

Waterside Hotel & Leisure Club

Hospitality

The Challenge

Located in the heart of Didsbury along the banks of the River Mersey in Manchester, Waterside Hotel & Leisure Club is a distinctive, independently-run hotel with 45 en suite rooms, leisure club and thermal suites for their guests' comfort and relaxation.

The hotel wanted to reduce some of its operational costs and looked at installing a clean energy solution that could efficiently provide electricity as well as heat and hot water.

In May 2016, Pure World Energy (PWE), Capstone's partner in the U.K., commissioned a clean energy solution for the hotel, which delivers guaranteed savings over a 15-year period.

"As a business we have reviewed all areas of expenditure and have invested a significant amount of time in understanding our energy demands. After discussing our needs with PWE we took a view that whilst we can control many things within the business, we needed assistance in the flow and cost of energy and I'm confident we have found a good partner to work with," said James Lyne, Proprietor of Waterside Hotel & Leisure Club.

The Solution

The original combined heat and power (CHP) system was centered around a Capstone C65 ICHP microturbine. The highly efficient system ensured that the hotel's 40+ rooms, plus the adjoining leisure facility's 25-meter swimming pool and 130-station gym, are all supplied with reliable power.



Waterside is leading the way within the hospitality sector, with a progressive energy management strategy, and we look forward to further developing our relationship and driving down their energy costs."

— Sean Fitzpatrick, CEO
Pure World Energy (PWE)

Power Profile

Customer

Waterside Hotel & Leisure Club

Location

Didsbury, Manchester, England

Commissioned

May 2016

Fuel

Natural Gas

Technologies

- 3 C65 ICHP Microturbine

Capstone Green Energy

National Account

Pure World Energy (PWE)



**Smarter Energy
for a Cleaner Future**



Three C65 ICHP microturbine solution provides a clean energy CHP solution for the Waterside Hotel & Leisure Club, which delivers guaranteed savings over a 15 year period.

The system is also designed to capture the waste heat produced by the microturbine in order to provide heat and hot water.

Five years after the original installation, when the facility had expanded in both rooms and leisure wet areas, the customer added two new C65 units, moving all three into a new acoustic enclosure. The structure was built on the bank of the Mersey River with low temperature hot water (LTHW) pipes and electrical connections installed via a trench to the plant room for connection to the distribution board and the LTHW system. While the original system supplied roughly 40% of the hotel's electricity and 65% of its hot water for both the pool and domestic hot water needs, the upgrade supplies 90% of the electrical energy and close to 100% of the thermal energy by way of LTHW.

With guest experience a priority to hotel operators, the microturbines' relatively low noise level (<65 dB) ensures a tranquil ambiance and guest experience. Along with delivering operational protection to both heat and electrical demand, the CHP system and integrated control solution ensures optimum efficiency of the entire plant room while taking up minimal space.

The Results

Clients of energy services companies (ESCOs), like PWE, typically achieve annual savings of 7-12% on the electricity and heat produced by a CHP system like the one installed at Waterside—all while making zero capital investment. The Waterside system annually generates 215,000 kWh of electricity or approximately 40% of the site's total load. It also provides 520,000 kWh of heat per year.

Use of a Capstone combined heat and power microturbine to generate on-site heat and power has significantly reduced

Waterside Hotel & Leisure Club's energy costs. With the CHP's high efficiency and use of captured waste heat for heat and hot water, the facility saves over 115 metric tons of carbon per year, which is the equivalent of taking 25 cars off the road each year. The C65 energy solution has also reduced their reliance on grid supply while simultaneously providing back-up power should it be required.

Sean Fitzpatrick, PWE CEO, concludes: "Waterside is leading the way within the hospitality sector, with a progressive energy management strategy, and we look forward to further developing our relationship and driving down their energy costs."

In fact, PWE and Waterside will be moving forward with an upgrade to a C200 microturbine, which will handle increased demand from a new extension of the hotel. Once completed later in 2020, the system will be supplying 65% of the hotel's electricity and 85% of its thermal energy.

Capstone C65 ICHP Microturbine



A C65 provides up to 65kW of electrical power while the UL-Certified C65 ICHP provides up to an additional 150kW of thermal power for CHP and CCHP applications.