

CASE STUDY TOWARDS A NET ZERO CHURCH AND COMMUNITY, WITH ECO CHURCH



N.B. This case study considers only one possible approach, which will not be suitable for every church. Always seek professional advice.

Key Points

- St Mark's, Harrogate has engaged with environmental issues in various ways, both by addressing the energy consumption of the church building, including solar panels, and by leading community social action, with a variety of impactful projects that simultaneously help tackle poverty, carbon, and waste.
- It has achieved an Eco Church Silver Award for its work



1 The south facing side aisle roof has 39 solar photovoltaic panels, generating c.5,000kWh electricity annually.

2 As a result of the numerous and diverse ways in which St Mark's has taken on environmental challenges, it has achieved an A Rocha Eco Church Silver Award.

3 For example, Resurrection Bikes saves hundreds of bikes from landfill each year. Once repaired, some are donated where needed, and some sold to generate income.

The context

St Mark's, Harrogate is a Grade II-listed Victorian church with a total area of 1003m². It is located on the south side of the town, within the Harrogate conservation area.

For more information see the church's [website](#) or its entry on the [Church Heritage Record](#).

The need for change

St Mark's is a large building with an equally large energy demand. As such, the desire to achieve net-zero carbon has been a priority for some time. This church has been at the forefront of trying new green technologies to reduce its emissions.

Meantime, by engaging with the A Rocha Eco Church scheme, the parish has also been provided with tangible goals, meaning that it has been able to take positive, proactive steps forward on many fronts.

What were the options?

The leadership team and congregation identified the need to cut down day-to-day excess carbon production across the town and this resulted in a range of projects that have engaged people across the community.

On the church building itself, the south aisle roof was an opportune space in which to fit an array of solar panels, with sun exposure high.

Watch the case study videos

To find the case study videos of St Mark's Harrogate, [click here](#), or go to www.churchofengland.org/environment

What was done?

The church building:

- It fitted **39 PV solar panels** to the south aisle roof, sitting behind the parapet and invisible from ground level, which produce approximately 5,000kWh per years.
- **LED lighting** has been integrated throughout the church, to improve the efficiency of electricity use.
- St Mark's has a **renewable electricity tariff** and a **carbon offset gas tariff**, meaning that it's energy use is net-zero carbon.
- The church installed **under-floor heating** many years ago, which radiates heat up to 6 feet above the floor, ensuring that energy is not wasted on heating empty space.

The wider community:

- Several schemes have been set up within the congregation and supported by the church to tackle wider environmental issues, these include:
 - ◇ **Resurrected Bites**, an organisation that intercepts good-quality waste food and provides it to low-income locals.
 - ◇ **Resurrection Bikes** fixes, sells and donates old bikes, with funds going to partner charities.
 - ◇ **Harrogate Clothes Bank** obtains waste clothing and distributes it to lower-income people.
- A member of the parish was also very instrumental in founding **Zero Carbon Harrogate**.

How well does it work?

The solar array contributes to the electricity requirements of the church's use, but more panels and storage batteries would be required to supply all of its needs. Due to the seasonal nature of solar energy production, they are sometimes able to export surplus electricity to the grid.

The community projects rescue considerable amounts of clothing, food, and bikes from landfill.

The church has achieved Eco Church Silver.

How much did it cost?

The solar panels cost £24,000 to install. WREN provided a grant to cover £16,000 of this, while feed-in tariff payments, at roughly £3,000 annually, helped the panels to pay themselves off in just three years. They now provide a passive income for the church, which can be reinvested in further decarbonisation projects.

“The A Rocha Eco Church scheme has been really positive. A lot of climate action can feel quite negative, but getting the award has enabled us to share some good news with the church and work towards something positive. ”

Jemima Parker, parish member and Diocesan Environment Officer for Leeds