

## **How do I work with my building to achieve energy efficiencies?**

**(Lisa McIntyre, Leeds DAC Secretary)**

Church buildings can often be seen as a burden and challenge, costly and time consuming, and distracting churchwardens, incumbents and congregations from their mission and ministry. Historic church buildings can be perceived as especially restrictive as there is sometimes the misconception that nothing is allowed to change within those that are heritage listed – or, at least, nothing can change without a lot of hoops to jump through first, including doing battle with various external groups, particularly heritage bodies. In addition, heritage and sustainability are frequently construed as being incompatible, with old buildings accused of leaking heat and requiring energy to be pumped into them to make them comfortable. So it can sometimes seem that our church buildings are towering over and consuming churchwardens.

However, it is good to think about what is positive about these buildings and what can be achieved by working with them. Church buildings are one of the greatest assets PCCs have for engaging with communities and new people. They are landmarks and distinctive buildings which are often cherished by people within the community as part of the local landscape and with links to the common history of the place. They also attract visitors interested in architecture, art, and history. And they can accommodate change, but this needs to be carefully assessed, considered and justified, and sometimes compromises may be necessary to strike a balance between heritage and modernising.

There is no denying that caring for church buildings can be a daunting task for the volunteers that make up PCCs, especially when many do not have any expertise or experience in looking after historic buildings, and certainly not ones of the scale and complexity of church buildings. You might live in a Victorian house, for example, but this isn't quite the same thing. So it is often hard to know where to begin, especially if the building in your care hasn't had any upgrades to services such as heating and lighting in many years, and when these are not fit for purpose and contribute to a gloomy church interior that cannot compete with a modern building and the environments that modern people have come to expect from their buildings.

And increasingly, doing nothing is not an option. Even if PCCs were inclined not to go through the potentially arduous process of building works and want to just sit tight with what they have. Bishop Paul spoke about the need for church buildings to be welcoming. Congregations battling through in cold and dark buildings is not an option in terms of growing the church and drawing new people into engaging with their church communities in efforts to keep the church alive and well. Doing nothing to our buildings and hoping that modern audiences will tolerate an uncomfortable building environment is therefore not realistic as we need to be hospitable and to cater to everyone.

Doing nothing is also not an option when it comes to the environment. Bishop Paul and Jemima have outlined the implications of climate change and why Christians should aim to be part of making positive changes. This need for everyone to take responsibility is increasingly recognised across all aspects of society. In the built heritage sector, which is my professional background, it is also recognised that action must be taken to address carbon emissions and environmental efficiency through our existing building stock, given that this makes up such a large part of our built environment here in England. As already mentioned, historic buildings have a bad image in respect of sustainability, but there are many ways that, if maintained and operated wisely, they can be energy efficient. Bodies such as Historic England have a growing range of literature and guidance to make people aware of these issues and ways in which we can work with our historic buildings and

upgrade them to be more energy efficient. Technologies are increasingly being developed that allow changes to be made to buildings without having a marked visual impact and in a manner that does not lead to the irreversible loss of important historic fabric.

If we recognise that doing nothing is not an option, I hear PCCs asking, how come it is made so difficult to do something with historic church buildings? The Diocese of Leeds adopted an environmental policy last year. A day or so after letters went out to parishes, encouraging them to adopt their own individual policies I had a church representative calling to ask why hadn't they been allowed to put solar panels on their church roof a year or so ago? Looking back into the church files, I found that some initial contact had been made about such a proposal but it hadn't gotten very far. The PCC had been warned by the DAC that this would be a challenging project as the church building in question was Grade II\* listed. And even if the diocese and DAC were supportive of such a scheme in principle, there are various other external bodies with a statutory role to play in advising on what works are allowable in church buildings. Not to mention the fact that the solar panels would have been very visible and would have constituted an external change to the building, so the PCC would have been required to apply for planning permission from the local authority, as well as a faculty. This can be understandably hard and daunting feedback to receive.

However, DACs are not here to protect the status quo or preserve historic church buildings unaltered. The legislation we work under has the guiding principle of a “**duty to have regard to church's purpose**. Any person or body carrying out functions of care and conservation under this Measure or under any other enactment or rule of law relating to churches shall have due regard to the role of a church as a local centre of worship and mission.”

The role of the DAC is to support parishes in understanding their buildings and working with them, but in the context of mission. Sometimes our role does involve giving out warnings that an initial proposal sketched out by a PCC might be considered contentious – but this is with the intention of helping to smooth the journey through the process of obtaining faculty permission. I'm sure that most DAC staff would tell you that DACs want to help PCCs to define their missional needs and to realise these through their buildings in an achievable and positive way, that works with and enhances what is special about their church buildings, rather than deferring to the heritage of the building over its potential to deliver the ministry of the church.

