Heating System Flowchart

The aim of this project is to develop a heating system for our church building to provide an outcome which offers the best combination of comfort and environmental care.

Adrian Fox, Environmental Sustainability Officer for Cathedral and Church Building Department commentated that: ""It can seem a difficult task finding the right solution, but if you stay open minded, ask the difficult questions and let fact not feeling steer you, I'm sure you will reach the right conclusion."

Currently, heating is provided by a combination of gas fired boiler supplying hot water to radiators located throughout the church, and two separate storage heaters. Both systems are temperature controlled on a timed system. Only one of the storage heaters is currently operational, and the ability of the boiler and its controls to provide consistent heating when required is a challenge. When all systems are working, they have the ability to provide a comfortable environment - but not as often as desired.

Basic Staring Facts

1. The regular worship pattern of our church building currently consists of a weekly Sunday Service and Tuesday morning Prayer Group
2. There a number of church festivals that may include additional services, such as Lent, Easter, Epiphany, Acension etc
3. There are also a couple of special events such as Christingle, The Light Party and the Memorial Service
4. Outside of this there are Baptisms, Blessings, Marriages and Funerals that occur on an ad-hoc basis throughout the year.
5. The local schools use the church for their annual Christmas Celebration.
6. The community use is concert based - with only occasional use.
7. With the exception of the school's Christmas Celebration, Christingle, Rememberance Sunday and very large weddings and funerals, current seating capacity is adequate.
8. For the last 12 months (1st October 2023 to 30th September 2024), 88% of all services were attended by no more than 78 people.

Summary of your views on the best way forward.

As you move through this process, please come back to this front record in order to have a concise section which indicates which options you feel gives the best outcomes - which may be useful for future discussion.

Section 1: How can we make the most of what we already have?

Please tick the box of the option or options which best matches what you think will give us the best choice. None of the options below ☐

We keep the current boiler running as long as we can ☐ When the time is right, we will replace the current gas boiler with another gas boiler ☐

When the time is right, we will replace the current gas boiler with an electric boiler ☐

Section 2: Are we comfortable using the Community Center for Sunday Services during the winter months?

Please tick the box of the option or options which best matches what you think will give us the best choice. None of the options below ☐

Moving Sunday Services into the Community Centre during the winter months ☐

Update our audio visual system ☐

Section 3: Which key drivers should direct the way we move forward with our heating system?

Please tick the box of the option or options which best matches what you think will give us the best choice. None of the options below ☐

5th Mark of Mission ☐ The comfort of those using our church ☐

The impact of our choices externally ☐ Protection of historical aspects of our church ☐

Section 4: What approach(es) should we take with our heating system?

Please tick the box of the option or options which best matches what you think will give us the best choice. None of the options below ☐

It's about comfort rather than temperature ☐ The controls to be simple ☐ The settings are pre-programmed ☐

Heating system which is reliable, low maintenance ☐ Long life-expectancy ☐ Replacement parts are easy to source ☐

Quickly react to being turned on/up or off/down ☐ Maintenance contractors locally with a good understanding of how the system works ☐

Section 5: What currently happens in our church building and ideas for its future use

Please tick the box of the statements below that you agree with. None of the options below ☐

Our building is generally used for a Sunday Service with additional add-hoc usage ☐

I have a good grasp on the who, what, where, which and when of the current building usage ☐

Our plans need to be flexible to take into account any potential increase in usage of our church building ☐

Section 6: What is the best way to heat the building?

Please tick the box of the option or options which best matches what you think will give us the best choice. None of the options below ☐

A heating system to provide background heating ☐ A heating system to provide frost prevention ☐ A heating system to provide conservation heating ☐

A heating system to provide space heating ☐ A heating system to provide people heating ☐ A heating system to provide 'winter church' ☐

Section 7: Which fuel(s) should we be using?

Please tick the box of the option or options which best matches what you think will give us the best choice. None of the options below ☐

Natural Gas as the only fuel source for any heating system ☐ Keep a watch over developments in solar battery technology for future use ☐

Green Electricity as the only fuel source for any heating system ☐ A combination of Gas and Green Electricity as fuel sources for any heating system ☐

Section 8: Which heat emitter(s) should we be using?

Please tick the box of the option or options which best matches what you think will give us the best choice. None of the options below ☐

Radiators ☐ Trench Heaters ☐ Fan Convectors ☐ Radiant Infra-Red ☐ Underfloor Heating ☐ Space Heaters ☐ Church Pew Heaters ☐

We should consider moving and/or replacing our current radiators and storage heaters ☐ We should consider removing the radiators, storage heaters and boiler ☐

Section 9: Proposals for when the Alter Zone is used for a service

Please tick the box of the option or options which best matches what you think will give us the best choice. None of the options below ☐

Carpet The Entire Area ☐ | Move The Sound System Controls ☐ | Relocate The Digital Piano ☐ | Install Theatre Curtain ☐ | Install Wifi Within The Building ☐

Under Pew Heating ☐ | Portable Heated Seat Pad ☐ | Move The Two Stalls ☐ | Upgrade Audio Systems ☐ | Additional Screen(s) and/or Monitors ☐

Install Convection Heaters ☐ | Reposition Pews ☐ | Electric Boiler ☐ | Install Infra-Red Heaters ☐

Section 10: Proposals for when the combined Alter and Pew Zones are used for a service

Please tick the box of the option or options which best matches what you think will give us the best choice. None of the options below ☐

Repositioning Of Pews ☐ | Modification of one of the large pews to make into a smaller pew ☐

Section 11: Proposals for when the majority of the church is used for a service

Please tick the box of the option or options which best matches what you think will give us the best choice. None of the options below ☐

Repositioning Of the font ☐ | Removal of the font ☐

Section 12: Proposals for use of the area within and below the gallery section of the church

