

---

WARRINGTON, UK, OCTOBER 13, 2006

# Birmingham Hippodrome saves 25% of HVAC energy with ABB drives

Variable speed drives from ABB are delivering a bravura performance at the Birmingham Hippodrome, where they are slashing the energy consumed by motors for heating and ventilation (HVAC) duties by more than a quarter.

The 29 ABB HVAC drives range from 2.2kW to 30kW and control motors on the pumps that move hot and chilled water around the building. As a result the motors have been using between 25 and 30% less electricity since the drives were installed, while the cost of running the fans that keep air flowing through the ventilation system has been cut by between 28 and 30%, according to Facilities Manager Mike Croke.

The project started when the Birmingham Hippodrome called in an assessor from the Carbon Trust to survey the building's energy efficiency. "This was one of the big projects that the assessor identified," says Croke. "He also pointed out that we could get an interest-free loan towards the cost from the Carbon Trust, which was obviously appealing to us."

Armed with a £60,000 loan, the Birmingham Hippodrome called in ADT, the UK's leading provider of electronic fire and security solutions, to upgrade the HVAC system. In addition to installing the variable speed drives, ADT upgraded the theatre's Building Management System (BMS) to use BACnet, which is a communications standard that was specially developed for building services. The protocol offers 'plug and play' integration of devices, without the need to pay a licence fee.

"We wanted BACnet for several reasons," explains Mike Cassell BMS Field Line Manager for ADT. "Ease of installation was the main thing, but BACnet also offers more data, better control, and makes it easier to monitor and adjust the drives from a single point."

BACnet is helpful for end users as well as contractors, according to Croke: "It's not something we'd use every day, but it gives us more information about how each drive is performing and helps us monitor the performance of the overall plant."

ABB has been offering HVAC drives with a fully incorporated, or "native", BACnet capability since 2004. This means that the ABB HVAC drives did not need to be adapted using add-on software gateways. ABB HVAC drives are also approved to BTL (BACnet Testing Laboratories).

Before the upgrade, hot and chilled water was pumped around the theatre using a system of duty and standby pumps, so that one pump in each pair normally ran at full speed while the other stood idle. The new drives enable both pumps in each pair to share the load by running at around 65% capacity. This means that every pump is operating closer to its optimum efficiency, effectively reducing the electrical demand for each pumping job by between 25 and 35%.

For the drives on air duty, the theatre's BMS is configured to run the fans at 50% by default and to increase the fan speed only when needed to maintain air quality. The air quality is monitored by carbon dioxide sensors located in the ductwork.

"While BACnet capability was the main reason for choosing ABB drives, the technical support and reliability of the drives were also important," says Cassell. Croke confirms that the drives have been running trouble-free since their installation and says that the theatre plans to use more of the same in any future projects.

ABB (ABBN: SIX Swiss Ex) is a pioneering technology leader in power grids, electrification products, industrial automation and robotics and motion, serving customers in utilities, industry and transport & infrastructure globally. Continuing a history of innovation spanning more than 130 years, ABB today is writing the future of industrial digitalization with two clear value propositions: bringing electricity from any power plant to any plug and automating industries from natural resources to finished products. As title partner in ABB Formula E, the fully electric international FIA motorsport class, ABB is pushing the boundaries of e-mobility to contribute to a sustainable future. ABB operates in more than 100 countries with about 147,000 employees. [www.abb.com](http://www.abb.com)



**Photograph by Stewart Helmley**

**Caption:** Variable speed drives from ABB are delivering a bravura performance at the Birmingham Hippodrome, where they are slashing the energy consumed by motors for heating and ventilation (HVAC) duties by more than a quarter.

—  
**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)