

St Nicholas' Church, Bathampton (Bath Deanery)

DETAILED RATIONALE FOR PROPOSED SOLUTION FOR HEATING, LIGHTING AND REWIRING

BACKGROUND

A fault with the hot-water-fed heating system in the church building was discovered in December 2022, since when there has been no heating. In April 2023 the cause was found to be major leakage from rust-corroded underfloor cast-iron pipework, with a hole being located close to the position where a repair had been made 15 years earlier beneath accessible flagstones, and very near to the point where the pipe disappeared beneath the Wombeyan marble flooring of the south aisle and Australia Chapel. Three building contractors consulted were unanimous that it would be almost impossible to lift the marble without it being broken. The marble slabs were a gift from Australia and came from a unique quarry in New South Wales which, unfortunately, is now closed, and it would therefore now be impossible to match new replacement slabs with the originals.

More detailed visual inspection of the above-ground pipework led us to suspect that other parts of pipework were beginning to develop leaks: water staining was visible on the north pier of the tower arch, and a joint close to the organ looked dodgy.

Several diocesan advisors were contacted: the church was visited by Jonathan Foyle, and a discussion was held with Sara Emmet (Climate Justice and Environment Advisor) who recommended an energy efficiency audit, which was conducted by Inspired Efficiency in May 2023. The audit suggested a number of generic measures that might enable a route towards net zero carbon, including replacement of the existing heating system by an electrical heating solution.

In September 2023 the PCC considered a report prepared by Paul Bryant (Churchwarden). Several other types of heating were discussed but discounted as being unsuitable for a church building that is used for only a few hours per week, and it was agreed that under-pew heaters would be undesirable in view of the possibility that we might in future decide to replace the pews with flexible seating. Noting that the existing gas-fired boilers were installed in 1992, and that the company who service them annually describe them as 'nearing end of life', it was decided not to replace these fossil-fuel-based boilers but instead to pursue a solution consistent with moving towards net-zero carbon. PCC resolved that an infrared heating system should be explored.

OBSERVATIONS FROM VISITS TO OTHER CHURCHES (2024)

- St Matthews, Bristol and All Saints, Martock: we were favourably impressed with their Herschel Halo installations.
- St Philip & St James, Norton St Philip: we were not impressed with their installation of Herschel Manhattan mid-IR patio heaters which, in our opinion, were mounted too high up on the walls and were ineffective.
- St Mary the Virgin, Marshfield: We were also not impressed with the mid-IR installation of EHS chandelier-style heaters; we did not like the glow of these units, which are suspended in the middle of each arch on each side of the nave.
- The site visits persuaded us of the merits of far-IR zero-light technology over mid-IR orange-glowing heaters. However, we considered that the inclusion of LED up/down lights within the Halo chandelier-style design was a desirable feature.

QUOTES FROM ALTERNATIVE SUPPLIERS

- We were unable to find any supplier of far-IR heaters other than Herschel in the UK.

- We did eventually obtain a quote from EHS, who did not visit us, despite our invitation. Their proposal was to install chandelier-style mid-IR (glowing) heaters in exactly the same way as in Marshfield. However, despite our having given them a clear plan of the church building and precise measurements of the height of our arches, their proposal would have involved the heaters being installed at a dangerously low height which would completely fail to provide the even heating effect of far-IR heaters mounted at the correct height. We noted an apparent lack of professionalism in their manner of dealing with us.

FURTHER CONSULTATION WITH DIOCESAN ADVISORS

- We met again with Jonathan Foyle (July 2024) and then with Mark Lidster (October 2024), whose advice and suggestions were well received.
- At the time of his visit to conduct our Quinquennial Survey (July 2024), George Chedburn (Church Architect) was briefed on our situation and deliberations. His report recommended that a new heating system should be investigated.

DIALOGUE WITH HERSCHEL

- Our first quote received from Herschel was for a combination of Halos and Horizons (both from the Heritage range). We recognised that the pricing of both models reflected the virtual monopoly that Herschel has for this rather niche area of the market. However, while we were sufficiently impressed by the design and appearance of the Halo (with LED up/down lighters but without decoration) to consider that its premium price would be justifiable within the aesthetically sensitive context of St Nicholas, we considered that the design of the Horizon was insufficiently attractive to justify the considerable extra cost of this model as compared to other far-IR linear heaters.
- We considered replacing the Horizons by Summit heaters but, following face-to-face discussions when we visited the Herschel manufacturing unit in Avonmouth, we were persuaded that the new model of Aspect heater would be more suitable, both in view of its power output, the quality of its manufacture, and its reliability.
- Jonathan Foyle had suggested that we should also consider the 'flying-saucer' shaped Pulsar models. In our opinion, these heaters are underpowered, overweight, overpriced and old technology.
- Our second quote (31Jan25) was for a combination of Halos and Aspects, as outlined in our faculty application (2025-109371).
- The plan included in the Statement of Need shows how the 'footprint' of the radiant output from the proposed arrangement of Halos and Aspects would provide adequate coverage of the entire area of the nave and side aisles. The area of each circle on this plan was taken as the mid-point of the range stated on the datasheets from Herschel for units mounted at the recommended heights; we did not want to stretch the coverage by using the maximum stated figures. We had a zoom meeting with Herschel in January at which we discussed the comments that Herschel had received from some churches that their Halos were less effective than hoped for during the coldest of this last winter's weather. They were suggesting that perhaps the units should be mounted about 200 mm lower but, in discussion it was agreed that (in view of the physics involved) a better solution was simply to allow for a longer warm-up time on the coldest of days when a larger rise in temperature was required.
- Herschel also mentioned the new 9.6 kW Halo models for which the recommended height above floor level is 4.7 m. However, noting that these emit a 'mild glow', we are unhappy that they are not zero-light heaters and are unconvinced that adopting these higher-powered units would add benefit to our proposed installation as we cannot change the distance between the ceiling-mounted points of suspension.

