



**Additional  
Frequently Asked Questions  
Net Zero Carbon Churches**

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**Q: We have issues with electricity supply and are unable to upgrade to 3-phase to install electric heating (curtilage restrictions).**

**The village infrastructure already is at capacity - are there any other options?**

There are several options if you can't get 3 phase.

1. Ask the local Distribution Network Operator (<https://www.energynetworks.org/customers/find-my-network-operator>) if they can provide you with a second single phase supply. This would mean that you double your existing capacity rather than triple it, which can often be enough. Technically single phase connections are considered in a different capacity category than 3-phase so sometimes this can work well.
2. Consider what you can install on a single phase. Often a church can install more than enough heaters to heat its regular congregation off a single phase supply and then it might just need to think about what additional needs it might have for large services and how those can be met (which may have to be bio gas or HVO if nothing else can be found).
3. Consider using air-to-air heat pump solution. This has a sCoP (an efficiency ratio) of about 1 to 4. So for every one unit of electricity you get 4 units of heat. So if you have a single phase supply you have 23kW of capacity, churches normally need 5kW for lighting, organs, AV, kitchen appliances etc leaving about 18kW for heating. At a 1:4 ratio this gives you 72kW of heat which can often be enough to heat a church well.

**Q: With a Grade 1 listed church how can we heat/insulate it efficiently?**

It depends on the usage of the church.

For “**Sunday Churches**” it probably won’t benefit much from insulation, just keep the walls and roof dry by doing **good maintenance**.

**Heating** solutions are likely to be direct electric solution to heat the people rather than the space and therefore either under-pew (if you have pews) or overhead infra-red (if you don’t), such as the Herschel Halo.

For “**Daily Used Churches**” insulation is key.

**Walls:** Thick stone walls are usually quite good if they are dry.

**Floor:** If you have suspended timber floors (pew platforms etc.) then you can insulate beneath it which can be very useful. If a reordering project lifts the floor then definitely put insulation back in where possible.

**Roofs:** Roofs depend on their architecture; if you have a void then insulate, if you don’t the only opportunity is when there is a roofing replacement project so always seize that opportunity. Note: If insulation is being used in the floor or roof voids please remember that ventilation will be required. Contact your architect for advice.

**Heating** is likely to be more ‘constant space heating’ which more often ends up being a heat pump of some sort.

For “**Intermittently Used Churches**” which sit between the two, insulation isn’t as important but as above, do it where you can easily; however **good maintenance** is key.

**Heating** solutions will be very dependant on the building, along with the use and you will need to get into very detailed specifics of what area is being used, when and for what. Often overhead Infra-red is an option and increasingly air-to-air heat pumps can be useful— but you’ll need specific advice.



**Q: What grants / funding are there to assist with replacement boilers?**

There are no specific decarbonisation grants, although there are some funding streams in development.

Replacement heating which decarbonises is part of the normal fund raising areas. Replacing boilers like for like is a faculty application and is unlikely to get permission. Most funders will no longer fund a project that includes the investment into fossil fuel usage so it will have to be a decarbonised solution. There are webinars and downloadable resources here, <https://www.churchofengland.org/about/environment-and-climate-change/fundraising-for-net-zero-carbon> .

Be sure to contact the Church Buildings Team who support churches for free or use their guidance here: <https://www.lincoln.anglican.org/parish-support/church-buildings/building-projects/funding/>

**Q: How do we make our Grade 1 listed church a warm, inviting space AND avoid using fossil fuels/be as energy efficient as possible?**

Depending on its use (see p2) the answer is often to heat the people rather than the space. The smart way to think about it is in terms of providing thermal comfort to the people using the building rather than heating the building to xx degrees C.

**Q: How do we make a leaky old listed building comfortably warm without using fossil fuels?**

Its less about heating the building and more about making people comfortable. Focus on the leaks and the space will dry out. Drier spaces and warmer spaces. For small congregations a set of re-chargeable heated events cushions maybe just the thing!

**Q: How do we get the DAC to approve environmental changes to buildings that change the look of the building?**

You apply for a faculty (when required) and make the case in the statement of needs.

