STATEMENT OF NEEDS FOR ST MICHAEL AND ALL ANGELS FLAX BOURTON

1. IDENTIFICATION OF THE NEED WITH EVIDENCE

Community use

Our church is open to the public every day during daylight hours but we usually only put heating on for events and services. Regular activities include fortnightly Sunday worship (average attendance: 15 adults,) weekly prayers (average 4 attendees), a weekly café (average attendance: 15 adults), and monthly Souper Lunch (average 24 attendees including a group of children from our local primary school).

Our 'Warm Welcome Café' is something of a misnomer as the heating fails occasionally!

A bigger problem is that the current boiler is only capable of making the inside of the church up to 10 degrees warmer than the outside, so in the winter it nearly always feels cold.

As well as regular events, we also hold occasional activities such as school days, community prayers, festivals and markets. These events have a much bigger footfall- often over 100 visitors. Our electoral roll is 60.

Currently, in order to ensure the space is warm for worship and other events we need to turn the gas boiler on at least 8 hours before the event is due to start and we have to heat the whole building.

The proposed Far Infrared heating system will address this issue because it has a substantially reduced lead time and we can zone the heating so that we heat the people, not the whole building.

Care for Creation

The fifth mark of mission is an important focus of our church life - *To strive to safeguard the integrity of creation and sustain and renew the life of the earth*.

We have recently submitted an application for our Gold Eco-Church award and the installation of a new electrical heating system aligns with some of the key aspects of our eco-church action plan;

- Worship and Teaching – modelling creation care through responsible action.
- Buildings – reducing operational emissions.
- Community and Global Engagement – being a witness to sustainability and social justice.
- Lifestyle – encouraging congregation-wide climate awareness and responsibility.

We are keen to reduce our carbon footprint as outlined in our church 'Environmental and Net Zero Policy and Action Plan' (attached). Currently, our old and unreliable gas

boiler contributes 3.2 tCO_2 per annum to our total carbon footprint of 5.43 tCO_2 per annum. We off-set this through the Climate Stewards scheme.

Switching to Far Infrared heating on an 100% green tariff will make a substantial difference to our footprint and support both our own ecological and missional aims, as well as the wider Church of England's Net Zero 2030 target.

2. THE PROPOSAL

To address the issues raised above we propose to install a Far Infra-red radiant heating system which offers rapid, zoned heating – warming people rather than the entire space. The system aligns with the CofE heating and renewables policy priorities as it will significantly reduce fossil-fuel energy consumption when used with a 100% green electricity tariff.

The system we have chosen (which is the only satisfactory one we are aware of) is manufactured by Herschel and comprises:

- two gold-coloured Halo Heaters (7.8KW each) with down- and up-lighters and incised trefoil design (as pictured below) - to heat the nave

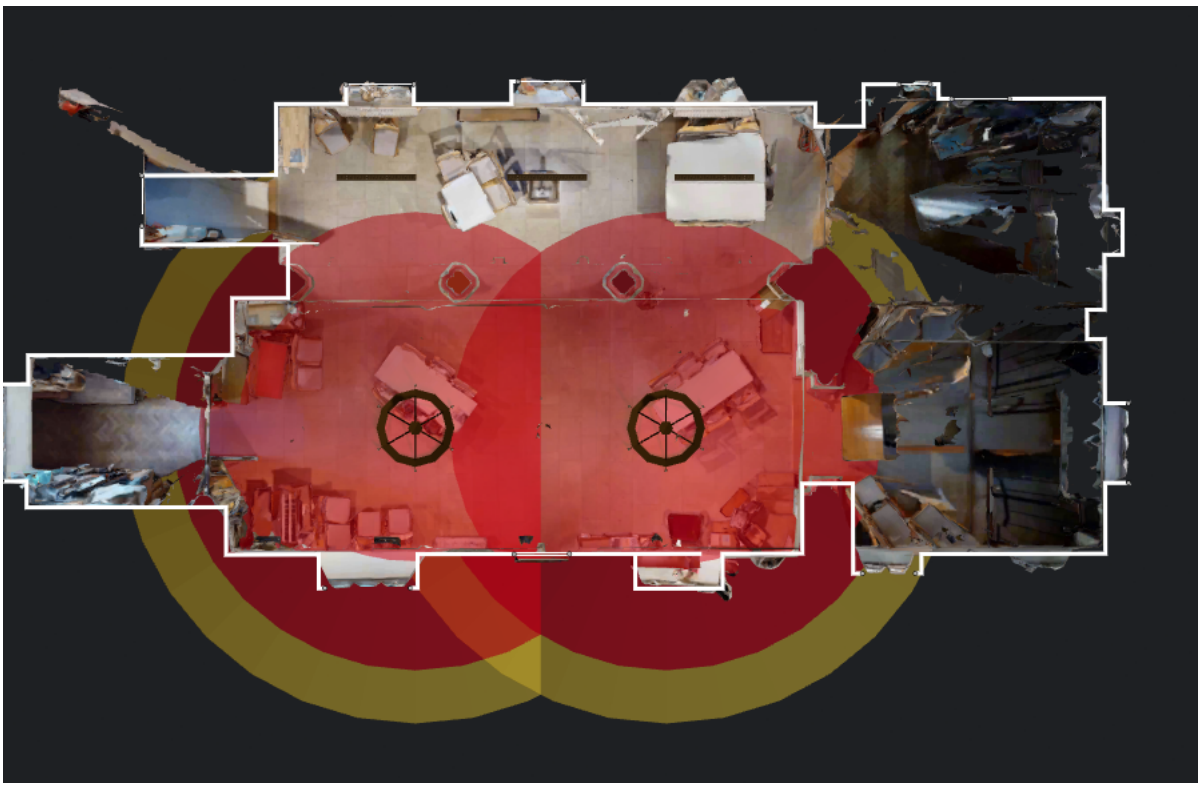
- three gold-coloured Horizon Heaters (2.6KW each) to heat the North aisle.