Please tick the box of the option or options which best matches what you think will give us the best choice. None of the options below ☐

Install Curtain To Gallery Space ☐ | Create A 'New Space' Under the Gallery ☐ | Re-Open The External Door ☐ | Create Second 'New Space' ☐

Section 13: Proposals for internal works identified in our 2023 Quinquennial Report

Please tick the box of the option or options which best matches what you think will give us the best choice. None of the options below ☐

Plasterwork ☐ | Glazing ☐ | Cracking ☐ | Flooring ☐

Section 14: Proposals for external works identified in our 2023 Quinquennial Report

Please tick the box of the option or options which best matches what you think will give us the best choice. None of the options below ☐

General Maintenance ☐ | Brick/Stone work ☐ | Moss ☐ | Metalwork ☐ | Roofing ☐ | Woodwork ☐

Section 15: Proposal to establish a Community Heritage Zone

Please tick the box of the option or options which best matches what you think will give us the best choice. None of the options below ☐

Install a theatre curtain to zone off this space ☐ | Allocate the second 'new space' for Heritage ☐ | Purchase associated equipment ☐

Issued by the Cathedral and Church Buildings Division, February 2021 & the CBI, July 2020

During our planning phase, we have found the guidance published by the Cathedral and Buildings Division of the Church of England to be a valuable resource.

It provides a balanced approach to the subject, and we would recommend you utilise the on-line documents if you need further information on specific items as you work through this important document.

This can be found at: https://www.churchofengland.org/resources/churchcare/advice-and-guidance-church-buildings/heating

As well as giving guidance, it also supplies Case Studies and links to other resources you may need.

For the flowchart below, each section consists of the following (please note the shapes used are not standard, but square as they fit better into the space available):

ITEM There are a number of issues to look at, and each element will be colour coded on the extreme left hand column

Start For each item there will be a start and a finish position. From the start follow the directional arrows to navigate through to the finish **Finish**

The general direction route will be with a black

If any of your answers are YES, follow the green line

If any of your answers are NO, follow the red line

If any of your answers are Not Sure, go to the blue box

Boiler All subsections will start with an orange box detailing the item to be considered.

The boiler is gas fired Basic information and/or comment will be within a purple box

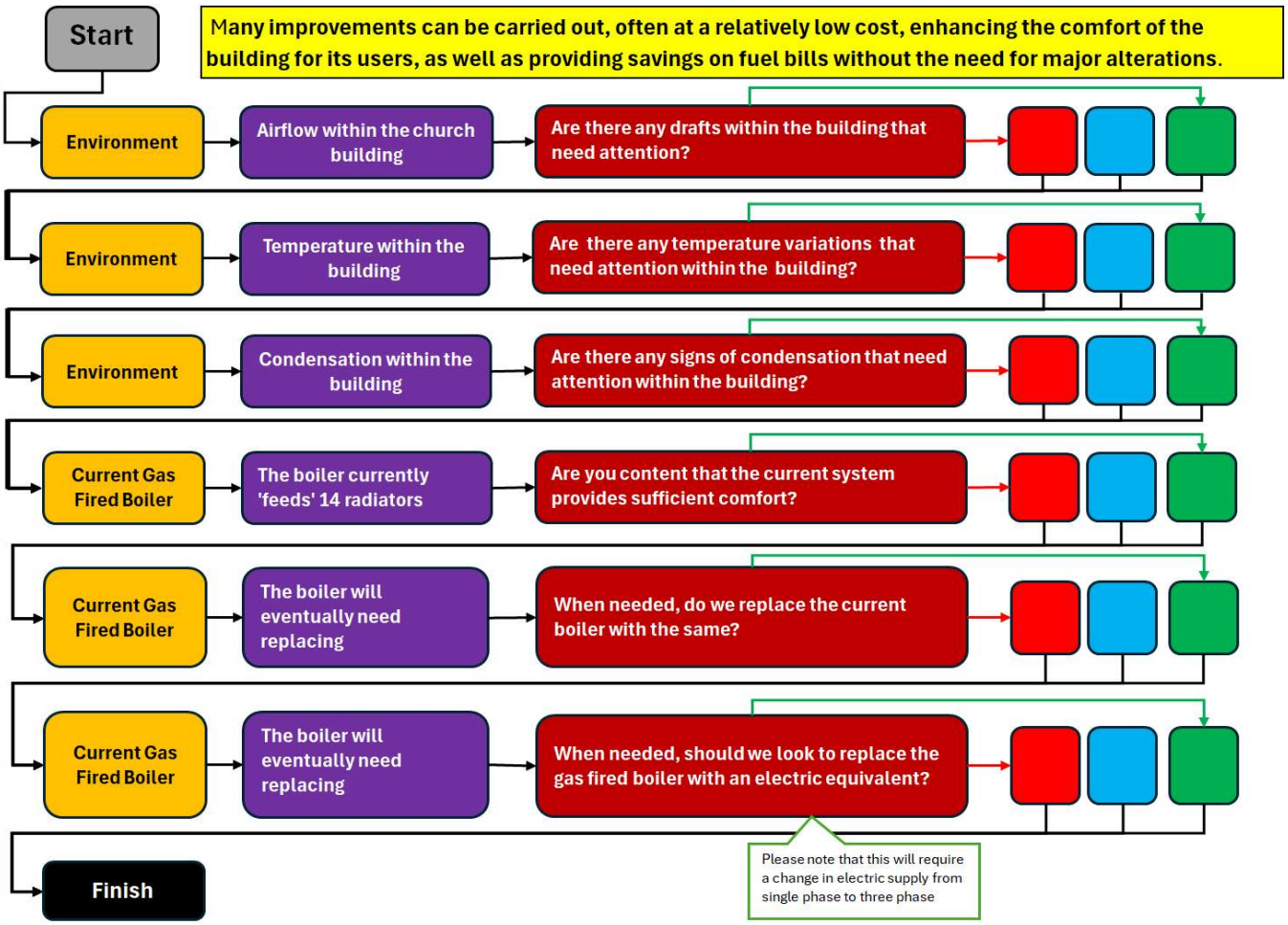
Do we need to make changes? The decision to be made will be within a dark red box

