



Comberton Village College Innovative Renewable Heat Network Scheme

At Bouygues E&S, an Equans company, we are committed to helping our clients meet their net zero targets in line with our 'Together Further for Climate' strategic pillar. Cambridgeshire County Council (CCC) has pledged to reach Net Zero on its own operations by 2035 and for the county of Cambridgeshire by 2045.

The Challenge

We are playing a key role in helping CCC achieve this through multiple renewable energy contracts in Cambridgeshire including Comberton Village College, where we have delivered an innovative renewable heat network.

The scheme has been a collaboration between us, the Cam Academy Trust, CCC, the Department for Energy Security and Net Zero, and Salix. Fundamentally, the new heat network has eliminated oil heating on site, replaced end-of-life heating plant, saved the college on its heating costs, and reduced carbon emissions from the college's heating by 70%. A key feature of the agreement is a performance guarantee on the projected energy savings.

The Project Overview

The project has replaced aging oil boilers in 11 different plant rooms with a network distributing heat to the buildings on site. The heat is now supplied by ground source heat pumps installed in the main plant room, which extract heat from an array of 215m deep boreholes in the college's car parks through underground pipes resulting in the delivery of 705 kW of thermal energy. Notably, the heat pump technology is currently the only form which allows for rapid decarbonisation of heating.

Delivered a live environment, the site operates 360+ days a year, with up to 2,000 pupils and staff on site. These factors added to the complexity of the project's delivery and collaboration with the college was essential to mitigate these challenges, while also working to the highest safety standard.

As with any project, end user satisfaction is key, but in this case the students vested interest throughout the project and in the futureproofing of the college has been very apparent. Undoubtedly, it has been fantastic to see the level of passion and urgency from the next generation who will soon be leading on the sustainability agenda.



Client Benefits

- Reduce carbon emissions from the college's heating by 248 tonnes of CO₂e (a 70% reduction) in the first year
- This saving will increase to 344 tonnes (an 95% reduction) in year twenty.
- Performance guarantee on the projected energy savings

Sean Sycamore, Deputy Principal for Comberton Village College, said, "We have been incredibly pleased to have been working with Bouygues E&S and CCC on such a ground breaking project, which will result in a significant forward step in future proofing the College's energy systems, whilst also reducing our carbon impact on the environment."

Councillor Lorna Dupré, chair of CCC's Environment & Green Investment Committee, said:

"Our vision is to deliver net-zero carbon emissions for Cambridgeshire by 2045. The Comberton Village College project is a great example of

how the County Council is working in communities with stakeholders like Bouygues E&S, an Equans company, and the Cam Academy to deliver this. The low carbon heat network not only ensures that we are doing our part to tackle climate change, but is also a great example of how to retrofit low carbon heating on other sites."



Miles Messenger, Energy Engineering Director at Bouygues E&S, an Equans company, stated:

"We are proud to have successfully delivered this innovative low carbon heat network scheme at Comberton Village College for Cambridgeshire County Council to help them meet their net zero target. The project will not only deliver significant energy and cost savings, but is testament to the Authority's and the college's commitment to addressing the climate emergency. As an energy and engineering partner, we've supported in translating this commitment into a successful project. This unique scheme is just one example of how we can deliver a significant long-term carbon reduction safely and with minimal disruption to the site's operation in a live school environment."



Key Facts.

- Reduce CO2e by 70% in year 1
- Reduce CO2e by 95% in year 20

The Switch on Event

The Civic 'Switch On' Opening Event at Comberton Village College was a great success.

After Councillor Ferguson's warm welcome of all attendees, two students at the college shared a comprehensive presentation contrasting the benefits of the new renewable heat system with the former oil-based one. The enthusiasm and engagement from the students has been evident throughout the project.

Bouygues E&S, an Equans company, representatives Tom McGrath, Energy Design Manager and Ornella Sangermano, Senior Project Manager, subsequently shared their insights on the technology underpinning the heat network.