Making changes to heating and lighting require faculty permission (or, in some cases, List B permission from the Archdeacon). If a full faculty is required, a Statement of Significance and Statement of Needs will be required as part of the application. Even if not formally written up, thinking through the questions set out in a Statement of Needs is a useful starting point to any project, even the smallest ones, which may not require a faculty in the end. It encourages the PCC to set down what it really needs – it may be more straightforward than you first think. Guidance on preparing Statements of Needs (and Significance) are available on the ChurchCare website. (This can be accessed here: <http://www.churchcare.co.uk/churches/guidance-advice/statements-of-significance-need>) The template poses questions about what you need, why you need it, and why you need it now, thinking about the existing life of your church, how the building is currently used and what potential there is for further use.

For instance, do you need to simply improve lighting for worship because the current light levels are too low or the lighting is uneven and causes too many shadows, or do you host concerts and other events which have different, additional requirements. If there are users other than the congregation, they should be asked about their requirements as well, otherwise an opportunity might be lost. For heating, is your building used frequently throughout the week and so needs heating every day, or do

you only need it during worship on Sundays? Are the comfort levels in the building currently just a little bit less than desired or has your whole heating system broken down?

The guidance, in addition to questions about ministry and mission, it poses question about financial need and, relevant to today, environmental sustainability and cutting your carbon footprint.

This exercise of preparing a Statement of Needs, no matter how simple and early-stage, is a useful first step before bringing in your inspecting architect or approaching contractors for quotations – it is good for the PCC to be clear on what you need before bringing in the professionals, as this can save costs and prevent being seduced by all singing and all dancing schemes that are far in excess of need. Of course, not all consultants and contractors are like this – some are keen to listen to PCCs and help them to realise their ambitions, big or small. Speaking of consultants, Bruce Kirk in his talk will be touching on this very point of assessing the needs of churches before starting projects and how the needs can vary significantly between churches and projects. The draft Statement of Needs can also be used to engage with the DAC and can later feed into a faculty application.

After Bruce, part of Robyn Pender's talk will cover building performance, with a particular focus on heat loss and retention, and how simple, non-intrusive measures like better maintenance and management can help make your church more comfortable. I will try not to stray too much onto her territory here, but it is important to emphasise that once you have defined what your needs are, often very small changes can be made that have no impact on historic building fabric or the character and appearance of the church or, indeed, can enhance its appearance. A very obvious example of this is changing existing lights to higher performance LED globes. Technologies have improved and options increased so that LEDs need not lead to a "colder" colour of light, as used to be the case, but come in the warmer colours we are used to. LEDs can be used in historic light fittings such as chandeliers, which could be an important part of the church building's character. Or changing the lighting to LEDs can be a chance for a rethink of existing light fittings and present an opportunity to markedly enhance a building and rectify mistakes of the past, such as the fluorescent strip lights that sadly show up in a fair few churches and detract significantly. Upgrading lighting can also be an opportunity to better pick up architectural features, such as using uplighters to highlight an attractively painted roof or carved corbels, or directing light onto monuments, memorials or other important features. As such, in some instances, physical changes meet a need and improve the usability of the building, whilst actively enhancing the significance and appearance. This is definitely working with your building and is the kind of project that would be likely to be supported by a DAC, perhaps subject to ironing out some points of details around fixings and such.

Small changes can also be made to improve heating in terms both of improving comfort levels and reducing carbon emissions and costs – replacing an existing boiler for a more efficient one, for example. Simple heat loss calculations can help to determine whether the existing output of the boiler and radiator are sufficient – the DAC should be able to put PCCs in touch with someone who is able to do this calculation – whether it's their own heating adviser or a contractor. Visual enhancement can be made by replacing large unattractive heaters with more slim-line and modern ones, painted in to match the finish of the walls, or by replacing obtrusive pipe runs with more discreet ones. And it is not only visual improvements, but also improvements to the overall experience of the building – for instance, replacing noisy fan-blower heating units or pipe runs that form trip hazards.

But you might have bigger ambitions that can only be met by a more substantial scheme. In those cases, there becomes a greater need to look closely at the church building and what is important about it and to balance this out against what might be quite comprehensive and intrusive works.