If your decision is YES, put a tick in the Green Box

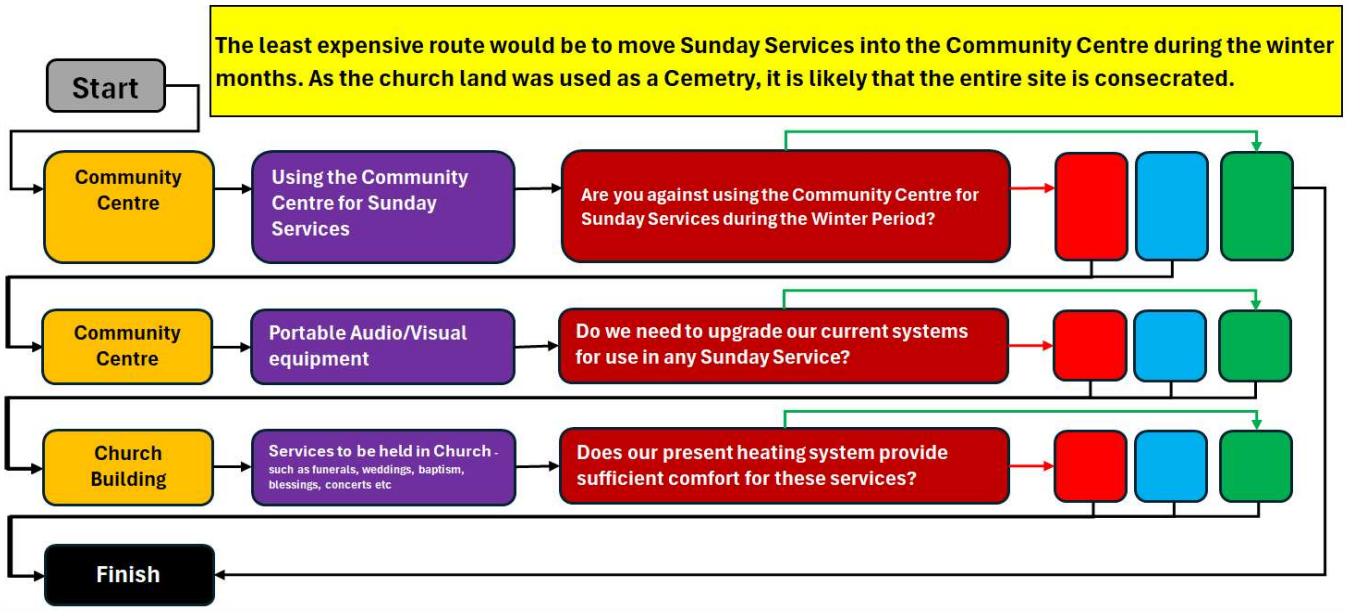
If your decision is NO, put a cross in the Red Box

If you are unsure, or need more information, put a question mark in the Blue Box

Section 1: How can we make the most of what we already have?



Section 2: Are we comfortable using the Community Center for Sunday Services during the winter months?