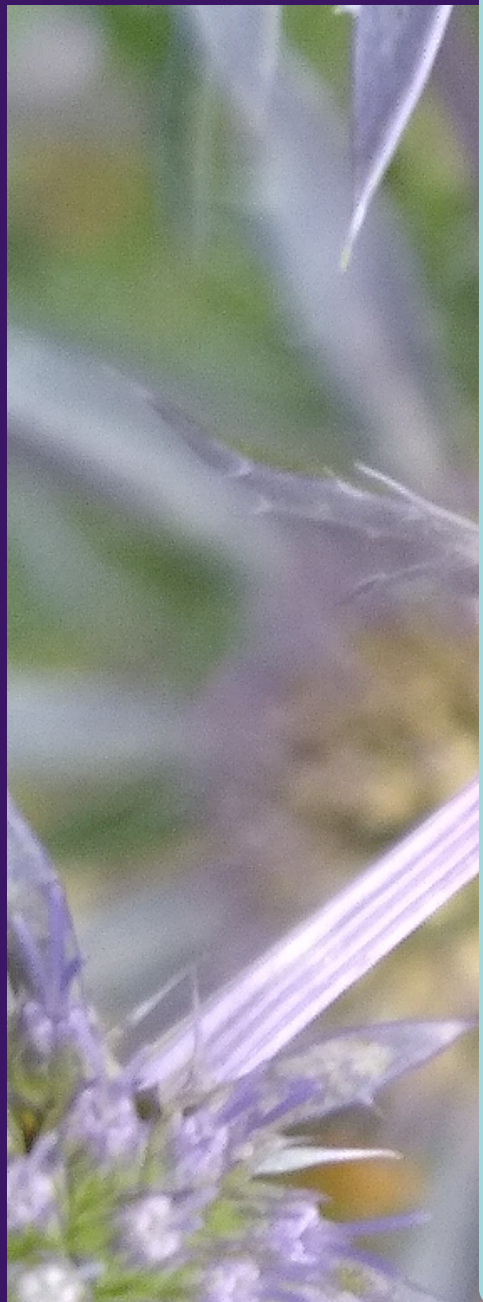
It will all be judged on harm vs benefit so if you can work to minimise any harm as much as possible and show the benefit very clearly then you have greater chance of success. You may find it interesting to read the Historic England's note on this area which has just been consulted on [Climate Change and Historic Building Adaptation - draft for consultation](https://historicengland.org.uk) ([historicengland.org.uk](https://historicengland.org.uk))

**Q: Can the DAC advise on affordable new heating systems suitable for our Grade 1 listed building that already requires all our existing money.**

Yes, your DAC heating advisor will be able to offer you advice. Please contact the Church Buildings Team to ask for a free consultation [churchbuildings.team@lincoln.anglican.org](mailto:churchbuildings.team@lincoln.anglican.org) .

**Q: Are there any Grade 1 listed buildings that have succeeded in being energy efficient? What have they done?**

Yes, many, I hope the presentation gave you insight to a few of these. The CofE website has an ever increasing set of case studies which are worth reviewing at <https://www.churchofengland.org/about/environment-and-climate-change/towards-net-zero-carbon-case-studies>