For further detail see (*Flax Bourton Church_Quotation - ME151124-AH1*) attached.

Halo Heater

Horizon Heater

These schematics provided by Herschel indicate how the system to heat zones within the church will work in practice:



Halo heat zones in the Nave

A view showing two of the three proposed Horizon heaters in the north aisle.

3. OPTION SELECTION PROCESS

We began our research process in January 2024 with a visit from Dan Wills, Diocesan Net Zero Advisor who produced a report for the benefice. The report is attached (*BGFB FB Heating from Dan Wills*) with the comments relating to other churches in the benefice greyed out. His *Conclusions and Next Steps* section recommended among other things that we obtain an energy audit.

In June 2024 we employed Inspired Efficiency to carry out the audit and produce a report which is attached (*St Michaels and All Angels, Flax Burton - Church IE.)* They considered various options for a decarbonised heating solution and the only one they considered viable was to use far infrared heaters.

We reported our working party discussion of the IE information and recommendations to the PCC in July 2024 with a report which is attached. (*Energy Audit PCC recommendations)*

In Sept 2024 the working party visited St Matthew's Church in Kingsdown, Bristol to speak to the architect who oversaw the project there and seek answers to the queries we had outlined in our report.

The team felt very positive about the suitability of this heating system for Flax Bourton Church because of its capacity to heat zones within the church rather than the whole church and the speed with which an optimum temperature could be reached. We found the design pleasing aesthetically.

After reviewing several case studies of Halo Heating in other churches we concluded it was the best option for our situation and arranged for Herschel to survey the church.

Herschel took on board the ways that we use our church space and produced a suitable plan to heat it. The PCC passed a resolution to proceed with the project in July 2024 (*see PCC minute attached*).

4. RATIONALE FOR IMMEDIATE IMPLEMENTATION

Prompt installation will address the current heating inadequacies, enhance comfort, and support both our mission of sustainability and the Church of England's Net Zero by 2030 ambition. The system's zoning capability and rapid response will improve the suitability of the church for worship and community events, while visibly demonstrating our commitment to environmental responsibility.

Examples of how zoning the heating will be more appropriate include;

- Warm Welcome Café - located in the east end of the nave and north aisle; could be heated by one Halo and one Horizon.
- Community prayers - located in the west end of the nave; could be heated by one Halo.
- Family Communion/Sunday worship - located in the nave; could be heated with two Halos.

5. POTENTIAL IMPACT OF PROPOSAL ON THE HERITAGE, CONSERVATION AND SIGNIFICANCE OF THE CHURCH BUILDING

A very supportive and helpful visit from Mark Lidster, DAC Buildings Adviser, took place in June 2025, and gave us further encouragement that our proposals were not only practically workable but also helped us explore and develop options for installation/fixing which would minimise impact on heritage and fabric. See notes of the visit attached.

