

Making the case to the DAC

The following documents were written for the Faculty application:

- Project Overview & Plan
- Background & Options Appraisal (including the Five Ws)
- Specification (2 documents)
- A set of photographs.

The Background & Options Appraisal document was the most important in making the case. The DAC asked a few questions prior to their meeting, but the proposal was supported first time.

Raising the Money

It took 5 years to raise the money! Very few grants for heating systems are available - the situation is getting better - but we successfully applied to the following Trusts:

- The Benefact Trust (£3,250)
- The Garfield Weston Foundation (£5,000)
- The Raymond Ross Fund (£5,000)

We also received a grant of £500 from Derbyshire County Council Members' Community Leadership Scheme .

The PCC is very grateful for the support of these organisations.

A Common Problem

Many small, usually ancient, churches have the same difficult problem - how to heat the building a few times per week economically with lower carbon emissions remembering that we are stewards of God's world.

We are keen to share our experience to provide advice to other churches.

Please get in touch if you have similar problems and don't know what to do first!

How to contact us

If you would like to visit St Mary the Virgin church, Denby, DE5 8PH, to see the new Zero-light, far infrared heating system, please send an email to: info@denbychurch.org.uk

We can provide more information about how the detailed work to analyse all the options was carried out and the calculations which proved the extent of the carbon reductions.

We look forward to seeing you.

September 2024 v1

St Mary the Virgin, Denby

The story of our new technology Zero-light, Far-infrared heating system



Heating a small, rural, ancient church economically and sustainably is difficult. The previous gas boiler and radiators at St Mary's did not heat the church even after being left on for 6 hours before a service in winter! The heat simply went up and out. Most of the pipes and radiators were 100 years and leaks had meant that some radiators had been isolated. The boiler was not big enough to give useful heat and we were wasting money for no benefit.

Something had to be done!



The old pipework was in poor condition and the boiler was not big enough to heat the church.

The Parochial Church Council (PCC) started to think about what could be done in 2019, but the pandemic meant that little progress was made for two years. After eventually finding a heating engineer, a specification was written for a gas boiler system with new pipework and 7 fan assisted convectors. The two quotes received were shockingly high (between £60,000 and £77,000) - which led to a total rethink.

In the meantime, the Church of England had developed their Net Zero target of 2030 and issued a number of guidance notes and checklists on church heating.

We followed the “Five Ws” process which starts with thinking about the future needs of the church and how often is it used?

The checklists give good advice on

what should be done to improve church heating - eliminate draughts, only heat the areas needed, etc, - but very few of the suggestions were appropriate for St Mary’s.

By chance our Priest-in-Charge spotted an article in the Church Times about a new infrared heating system being trialled in a church in Bristol. Two of us visited the manufacturer in Avonmouth twice in early 2023 to understand the technology. The large heater, called a Halo, is suspended from the ceiling and has been designed for heritage buildings. The technology is called “zero-light, far infrared.” The heaters do not emit any light and use a lower frequency of infrared compared to legacy infrared heaters. The frequency is nearer that of the sun’s rays - it does not boil your forehead while keeping your feet cold!

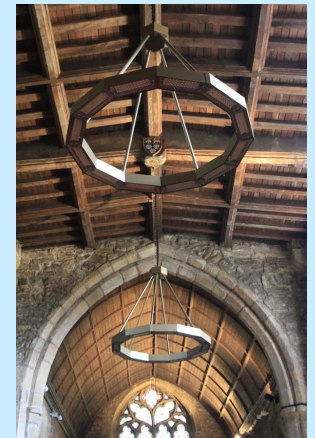
The PCC decided that a detailed proposal should be developed, which led to a quotation which was almost 40% less than the gas / radiator system. The PCC was by this stage keen to go ahead as quickly as possible!

A number of documents were written

ready for an application for a Faculty. The most important was the Options Appraisal which looked at all possible options for the energy source (electricity, air-source heat pumps, etc) and how the heat would be emitted (radiators, under floor elements, infrared panels, heated pew cushions, etc).

The only viable and affordable option was the new technology infrared electric system.

The calculations showed that “ZERO-LIGHT, FAR-INFRARED “ heating could save 67% of the running cost and reduce our carbon footprint by 88%.



The savings are due to:

- 30 min warm up time (not 5 hr)
- Only needs 1/3 to 1/2 power of conventional radiator system.

The final cost of the system (excluding VAT) was £49,500.