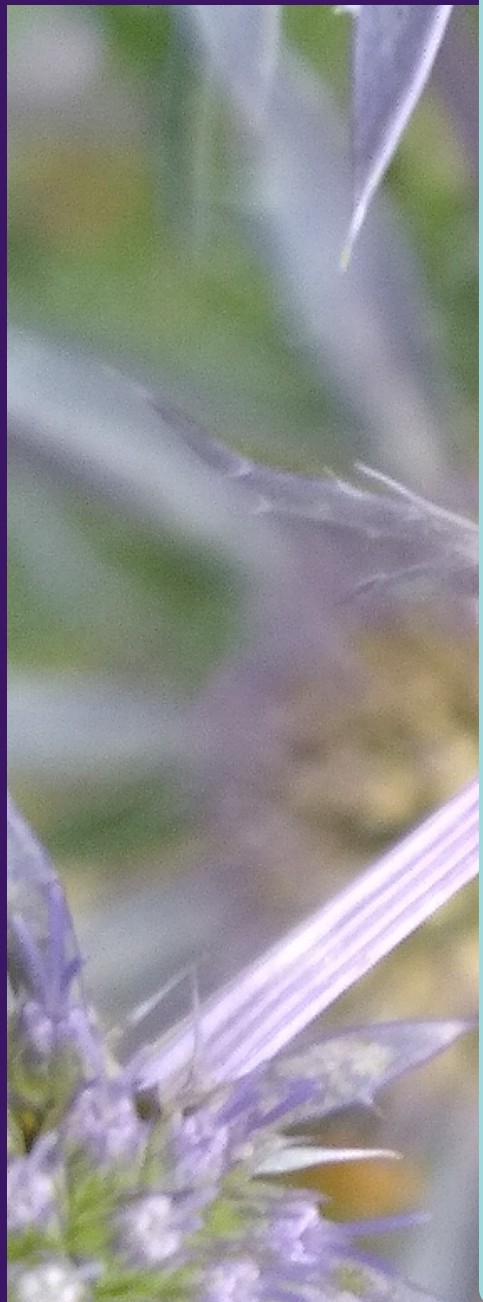


**Q: How to engage the PCC/members/incumbent to understand the urgency, so we're not merely focussing on buildings, but engaging in society & politically**

Journeying towards Net Zero Carbon is part of the way we express our love of God, for our neighbours and all of life. It is a practical outworking of the 5<sup>th</sup> mark of mission, a characteristic of God's mission. Theology can be useful for engaging incumbents and all the congregation on thinking about our actions and lifestyles. Read the Anglican Communion's 'Lambeth Call' on environment and sustainability to dig into the theology. <https://www.lambethconference.org/phase-3/phase-3-resources/environment-and-sustainable-development>

Its also good to consider how our church services are responding to each mark of mission. There are lots of resources out there for services; buying the incumbent a copy of 'Time for Creation' [A Time for Creation Liturgical resources for Creation and the Environment by Robert Atwell, Christopher Irvine, Sue Moore - Paperback / softback - 9781781401859 \(chpublishing.co.uk\)](#), wrapping it up (in old newspaper as wrapping paper with a topical article on it!) and giving it to them as a gift can be a nice way to make the point. In intercessions there is nothing like praying for forgiveness for the harm we have caused creation every week to concentrate the mind!

We are called to challenge injustice and to talk to others. People take the message better when its being outlived credibly by those delivering it, so be passionate and positive about doing it and make sure you do everything possible yourself. For support with speaking to leaders and politicians go to Tearfund's [Climate Emergency Toolkit](#) for ideas.



**Q: Should we acknowledge that our 12th century church buildings are not suitable for a time of climate crisis?  
Is it that we can't make them better, just that we should we have a lower expectation than domestic heating levels?**

In some cases yes, but its not about heating a building to xx degrees C but about making people comfortable in the space for the duration of their stay. In buildings where it is not possible or practical to heat the air volume inside to provide thermal comfort, there are lots of other ways to provide comfort for people. This can be to provide a heat source close to someone so they get the benefit of the warmth as it rises past them (such as under-pew) or heat down from the space above them (IR heating).

It could also be heating the person directly with heated seat cushions and/or heated floor mats. Failing that hot water bottles, rechargeable heat pads and even heated gilets can be very welcoming for a cold visitor and a simple blanket, pew runner on the floor and cushion on the seat can also be a major benefit. There are numerous unheated churches across the country which are still used and attended. It is very unusual for a maintained church building to fall below 6 degrees and most settle at 12°C.

**Climate Resilience:** Of course 12th century church buildings are also very resilient to fluctuating heat, are cool placed in hot summers, and protective spaces in high winds. For information on climate resilience and churches go to: <https://www.churchofengland.org/about/environment-and-climate-change/climate-resilient-church>

**Q: Are these churches using electricity because gas & oil are not readily available? How many use renewable electricity? Have you got evidence of joint buying of renewable?**

Approximately 7% of churches that submit an EFT return say that they use only electricity and purchase this electricity from renewable sources. In reality the true figure would be well over 10%. It is just that churches don't all complete the EFT and a lot of churches that do, don't know that the electricity they are purchasing (from the likes of Ecotricity, Good Energy or Octopus) is 100% renewable!

For example the Diocese of Gloucester has a scheme with Ecotricity (<https://gloucester.anglican.org/2020/green-energy-deals/>). And watch this space for new schemes in the future. Matt Fulford is working and lobbying hard on something which could be rather interesting where by 100% renewable energy used on a Sunday morning is offered to churches at a cost substantially cheaper than standard rates!

**Q: We are planning to have under-floor heater with other booster heaters in our Grade 1 listed church**

Proceed with great caution with Under Floor Heating schemes, they work well if you use your building for 6 hours + every/most days. If you don't then they can be very detrimental to having a usable building. Watch the video for more detailed information.