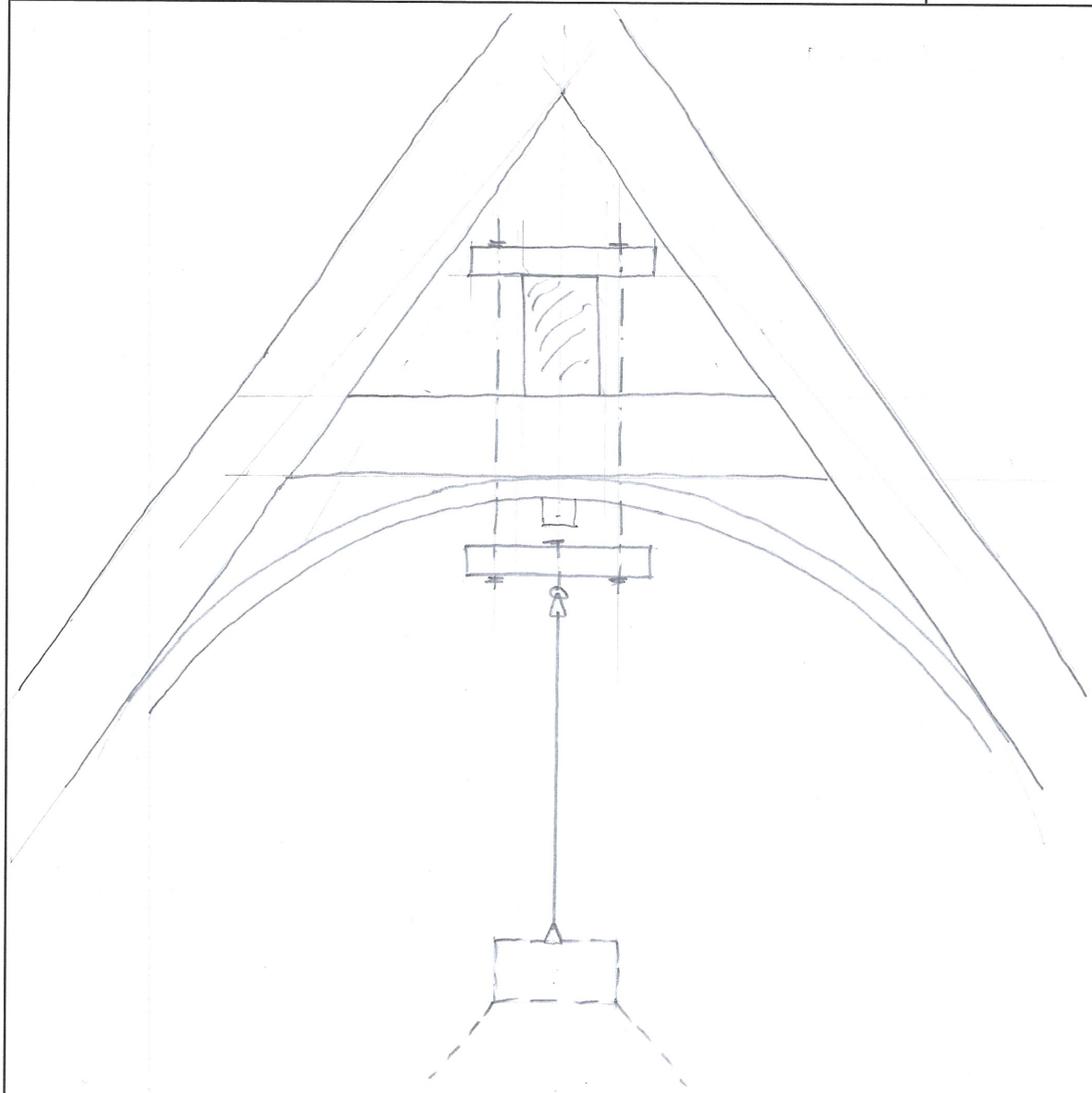
Please also see our *Statement of Significance* for a more detailed appraisal of impact on significance.

6. DETAIL OF INSTALLATION AND IMPACT ON CHURCH FABRIC

The proposal for the Halo chandelier fixing prepared by Structural Solutions (see images below) was to be capable of carrying the load recommended by Herschel. This was 3 times the 27kg weight of a Halo. This design is in the process of being revised after consultation with Structural Solutions to move the lower *Square hollow section steel* to above the internal timber finish so that it will no longer be visible from within the nave. The supporting cable and power cables will come together through a minimal sized hole in the centre of the nave roof. Therefore, the impact of the installation on church fabric will be minimal.

