ESOS-ENERGY
Energy efficient solutions

Energy Efficiency and Zero Carbon Advice

St Edmund's Church, Hardingstone
PCC of St Edmund's Church

Author	Reviewer	Audit Date	Version
Paul Hamley	Tamsin Hockett	15th June 2022	1.0

Contents

1. Executive Summary

An energy survey of St Edmund's Church, Hardingstone was undertaken by ESOS Energy Ltd to provide advice to the church on how it can be more energy efficient and provide a sustainable and comfortable environment to support its continued use.

St Edmund's Church, Hardingstone is a Grade II* listed church dating from the 13th to 15th centuries with 18th century additions. [Historic England reference 1039756]. Electricity only is supplied to the site.

The church has a number of ways in which it can become more energy efficient. Our key recommendations have been summarised in the table below and are described in more detail later in this report. It is recommended that this table is used as the action plan for the church in implementing these recommendations over the coming years.

Energy saving recommendation	Estimated Annual Energy Saving (kWh)	Estimated Annual Cost Saving (£)	Estimated capital cost (£)	Payback (years)	Permission needed	CO2 saving (tonnes of CO2e/year)
SHORT TERM						
Draughtproofing	2% 200	£30	200	7	List B	0.05
Keep Fixed water Heater turned off when not in use	Precaution		Nil		None	
Install timer control switch for kitchen wall heater	Precaution		200	Not recovered	List A	
Replace floodlights with LED units	60% of present use 770	£107	£400	4	List A	0.19
MEDIUM TERM						
Install solar photovoltaic panels	22,000	£3,300	£34,800	10.5	Faculty	5.57
Install new control system for overhead radiant heaters	10% 1,000	£150	£1,000	8	List B	0.25
Install Air to Air source heat pump	¾ of heating load 6,750	£1,010	£22,500	22	Faculty	1.7

The church should check any faculty requirements with the DAC Secretary at the Diocese before commencing any works.

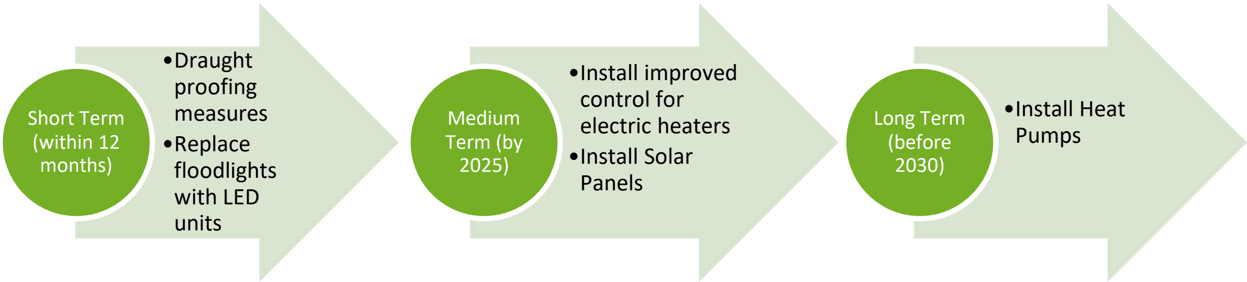
Based on current contracted prices of 16.10p/kWh (day) and 13.86p/kWh (evening, weekend) for electricity.

If all measures were implemented this would save the church around £4,500 per year in operating costs [i.e. the majority of current operating costs plus a proportion of heat pump running costs].

2. The Route to Net Zero Carbon

The General Synod of the Church of England has indicated that the Church of England should be Net Zero Carbon by 2030. Every church, cathedral, church school and vicarage will therefore need to convert to be a net zero building in the next 10 years.

This church has a clear route to become net zero by 2035 by undertaking the following steps:



3. Introduction

This report is provided to the PCC of St Edmund's Church, Hardingstone to give advice and guidance as to how the church can be improved to be more energy efficient. In doing so the church will also become more cost effective to run with improvements in the levels of comfort. Where future church development and reordering plans are known, the recommendations in this report have been aligned with them.