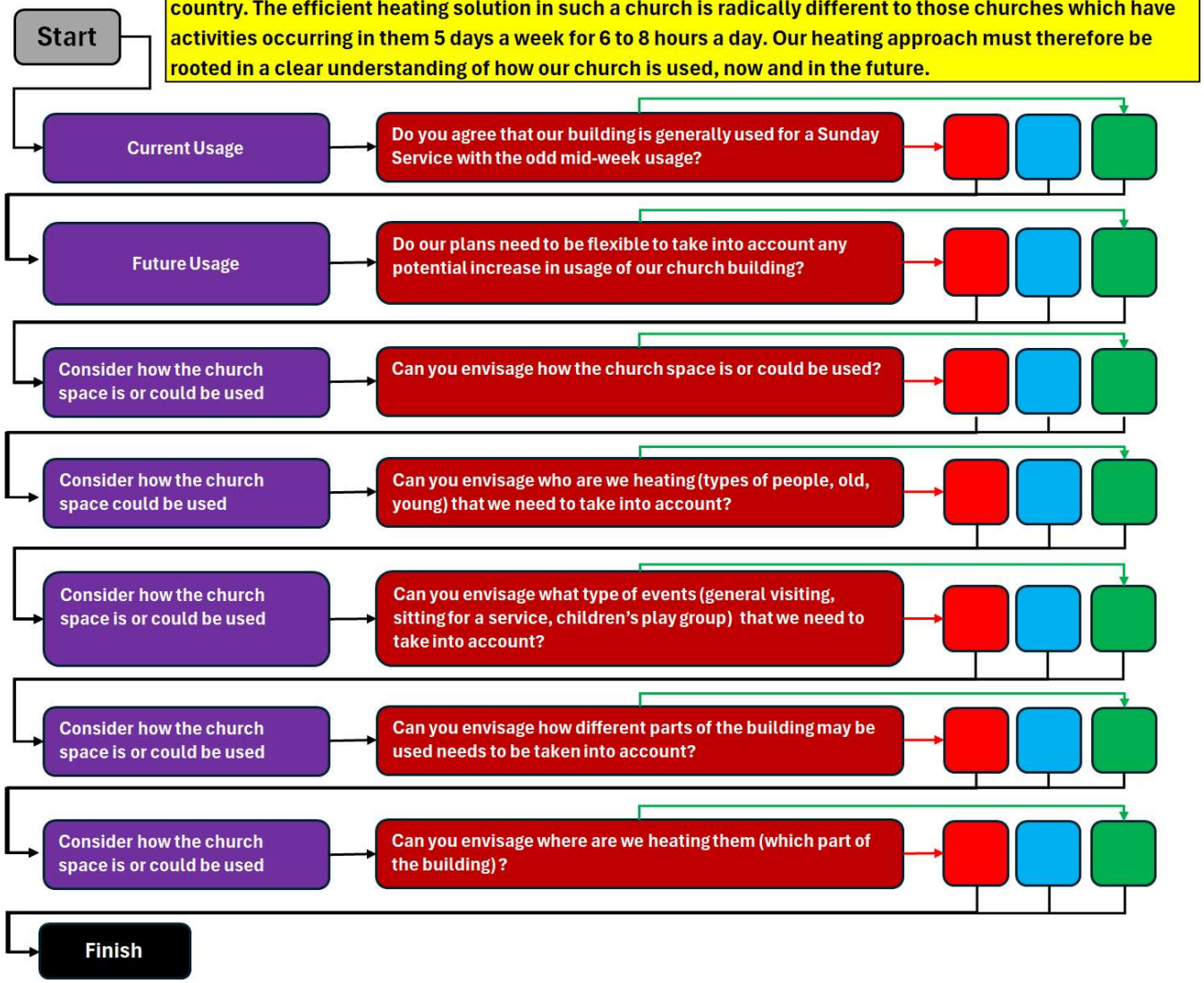


Section 3: Which key drivers should direct the way we move forward with our heating system?

Section 4: What approach(es) should we take with our heating system?

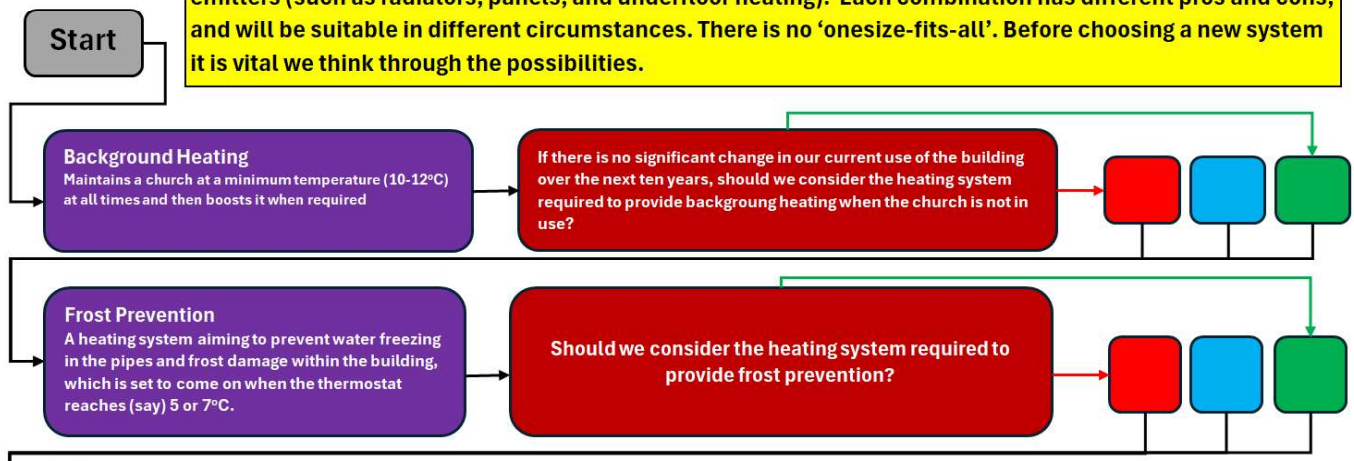
Section 5: What currently happens in our church building and ideas for its future use

The heating solution must be designed around our church's use and nature. Churches which get used for services on a Sunday with the odd hour mid-week use make up a substantial number of the churches in the country. The efficient heating solution in such a church is radically different to those churches which have activities occurring in them 5 days a week for 6 to 8 hours a day. Our heating approach must therefore be rooted in a clear understanding of how our church is used, now and in the future.



Section 6: What is the best way to heat our building?

There are a wide range of approaches to heating, from space heating the whole church to no heating at all. They combine different objectives, different heat sources (such as gas and electricity) and different heat emitters (such as radiators, panels, and underfloor heating). Each combination has different pros and cons, and will be suitable in different circumstances. There is no 'onesize-fits-all'. Before choosing a new system it is vital we think through the possibilities.



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Conservation Heating
Aims at preserving historic interiors susceptible to damage through environmental changes.

We spoke with Adrian Fox, Environmental Sustainability Officer, Cathedral and Church Building Department. His opinion is that the only item for us to take into consideration is the church organ.

The Institute of British Organ Building report that heating systems that heat up and cool down slowly (no more than 2°C/h) are best for the fabric of the building, and for the organ. Their prime concern is the control of relative humidity – which in their opinion causes greater damage if relative humidity falls outside of 55% to 75% range

Should we consider the heating system required to provide conservation heating?

Space Heating
Aims to heat the air of the church, so that the whole space is warm

As space heating is our current mode of heating the building, are there any changes that could be made to make the system more effective?

