

Case Study: St. Ambrose College



College gets greener with advanced combined heat and power technology

St. Ambrose College is using a technically advanced ENER-G 125kW Combined Heat and Power unit to assert its commitment to green energy initiatives, whilst generating over £28,000 per year in energy savings and reducing their carbon footprint by around 294 tonnes per annum, the equivalent to taking 98 cars off the road each year.

Saint Ambrose College was identified through a One School Pathfinder project, procured through the Building School for the Future programme, for rebuild due to the poor condition of the existing school.

The overall aim was to provide high-class sustainable facilities, which embraced the Catholic ethos and provided a world-class environment for a high achieving grammar school. This was captured by the external design, which is in the shape of a Celtic cross, and internal agile design, which incorporates a chapel at the heart of the school. The exterior supplements this with high-class sports facilities for a range of sports. The new building and part of the external area were handed over in Autumn 2012 and the sports pitches were completed in Spring 2013.

As a forward thinking College, they looked into efficient and energy savings options for the brand new building. One of the school's largest initiatives was the installation of an ENER-G 125kW Combined Heat and Power (CHP) unit.

By using CHP to generate electricity on site the heat created in the electricity generation process can be recovered and used by the school can use to provide its hot water and heating requirements.

The CHP system was commissioned in July 2012 but started running properly in October aligned with the opening of the new school. As part of the package, ENER-G's specialist CHP engineers will maintain the system for the college.

The CHP system was bought by the school on capital purchase with premier plus contract cover. This ensures that St. Ambrose College receives ENER-G's vast industry experience and the financial and environmental benefits associated with CHP technology, safe in the knowledge that any maintenance requirements would be promptly resolved.

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The CHP system generates electricity and recovers the majority of the heat created in the process. In conventional power stations this heat is simply wasted into the atmosphere through power station cooling towers, much energy is also lost along the many miles of electrical distribution cables needed to bring the power to site.

By using CHP to generate electricity on site the heat is used to provide heating and hot water providing increased comfort for the school's staff and pupils during the winter months.



Internal CHP unit at St Ambrose College designed by ENER-G

Remote monitoring

An integral part of our CHP units is the on-board computer. The computer's function is to provide optimised safe and efficient operation of the CHP unit. The computer also provides a two-way communication channel between your CHP unit and the ENER-G service centre, allowing live system operational monitoring and full historic data retrieval.

In addition, in the event of system faults, ENER-G service centre can receive an SOS signal from the unit, run remote diagnosis, rectify problems and schedule an engineer if necessary.

Remote monitoring reduces operational downtime and maintains client savings whilst generating monthly performance reports and offering customers the opportunity to log on and monitor operation and savings.

About ENER-G

ENER-G's cogeneration experience in the market to 1984 when we began designing, financing, manufacturing, installing and maintaining cogeneration systems.

Our systems can be powered by a variety of different fuels including; natural gas, biogas, propane, biodiesel or pure plant oil (PPO).

The applied CHP technology enables the organisation to generate its own electricity, radically reducing carbon emissions.

This method is highly energy efficient (85 per cent) as it recovers heat created in the electricity generation process and avoids transmission losses because the energy is used locally.

The typical payback period on CHP technology varies between two to four years.

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The benefits of CHP in the education sector:

- Offers financial savings over conventional energy supply
- Avoids Climate Change Levy
- Primary energy savings deliver lower energy bills
- Higher efficiency offers reduced greenhouse gas emissions offsetting the impact of the Carbon Reduction Commitment
- Greater security of supply and plentiful hot water
- Flexible procurement options
- Zero CAPEX required
- VAT savings
- Possible grant funding