An energy survey of the St Edmund's Church, Hardingstone, NN4 6BZ was completed on the 15th June 2022 by Dr. Paul Hamley. Paul is an energy auditor with experience of advising churches and small businesses. He is part of the Church Energy Advisors Network developing advice for the Church of England and authored the "Assessing Energy Use in Churches" report for Historic England. He is a CIBSE affiliate member and a Chartered Scientist, with experience of the faculty process gained from chairing the building committee of a Grade I listed church and has been an assessor for EcoCongregation.

The church was represented by John Wilson, Church Warden and Hilary Wilson, Treasurer.

St Edmund's Church, Hardingstone	
Church Code	628189
Gross Internal Floor Area	250m^2
Volume	1,500m^3
Heat requirement	50kW
Listed Status	Grade II*

The church is typically used for 14 hours per week for the following activities:

Type of Use	Hours Per Week (Typical)	Average Number of Attendees
Services	3 hours per week	10
Community Use	Café 8 hours per week Fundraising events, concerts, schools visits average 1.5 hours per week	30 100 200
Occasional Offices	3 weddings 6 funerals 12 baptisms	100 100 50

Annual Occupancy Hours: 730

Estimated Footfall: 6,000

4. Energy Procurement Review

Energy bills for gas and electricity have been supplied by St Edmund's Church, Hardingstone and have been reviewed against the current market rates for energy.

The current electricity rates are:

Day Rate	16.10p/kWh	Below current market rates
Evenings & Weekend Rate	13.86p/kWh	Below current market rates
Standing Charge	25p/day	N/A

Supplier: EDF. Contract End Date: 31/01/2024

The above review has highlighted that when the current contracts expire, there will be opportunities to gain cost savings from improved procurement of the energy supplies at this site using a group purchasing scheme. The current rates are lower than the market rate and should be retained at present.

We would therefore recommend that the church looks into 100% renewable tariffs and obtains quotations for its electricity supply from group purchasing schemes such as the Big Church Switch scheme, Charities Buying Group and the Diocese Supported parish buying scheme, http://www.parishbuying.org.uk/energy-basket.

These scheme offers 100% renewable electricity and therefore are an important part of the process of making churches more sustainable.

A review has also been carried out of the taxation and other levies which are being applied to the bills. These are:

VAT	20% charged from November 2021	The organisation is understood to be a charity and therefore should be benefiting from only be charged a 5% VAT rate. A VAT declaration should be sent to the supplier to adjust this.
CCL	100% charged when 20% VAT applied	As the organisation is being charged the wrong VAT rate they are also being charged CCL which should not be applied as they are a charitable organisation, domestic users (including children's homes/hospices/student accommodation and care homes) or users consuming less the 1,000kWh of electricity.

		Sending the supplier a VAT declaration will remove this charge.

Whenever monthly electricity consumption exceeds 1,000kWh, or gas consumption exceeds 4,397kWh (52,000kWh per annum), 20% VAT is charged unless the customer has submitted a VAT declaration form. This should always be done when changing supplier.

The church is a charity and therefore can claim VAT exemption status.

Excess VAT paid can be reclaimed for the past three years.

VAT declarations are available from the suppliers website and can usually be found by typing the suppliers name followed by "VAT Declaration Certificate" into most website search engines.

A detailed explanation is available here: https:// perfect-clarity.com/vat-on-church-utility-bills/#:~:text=There%20is%20no%20VAT%20chargeable%20on%20Church%20water%20bills

An overview of the church showing the radiant heaters suspended from the arches.

5. Energy Usage Details

5.1 Annual Consumption

St Edmund's Church, Hardingstone used 13,223 kWh/year of electricity in the year from 1st May 2021, costing in the region of £2,000 per year (with 20% VAT charged over half of the period).

