

Auditoria applauds DCS service

DUST Control Systems Ltd (DCS) has supplied and installed a complete dust extraction system at Auditoria Services' manufacturing facility in Rotherham, South Yorkshire. The energy-efficient system, which features an externally-sited, high-performance modular filter unit, also benefits from the inclusion of Ecogate® extraction optimisation technology.

Founded in 1977, Auditoria Services is a family business with a wealth of experience at its disposal, and is widely-acknowledged as the UK's market leader in the design, manufacture and installation of fixed, retractable and folding seating for theatres, cinemas, lecture rooms and sporting venues. The company is extremely proud of its reputation for manufacturing auditorium seating to the highest quality standards and, wherever possible, the company endeavours to patronise local companies and to utilise locally-sourced materials in the manufacturing process.

Auditoria's joinery manufacturing workshop is well-equipped with a range of high-speed woodworking equipment; including a vertical moulder, various saws and sanders, as well as edgbanding and CNC routing machinery. However, it was becoming clearly apparent that the existing

dust extraction system was no longer coping efficiently with the demands being placed on it, and so the company invited DCS to undertake a full survey of the factory, and also accepted the offer of a free energy-saving appraisal.

The existing filter unit, which was internally-sited, wasn't providing effective suction from the woodworking machines but, more significantly, the collected waste was being fed directly to a briquetter. This arrangement had persistently proved to be problematic for Auditoria; whenever a glitch occurred with the briquetter there was nowhere for the waste to go — the only solution was to shut down the entire extraction system to prevent waste backing up and blocking the filter unit.

The proposal put forward by DCS was accepted and the company installed and commissioned an NFSZ3000 3HJLR screw filter unit, with the capacity to handle up to 24,500 m³ of dust-laden air per hour through its patented antistatic Superbag filter media. The system is powered by a 45 kW direct drive main fan, extracting wood chips and dust from a total of 10 machines, and the ATEX-certified filter construction includes three explosion relief panels. Dust is continually removed from the filter media



DCS installed an NFSZ3000 3HJLR modular filter with 45 kW main fan and rotary valve.

WOOD WASTE & DUST CONTROL

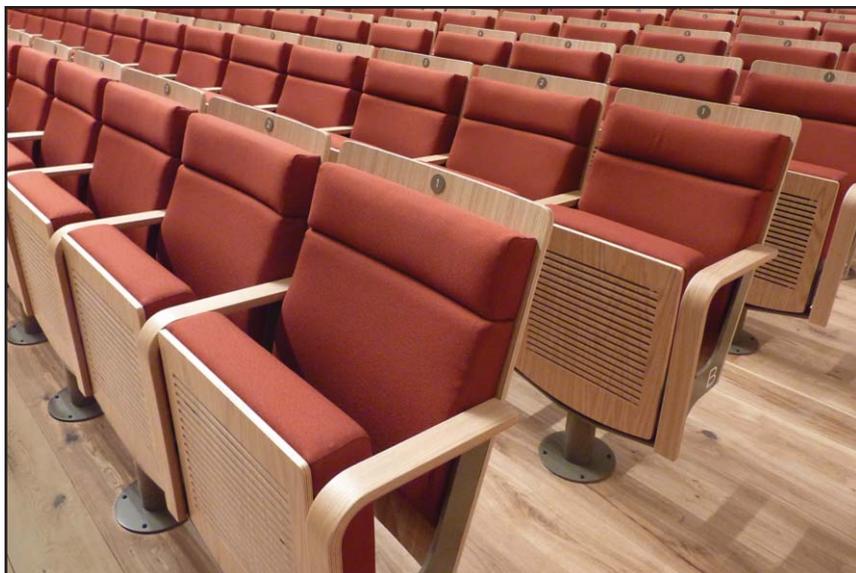
by a reverse air regeneration fan, directing it to the lower hopper section of the filter unit, from where it is dispelled by a screw conveyor before being transferred pressure-free, via a rotary valve, to a new hopper installed inline ahead of the briquetter. The storage hopper is effectively a buffer unit; ensuring a regular flow of waste to the briquetter and, in the event of a breakdown, the rotary valve includes an emergency discharge outlet to a bulk-bag container — allowing uninterrupted operation of the extraction system.

Although the system installed at Auditoria has the capacity to provide sufficient extraction to allow continuous operation of all machinery throughout the working day, this is a scenario which, in common with all joinery workshops is seldom, if ever, a reality.

With variations in machine usage, depend-



Ecogate® greenBOX 12 controls the variable speed drive inverter unit which adjusts fan speed to match machine usage.



An example of bespoke theatre seating manufactured by Auditoria Services.

DCS installed FastClip ductwork system throughout the joinery workshop.

ing on the day's production requirements, downtime for loading and offloading, shift changeovers and operator rest breaks, extraction is typically required for around 80% of the working day — yet the extraction fan on a traditional system will continue to run at full load, all day, every day. At Auditoria, the energy-saving appraisal carried out by DCS revealed that installing an Ecogate® system would reduce the average extraction volume requirement by 22% which, remarkably, equates to a reduction in power consumption of over 50% — reducing the company's electricity bills significantly, and providing a return on the investment in just over four years, with continued nett savings for years to come.

In the workshop, DCS installed an Ecogate® automatic damper in the ductwork to each machine. The dampers open and close automatically when an individual machine comes on or offline and the change in extraction requirement is signalled to the Ecogate® greenBOX 12 controller, which in turn instructs a variable speed drive inverter unit to adjust the fan speed accordingly.

UK sales manager for Ecogate Ltd, Ian Rayner, who assisted DCS with integration of Ecogate® technology into the dust extraction system design, commented: "The data that DCS gathered during the site survey showed that Auditoria was consuming over 93,000 kWh of electricity per year and, with electricity costs rising year on year, the option to invest in the Ecogate® system and reduce power consumption by at least half was a no-brainer for Auditoria." And, as Ian continued to explain: "Installing

an Ecogate® on-demand extraction optimisation system not only reduces power consumption and customers' electricity bills but, because fan speed is continuously controlled to exactly match extraction requirements, in real time, wear and tear on component parts of the extraction system is reduced, noise levels in the factory are noticeably lower, and the reduction in average airflow effectively provides additional filter capacity to accommodate machine changes and future expansion."

Auditoria director, John Penistone, is understandably delighted with the difference the new installation has made, and was equally appreciative of the role played by Dust Control Systems: "We were impressed with the professional service DCS provided from day one and, during the actual installation, their engineers worked efficiently around our production team. In just seven days, including a weekend, the new extraction was up and running and the Ecogate® system commissioned just a few days later."

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