People Heating
Aims to keep people comfortable, where they are

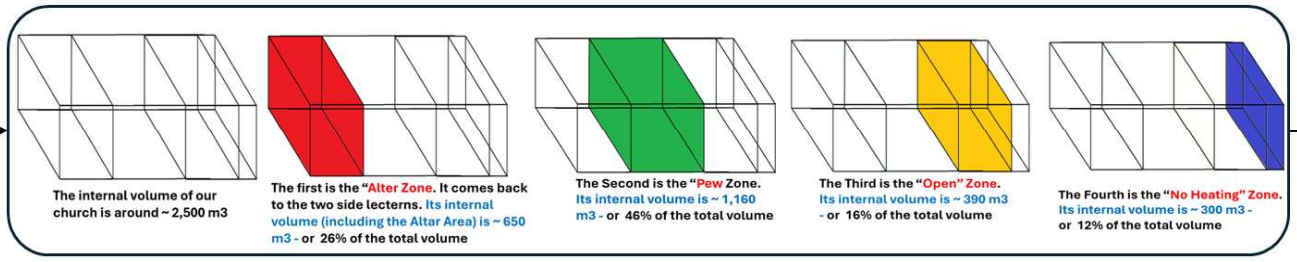
Most people who come into the church, enter in a "warm state". If the ambient temperature is below 20°C, the body will start to cool. The aim would be to try to keep the temperature in the persons' immediate proximity as close to 20°C as we can.

If we can achieve this, then for the time the local ambient air is at 20°C, the person will feel comfortable in their surroundings.

Should we consider the heating system required to provide people heating?

Winter Church
Aiming to create a space within the church which can be kept warm enough to use during winter, without needing to warm the whole space. The space is partitioned off, and heated, whilst the rest of the space is left unheated or on frost prevention.

It is being suggested that we consider looking to 'divide' the internal volume of our church into four separate zones. The details are found in the box below.



It is being suggested that we use theatre curtains to provide the partitions.

They can be pulled back to increase internal area if required.
They can be partially pulled back to form a pathway between zones

This approach is likely to give us the highest flexibility - as it utilises different parts of the heating system listed above. Should we consider the heating system required to provide a 'winter church approach'?

Finish

Section 7: Which fuel(s) should we be using?

The General Synod of the Church of England voted in February 2020 for the whole of the Church of England to achieve net zero carbon by 2030. The vote recognised that the global climate emergency is a crisis for God's creation and a fundamental injustice. For the Church of England, being net zero carbon means that the carbon emissions of their buildings and travel will be reduced to less than 10 per cent of their baseline levels. For us, this could mean a shift towards electric heating powered by 'green' electricity.

Start

Natural Gas
Around 80% of churches use gas as their primary source of heating, with around 7% on oil. These are the very fossil fuels contributing to climate change.

Natural Gas is currently our main source of fuel for our heating system. Do you want to continue to use gas as the prime fuel source for our church?

'Green' Electricity
Electricity produced from renewable sources such as wind, solar and hydro. They have a much lower environmental impact than fossil fuels like coal and gas.

Do you agree that If we made electricity our only source of power, it would make a major contribution for our church to move towards a net-zero target?

If we do not have a reliable, three-phase electrical supply then the additional electrical load from electric heating may not be feasible without improvements.

Do you agree that it is worth checking the intergrity of our electricity supply and capacity early on?

Ground Source Heat Pump
You need sufficient ground near the church without burials, where you can either sink boreholes or run underground horizontal pipework.

Taking this into account, do you agree that it is unlikely that we will be able to utilise ground source heat pumps at our church?

Biomass Boiler
Requires someone able to carry out regular maintenance. You need space and access for the pellets/chips to be delivered and stored.

Taking this into account, do you agree that it is unlikely that we will be able to utilise biomass boilers at our church?

Air Source Heat Pump
May need to be on for long periods in cold weather , can be noisy, provides low level heat

If we need background heating this would be a good option

Do you agree that it is unlikely that we will be able to utilise air source heat pumps to provide sufficient heat to provide the levels of comfort required?

LPG
Requires on site storage & deliveries , must be compliant with the Pressure Systems Safety Regulations

Would you agree that we would struggle to find a suitable area to site the plant and access route within our site?

Solar Photovoltaic Panels plus Battery Storage

Photovoltaic panels are installed for the conversion of thermal energy into electricity, while solar panels convert solar radiation into heat. Solar batteries are a great way of maximising the electricity generated by solar panels, and reducing our reliance on the national grid, which does make it an environmentally-friendly addition. If our primary motivation for getting a solar battery is to save money, it may not be worth it until the price of solar batteries comes down (which it should, as the technology evolves and improves), or if the price

The steepness of our church roof and surrounding trees means that installation of panels on the church roof is unlikely to be an option. However, they could be installed on the roof of the Community Centre. We need to check issues around insurance and the lease agreement.

Would you agree that this is an option that we could add on later as technology improves and relative costs decrease?

Finish

Section 8: Which heat emitter(s) should we be using?

A heat emitter is any product that sends out heat. Heat emitters are used to distribute heat around a building to maintain required set points within spaces. Heat can enter a space through:
a) Conduction - The transfer of heat through collisions of particles and movement of electrons within a body
b) Convection - The movement of molecules within fluids such as liquids and gases
c) Radiation - The emission, or transmission of energy as waves through space or a material.
It is likely, as there is not a one size fits all, that we may need a combination of heating emitters.

Start

Radiators
The most familiar type of heat emitter and usually offer the best mix of radiant heat and convective heating of the air in spaces. Existing radiators, if of great age, may be of great historical importance as well as being quite suitable for re-use if free from leaks.

→ Should we continue to use radiators at church as the heat emitters for our heating system?

Trench Heaters
Use a piped (or electrical) heat emitter located within the floor to heat the space above via convection.

→ As installation requires some disruption to the floor (unless existing trenches are available), and location is important to minimise the ingress of dirt, is this unlikely to be an option for our church?

Fan Convectors
Uses a fan to draw the room air across a pipe coil or electrical element to heat the space by convection.

→ As they have a fast response time (the time taken to heat a space) , is this an option we should look at?

Radiant Heating
Transmits infra-red energy, which is converted to heat energy when absorbed by objects, such as walls, floors or ceilings, or the occupants within the space.

→ Should we consider this, as it is efficient: only heats the objects within the space and not the air. It provides thermal comfort: heat is instant and when it is required?