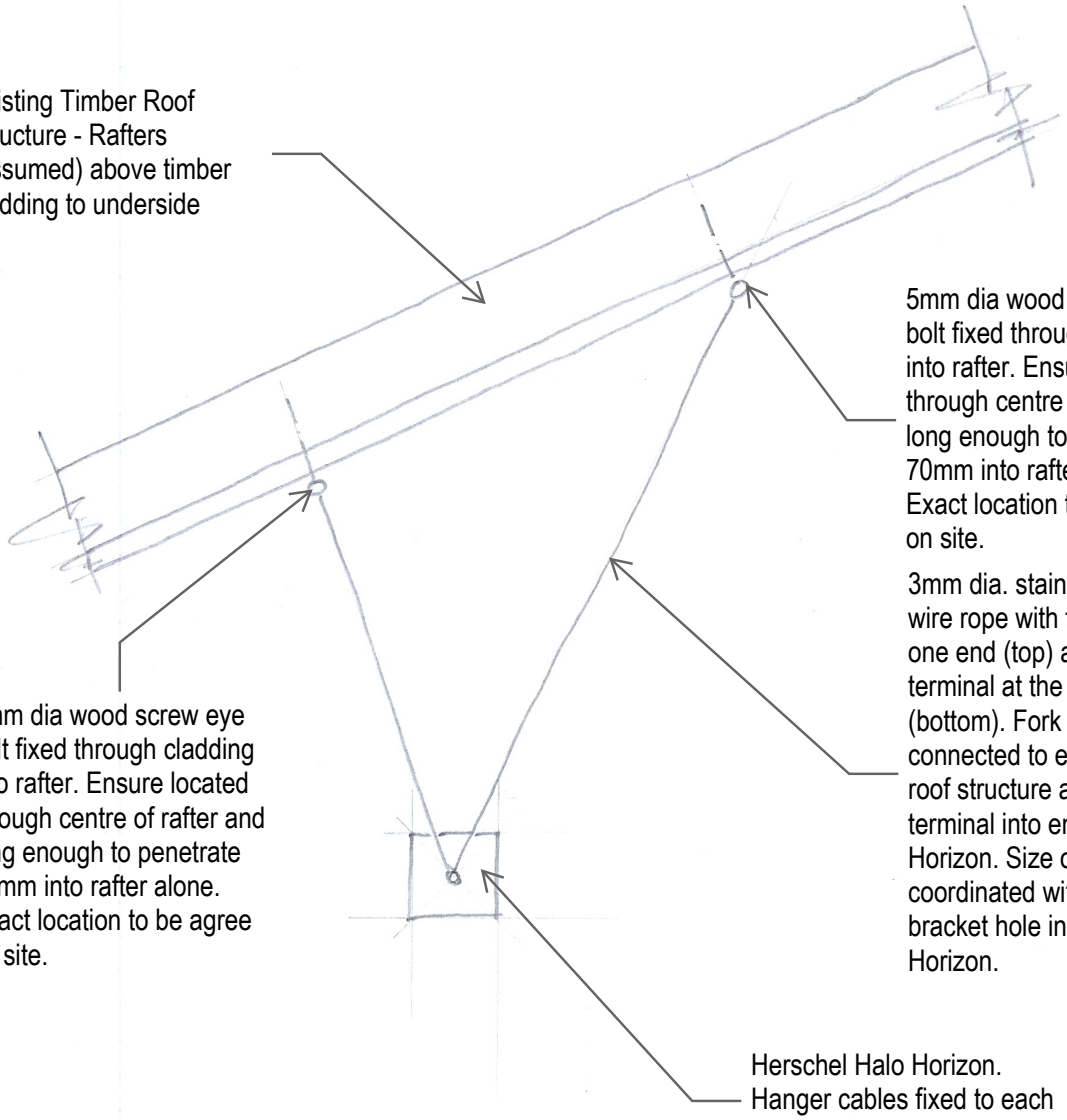
Please see our *Statement of Significance* for a more detailed appraisal of impact on significance.

Project	Sheet no./rev.
	By/Date



STRUCTURAL SOLUTIONS

Project	Sheet no./rev.
St Michael & All Angels Church, Flax Burton	FBC/SK01
Herschel Halo Horizon Support Proposal	By/Date MM / 10/01/25



Note: Stainless steel wire rope can be procured from 'Steelropes24.co.uk' or similar. Working load capacity of rope and end connections to be minimum 25kgs

STRUCTURAL SOLUTIONS

8. DETAIL OF ELECTRICAL WORKS AND RELEVANT SAFETY STANDARDS

We will shortly have a three-phase upgrade.

We have yet to receive a detailed specification of the electrical installation but have already received two quotes and are awaiting a third.

All the electrical companies that we have approached are NICEIC/ECA/NAPIT registered contractors with commercial installation insurance. On completion of the work the contractor will test the installation and supply an electrical certificate.

The wiring will comply with current regulatory requirements BS 7671:2018+A2:2022.

Cabling will be low smoke and fume (LSF) as a minimum

9. IMPACT OF CABLE ROUTING

The 3 phase power supply meters and distribution units will be installed on the wall in the tower vestry.

The cables for the Halo heaters will remain in the tower vestry until they go into the tower clock room and then to the cavity above the nave roof. The power cables to the Halo heaters will not be visible in the nave as they will be in the void above the nave roof.

The route for the power cables for the Horizons have yet to be precisely determined although they will remain in the tower vestry until they follow existing cable runs to the north aisle roof. They will then run along the edge of the wooden roof where it meets the arch walls and then down along the ribs of the wooden roof.

The colour of all the cables that would be visible will match the background on which they are installed.