This data has been taken from the annual energy invoices provided by the suppliers of the site.

Utility	Meter Serial	Type	Pulsed output	Location
Electricity - Church	K13W 314535	Elster A1140	Yes	Electrical cupboard in Hervey chapel

The meter is AMR connected and as such an annual energy use profile for the site could be obtained from the supplier.

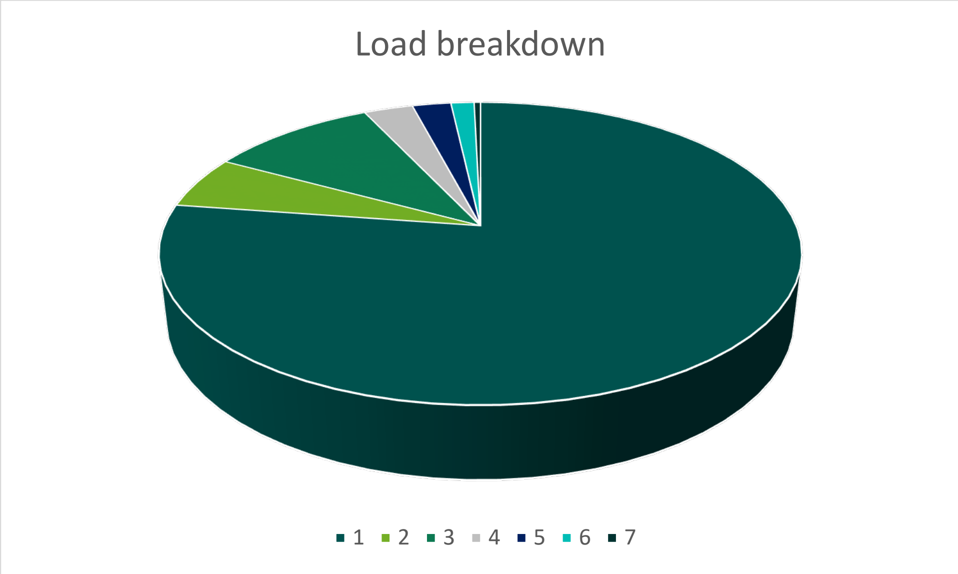
5.2 Energy Profiling

The main energy consuming plant can be summarised as follows:

	Equipment	Power kW	Annual Consumption kWh	Portion
Heating [Electric]	Nave 18 x 2 element quartz radiant Chancel 2 x 2 element quartz radiant 10 under pew bar heaters Kitchen, toilet 2 x quartz radiant heaters TOTAL 68 hours estimated Sunday heating, 70 hours for café and other events.	 54 4 10 2 70	10,000	77.3%
Lighting [Internal]	CHURCH 750 hours use Triple bulb chandeliers; 42 bulbs x 18W 8 spotlights x 13W 4 CFL x 25W 2 LED x 18W 1 x 60W incandescent (kitchen)	 756W 104W 100W 36W 60w	 550 175 TOTAL 725	5.6%
Lighting [External]	4 Floodlights, SON 250W Average 3.5 hours/night = 1,280 hours Porch light CFL, PIR control Path Pedestal lights x 8 + tower mounted large LED (rarely used)	1 25W 200W	1,280 10 10 TOTAL 1,300	10.0%
Hot Water	Fixed water heater, kitchen (1 hour per week, normally off) Kettle Coffee machine Urn	3 3 3 2	200 30 100 50 TOTAL 380	2.9%
Kitchen	Fridge (on constantly)	100W	300	2.3%
Sound, Music	Sound system, weekly use Organ, every other week	0.5 0.5	150 30	1.4%
Small Power	Vacuum cleaner	1.5	50	0.4%

Sum of estimates: 12,935kWh

Annual site electricity consumption, 2021-22: 13,223kWh



KEY *1 electric heating)* *2 Lighting internal* *3 Lighting external*

4 Hot water *5 Kitchen* *6 Sound, music* *7 Small power*

As can been seen from this data, the heating makes up by far the largest proportion of the energy usage on site. The other significant load is floodlighting.

