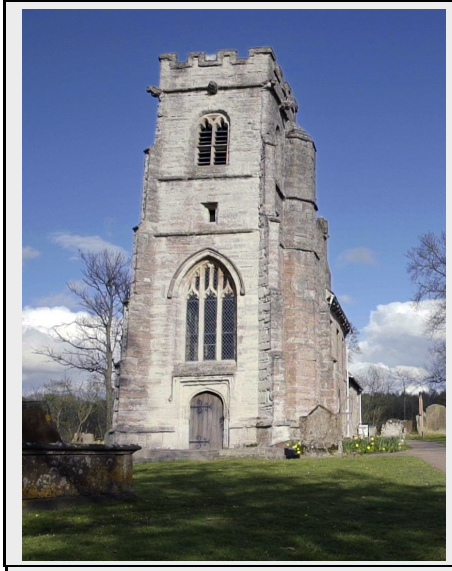
CASE STUDY PEW HEATING ENABLES CHURCH TO BECOME NET ZERO CARBON

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 Michael's, Baddesley Clinton is a small rural church which has installed electric under-pew heating, aiming to heat the people and not the space.
- The under-pew heating system replaced an old electric system that had failed.
- With electric heating and LED lighting, plus using a renewable energy supplier for their electricity, they have reached net zero carbon.



1 St Michael's is a small, rural, medieval church near to Baddesley Clinton House (National Trust).

2 St Michael's has become net zero carbon by installing electric pew heating, LED lighting, and switching to a green electricity provider.

3 They have installed two pew heaters per pew, to ensure everyone is warm enough. The warm-up time has reduced from 3.5 hours with the old system to half an hour.

The context

St Michael's Baddesley Clinton is a rural, medieval, Grade II-listed church in the Diocese of Birmingham.

In a typical week, the church is only used on Sunday. The church also hosts weddings and funerals, and occasional concerts and events.

For more information visit A Church Near You, its entry on the Church Heritage Record, or its page on the National Trust website .

The need for change

The previous heating system had to run for three and a half hours before a service, plus an hour during the service. Even with this, the congregation were complaining it was cold during winter.

In winter 2017, smoke started coming out of the vestry, because the heaters were using more electricity than the electrical system could cope with. It almost caused a fire; something had to change.

What were the options?

A consultant assessed the options, and recommended under pew heaters, plus a heater by the altar.

Other options were considered non-viable, because of cost and difficulty to install. For a church like this, only used once a week, a more major installation like a heat pump was not the right approach.

Staying as they were was unviable, for the reasons above.

What was done?

- 24 x 500 watt and 2 x 300 watt under-pew heaters were installed under the pews. Two per pew was chosen, to go the whole length of the pew.
- 2 free-standing 1800 watt heaters were placed by the altar and the pulpit/ lectern, for the rector's comfort.
- 13 watt LED bulbs were introduced, in place of 150 watt light bulbs.
- Heating controls were installed in the vestry; they consist of two time clocks, one for the morning service and one for evensong.
- A smart meter was installed, enabling the treasurer to monitor use.
- They switched to renewable electricity supplier.

How well does it work?

The old heaters had to be on for 3 and a half hours before the service. The new under-pew heaters only have to be on for half an hour before the service. With this, and the LED lighting, the energy consumption has decreased considerably.

The older congregation report that they are happy with the results; the heaters make them comfortable, and also allow them to warm their hands to turn the pages of the hymn book.

How much did it cost?

The parish decided to project manage the work themselves, hiring in a certified electrician, saving 60% on the original quote from the consultant.

The pew heaters cost £3,780 to install (including VAT and fitting). The lighting cost £100, excluding preparatory electrical works.

My advice to you, if you are looking to do this type of project, is first of all don't be afraid of it, it's not that difficult. We've done it; we're a small church in a small community, and we managed it fairly easily. There are people out there who can help you.

Graham Hughes, Church Warden

Watch the case study videos:

⇒ What they did

⇒ Why they did it