ASSESSMENT OF HEATING WITHIN CHURCH BUILDINGS

Introduction

This document provides a simple assessment of church heating systems and brings together information that will help brief a technical advisor (consulting engineer) if one is appointed at a later stage. The process may also identify simple steps that can be taken that may negate the requirement for further work / advice.

The Church Building Council also provides advice on choosing the right heating

system see link: www.churchofengland.org/sites/default/files/2018-12/CCB_Choosing-the-right-heating-system.pdf

This is a very useful document and gives more guidance regarding energy sources and heat emitters and gives a good flow chart when considering heating systems. The questions below are essentially an expansion of part of the evaluate and define sections.

Questions to consider

The more complete and frank the answers to the questions are the more likely the final solution/approach is likely to reach the optimum.

Initial evaluation	**Things to consider**
What is the problem / concern?	Is this related to failure of plant, poor comfort conditions for occupants, high energy costs or a future requirement? Is this a recent development or longstanding? What is the impact of the concern?
Are there any temperature and humidity records available?	An understanding of the current temperatures / humidity achieved in the church (ideally this should be for each main space, but any data is better than nothing) over say 12 months would be useful. This would allow comparison when any changes are made. See link to a suitable logger: www.omega.co.uk/googlebase/product.html?pn=OM-92&gclid=Cj0KCQiAkMDiBRDNARIsACKP1FEA8XS8nvjJKIExQEbxes4H_pHChWbtdPu4wqILNSzQQ66Twk4Xla4aAq5pEALw_wcB If this data is not available, it is recommended that it is considered going forward.

DIOCESE OF TRURO

DISCOVERING GOD'S KINGDOM
GROWING THE CHURCH

How is the building used now? How will the building be used in the future? What are the current and future needs?	For each space in the building (spaces where people gather / meet) typically when are they used? By how many people? For what activity? (A table may be useful to present this data.)
Are there any items of 'significance' that may be sensitive to changes in temperature / humidity? Are these being detrimentally affected currently?	This could be such items as wall paintings, fabrics, timber screens etc. The symptoms could be cracking / flaking or mould growth for example.

What is the energy source for the heating (often gas)? Is there data available on the use of the energy?	It is useful to understand all 'energy' (usually gas and electricity but could be oil, LPG, biomass) and water consumption. This will help identify unusual changes e.g. high gas consumption in summer or a water leak in winter! The ideal is to have monthly consumption data often this can only be achieved by manually reading meters. A conscientious person required! As a minimum energy consumption can be taken from the last 12 months (ideally two years bills) but because some reading may be estimated this data is not always reliable. Manual readings will also give the church the information to ensure that the church not overcharged and enable supplier figures to be challenged.
Are there any simple steps that can be taken to reduce the problem / concern?	This could be items such as draught proofing a door, providing a door curtain, using a different or smaller space if possible, holding the meeting / event at another time when the building is more densely occupied and the main heating is on, use a more localised heating solution.
How is the heating controlled? Can this be adjusted to better meet the needs?	What are the time and temperature settings? (larger systems sometimes have more complicated controls such as optimisation and compensation for the external conditions) Is there one setting for the whole building or is it controlled in zones? Do you understand how the controls work? Do the settings make sense with the way you use the building? Do people understand how to override the controls for an unscheduled event but not to leave the heating on permanently?
If you still, consider that you need more advice think about what aspect are you looking for advice on?	If the question is simple a technical advisor may need no additional information.

If you still consider that you need more advice the following additional information is likely be helpful and would also be useful for the church if held in a file for future reference:	
How is hot water currently provided to sinks / basins? What is the current and future requirement?	The building hours of use give some indication of this but if there is a 'kitchen' area this may be open at different times. Digital photos of the equipment water heaters etc. are useful including any 'data' label.
Are any architectural plans, elevation or section drawings of the church available? If not a hand drawn sketch with the main dimensions is better than nothing.	Digital scans or good photographs of them are fine. A general photograph of each of the building spaces referenced to the plan.
Are any heating plans / drawings of the church heating available? If not a hand drawn sketch with the main items of equipment is better than nothing.	Digital scans or good photographs of them are fine. Digital photos of the equipment, radiators, boilers fan convectors etc. are useful including any 'data' label, flues and primary pipework routes. A copy of the last boiler servicing record.
Is there an asbestos register available?	Does this indicate asbestos containing materials in any plant space or duct etc.