



Lighting DIY Audit

For most churches, lighting is the second highest consumer of energy after heating. This DIY audit will help you find where energy and money can be saved in your church whilst maintaining or improving the lighting quality.

Establish the baseline

- Look at recent electricity bills – how much energy and money are currently used for lighting? If your heating is gas or oil, most of your electricity use will be from your lighting. However, if your heating is electric, 80-90% of your electricity use is likely to be due to heating.
- Our average annual use of electricity is ____ kWh, costing £____.
- We estimate that about _____ was due to lighting.
- How happy are you with the current lighting? Is it fit for purpose or are there areas where you would like to see improvements?

For best results, look at electricity bills over two to three years unaffected by the pandemic.

Lamps and Fittings

Make a list of the different light fittings in your church and the lamp (bulb) type in each.

Light fittings in churches largely take halogen, compact fluorescent (CFL) or LED lamps. LEDs are over 80% more efficient than halogen lamps and long-lasting at 30,000 hours (3 times the lifespan of a CFL). The upfront cost of the lamp is higher than halogen or CFL but switching to LEDs is cost saving in the long term. If your current fittings will accept LED lamps, switching is an easy win.

Not all older fittings will accept LEDs. An electrician can advise about your specific needs, and this cathedrals and church buildings guidance offers more information:

[churchofengland.org/resources/churchcare/advice-and-guidance-church-buildings/lighting](https://www.churchofengland.org/resources/churchcare/advice-and-guidance-church-buildings/lighting)

Points for planning

We have ____ lamps that could be switched to LEDs without changing the fitting.

We have ____ lamps where the fittings would need to be changed.

You DO NOT need DAC permission to change a lamp within an existing fitting. You DO need DAC permission to change a fitting.

“Replacing a 50W halogen with an LED equivalent could cut your energy costs by £75 over the lifetime of the bulb – not including the price [of] all the replacement halogen bulbs you no longer need to buy ...” *Energy Savings Trust*

Dimmers, sensors and timers

- Dimmable, motion sensor and timer-controlled lights all help to save energy and money.
- Dimming a light by 10% saves 10% of energy and money and can be effective in creating lighting atmospheres for different events in the church. NB not all types of LED lamp work with dimmers. Motion sensors are ideal for lights in areas that are used infrequently, such as toilets, and help with security.
- Are there light fittings in your church building that would benefit from being dimmable, on motion sensors or a timer? Could you make more effective use of the timer?

By switching to LEDs, Christ Church New Malden reduced their typical running level by over 5,500W (based on usage 20 hours a week), saving almost £2,000/year.

Permissions

Contact the DAC before you install dimmers, motion sensors or timers. Adding dimmers needs to be done with caution to avoid a fire risk, and CFLs should never be used with dimmer switches.

Zones

Using lighting zones with separate switches means that only the spaces in use are lit and avoids unnecessary energy use.

- If your lights are already on separate switches or zoned, could you display a chart to remind users of the church to turn on only the lights that are needed?
- If you don't currently have the capacity to zone, could you improve your lighting system to make use of zones and save energy and money?

External lighting

External lighting in a church and churchyard is important for health and safety, enhancing security, and highlighting building architecture. Each purpose often requires different forms of lighting, but there are ways to improve efficiency.

- For lighting that assists access, could you add motion sensors or switch to solar-powered LED?
- For security, could you add motion sensors? Intruders don't tend to like finding themselves suddenly in a burst of light!
- Flood lights are heavy users of energy and can disturb animals. If you're using floodlighting to highlight stained glass and make the building welcoming, could you use low energy internal lighting instead?
- If you need the floodlighting can you adjust the timers, so that it is used less? For animals' sake, it's particularly helpful to avoid dusk and dawn. Can you also ensure you're using LED fittings and lamps?
- See this flood light guidance note from the Diocese of Exeter: [exeter.anglican.org/wp-content/uploads/2018/09/Floodlighting.pdf](https://www.exeter.anglican.org/wp-content/uploads/2018/09/Floodlighting.pdf) and the national church [churchofengland.org/resources/churchcare/advice-and-guidance-church-buildings/bats-churches](https://www.churchofengland.org/resources/churchcare/advice-and-guidance-church-buildings/bats-churches)

Remember to seek DAC permission before altering light fittings, installing sensors and timers, or doing any work to external lighting. [oxford.anglican.org/dac-and-buildings](https://www.oxford.anglican.org/dac-and-buildings)

Flood lights may disturb bat roosts, which is illegal. Avoid floodlighting bat roost access points, and, if you have bats, limit floodlighting to special occasions. [bats.org.uk/advice](https://www.bats.org.uk/advice)

Lights are often left on unnecessarily. Try an audit of your lighting use and make changes that cost nothing to implement and save money and energy!