St Nicholas' Church, Bathampton
(Bath Deanery)

HEATING AND LIGHTING

STATEMENT OF NEEDS

1. General Information.

Bathampton is a village with its own identity, despite its proximity to Bath. With a population of 1698 (2021 census), it has a wide socio-economic profile: housing ranges from low-cost social housing through to multimillion-pound dwellings. Many activities happen in the village, including art groups, Keep Fit, Scouts, Guides, Cricket, and community coffee hubs.

The main (grade II* listed) St Nicholas' Church building is normally used only for acts of worship, together with occasional outreach events, and activities involving the adjacent village school and a nursery (especially before Christmas). A 10:45 service is held every Sunday (average attendance ~45) and there is a monthly evening service (usual attendance fewer than 6). Currently there are 91 people on the electoral roll. Although it is not always possible (due to lack of volunteers), we aim to keep the church open each day for the benefit of the community and of visitors, many of whom come to see the Arthur Phillip memorial, display and Australia Chapel.

The church extension (built 1992) is used regularly as a meeting place by both church groups and a small number of outside organisations. Junior Church normally takes place during morning services, and there is an after-school Story Club weekly in term time. A weekly coffee club is open to the whole community, which (in conjunction with the Genesis Trust) acts as a distribution point for coal and kindling to the less-well-off members of the local canal community.

The church currently has unrestricted financial reserves equivalent to approximately 6 months of operating expenses. Some funds are available now to start the work: a recent Gift Day aimed at regular church attenders has raised ~£22K (in addition to ~£13K previously given) for the immediate heating and lighting work, and a major appeal to the wider community and potential outside donors has been launched for the proposed later phases, together with a consultation process within the local community.

The most recent quinquennial report was received in December 2024. The church has a very strong and proactive Fabric Committee which completed all the actions required by the previous quinquennial report within two years.

2. What do you need?

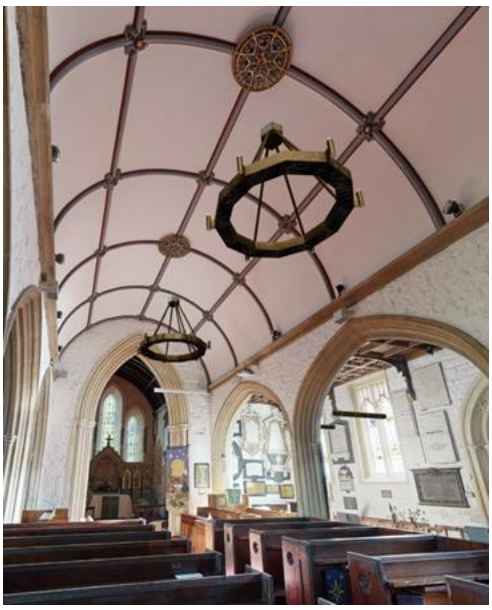
There has been no heating in the main church building since early 2023 when corrosion in cast-iron water pipes caused a sudden and complete failure of the system; due to their location beneath irreplaceable marble flooring, this pipework cannot be repaired. <u>We urgently need a new heating system.</u>

More slowly over the same period, a large proportion of the mineral-insulated-copper cabling in the main church building has been failing, leaving areas of the church with no lighting. Some of the existing lamps are irreplaceable because they are no longer available for purchase. <u>We urgently need to restore and improve the lighting system.</u>

