

CASE STUDY

A LARGE, LISTED CHURCH IS HEATED EFFICIENTLY BY AN AIR SOURCE HEAT PUMP



N.B. This case study considers only one possible approach, which will not be suitable for every church. Always seek professional advice.

Key Points

- St Egelwin's has managed to install an air source heat pump system at a surprisingly low cost.
- The new blower installations in the nave are not visibly or audibly obtrusive and the whole system has proven to be effective all year round.



1 St Egelwin's spacious nave is heated by four large but unobtrusive blower units attached to the ceiling in the north and south aisles. In the chancel, the heating is supplemented by four electric wall heaters. There are electric under-pew heaters too, but these are rarely used.

2 One of the blower units in the north aisle, as well as cabling for it running down the wall.

3 Outside the church, the two air source heat pumps are tucked behind carefully positioned conifers.

The context

St Egelwin the Martyr, Scaford is a Grade II*-listed medieval church located in the Diocese of Leicester. Its large size (495m²) makes it a challenge to heat and keep warm.

For more information visit the church's [website](#) or its entry on the [Church Heritage Record](#).

The need for change

When the oil-boiler failed in 2011, the church replaced it with electric underfloor heating in the nave and electric radiators in the chancel. The architect misjudged requirements and specifications, and the poor installation meant that it was entirely insufficient. This left the church, once again, in need of a new heating system.

What were the options?

St Egelwin's continued to explore electric heating options. As a short-term measure, electric pew heaters were installed.

On the recommendation of the Archdeacon, air source heat pumps were considered, and eventually chosen as an electric-powered, low-maintenance solution.

What was done?

- Two air source heat pumps were installed.
- Four large blowing units were fixed inside St Egelwin's: two in the north aisle and two in the south aisle. They direct air towards the central aisle of the nave. Despite their size, the blowers are placed and coloured in such a way that makes them an unobtrusive presence.
- The system provides 50kW heat for the church, directed towards the congregation.

How well does it work?

The blowers are quiet when in operation, but provide an effective source of heating for the church. They are typically turned on 3-4 hours prior to an event, when in use.

With a low maintenance requirement, the air source heat pump system is cheap and simple to run.

Acting as a backup system in preparation for very cold spells of weather, the under-pew heaters also remain in place.

How much did it cost?

The total bill for the air source heat pump installation was a little over £16,000.

The majority of this was covered by the damages that were awarded to the church following the unfortunate failed installation of electric underfloor heating.

“After a difficult time, the PCC were delighted with the efficiency of the installation. We were warm, not worried by noise, and the cost of running is acceptable.”

Penny Clemons, Churchwarden