Underfloor Heating
Provides good thermal comfort and is good for keeping a constant temperature within a space. It is costly to install and is slow to respond to changes in heat demand within the space.

→ As this emitter is not ideally suited for spaces with intermittent occupation and changing heat demands, plus the major floor works required, should we consider using it?

Electrical Space Heaters
The benefits of this type of heating is that it provides localised heat and as you only have to heat the occupied spaces, they tend to heat up quickly

→ Should we consider this type of heat emmiter?

Church Pew Heaters
These heaters can be convective or radiant. They are intended to provide local electric heating to warm the occupants rather than heat the entire church.

→ As the advantages of this type of heating are likely lower running costs and associated carbon emissions, and some flexibility in the switching off of individual pews, should we considering this as an option?

We currently have 14 radiators and two space heaters within a church. We should also consider:
a) Do we keep them in their current positions (currently at the front and back of the church building – but nothing in the middle section of the building where the congregation currently sit)?
b) Do we move them to a different location to provide a more balanced heat input over the entire building?
c) Do we replace our current units with modern, more efficient units?
d) Do we remove them completely, along with the boiler and look at replacing them with something else?

Finish

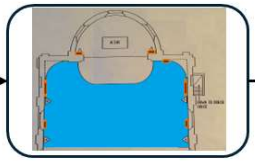
Section 9: Proposals for when the Alter Zone is used for a service

Having worked through the basics of heating systems, we can now move into looking at developing specifics plans within each part of the church.

Start

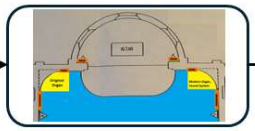
The first area for consideration is from the front of church, including the alter area, extending back to a position between the first and second side windows – or in line with the two side lecterns.

Carpet The Entire Area
Carpeting over concrete floors can be a quick, affordable and smart way to warm up a cool room, reduce noise and turn a bland and uninspiring space into somewhere warm and inviting.



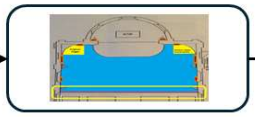
Do you agree that this is an option we should consider?

Relocate The Digital Piano and Sound System Controls
This is to make space at the front for other items.



Do you agree that this is an option we should consider?

Install Theatre Curtain
This is to establish our first heating zone.
Note: it is not known what this will do to the accoustics.



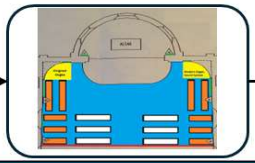
Do you agree that this is an option we should consider?

Reposition Pews
This will give us a seating capacity within the Alter Zone of 78 people – which would have accommodated 88% of all services taking place over the last 12 months.

This would mean removing/repositioning the two side lecterns

Do you agree that this is an option we should consider?

Under Pew Heating
Fitted to the external pews (orange in the drawing to the right), but not the internal pews (white (ditto)). This takes into account electrical tray ducting – already in place – and removes the need to bury power cables underground.

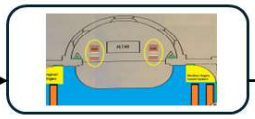


Do you agree that this is an option we should consider?

Portable Heated Seat Pad
Three levels of heating modes are available. The heating pad has a special rechargeable storage bag, so you can conveniently protect the mobile power supply. It is equipped with high-density memory foam pad, which feels like sitting on the sofa. IThis is best described as to how it feels sitting on a heated car seat.

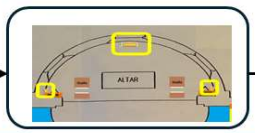
Do you agree that this is an option we should consider?

Move The Two Stalls
Again, this will make space in front of the Alter Rail.



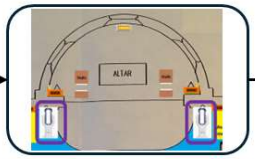
Do you agree that this is an option we should consider?

Install Infra-Red Heaters
These are to keep those leading our service comfortable where they sit or stand in the Alter area.



Do you agree that this is an option we should consider?

Install Convection Heaters
Used to help bring the main areas to a reasonable temperature before services start. It is not planned to use them during the service due to their noise and the fairflow caused by the fans can cool a person.



Do you agree that this is an option we should consider?

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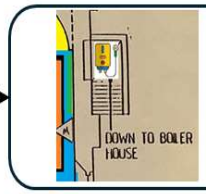
Electric Boiler
Replace the gas-fired boiler with an electric boiler.

PLEASE NOTE THAT THIS WILL MEAN MOVING TO A THREE PHASE ELECTRICITY SUPPLY



Do you agree that this is an option we should consider?

Install Wifi Within The Building
This is more for other zones within the building – but could be useful to bring a new dimension to our services.

Do you agree that this is an option we should consider?

Upgrade Audio Systems
Part of this could be to a wireless system.

This would give flexibilty in where items such as the lectern(s) and font could be located.

Do you agree that this is an option we should consider?

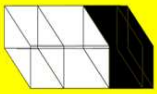
Additional Screen(s) and/or Monitors
It is likely that we will need additional visual aids

Do you agree that this is an option we should consider?

Finish

Section 10: Proposals for when the combined Alter and Pew Zones are used for a service

Start



The second area for consideration is from the front of church, including the alter area, extending back a distance at a position roughly in line with last pews in their current layout. This area currently has a seating capacity of 186 people, sufficient to cover 95% of all services over the last 12 months.
Having already considered the removal, replacement or positioning of the heat emitters above, there is just a single issue to consider.

Repositioning Of Pews and some modification to one of the pews to fit

In forming the Alter zone above, we have already looked at the possibility of repositioning some pews.

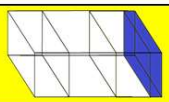
We now need to consider a small change to the last row of pews, which would involve the removal of one of the pews, and the resizing and repositioning of a second pew. This is to square- off the area.

