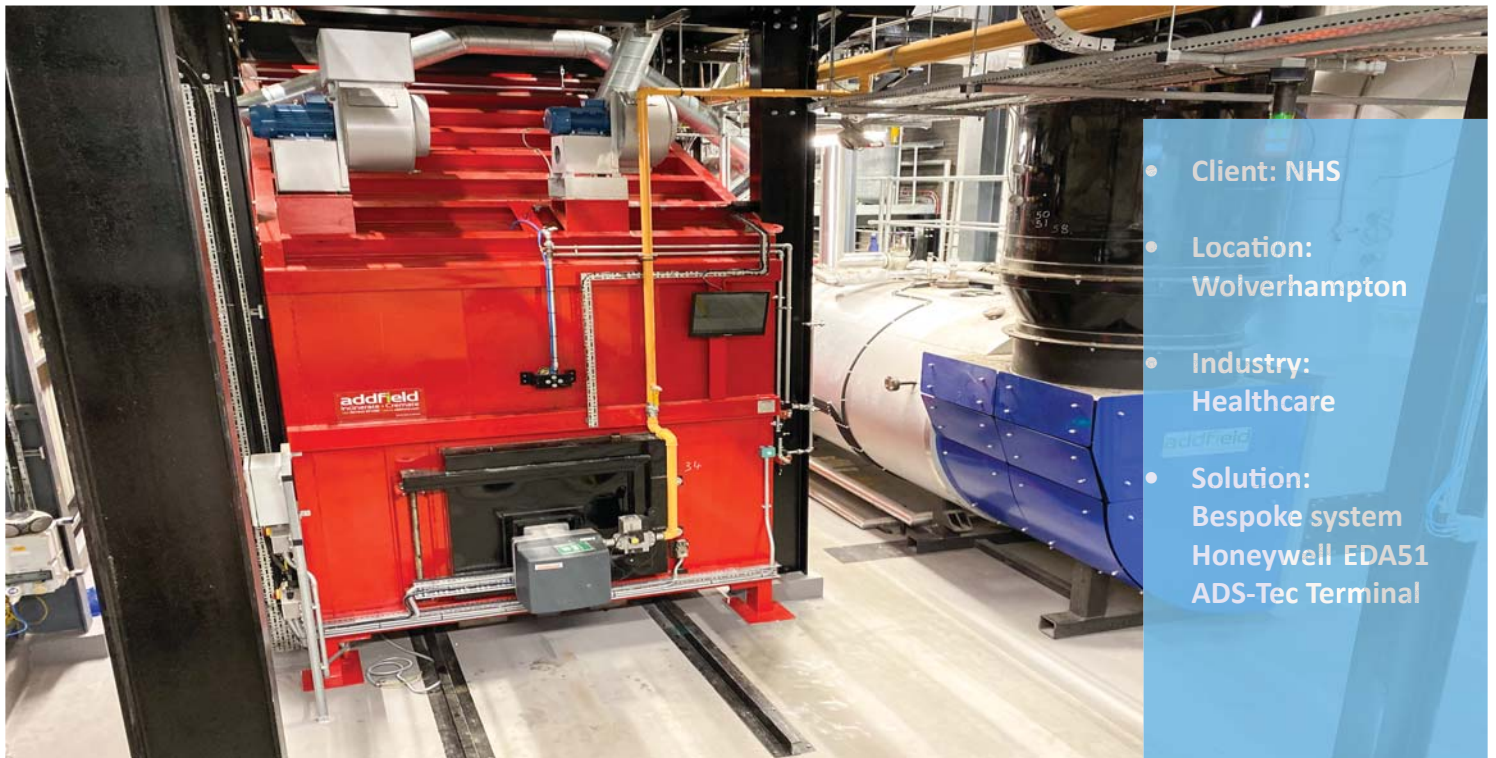CASE STUDY - **NHS Wolverhampton**

Tracking System for the NHS Advanced Waste-To-Energy Incineration Plant

Tracking clinical waste for the most advanced incenerator project in the NHS

- **Client: NHS**
- **Location: Wolverhampton**
- **Industry: Healthcare**
- **Solution: Bespoke system Honeywell EDA51 ADS-Tec Terminal**

ABOUT THE CLIENT

The National Health Service (NHS) Founded in 1948 as part of major social reforms following the Second World War on the principles of comprehensive, universal, and free at the point of delivery healthcare. The NHS is the biggest employer in the UK (and fifth biggest in the world!), with around 1.7 million employees and approximately 1,250 NHS hospitals across the UK.

THE PROBLEM

Clinical waste incineration is a vital part of NHS operations. The Royal Wolverhampton NHS Trust was looking to replace their ageing incinerator with a plant that improved efficiency and delivered greater environmental benefits whilst incorporating a processing and tracking system.

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The incinerator would need to handle all the clinical and medical waste generated by the hospital and utilise the waste heat from the incineration process. When offsetting the fossil-fuelled boilers previously used by the hospital, the incinerator creates clean, free, and green recovered energy. Part of the system needed a way to continuously monitor and confirm the amount of waste being loaded and processed by the machine.

THE SOLUTION

The team at GSM Barcoding developed an asset management and waste quantity tracking system that enabled the operators to track the waste process.

Graham McCarthy from GSM Barcoding explains how they helped build the solution: "Addfield, the International leaders in incineration solutions, built the incinerator for this project, and called upon our team at GSM Barcoding to help develop a bespoke software system that allows internal NHS staff who collect waste, to record the location, type of waste, who collected it, and when.

Once collected, the waste is then taken to the plant, and the bins unloaded onto a conveyor. The bin's barcodes are scanned, and it is weighed by a scale that has the bins integrated into it so their weight can be removed from the final calculation, leaving just the weight of the waste. The weight is recorded, and the bin is cleaned and dropped back at its ward for the next collection."

"The data from the collection is passed to the incinerator, which now records the weight and type of waste that has been deposited, so before it even arrives it can automatically process how long to burn it for, depending on these variable factors."

" Through the cloud server, the system can show the pickups and when the waste was processed.

This is especially helpful in the current climate, with COVID-19 waste needing to be burned within 48 hours of pick up."

As a total solution, GSM Barcoding provided the latest hardware technology including Honeywell EDA51 mobile devices for barcoding and recording the collection, with 3G SIM cards to be used on Wi-Fi or cellular - enabling mobile working for the team. For the incinerator loading, an ADS-tec terminal was connected to the weigh scales. The ADS-tec device with ease-of-use touch screen, IP rating and rugged build was selected for its ability to endure the external variable weather conditions

THE RESULTS

By integrating a barcode scanning system into the incinerator system, GSM Barcoding created an asset management and tracking tool that has enabled the operator to track waste origins accurately. The plant can now pre-prepare for incoming wastes and its content's potential calorific value. This system means that the machine can automatically adjust the settings to deliver the most economical and efficient thermal treatment process possible to all incoming waste.

Due to the system continuously monitoring and confirming the amount of waste being loaded and processed, the system has reduced operator attendance and labour, making the day-to-day running of the plant more efficient.

"We needed a barcoding system that would provide full traceability of the hospitals own, and imported waste that was generated, and that is what GSM delivered, the results have genuinely spoken for themselves.""

Derek Carr, Operations Director Addfield