Whilst some tinkering might be permitted under List B permission, a larger scheme will require a faculty and both Statements of Significance and Statements of Needs will become requirements. I have already covered Statements of Needs but is it worth touching on Statements of Significance here. These will outline the history of the building and what features are most important, and should look specifically at the elements that might be affected by building works. For a lighting scheme, this could potentially involve proposals to remove historic light fittings, although this is probably less common as historic light fittings are these days usually adaptable and recognised as being of interest and worth retaining. Underfloor heating is increasingly popular, and where this is proposed, there could be an irreversible impact on a characterful historic floor – be that elaborate and colourful tiles or a floor incorporating ledger stones, or even a plain stone floor that shows the wear of centuries. It may not be an immediately obvious point of significance for many people, but there is increasing concern amongst heritage bodies about the loss of historic floors, for replacement with uniform and bland floor finishes. This is highlighted by the guidance document recently produced by the Society for the Protection of Ancient Buildings and the Church Buildings Council. (On the other hand, renewing your floor could present an opportunity to replace a mess of various, modern finishes, with a floor finish using more historically appropriate materials, which unifies and enhances the church interior.)

Preparing a Statement of Significance can throw up unexpected surprises – I know of one church (down south) that discovered that it had an early example of a church heating system which they thought nothing of initially until Historic England highlighted its importance. It wasn't the best news for them as it made things more complicated, but they knew early on the challenges that they might face and what they would need to work around.

Understanding the significant features of the building will help the PCC to develop a scheme that works with and around its building in a sympathetic manner. For instance, the aforementioned underfloor heating. This will require removal of the historic floor as well as requiring thought to be given to any fixed pews, which would have to be removed at least for the duration of works. Underfloor heating is rather in fashion currently, but it is deemed to be best for churches in use throughout the week rather than those used just for a few hours on Sundays. Is it actually the best solution for you and your building, or are there alternative heating systems that will better suit your needs? Would it be working better with your building to introduce more efficient radiators instead? You might not know the answer to this, which is where your inspecting architect and the DAC can offer advice, and help to point in the direction of specialist consultants.

It may be that certain compromises ultimately have to be made, but having carried out this exercise of assessment and having tested various options will improve the chances of the PCC finding a successful solution for its building needs. As mentioned at the outset, change is possible to historic church buildings, but justification is required. If you are embarking on an ambitious project, you should be prepared for potentially extensive discussion. This will begin with internal discussions amongst the PCC and with members of the congregation. It may extend to engagement with people from the local community. It will inevitably lead to discussion with the DAC in the journey towards submitting a faculty application. And it may involve consultation with external bodies such as Historic England, the Society for Protection of Ancient Buildings, the Church Buildings Council and others such as the various amenity societies responsible for the protection of historic buildings of various eras (The Georgian Group, The Victorian Society, etc).

If you can show the strength of your need and if you can show that you respect and understand your building, you will be far better placed to enter into these conversations and ultimately improve your chances of being granted a faculty. And it is important to remember that the aim of DACs is always

to support the PCC towards the best possible solution. The DAC has general and wide-ranging knowledge of church buildings, legislation and processes, whilst also having specialist advisers that can bring their expertise to PCCs to assist you in understanding more technical matters. The earlier we are brought on board or at least made aware of plans, the more we will be able to assist and help you to avoid travelling too far in an untenable direction that either will not fulfil your needs or will meet with opposition from heritage bodies.

I've aimed to show that it is possible to work with your church building to achieve energy efficiencies, and this is sometimes best achieved by starting with small changes, though it is possible to think bigger and make more significant changes, and there is more chance for success if you approach your project in a careful and considered manner, engaging with people that can help you along the way in understanding your building and its possibilities. I have given some warnings about elements of church buildings that might present obstacles, but I should say that there are also features you might have that present opportunities. I mentioned the query I received about solar panels. Most churches have expanses of south-facing roofs, which could present an opportunity for power generation through solar panels if you have a shallow pitched roof or parapets that will ensure that panels are not visually intrusive. It won't be the right solution for everyone, but there are increasing numbers of churches across the country introducing them. Sue Booth, who will be speaking later, has been working with a church in our diocese which is thoroughly exploring the more recent solar generation technologies that are being developed and that are less visually and physically obtrusive. Churches often have a good amount of land connected with them that can present other opportunities for power generation, such as ground source heat pumps (though this will be more complicated when you have burials throughout your churchyard).

There is a growing amount on guidance on how to work with your church building, particularly in respect of improving sustainability. The ChurchCare website has a note on lighting and a series of notes on different heating sources. (To be found here: <http://www.churchcare.co.uk/churches/guidance-advice/all-guidance-notes>) Historic England has several guidance notes on energy efficiency. (Some resources can be found here: <https://historicengland.org.uk/advice/technical-advice/energy-efficiency-and-historic-buildings/>) And Jemima and I are going to be working together to improve the guidance, information and links that are available via the Diocese of Leeds website, starting with resources from this conference, which will be made available shortly for download. (The relevant pages of the diocesan website are: <https://www.leeds.anglican.org/dac/sustainability> and <https://www.leeds.anglican.org/environment>)