Do you agree that this is an option we should consider?

Finish

Section 12: Proposals for use of the area within and below the gallery section of the church

Start



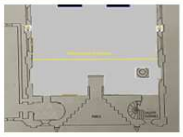
The fourth area for consideration is that located within and below the gallery section of the church.

Install Curtain To Gallery Space

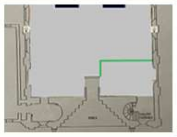
The volume within this section is ~5% of the total volume. It is highly unlikely that it will ever be used for its intended purpose. The curtain would stop warmed air being wasted.

Do you agree that this is an option we should consider?

Create A 'New Space' Under the Gallery



It is proposed that we form a new space under the gallery which will be self contained. It will have its own furniture, carpet and heating.



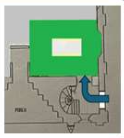
It's walls and door would be made from standard off-the-shelf safety glass panels.

It would be serviced by a combined infra-red heater and light fitting(s)

Do you agree that this is an option we should consider?

Re-Open The External Door

In talks with the local schools, a common theme is a requirement for a quiet room "off-site" for meetings and one-to-one lessons for those who need language and speech therapy - for example.



By re-opening the external doorway, and a key code/key, they could gain access without the need for anyone else to have to open up the room. The instant heat from the infra-red emitter would be ideal in this situation.

Do you agree that this is an option we should consider?

Create Second 'New Space'

The second 'new' space is more for the use of the church.It will help the back of the church look symetrical. It could be used for Sunday School, Tuesday morning prayer group, and any adhoc meeting(s). Part of the build will need to ensure access through into the vestry area as a link beyond into the toilets and Community Center.

Do you agree that this is an option we should consider?

Finish

Section 13: Proposals for internal works identified in our 2023 Quinquennial Report

Start

We now move into the beautification section of our plans - but it must be stressed this has little to do with heating the building. Our 2023 Quinquennial Report highlights a total of 86 items, of which around 22 concern building maintenance issues that it would be good to address rather than 'papering over the cracks before we decorate.

Plasterwork

Nave and sanctuary	Carry out repairs to the internal plasterwork to the nave and sanctuary.	£ 1,000
North Wall	Arrange for all cracked render plaster to be repaired. Also carefully remove the Gypsum plaster form the north wall and replace with lime render.	£ 1,000
West Wall	The damage to the internal plaster of the west wall does appear to have worsened. Large high level areas of plaster look as though they are due to de-bond from the substrate.	£ 1,000
South West Corner	The internal plaster in the south west corner of the staircase to the west end is suffering badly through damp ingress. Inappropriate cementatious Gypsum plaster appears to have been used for some repairs.	£ 250
North Wall	The inappropriate cementatious Gypsum plaster on the north wall should be carefully removed and replaced with lime based render.	£ 750

Do you agree that we should look to undertake this work before decorating?

Continued on next page

Glazing		
General Comment	Carry out repairs to the leaded light glazing. (based on £3,000 per window 10 years ago - so double cost)	£ 102,000
General Comment	Carry out additional window repairs.	£ 2,500
General Comment	As mentioned in previous reports, the windows and glazing throughout the church are likely to require some repair works. The leadwork in some windows is weakening and bowing.	£ 2,500
South West	A piece of glass is missing from the west side of the south west window.	£ 300
General Comment	It is recommended that a glazing conservator visit and inspect the condition of the glazing.	

Do you agree that we should look to undertake this work before decorating?

Cracking		
East Wall of Sanctuary	As mentioned in previous reports, the settlement cracks in the internal plaster do not make pleasant viewing. There are a number of cracks in the east wall of the sanctuary.	£ 2,000
East End of South Wall	The cracks that are evident at the east end of the south wall of the nave appear to have worsened.	£ 1,500
West End of South Wall	Further cracks are evident in the western end of the south wall of the nave.	£ 1,500

Do you agree that we should look to undertake this work before decorating?

Flooring		
Balcony Stairwell	The spalling of the quarry tiles to the ground floor balcony stairwell do not appear to have worsened.	£ 750
Nave	Some of the wood blocks to the areas of wood block flooring in the nave are loose and uneven.	£ 250
Central Aisle	The carpet to the central aisle appears to be in a reasonably satisfactory condition.	
Side Aisle	The thermoplastic tiles to the side aisles are not a floor finish that is usually associated with a church. It is likely that these contain some asbestos fibres and will need to be removed by a licensed contractor.	£ 1,000

Do you agree that we should look to undertake this work before decorating?

Finish

Section 14: Proposals for external works identified in our 2023 Quinquennial Report

Start

The second part of our look at the items raised by the Quinquennial Report relates to issues that are mostly external matters

Moss		
General Comment	Clean off the moss growth to the window cills and the semi-engineering blue brick weatherings to the plinth course.	£ 500
North Elevation	There is moss growth on the semi engineering blue brick weatherings to the plinth course on the north elevation.	£ 500
General Comment	Some of the stone cills to the windows are covered in moss growth.	£ 500

Do you agree that we should look to undertake this work?

Metal Work		
Sanctuary Window	Refix the metal protective grilles to the sanctuary windows.	£ 250
Doors	De-rust all ironmongery and redecorate with black Hammerite paint.	£ 100
Windows	Carefully de-rust and redecorate the ferramenta of the windows and the frames of the hopper ventilators.	£ 1,000
Rain Water System	De-rust and redecorate all cast iron rainwater goods.	£ 250
West Elevation	The ferramenta to the windows is rusting. The rusting and expansion of some of the bars is disrupting the internal plasterwork to the reveals and is likely to be the cause of some of the crazing plasterwork.	
???	As mentioned in the last 2013 report the opening ventilation hoppers require to be overhauled and the metalwork redecorated.	£ 1,000
South Elevation	There is a damaged cast iron ventilation grille at low level in the plinth brickwork of the south elevation.	£ 250
East Elevation	The metal protective grille to the east window of the sanctuary is loose and requires careful refixing.	£ 150

Do you agree that we should look to undertake this work?

