligations to reduce the use of fossil fuels, has installed under-pew convection heaters together with several complementary measures to create a warm and welcoming space for worshippers and the community.

Background

The heating system in Holy Trinity consisted of a wide Victorian pipe running around the perimeter of the church. This was fed by hot water from a gas boiler. It was antiquated and not fit-for-purpose, delivering little heat to where it was needed.

The church is of modest size, seating over 100 at capacity in wooden pews. An average Sunday would see 40-60 in attendance. A small number of additional events happen in church, and the open area at the back of church is used for meetings and similar.

Leadership

The project was spearheaded by the vicar, the Revd Fiona Simon, supported by the PCC.

The Project

An under-pew heater was supplied to every bay of the pews (two per pew) throughout the church, including pews in the choir and sanctuary.

These are controlled in six zones, so depending on occupancy the correct heating can be deployed. Each pew also has its own control, for user comfort.

The heaters are discrete (list B permission was required), with wiring hidden in the flooring. They are safe-to-touch (e.g. for toddlers) and kneeling to pray is unimpeded.

The heaters are generally turned on for 30-minutes before a service. They deliver convective heat directly to the people in the pews. When active for a longer period, the air temperature within the church rises, though this is not the primary function. Cushions have been added to the pews for comfort.

Phase 2 of the project created a warner and welcoming community space at the back of church, where 4 pews and the font were removed. Flagstone flooring was replaced with

a comfortable insulated and flat floor. The space is heated by 2 infra-red (visible light) heaters, manually operated, for which they received a diocesan Quick Wins grant.

The pew heaters have been well-received, the only negative feedback being that on standing (to sing for example) the air is colder.

Some damp problems were experienced in the first winter of use, but this was diagnosed as being due to water ingress under the floor at the back of church, and corrections were made as part of the floor project to prevent this.

Wider Context

Moving towards Net Zero is just one part of Holy Trinity's Eco Church commitment. They are already purchasing electricity on a renewable tariff. Their efforts have gained a silver award, and they are advancing confidently to pursue gold.

Future Plans

The church has only single-phase electricity, and they are advised that they should use either the under-pew heaters or the IR heaters, not both together. An upgrade to a 3-phase supply (approx. cost £10k) will overcome this and also enable electric heaters to be installed into the vestry, removing the final vestiges of the gas heating and enabling the supply to be discontinued, with the resulting saving on standing charge.

Glass doors will, when installed, provide a welcoming appearance for visitors.

Learning

This project demonstrates that adequate electric heating can be installed into a small, relatively infrequently-used building, at modest cost. Heat is delivered where it is needed for short periods. This has been done on a single-phase electricity supply (the benefits if an upgrade to three-phase can be secured are noted elsewhere).

Contact

The diocesan team is available to help with planning and fundraising around Net Zero and Eco Church. Contact martin.carr@cofeguildford.org.uk with any queries. We can also put you in touch with the team at West End if you have any questions for them.

Key Stats

Project Cost: £14k Quick Wins Grant Amount: £1.6k
Contractor: Electric Heating Solutions https://www.electricheatingsolutions.co.uk/
Scope of Project: Church heating and thermal comfort
Estimated Energy/Cost Saving: Majority of gas removed; heating costs comparable (substantial reduction possible when gas supply turned off in future).

Figure 1: Under-pew heater

Figure 2: Holy Trinity Church

Figure 3: Group meeting in community space

Figure 4: IR heater and Eco Church award