CONSIDERATIONS REGARDING MOUNTING OF HEATERS IN THE SIDE AISLES

- Our faculty application includes a proposal to install three ceiling-mounted Aspect heaters in both the north and south aisles, suspended from the wooden ceilings at the height recommended by Herschel for effective operation (3 m above floor level).
- One of the assessors expressed a particular concern, as relayed to us on 12/03/25: *'The solution for the aisles is less convincing – the black suspended heaters block views and appear incongruous in the 3d image. Suggest the PCC review – they might consider wall panels, under-pew heaters or models mounted to the rear of the arcade for these areas.'*
- We recognize this concern but wish to note several points, as follow.
- The presence of numerous memorial tablets as well as windows on the north and south walls severely restricts the possible locations for wall mounting or for wall panels. There are no pews in the south aisle. As noted above, under-pew heaters would be incompatible with possible future replacement of pews by flexible seating.
- To cover the floor area in the north and south aisles adequately ideally requires three evenly spaced 2.6 kW Aspect heaters, the midpoint of each being (roughly) in line with the middle of an arch. (Old photographs show that there were once pendant lights in exactly these positions, as evidenced now by defunct lighting roses still attached to the ceiling.)
- Herschel's recommended maximum height above floor level could only be achieved by wall mounting of two heaters between arches, each attached to the white-painted rough stonework above the downward cusp, and each fixed at an appropriate angle (*above right*). In our opinion, this would be both unsightly and inadequate as this reduced configuration would fail to provide heating at the east and west ends of each aisle. In particular, it is highly desirable in the south aisle for there to be heating in three distinct zones of usage: (a) Australia Chapel (east end), (b) Arthur Phillip memorial (*right*), (c) font area (west end).
- If a row of three linear heaters suspended along the east-west axis in each side aisle is considered to be aesthetically undesirable, perhaps it requires only for each unit to be rotated by 90° into a north-south orientation in order to minimize the visual intrusion when looking towards each of the windows.
- Another possibility is to use a pulley and winch system to enable the heaters to be raised close to the dark wood ceiling when not in use and to be lowered to the recommended height for the limited times when they are in use. This would further minimise obstructions to lines of sight, albeit at some expense, and would necessitate additional unsightly mechanical apparatus.



North aisle, looking south-east



Phillip memorial, looking north from main entrance



Australia chapel, looking south, with Aspect heater oriented either E-W (*left*) or N-S (*right*).

MOUNTING OF HEATER IN THE TOWER AREA

- Our faculty application includes a proposal to install one Aspect heater in the area beneath the tower at the west end of the church building, to be suspended from the wooden ceiling. On further thought we now consider that it would be preferable to mount this unit to the north wall of the tower, where there is a suitable space at the appropriate height between two memorial tablets.

CONSIDERATIONS REGARDING CABLING AND WIRING RUNS

- The rewiring of the church building should be able to follow most of the existing courses of the old wiring, subject to careful thought about the siting of power sockets and new lighting units. The existing cables for sockets are white and are surface-mounted unobtrusively to white-painted stonework, usually in corners. Existing cabling for lights in the nave runs along the tops of the stone parapets above the arches, and it is completely hidden from view. In the side aisles, cabling runs unobtrusively in the corner between the wall (above the arches) and the wooden ceiling.
- Each of the Halo chandelier-style heaters requires a 7-core 4 mm² cable. Our faculty application includes a suggestion to run these cables along the top of the stone parapet (on one side of the nave) and then up the curve of the barrel ceiling to each of the decorative iron grilles, using a glued fixing and then painted to match the background décor.
- However, a more recent suggestion is to install a pair of steel wires, one on either side of the 'spine' along the apex of the ceiling, attached to the white-painted stonework above the east- and west-end arches, and tensioned to be very taut (*right*). They would pass between the ceiling and each of the decorative iron grilles, and a cable would be attached to each wire and painted to complement the background décor. This should be aesthetically satisfactory and would avoid any direct fixing to the Georgian barrel ceiling.
- The existing single-phase electricity supply enters the church building at the west end, where a cupboard contains the meter and the main consumer unit, along with a bank of lighting switches. It has now been established with National Grid Electricity Distribution that the new 3-phase supply must come from the substation in Station Road and will therefore enter the existing boiler room at the east end of the church building, where there is a subsidiary consumer unit that serves the church extension.
- A thick, black, armoured cable extends from the west end of the church to the subsidiary consumer unit in the boiler-room, running along the corner between the wall above the arches and the ceiling in the north aisle. It is now proposed to use the same cable in reverse to take the new power supply back into the main church building. The control system for the new heaters will be located in the re-configured cupboard at the west end, along with most of the light switches.
- We are presently seeking professional advice from Enlightened (Bristol), who have worked in several churches and cathedrals, including Bath Abbey) regarding the most suitable type of lighting for the nave, side aisles and chancel, bearing in mind not only the needs for Sunday worship but also the future possibility of other uses to benefit the wider community. As at present, most of the new units will be attached to the walls above the stone parapet and arches, although the precise positions will be subject to careful consideration. We ensure that the load balancing between each of the electrical phases allows for possible future additions.