Roofing		
Nave and Sanctuary	Refix tiles to the north and south roof slopes of the nave and the sanctuary roof.	£ 5,000
General Comment	As mentioned in previous Quinquennial Inspection reports, there are a number of slipped and missing roof tiles. Some tiles appear to be lifting, the north slope of the nave roof is in the worst condition.	£ 2,500
General Comment	It would be worthwhile considering the installation of snowguards (refer to the 2018 Quinquennial Report).	£ 5,000
Sanctuary	The tiles to the roof above the sanctuary appear to be lifting and some are loose.	£ 1,000

Do you agree that we should look to undertake this work?

Woodwork		
External Doors	It is recommended that the external timber doors and frames be carefully cleaned down and treated with Danish oil	£ 200
General Comment	All fittings and furniture appeared to be in a reasonably satisfactory condition	£ -

Do you agree that we should look to undertake this work?

Continued on next page

General Maintenance	
Rain Water System	It is absolutely essential that all rainwater downpipes, hoppers, gutters and ground channels and gullies are inspected regularly (at least twice a year) and cleared of silt, leaves, debris, small plants, etc.. A monthly inspection should be made of any vegetation growing against or up the walls of the church and this should be immediately removed. During the inspection it was noticed that the channels were quite overgrown and these need to be cleared out.
Rain Water System	Generally the cast iron rainwater goods appear to be in a reasonably satisfactory condition. Some of the upvc plastic pipework had, however, come apart.
Leadwork	The leadwork at the roof junctions with the tower and the gable parapets appear to be in a satisfactory condition.
Below Ground Drainage System	It is understood that this functions satisfactorily. During the inspection it was noticed that some ground gullies were clogged with leaves and weeds.
Monuments and Memorial Plaques	The monuments and memorial plaques are in a reasonably satisfactory condition. When funds permit consideration should be given to getting them professionally cleaned.
CHURCHYARD	The churchyard is well maintained. It is recommended that a report be commissioned on the condition of the trees growing close to the south elevation and specifically identify whether the tree roots are causing some of the settlement/movement.

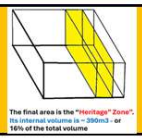
Do you agree that we should look to undertake this work ?

Brick/Stone Work			
South Elevation	Carry out repairs to the cracked brick and stonework to the east end of the south elevation.	£	100
East end of south elevation	There is a significant crack through the brick arch and the stonework above the blocked up doorway (at the east end of the south elevation) behind the entrance to the boiler room.	£	500
South East Window	There is a further crack above the head of the south east window and a section of the brick detailed arch over the south east window has dropped significantly and looks very loose. This requires immediate attention.	£	-
General Comment	Repoint all open joints to the external brickwork and stonework. Also carefully infill the voids in the stonework.	£	1,000
North Elevation	The void in the stonework behind the central rainwater downpipe to the north elevation still exists (this was reported in 2018).	£	100
North Elevation	There are open mortar joints to the buttress located on the north elevation behind the library.	£	100
West Door	There are open mortar joints to the keystone above the west door.	£	100
General Comment	Arrange via the Church Architect to have stonework repairs carried out.		
West Door	Point up the open mortar joints to the stone paving adjacent to the west doors (with lime based mortar).	£	100
West Door	The entrance paving to the west doors is uneven and some stones are cracked. The open mortar joints require clearing out and careful repointing with lime	£	300
East Gable	Renew the decorated stone cross to the east gable of the nave.	£	750
East Gable	A large section of the decorated stone cross to the east gable of the nave is missing.	£	500
North Elevation	A piece of blue brick weathering has broken away from the plinth course on the north elevation.	£	50
Nort East Buttress	A brick to the east side of the north east buttress has become chipped and a piece is missing.	£	100
???	There are some extensive areas of stonework that have received inappropriate cementatious mortar pointing. This mortar is assisting with the erosion of the stonework.	£	1,000
East wall of sanctuary	Sections of low level brickwork have open mortar joints. There is a significant area at the base of the east wall of the sanctuary.	£	250
East & West Elevations	Some of the dressed sandstone to the east and west elevations shows signs of masonry bee activity.	£	-
West Gable	The coping stones to the west gable (north and south slope) are chipped and a few of the mortar joints are open.	£	300
West Gable	The decorative sandstone medallions are badly eroded.	£	500
West Elevation	There are a few voids in the stonework to the west elevation.	£	300
West Elevation	The carved sandstone faces either side of the round louvre vent to the west elevation are badly eroded.		
South Elevation	The sandstone steps to the door at the west end of the south elevation are badly eroded.	£	200
West Entrance	The dressed sandstone stonework to the engaged shafts capitals and bases to the west entrance are badly eroded.	£	500
Tower	Some of the facing bricks to the tower have perished, due to frost action. The west elevation is the worst affected.	£	1,500

Do you agree that we should look to undertake this work?

Finish

Section 15: Proposal to establish a Community Heritage Zone



This final section looks at the possibility of establishing an area at the back of church that we effectively hand-over the running of to local volunteers - with a key emphasis being placed on heritage - which would be a vital element of any application fo the Heritage Fund.

Start

Additional Theatre Curtain
Which will be situated just behind the last row of pews

Do you agree that we should undertake further work on this?

Set aside one of the two 'new spaces'
To accommodate multi media equipment

Do you agree that we should do this if appropriate?

Purchase Associated Equipment
Items such as display cabinets, interactive boards, multi media etc etc

Do you agree that we should undertake further work on this?

Finish