



Case Study

Toyota Manufacturing Installation

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George Koch Sons Europe Processing Installation at Toyota Manufacturing UK is Fully Recognized

George Koch Sons Europe has completed a major environmental process installation at Toyota's Derbyshire premises, with the project enhancing the vehicle manufacturer's handling of volatile organic compounds (VOC's) – and even prompting two of the company's prestigious Paint Shop Principal Contractor's Safety Awards.

"The work highlights our capability in terms of equipment design and installation as well as project management," says Tom Mercer, George Koch's UK Managing Director. "We are delighted to have been able to contribute to the production efficiency and environmental performance of such a major manufacturer and also, of course, extremely proud to have received the two awards."

The George Koch facility – part of a £3.4 million project – centres on the installation of a new oxidiser, which links to oven emission control, and an upgrade to the process heating system. Focused on Toyota Manufacturing's paint shop, the design replaces a 23-year old system which previously operated with localised exhaust handling and incineration. The new facility brings all such outlets together via a single Regenerative Thermal Oxidiser (RTO) that now handles exhaust streams throughout the plant – some 63,000 Nm³/per hour at 98% thermal efficiency.

"The installation was conducted over a series of phases designed to minimise the impact on ongoing vehicle production," continues Tom Mercer. "This required us to develop a safe method of access protocol for the works, which was one of the factors that is at the heart of the recognitions that we have now received at the site."

He points out that Toyota Manufacturing UK's objectives were very clear-cut and focused on the provision of an economical solution that could deliver optimised energy efficiency, compliance with national limits for VOC, NO_x and CO and one that offers reliability of operation and ease of maintenance. "The installation that we have completed fully meets these objectives throughout," adds Tom Mercer.

One of the key aims of the work was to separate the final treatment of emissions from the oven heating facility. This has seen each oven being fitted with direct gas fired heating systems powered by fans with inverter controls to ensure optimum energy efficiency. "The system allows for the RTO and the oven recirculation configurations to be carefully monitored and controlled to ensure close control of energy usage depending upon vehicle throughput at any given time," continues Tom Mercer.

He explains that because the new oven heaters are of an indirect gas fired configuration, the consequent network of ducting and automated dampers had to be installed in line with ongoing plant operation, reflecting the development of the safety procedures for the project.

"Our work also required us to source and oversee the role of a number of subcontractors at the site, all of which shaped our project management input which is one of the functions defined by Toyota's recognitions," adds Tom Mercer. The awards reflect performance in each of two consecutive years – 2014 and 2015 – specifically over the summer shutdown period. They recognise 'outstanding leadership in the role of principal contractor and for setting a good example to subcontractors' and are given by the Health & Safety Departments of Toyota Motor Europe and Toyota Manufacturing UK.

"Working with a new supplier can present many challenges as they adapt to our requirements and procedures, but the positive approach of the George Koch team associated with this project from conception to completion helped us to achieve an excellent result in terms of safety and impact to production," comments Mark Ashmore, Vehicle Production Engineering Manager (Paint) – Toyota Motor Europe, UK Branch. "The awards issued by our internal Health and Safety department are based upon feedback from site safety audits on consecutive years of construction, and demonstrate our appreciation of a job well done."

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