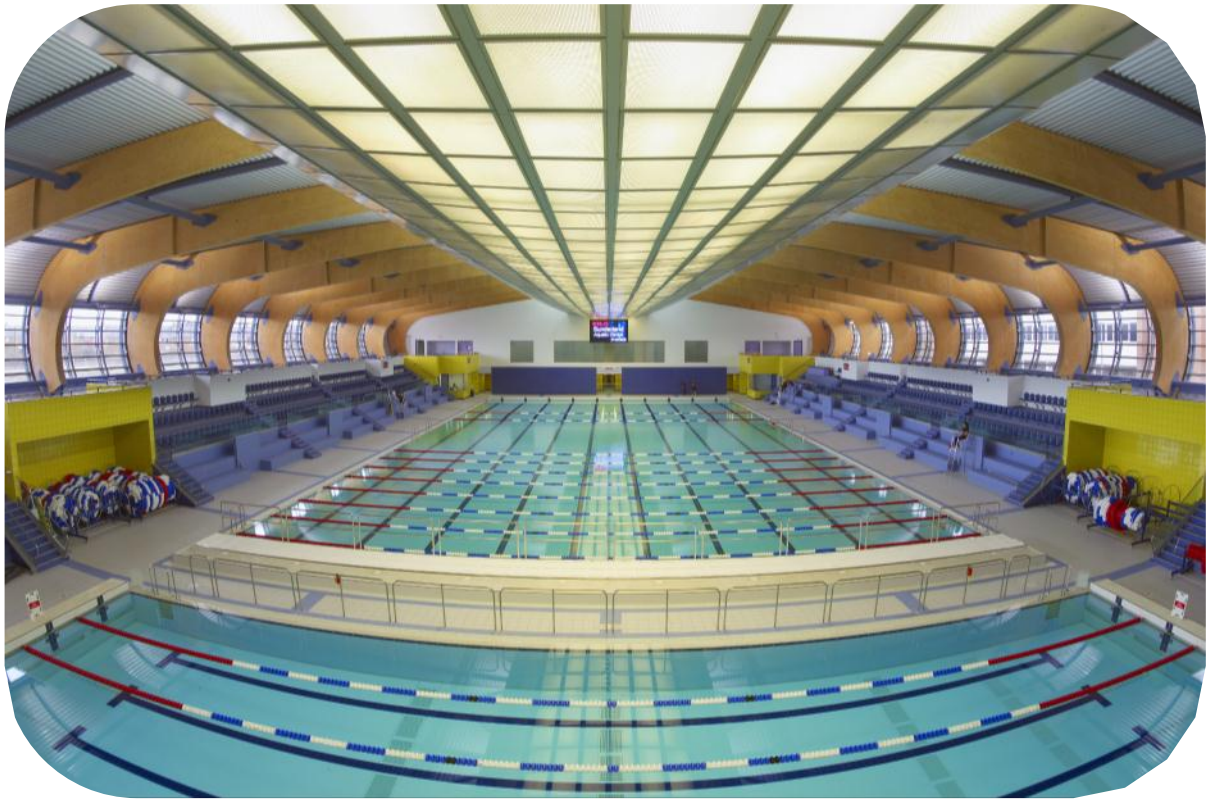
Case study - Swimming Pool



ENER-G Combined Heat and Power unit helps to generate energy for the country's 'greenest' 50m swimming pool.

Sunderland Aquatics Centre, Sunderland

Sunderland Aquatics Centre is Sunderland's newest and one of its most ambitious regeneration projects; it houses the region's first 10 lane 50m swimming pool and is the only facility of its type between Leeds and Edinburgh.

The aquatics centre was designed to be the greenest 50m swimming pool in the country and incorporates a number of green energy initiatives including; rain water harvesting for re-use in the building and super insulated external fabric to enhance further efficiency savings.

At the heart of the centre's green credentials is the installation of an ENER-G combined heat and power (CHP) unit. The system has been operational since May 2008 and was designed, built, operated and financed by ENER-G on a Discount Energy Purchase (DEP) scheme over 10 years.

Through opting for a Discount Energy Purchase (DEP) contract, the aquatics centre was able to realise an instant payback. Under this agreement, ENER-G finance, install and operate the CHP system at no capital cost to the client, and then sell the energy generated to the client at a discount, offering immediate savings.

"ENER-G's ability to install a system that offered huge carbon savings to match our project's green credentials, in addition to providing large financial incentives through efficiency savings ensured they were the number one choice to provide our energy solution."

185kWe ENER-G CHP unit

The 185kWe ENER-G CHP unit was assembled on site, because of logistical difficulties in accessing the installation area on the first floor, with a fully assembled unit. It was mounted on an anti-vibration frame, due to it being located below a large projector, which propels images of local artwork onto a piece of frosted glass outside the building, this meant it was essential for vibration to be kept to a minimum.

The CHP system used at the Sunderland Aquatics Centre generates electricity and recovers the majority of the heat created from the process. With conventional generation much of the heat is wasted into the atmosphere through the cooling towers, in addition electrical losses are created along the miles of electrical cables needed to bring the power to site. By using the CHP to generate electricity on site the heat generated can be used to provide heating for the pool water temperature and increased comfort for the staff and visitors within the centre complex.

Savings

From installing the ENER-G CHP unit alone the aquatics centre has achieved carbon savings to date of 539 tonnes of CO_2, which is equivalent to planting 82,923 trees.

These savings have helped the centre achieve many of their environmental and financial goals highlighted at the project's concept, the aquatics centre added:

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The CHP unit has also presented huge financial savings through reduced primary energy costs, the DEP savings scheme has produced savings of £31,548 per annum, assuming the site is using all the heat and operating 17 hours per day.

The benefits of CHP in the Leisure 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
- VAT savings
- Possible grant funding

About ENER-G

ENER-G develops, delivers and finances sustainable energy solutions and technologies on a business to business basis worldwide. We offer a “one-stop-shop“ for all commercial and industrial energy requirements, from combined heat and power (CHP), renewable electricity generation from biogas, heat pump technologies, efficient lighting, controls, metering and data solutions and energy from waste.

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