

Case Study: Isaac Newton Academy



State-of-the-art Academy raises the standard with advanced combined heat and power technology

Isaac Newton Academy are using a technically advanced ENER-G 90kW Combined Heat and Power unit to assert their commitment to green energy initiatives, whilst generating over £32,000 per year in energy savings and reducing their carbon footprint by around 144 tonnes per annum, the equivalent to taking 48 cars off the road each year.

The Academy is a non-denominational, non-selective school, welcoming girls and boys from all backgrounds from the local community. The school opened with just 180 Year 7 students in September 2012. Each year it will welcome another cohort of pupils until it has 1250 11–8 year olds in 2018.

Isaac Newton Academy, the foundation for a vibrant learning community is in place. The academy is a glorious building, purpose-built to provide a small school experience to a large student body.

As a forward thinking Academy, 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 90kW 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 academy.

The CHP system was bought by the school on capital purchase with premier plus contract cover. This ensures that the Isaac Newton Academy 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.



Bespoke unit at Isaac Newton Academy designed by ENER-G

CHP Maintenance

CHP systems require regular, periodic maintenance and inspection. Every unit requires a service after a predetermined amount of running hours. Units typically require between 6 to 10 services a year dependent upon operation. The service procedures vary throughout the year from replacing and recalibrating components to oil and filter changes. CHP units use gas as a fuel and are therefore subject to the Gas Safe Regulations. To ensure maximum savings and compliance with regulation.

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

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.

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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

