ALL SAINTS BURTON – CARBON NEUTRAL? BY CATHY BIRTWISTLE

*All Saints Parish Church in Burton in Lonsdale is on the slow road to going completely carbon neutral*

There are multiple problems with the wonderful churches which we see all around us, from the medieval to the modern, from the small village churches and ancient chapels to the huge edifices which were built in the Victorian times in the densely populated industrial towns of the North of England. Changing populations have made some city centre churches redundant as the population moves out of cities, the changes in social structure and population mix has reduced church attendance, yet in rural towns and villages, churches are still important to the local population. People may not attend church, except for christenings, weddings and funerals, but many are proud of the village church and offer support when needed.

Until innocent members of the congregation are swept into becoming members of the PCC, and then find themselves taking on roles such as Church Warden or Treasurer the full horror of maintaining an old building, which is underused, is not fully appreciated.

Here, in Burton in Lonsdale, our parish church is a beautiful, large Grade 2\* listed building but it is cold and draughty and costs an absolute fortune to heat. The population of the village is small and church attendance is not high, but we have a very loyal congregation and support from many who do not attend church. The commitment of the Church of England to achieve carbon neutral status in its buildings by 2030 coupled with the changing weather patterns which are seen constantly on the news, has propelled us into planning a sustainable future. But how do we set about achieving carbon neutral status? Unless we reduce our carbon footprint we risk becoming redundant and/or contributing to the huge environmental problems of the world.

We have started with the small and easy things – every little helps and each of us making small changes is a step of the path which we are following. We started by working towards the Eco church award (<https://ecochurch.arocha.org.uk/>) and achieved the Silver Status. This meant taking a series of small steps, encouraging fair-trade, encouraging wild life in the church grounds, reducing our rubbish and sorting it, tea bags no longer go into the dustbin, but onto the compost heap maintained in the churchyard. Where possible, low carbon electrical fittings are used, cleaning materials are environmentally friendly.

But our biggest challenge has been to reduce the dependence on fossil fuels for heating and lighting. We have joined with other churches in Craven, the four other churches are in the Skipton area, to work together to find solutions. Each church is different, from the medieval to the almost modern, from huge and high roofed, to small and compact. But we all had the same aims. In addition to reducing our dependence on fossil fuels we wanted to illustrate how a series of actions can be taken by other churches (or other buildings) to achieve carbon neutrality. Our group is the TCNCC (Towards Carbon Neutral Churches in Craven). Together we bid for funding to enable a feasibility study from the BEIS funded Rural Community Energy Fund which is managed by the North East, Yorkshire and Humber Energy Fund and administered by the Tees Valley Mayor and Combined Authority. We won our bid and commissioned a firm of consultants to carry out the feasibility study and have recently received the phase 1 report (which was desk based on information provided by the churches) and have just had the first site visits from a consulting engineer.

The work which we had done previously as a team, together with the phase one report and site visit opened my eyes to different approaches which can be taken within the one building. Naively I had considered that putting up some solar panels would form most of the solution, but no – there is more to it than that! First of all – what solution were we trying to achieve? People of my generation, and younger will remember that we has our “Sunday Best” outfits. Coat, hat, gloves and scarf which came out every Sunday for church attendance. Why was this? Thinking back, we went to church and were dressed warmly because the church was cold – as a child I remember that coal (the main form of heating) was rationed, and even when rationing ceased, it wasn’t always available. Today we go into public buildings and expect them to be warm enough to take our coats off! I accept that we do not want to go to post WW2 days and be cold in church, so is there a happy medium? The solution is to focus heat on the person rather than the building and this can be done in a number of ways. Solutions which are being considered are infra-red wall heaters, under seat heating, even heated pew cushions; all of these solutions need electric power.

We need to reduce draughts in the building. That is very difficult in a high roofed building such as All Saints where the only way to insulate the roof is to take it off and start again, prohibitively expensive. Sealing an old building is also bad for the building as damp and mould are likely to appear, and will damage the building’s structure. But we can check all the windows and doors, making sure that they are fitted securely. Secondary glazing is a possibility but would spoil the impact of beautiful stained glass. Another possibility for both windows and doors is to fit curtains. Under floor draughts can be reduced by carpeting.

Together with warming the individual and reducing draughts constant low level background heating will enhance the atmosphere of the church and will dry out the building and prevent damp patches forming. The current pattern of heating, where the boiler is switched on for Sundays or other important occasions, will cause long term damage to the structure. Solutions to be considered are Air to Air heat pumps (A2A) and Air to Water heat pumps (A2W). These technologies, which require electricity, work as a reverse refrigerator, taking warmth out of the outside air and warming either air or water to be circulated in the building. The heat pumps work 24 hours a day, 7 days a week so maintaining a constant temperature in the building.

And where do we get the electrical power from, in a carbon neutral way? The solution chosen by All Saints would be to have ground mounted solar panels. We have a large south facing, south sloping, churchyard, together with the old disused burial ground, also south facing. Ground mounted panels are easy to maintain and accessible – whereas roof mounted panels require expensive access to maintain on a very high roof. Electricity generated can be used constantly to provide background heating to the church, lighting and possibly 2 electric car charging points. Excess electricity generated can be stored in batteries in the church and can be sold back into the National Grid. The stored electricity can be used as a boost to warm the congregation via infrared panels in the winter months.

Work on phase 2 of the feasibility study is ongoing and we will receive the final report in the autumn but already we are considering how we can implement our plans. Almost certainly to be done in phases as funding is raised. There is already a government grant to install car charging points. Our first phase would be to install the solar panels and make an agreement for payback with an electricity provider for electricity put back into the National Grid, possibly together with installing the car charging points. These 2 actions will give us a small income stream. Then to install the A2A or A2W heat exchangers to give the constant background heating – at that point we can dispense with the oil central heating – hurrah! We will have a building with constant background warmth which is attractive for other community activities.

All Saints PCC are well aware that we have to make changes, we have to move forward, and 2030 is not far away, but, with the support of other churches in the TCNCC group we will move forward.