3. The proposals

Heating

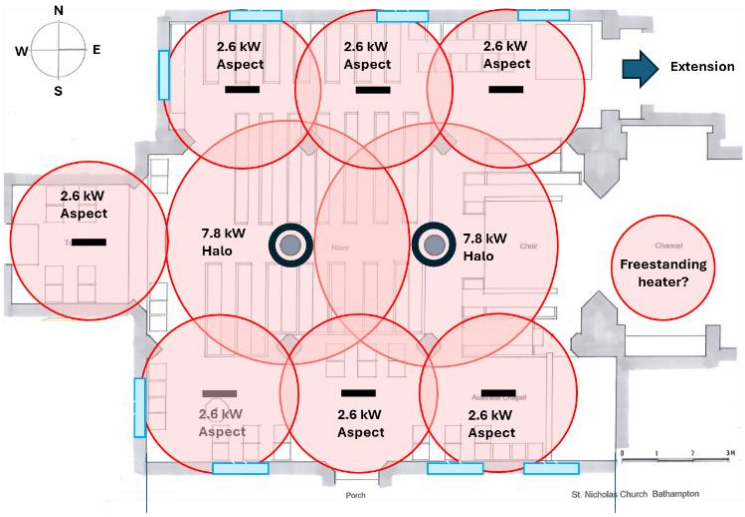
We recognize that the irreparability of the existing heating pipes now provides us with the opportunity to install a modern and more efficient electrical heating system which should help to achieve the Church of England's net-zero carbon target. Following extensive research, and with due consideration to the aesthetic and heritage character of the building, we plan to install a far-infrared heating system, comprising two Halo chandeliers (for the nave) and seven Aspect linear heaters (for the north and south aisles and tower) from Herschel Infrared. The Halo chandeliers (with LED up/down lights) will be suspended from existing iron rings beneath the two decorative grilles along the apex of the barrel ceiling; it is thought that the original purpose of these rings was to support lighting chandeliers. The load-bearing capability of these rings has been tested to four



Mock-ups of (*left*) Halos at recommended height and (*above*) Aspects in the side aisles (with correct orientation but incorrect positions)

Below: Plan showing proposed locations of far-IR heaters with approximate 'footprints' (drawn using mid-points of quoted ranges).

times the weight of each heater, as endorsed by a consultant structural engineer. In our opinion, the proposed non-glowing far-IR heating chandeliers will serve to enhance the appearance of the church interior sympathetically; moreover, removal of the now-redundant and ugly cast-iron radiators will also provide an aesthetic bonus. The slimline black far-IR Aspect heaters will be suspended from the wood-panelled ceilings in the two side aisles, which are both much lower than the nave, and (probably) from the wooden ceiling of the tower section at the west end of the building.



Far-IR heaters radiate heat directly to people (and other objects) rather than heating the air in the building, and they are therefore very well suited to large and infrequently used spaces.

Electrical wiring

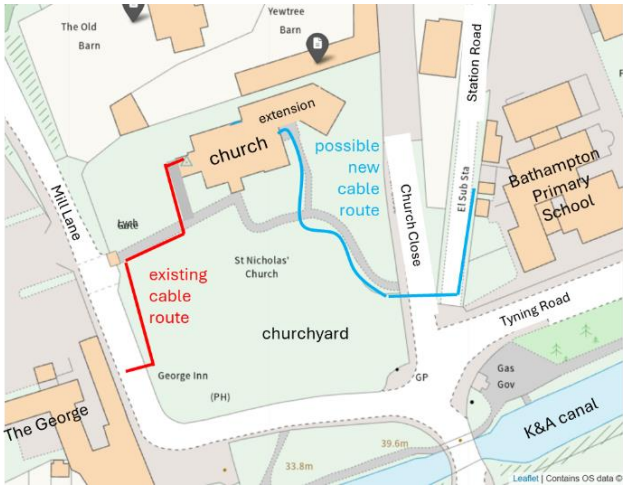
The circuits that are still working have been inspected and are safe; there is a modern consumer unit, and all damaged wiring has been disconnected. We intend to replace the current wiring, in the most part on a like-for-like basis following the course of existing out-of-sight cable runs. The 13A power ring circuits will need to be replaced, and the number of sockets increased to cope with demands of modern worship and the desire to avoid the use of extension cables.

The new cabling to each of the Halo heaters will run along the top of the stone wall plate above the arches on one side of the nave (where much of the existing wiring is), from where it will be brought up to each of the suspension rings by glueing to the curved ceiling on the east side of each of the decorated ribs (less visible as viewed from the west) and painted to match the existing background décor.