5.3 Energy Benchmarking

In comparison to national benchmarks for church energy use St Edmund's Church, Hardingstone uses 33% less electricity and 5% less heating energy than is average for a church of this size.

This is largely due to lower than average hours of use.

	Size (m^2 GIA)	Annual Energy Usage (kWh)	Actual kWh/m^2	Benchmark kWh/m^2	Variance from Benchmark
St Edmund's Church, Hardingstone (electricity not for heat)	250	3,223	12.8	19	-33%
St Edmund's Church, Hardingstone (electricity for heat)	250	10,000	40	42	-5%
TOTAL	**250**	**13,223**	**52.9**	**61**	**-13%**

There is currently no benchmark data available which takes hours of use and footfall into account. [1] CofE Shrinking the Footprint – Energy Audit 2013.

6. Efficient / Low Carbon Heating Strategy

6.1 Future Heating Options

The church is currently seated using pews in the first three bays of the nave and aisles. The rear two bays have had the pews removed and moveable tables and chairs are provided for drinks.

It is planned to remove the remaining fixed pews and create a large open space; which will be the only such space in the village, currently being enlarged from 1,300 to 2,300 housing units.

The roof is Victorian, consisting of widely spaced beams and plain planking, with a shallow angle of around 15 degrees. It has the potential for installation of ceiling mounted infra red heating panels. Due to the height of around 7.5m, panels would be high temperature devices.

The width of the building, 11.4m means that wall mounted infra-red panels would be ineffective to heat the nave centre.

The church wishes both to increase hours of use and ideally cut costs and carbon footprint.

There are no radiators fitted and the building is supplied by electricity only. The hours of use and current small size of congregation make an expensive underfloor heating system unrealistic.

Initial discussions regarding heat pumps have been held with the church's inspecting architect.

Both Air Source and Ground Source heat pumps which supply warm water to a radiator network require large sized radiators and/or long hours of running. As with a conventional gas fired radiator system, warm air rises by convection to the ceiling, where it is cooled, and a long period is required for the space to warm.

An Air to Air Heat Pump serving fan heaters is suggested. Refrigerant is circulated rather than water. The existing network of underfloor ducting, some of which is covered with Victorian grilles and some have been covered up, can be used to run some of the pipework. It may also be possible to insert some of the internal fan heater units underfloor, dependent on specifications.

Whilst refrigeration technology is mature, growing use of heat pumps means that there are a wide variety of products. Only a few churches have been equipped to date, amongst them Hethel in Norfolk.

If plant is installed with sufficient output to heat comforatbly in the coldest weather (taken as -5ºC), then it will be oversized for almost all of the time. It is recommended that the plant is sized for "average winter" conditions, and that the overhead radiant heating is retained as described in the previous section to assist on the coldest days of midwinter. This will reduce capital cost.

Chandelier mounted visible radiant quartz heaters (which are usually, when installed in churches, suspended from arch centres) were discussed. They would have an identical running cost to the existing heating; the only difference being a hexagonal arrangement which may appear marginally less visually unpleasing, plus they should be switchable in pairs (2 / 4 / 6 elements).

It is recommended that the money available be put into rewiring the present units and making their use more flexible to cope with different sizes of event – they would then form a useful provision for heating small or short notice meetings for which running heat pumps and heating the whole of the space would be too expensive.

The current system of heating in the chancel; under pew radiant heating bars and two 2 bar wall mounted quartz heaters should be kept if it is performing suitably.

For future replacement when needed, it is recommended that under pew convector heaters are provided. These can have a dual role; heating the choir area and contributing to overall space heating.

