



gs College Chapel in Cambridge will have one significant difference: it

Image by Leon Hargreaves, courtesy of King's College Cambridge.

It's 3pm on Christmas Eve. As the light fades, a chorister steps forward in the world-famous King's College Chapel in Cambridge and sings the opening verse of Once In Royal David's City.

The service, which has been held at King's for more than a century, has been broadcast since 1928. For millions of people listening to the Festival of Nine Lessons and Carols around the world, this marks the beginning of Christmas.

This year's service will have one significant difference: it will be powered by solar panels.

Some 438 were installed on the roof of the historic building earlier this year after the roof was restored. They now provide all the chapel's electrical needs, with the excess being used in other college buildings.

"We're taking our environmental commitments very seriously," said Head of Capital Projects at the college, Shane Alexander. "We wanted to lower our carbon footprint, but we never thought we would get permission."

The appeal to install photovoltaic cells (PVs) on the roof was not met with universal warmth. Architect, Oliver Caroe, recalled a meeting of all the key stakeholders on the roof of the chapel as we emerged from the pandemic in 2021. "There was not unanimity," he said.

The bid to install the PVs and the opposition to it, attracted the world's media, even making it into The New York Times, which dubbed the situation 'an architectural squabble'.

"Some people felt, 'Why do you have to do this first?'" said Oliver. "King's needed a new roof, so this was the moment. We weren't trying to be eco-warriors. We were just trying to see what was the right thing to do for this beautiful, wonderful, special building.

"We are providing for its long-term future," he added.

"Even though it's not been the sunniest summer, we have beaten the proposed targets," said Shane. The PVs have produced enough energy to power 80 average homes, so more than enough for the chapel, and the rest for the college.

"So, the service will be powered by the PVs," he said. "It doesn't even have to be sunny for that to happen. It's rather satisfying for me. I have to pinch myself to see how we are changing this historic building for the right reasons."

The move has dramatically reduced the chapel's carbon footprint.

The potential combined annual output of the north and south slope PV panels is 128,062 kWh/year, with an annual CO2 reduction of 23.72 tonnes.

It will also save the college a significant sum financially. The installation cost around £350,000. But in January 2023 alone, the college's utility bill was £184,000, £83,000 of which was spent on electricity. With sunlight powering the chapel – and putting around 5% back into the college – those costs are set to fall.

Shane and his team are now considering ground source heat pumps to heat the chapel, meaning a future Festival of Nine Lessons and Carols could be held in an entirely carbon neutral building.

Nigel Cooper, the Diocese of Ely's Diocesan Environmental Officer, commented: "We have been delighted to support King's through the process for getting permission for the PV. To think that such a game changer on a globally iconic building has happened in our diocese is so encouraging."

Dean of Chapel Rev'd Dr Stephen Cherry said: "The panels were added as part of a much-needed project to repair woodwork and replace the lead of the great roof. This, to me, adds to their significance. Preserving what we have inherited and taking responsibility for the future go hand in hand. I long for a future where every church that has a Festival of Nine Lessons and Carols has solar panels on its roof."

So, this Christmas Eve, as the dying winter light enlivens the stained-glass windows at King's College Chapel, it will also be powering the electricity for the Festival of Nine Lessons and Carols.

What's heard on the radio around the world, and seen on television, may look and sound the same, but behind the scenes there will have been a fundamental shift towards net zero carbon in one of the world's most famous buildings.

Environment

[Net zero carbon](#)

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