3-phase supply

Changing from a gas-fired pumped-water system to far-IR heating will require a very much greater demand upon the electrical supply to the church. The heating units (as above) will alone have a power requirement that significantly exceeds the capacity of the existing single-phase supply, and therefore it is essential to install a 3-phase supply. We propose now to install the necessary infrastructure to provide the anticipated future total demand when the church extension would also be switched to electrical heating, and we are currently seeking professional advice on how best this can be achieved.

The existing electricity supply enters the church at the west end from a connection in Mill Lane and follows the course of the footpath through the churchyard. One option is to use the same connection point and route, with the new 3-phase cable being laid in same trench as the single-phase cable it will replace but at a deeper level as required. This may be the preferable option if it is possible to synchronise installation of a duct beneath the road with other works to be carried out in Mill Lane by Bath & North-East Somerset Council during March 2025; we are presently in consultation with BANES about this matter. However, if these works cannot be carried out at the same time, it will add very considerable extra expense, owing to the cost of placing temporary traffic lights on a very busy road. Another option is to make a new connection to the substation in Station Road, and to lay cable in a new trench to follow the footpath through the churchyard into the east end of the church, where the existing boiler room is located; this would involve much less disruption.



Lighting

Defunct lighting units will be replaced with LED units. The existing units on either side of the nave have a rather 'industrial' look and will be replaced to achieve lighting that is more sympathetic with the architectural aesthetics of the building. Some extra lighting will be added to give better illumination in certain areas. A complete re-wire will also allow us to rationalise the position of light switches, and to replace the remaining non-LED luminaires.

4. Why do you need it and why do you need it now?

The church heating failed during Christmas 2022. During spring and autumn, we have used temporary portable heating to warm the building before a service but, because of their noise, these cannot be used during the service. In colder weather the temperature drops very quickly, and the congregation has felt very cold during winter months. During the coldest part of the winter, services have been held in the church extension (The Miller Room), where the heating is still functioning, but this has a detrimental impact on the provision of Junior Church.

The wiring has gradually become more problematic over time. As the church electrician has told us that the whole system needs to be replaced, we have decided not to repair any more wiring faults except to ensure that the system is safe. Currently there is no fixed lighting in the chancel or vestry. Less than half of the lights in the nave are working and only a quarter of the lighting in the Australia Chapel (South Aisle).

5. **What is the evidence for the need?**

Complaints from the regular congregation after every service in the church, and from disgruntled visitors who do not realise that extra clothing is essential.

6. **How is the proposal contributing to the need for environmental sustainability?**

During May 2023, Inspired Efficiency carried out an environmental audit of the church's heating and lighting: they estimated that we use 4.96 tonnes of CO_2e/year. The change to electric heating in the church and a change to a low-carbon electricity supplier would substantially reduce the amount of carbon being used. This is a first stage on our journey: as funds allow, we intend to switch to electric heating in the Extension, to remove the boilers and discontinue the gas supply and perhaps, in due course, to install solar panels on the south-facing roof and batteries in the old boiler room.

The nature of the proposed far-IR heaters will substantially reduce the amount of energy required to have the church as a comfortable place to worship, as they have very short warm-up times in contrast to four or five hours (at least) for the gas-fired pumped-water system.

The impact of the project on the flora and fauna of the churchyard will be extremely low, requiring one fairly small trench to follow the edge of one of the paths, to allow a three-phase mains supply to be introduced.

7. What other options to meet the needs were considered?

Repair of the corroded pipework would inevitably cause damage to the Wombeyan Marble floor of the Australia Chapel, which is now irreplaceable since the closure of the quarry in Australia. Also, continuing to rely upon a fossil-fuel-based heating system is unsustainable. Using ground-sourced heat pumps to heat water would still require usable pipework.

Air-sourced heat pumps are not suitable for large spaces that are used infrequently and, as with conventional ‘radiators’, they heat the air in the building which rises to the high ceiling before its effect is felt by people at ground level.

We consider that under-pew heaters, or heated pew cushions, would undesirably restrict us to retaining the pews indefinitely, thereby denying the future possibility of their replacement by flexible seating if the church should choose to do so.