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## Joinery firm saves £13,000 with ABB drives

A manufacturer of timber doors and windows is saving £13,000 a year on electricity costs following the installation of ABB variable-speed drives (VSDs) on its extractor fan system. The solution, provided by ABB Drives Alliance member Advantage Control, involved five ABB general purpose drives, ACS550, to control the speed of five extractor fans.

Heron Brothers, based in Northern Ireland, sells its products to public sector bodies, large private building contractors and builders' merchants in the UK and Ireland. The factory uses an extraction fan system to remove potentially harmful wood dust from the machinery to a large extraction unit with a filter and a rotary vane feeding a hopper. There are three 37 kW extraction fans, an 18.5 kW extraction fan and a 15 kW transfer fan, which runs continuously when the production machinery is switched on.

The extraction fans were left running all day as the control panel for them is situated some distance from the machines they serve. The fans also had to be started in a set sequence to avoid overloading the supply on start-up.

Damien O'Callaghan is the Executive Manager for the plant: "From a review of the appliances that were using most electricity, it was found that circulation fans, extraction fans and the extraction system were consuming the most and they were operating inefficiently.

"We asked Advantage Control to look at the application and come up with a more efficient way of working. Our internal maintenance staff had worked with Advantage Control previously and had nothing but praise for them."

Advantage Control carried out an initial survey of the supply to the extraction panel using a data logger and recording the detail of the weekly running. A survey was also undertaken on the main supply to see how much power was being consumed on site. The next stage was to use an ABB general purpose hire drive to run the 18.5 kW fan for a week.

The eventual solution involved installing five ABB general purpose drives mounted beside the main control panel. The panel itself was unchanged as the filter cleaning and the rotary vanes are controlled by timers contained within. The 15 kW transfer fan was connected into the emergency circuit as a failure of this component stops the extractor fans from running.

The major benefits of the project are the reduction in energy cost of £13,000 per annum resulting from a cut in the average daily power consumed from 103.3 kW to 51.4 kW through matching fan motor speed to the demand of the process. This is a saving of 50 percent and a reduction of 59.79 tonnes of CO<sub>2</sub> per year.

Controlling the drives through VSD technology has also allowed the fitting of remote control stations through-out the factory, meaning operators can switch off the fans serving their respective machines while moving materials or during production breaks.

The payback for fitting the drives is just under nine months. This reduction in kW used on site has reduced the strain on the plant's mains supply as the transformer was reaching the limit of what it could

supply. The drives' ramped start up ensure they never need more current than they are labelled for, while isolators and cables which were previously hot are now noticeably cooler.

Adds O'Callaghan: "Advantage Control advised us that grants were available which we duly applied for and received. Advantage Control made the investment decision very easy for us as it was less than a year payback when annual savings and grants were factored in.

"The success of this project has made us more aware of energy saving solutions."

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**Caption:** Heron Joinery is saving £13,000 a year on electricity costs following the installation of ABB VSDs on its extraction fan system.

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**For more information please contact:**

**Layla Hewitt**  
**Marketing Communications**  
Phone: 01925 741517  
Email: [layla.hewitt@gb.abb.com](mailto:layla.hewitt@gb.abb.com)

**ABB Ltd.**  
Daresbury Park  
Daresbury  
Warrington WA4 4BT

**Emma Jenkinson**  
**Armitage Communications**  
Phone 020 8667 2218  
Email: [emma.jenkinson@armitage-comms.co.uk](mailto:emma.jenkinson@armitage-comms.co.uk)