6.2 Site Heat Demand

The Centre for Sustainable Energy model[2] can be used to estimate heat load for the building.

Heat Load (kW) = Volume V (m^3) x Insulation Factor

Insulation Factors

Condition	Factor kW/m^3
Poorly insulated with open or broken windows, draughty doors (add 5%)	0.034
Poorly insulated (assume no interventions)	0.033
Some insulating features	Estimate value
Well insulated	0.022
Insulated to 2010 regulations	0.013

Area	Volume m^3	Insulation Factor kW/m^3	Heat Required (Space heating) kW
Church	1,500	0.0033	50

2 www.cse.org.uk/local-energy/download/estimating-the-heat-demand-of-a-hypothetical-community-building-79

The church is estimated to be in use for 730 hours with heater powers of 54kW (nave) and 14kW (chancel) respectively.

Cost per hour (all heaters on) = 70kW x 13.86p (Sundays) = £9.70

7. Improve the Existing Heating System

7.1 Overhead Radiant Heater Control

The current overhead radiant quartz heaters are switched in four sections which gives insufficient control. If each pair of heaters (under each arch) consisting of a total of four elements could be controlled by two switches allowing half or full power, this would allow for the level of heating to be more sensitively adjusted to the needs of the congregation and different weather conditions.

It is recommended that the existing installation is retained, or a replacement providing similar function is kept in addition to a new Heat Pump system. This would allow the heat pump to be sized for "average" winter conditions, i.e. above 5°C external temperature. Colder conditions would require use of the overhead radiant heating as well. Advantages are:

- A smaller heat pump capacity, lower capital costs, smaller size of external unit.
- Ability to add extra heat during the coldest weather
- Overhead radiant units can be used to heat a small area for a short period at short notice, which is not possible with a space heating method.

Achieving this may involve rewiring and will require a new switch console.

With 18 double element units, it is envisaged that the heating controls would be as follows

1. Chancel under choir stall tube heaters (occasional use), also individually switched
2. Chancel wall mounted radiant heaters (occasional use)
3. Bay 1 north (just heats pulpit area - occasional use)
4. Bay 1 south
5. Bays 2 and 3 main seating area, two units each side
6. Bays 2 and 3 main seating area, two units each side – the second pair for full power heating
7. Bays 4 and 5, two units on north side (one in bay 4 and one in bay 5)
8. Bays 4 and 5, the other pair units on north side (i.e. one in 4 and one in 5)
9. Bays 4 and 5, two units on south side (one in bay 4 and one in bay 5)
10. Bays 4 and 5, the other pair units on south side (i.e. one in 4 and one in 5)

This would require a bank of 10 switches and probable rewiring to add the extra wires.

7.2 Chancel: Under Pew Heaters

The church is fitted with two rows of choir stalls in the chancel. If these require replacement heaters in the future, under pew heating is a straightforward solution which can be applied to each stall as at present, or just a selected number if desired.

Capital costs for 900mm 650W units were £341 per unit, installed (in 2019).

8 units x £341 = £2,728

This would also create a small area which could be independently heated and used for small services with traditional seating.

System advantages include:

- Individual switching of each unit – useful for small meetings
- The ability to run all units to preheat the building when it is very cold.

For replacement, two most popular under pew heaters within churches are BN Thermic PH65 heaters (http://www.bnthermic.co.uk/products/convection-heaters/ph/) which are used for the above calculations, or similar from http://www.electricheatingsolutions.co.uk/Content/PewHeating.

Cable runs to the pew heaters could run under the wooden pew platforms. All cabling should be in armoured cable or FP200 Gold when above ground. Each pew heater to be switched with a neon indicated fused spur located underneath the pew seat.

The under pew (see photo below) and panel heaters have been recently installed at St Andrews Church, Chedworth, Gloucestershire, GL54 4AJ. The church is open in daylight hours so can be viewed at any time.

