

Deloitte Offices London, England

A comprehensive upgrade solution was provided to replace end of life Hoval boilers that were not meeting a required turn down ratio in excess of 4:1.

2 high efficiency, hydrogen ready Limpsfield low NOx burners, BKBD boilers and Autoflame Mk8 series controls were installed to reduce fuel consumption, increase reliability and reduce the overall emissions output of the plant.



THE PROBLEM

- The existing Hoval boilers were deemed end of life and were not meeting the efficiency requirements of the site.
- Consequently, the existing equipment was not future proof for changing regulations or fuel sources, including the Medium Combustion Plant Directive (MCPD) or burning hydrogen.

THE GOALS

1. **Reliability & Control** | The site requires reliable heat demand and an increase in the functionality of the plant room, including aspects such as remote access to boiler plant controls for safety and maintenance.
2. **Efficiency** | To improve the efficiency of the plant room, to therefore reduce both operating and fuel costs.
3. **Innovation** | To understand the carbon footprint of the plant through emissions monitoring and fuel flow metering.
4. **Future Proof** | Hydrogen ready equipment was specified by the site.

THE RESULTS

- Instant fuel savings in excess of 25% per annum were delivered.
- An ROI was predicted at less than 18 months based on 2021 gas usage figures provided by the site.
- Net Emissions were reduced by 35% across 5 exhaust gases due to the increase in combustion performance.
- Boiler plant safety is paramount, this was achieved by implementing exhaust gas safety limits, complete with a data transfer interface (DTI) control for remote access to boiler plant functions.
- The site is now future proof with the potential to fire 100% Hydrogen, supporting the client's emissions reduction pathway.



BEFORE



AFTER

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THE STRATEGY

An energy audit was carried out to understand the actual heat demand for the building. This ensured that the newly installed equipment could meet those requirements efficiently and effectively.

The proposed solution was to install 2 x 880kW ultra high efficiency condensing BKBD Boilers to replace the existing 3 x 850kW MTHW Hoval boilers.

To ensure peak performance for this site, the BKBD boilers were fitted with Limpsfield low NOx LP burners firing natural gas. Autoflame Mini Mk8 controllers were POD mounted to ensure precise, intelligent combustion.

Autoflame's exhaust gas analyser, the Mk8 EGA EVO, was fitted to each boiler to monitor emissions levels from the flue. Data collected on the analyser is not only logged for reporting purposes, but also utilised by the Mini Mk8 to improve the accuracy and efficiency of the combustion process via 3-parameter-trim. The Mk8 DTI, Autoflame's data transfer interface, was installed for remote monitoring capabilities and total boiler plant overview.



THE EQUIPMENT

Pre-Existing

- 3 x 850kW MTHW Hoval Boilers
- 3 x Limpsfield Burners
- 3 x Autoflame Mini Mk6

Newly Installed

- 2 x 880kW Ultra High Efficiency, Condensing BKBD boilers
- 2 x Limpsfield LP Burners
- 2 x POD mounted Autoflame Mini Mk8 MMs
- 2 x Mk8 EGA EVOs
- 1 x Mk8 DTI