7.3 Heat Pump Overview

Heat Pumps are a low carbon method of creating heat. As the hours of use of a building increase, so do heating costs.

Electrically operated heat pumps can provide between 2.5 times and 5 times the amount of heat in kW which they consume in electricity (This is termed the Coefficient of Performance, CoP).

With electricity prices now only three times more per kWh than gas (it was about four times), heat pumps are becoming steadily more cost effective. Refrigeration technology is mature and reliable; the units appear to offer lower maintenance costs compared to gas boilers.

The efficiency advantages of heat pumps mean that in some circumstances they can work out at equivalent or cheaper operating cost than gas despite the higher cost of electricity per kWh. This effect is increased if electricity is generated on site by solar power.

Air Source to water– the low hours of use of the church are insufficient for this technology. Also, a new installation of large radiators would be required;

Ground source to water; as above, plus would require a borehole.

Air to Air Source Heat Pump – this requires an external unit (as do all heat pumps), but would be connected to a network of internal fan units which could provide heating or cooling. The existing underfloor heating pipe trenches would provide a pipework route and could be used to house some small output fan units (which would require a particular manufacturer's product to fit). Other fan heaters would be required above ground, for instance at each end of each aisle.

Air to Air systems deliver warm air through indoor fan units and have a CoP rating of up to 5 and they can also provide cooling.

Compared to the existing installation of "direct" electric heating, where 1kW of heat is provided by 1kW of electricity, a heat pump can provide the same amount of heat for much less electricity input; one quarter for an AASHP operating at a CoP of 4.0.

Furthermore, some of the electricity required to run heat pumps can be obtained from solar PV panels. Some types of heat pump can provide cooling – solar powered cooling in summer is very efficient.

7.4 Air to Air Source Heat Pumps

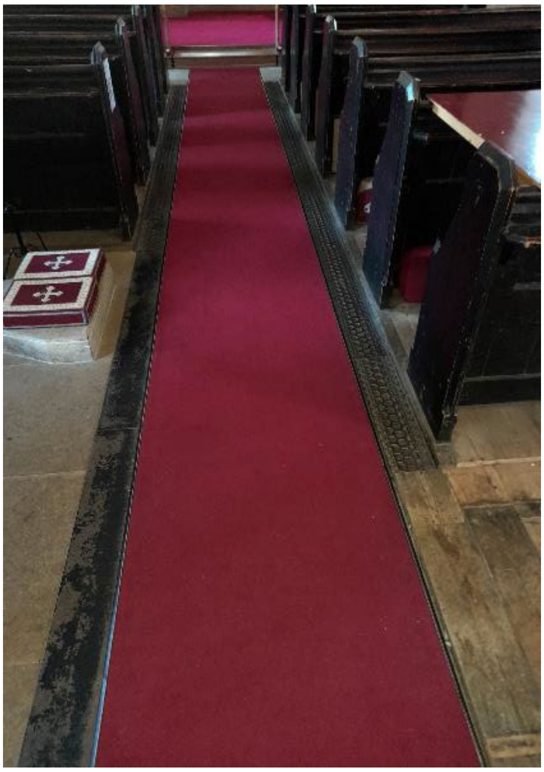
Air to Air Source heat pumps require internal fan units, blowing warm air, connected to external units – they do not require water radiators. Systems provide summer cooling as well as winter heating and can deliver up to 4 to 5 times the amount of heat which they consume in electricity.

Two large units of 75kW combined output and four of the small units below supply a four storey office of area 660m^2. The CoP is between 3.2 and 3.9 depending on the type of internal unit chosen.

There are a wide variety of internal units for ceiling, high wall and low wall mounting.

The church has a network of underfloor heating ducts which are currently unused.

They could be used to run the heat pump refrigerant pipework and possibly install some internal fan units (although the dimensions of the duct may need to be increased).



External units would need to be found locations which were non viewable or hidden in some way, but need to be well ventilated for this method to be viable.   Hedge planting has been used to hide oil tanks at some churches, as below.

The best technical location, is the south facing wall of the tower next to the south aisle (the area in shadow in the image below).   This would need some visual shielding.

The other location is north of the chancel, in the step in the perimeter wall by the end of the north aisle.   This area is well screened by trees to the left of the image below.

7.5 Air to Air Source Heat Pumps Costs

Pumps to supply 50kW of heat (with capital cost estimated at £450 per kW output: £22,500) would deliver a similar amount of heat annually as the current system.

Operating at a Coefficient of Performance of 4, a 50kW heat output requires 12.5kW of electricity supply.

14 hours per week use for a 30 week heating season = 420 hours

12.5kW x 420 hours = 5,250kWh electricity used annually.

Operating cost at 15p/kWh = £787

8. Energy Saving Recommendations - Equipment

In addition to having a revised heating strategy there are also a number of other measures that can be taken to reduce the amount of energy used within the church.

8.1 Fixed Water Heater: Timer Control

A 20 litre water heater (estimated) is located in the cupboard adjacent to the kitchen sink. This is reported to be turned off when not in use – it would benefit from a notice to remind people.

This type of tank is well insulated, but the copper pipework is not and is a constant source of heat loss of around 100W (incandescent light bulb) and will waste around 900kWh per year, costing around £150. It is recommended that, if used regularly, it is fitted with a 24 hour/7 day timeclock to replace the fused spur switch. An example of such a unit would be a TimeGuard FST77. They should be set up with times to match the times that the building is occupied This will prevent the standing losses from the unit wasting energy during periods when the building is not occupied.

Note that a 20 litre tank will only deliver half this volume of hot water. As the water is drawn, it is replaced by cold, so the second half of the tank will be lukewarm.

If the hot water use pattern is so unpredictable that the timer needs to be altered regularly, the church is recommended to replace the whole unit with a point of use water heater immediately in advance of the kitchen tap. This will then heat only the water actually required.

Such units can be purchased at any electrical wholesaler and fitted by your existing electrician or any NICEIC registered electrical contractor.

8.2 Lighting Controls (Internal)

As use of the building is expected to increase, it is recommended that a motion sensor is installed on specific lighting circuits so that the lights come on only when movement is detected in the space and turn off approximately two to five minutes after the last movement has been detected (note that the duration of the time lag after which the light goes off needs to be consider alongside the type of light that is fitted. LED lights are much more suited to being switched off after only a short duration than some fluorescent lights). These movement sensors (commonly called PIRs) also have light sensors integrated into them so they can be used to make sure that the light does not come on if there is already sufficient daylight in the space.

Your existing electrician or any NICEIC registered electrical contractor can install PIR sensors onto existing lighting circuits. This can be carried out without significant disruption to the use of the space.

9. Energy Saving Recommendations – Building Fabric

9.1 Draught Proof External Doors

There are a number of external doors in the church. Original historic timber doors often do not close tightly against the stone surround and hence a large amount of cold air can enter the church around the side and base of these doors.

It is recommended that the draughtproofing around the door is improved and draught strips are added. This could be achieved in a number of ways.

For timber doors that close onto a timber frame a product called QuattroSeal (see link below) is often used in heritage environments to provide appropriate draught proofing.
http://www.theenergysavers.co.uk/application/files/1714/7197/4194/National_Trust_Case_Study.pdf

For timber doors that close onto a stone surround more traditional solutions such brush draught strips rebated into the edge of the door by a skilled joiner. Other traditional methods such as using hessian or felt pads tacked to the door could be used and keeping the door maintained in a good condition is important.

Simple measures such as having a 'sausage dog' style draught excluder full of pea gravel laid along the base of a door, using plasticine of the right colour to fill gaps where daylight can be seen and putting painted fridge magnetic over large keyholes can all be simple DIY measures which are effective.

9.2 Windows

Any opening hopper windows which are a source of draughts can have gaps filled reversibly using black plasticene. Any rust should be dealt with, since this leads to distortion of the frames and further leaks.

10. Renewable Energy Potential

The potential for the generation of renewable energy on site has been reviewed and the viability noted.

Renewable Energy Type	Viable
Solar PV	Yes
Battery Storage	Future potential
Wind	No – no suitable land away from buildings
Micro-Hydro	No – no water course
Solar Thermal	No – insufficient hot water need
Biomass	No – not enough heating load as well as air quality issues
Air Source Heat Pump	No – no radiator network, low hours of use
Ground Source Heat Pump	No – no radiator network
Air to Air Source Heat Pump	Yes

11.1 Solar Photovoltaic Panels

Most of the roof is of low pitch of about 15 to 20 degrees and has a low parapet. It is not visible from the ground and thus is suitable for installation of solar photovoltaic panels.

The aisle and nave roofs together offer a maximum area of around 160m^2. This area could generate 0.15kWpeak/m^2 giving a 24kWpeak system. A 1kWpeak system can generate up to 1000kWh annually.

Assuming that the maximum amount of roof space could be, and was used for panels, the following formula calculates annual generation.

Annual Generation (kWh) = Area x 0.15kWp/m^2 x 1000kWh/kWp x Orientation Factor x Overshading Factor.

Roof Section	Useable area / m^2	System Size / kW peak	Orientation factor	Shading factor	Annual Generation, kWh
Church Aisle	160	24	170 degrees / 10^0 0.92	1	22,080

This is the maximum likely figure, which may be reduced by factors such as the weight of panels (due to roof strength), and access space between panels. The ability of the roof structures to support the extra loads should be discussed with the church's inspecting architect.

The maximum potential generation is greater than the church centre's annual recent electricity use (13,223kWh in 2021-22). If heat pumps are installed with around 5,250kWh consumption this totals around 18,500kWh. Although a maximum sized panel installation appears capable of meeting the site's future needs (which are likely to increase if hours of use increase), there would still be reliance on grid electricity during winter.

The system should be specified for future addition of a battery, when battery costs reduce as this would extend system usefulness into the evenings and therefore minimise reliance on the grid except in winter.

Battery Storage is not strictly a renewable energy solution but provides a means of storing energy generated from solar PV on site to be able to be used at peak times or later into the day when the PV is no longer generating. It therefore extends the usefulness of the existing PV system. This is a new but fast-growing technology.

Using average 2019 installation costs (£1,450 per kWpeak); a 24 kWpeak system would cost £34,800.

11. Funding Sources

There are a variety of charitable grants for churches undertaking works and a comprehensive list of available grants is available at www.parishresources.org.uk/resources-for-treasurers/funding/

This includes a 77 page guide to funders and their criteria:

https://www.parishresources.org.uk/wp-content/uploads/Charitable-Grants-for-Churches-Jan-2020.pdf .

12. Faculty Requirements

It must be noted that all works intended to be undertaken should be discussed with the DAC at the Diocese.

Throughout this report we have indicated our view on what category of permission may be needed to undertake the work. This is for guidance only and must be checked prior to proceeding as views of different DACs can differ.

Under the new faculty rules;

List A is for more minor work which can be undertaken without the need for consultation and would include changing of light bulbs within existing fittings, repair and maintenance works to heating and electrical systems and repairs to the building which do not affect the historic fabric.

List B is for works which can be undertaken without a faculty but must be consulted on with permission sought from the Archdeacon through the DAC. This includes works of adaptation (but not substantial addition or replacement) of heating and electrical systems and also the replacement of existing boilers so long at the same pipe work, fuel source and flues are used. It can also be used to replace heating controls.

All other works will be subject to a full faculty.

Works which affect the external appearance of the church will also require planning permission (but not listed building consent) from the local authority and this will be required for items such as PV installations.